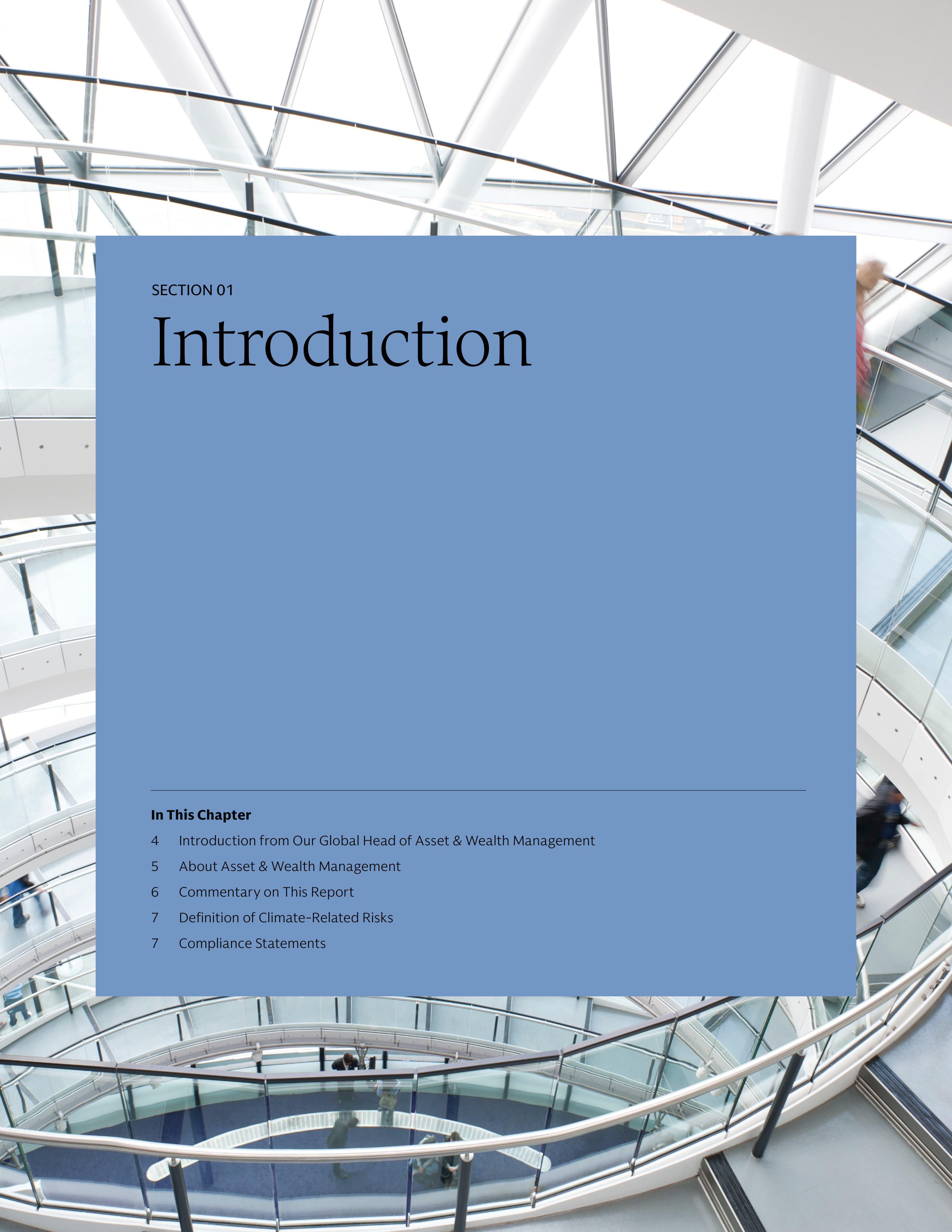
Goldman Sachs

Task Force on Climate-Related Financial Disclosures

Asset & Wealth Management TCFD Report 2024

Table of Contents



SECTION 01

Introduction

In This Chapter

Introduction from Our Global Head of Asset & Wealth Management

As a leading asset and wealth manager with a global client base, we serve a large and diverse group of institutions and individuals across jurisdictions, each with their own distinct set of investment objectives.

Within Asset & Wealth Management (AWM), we implement Goldman Sachs' client-centric approach to sustainability by our ability to tailor investment strategies, insights, and solutions to meet our clients' evolving needs and investment objectives.

We view climate transition in the context of a broader, multi-dimensional macroeconomic landscape, including international trade dynamics, supply chain challenges, geopolitics, and the evolving regulatory backdrop across jurisdictions related to climate transition and other sustainability-related issues.

Since last year, we enhanced our capabilities related to climate transition. For example, we have expanded our internal climate transition-related resources, broadened our climate risk capabilities, and advanced the development of our suite of climate-related products and solutions that we have designed to help clients capture climate transition opportunities in their portfolios.

Looking ahead, we plan to continue supporting our clients and portfolio companies. We will continue to evolve our practices in line with our clients' needs, market dynamics, and regulatory developments—with the goal of generating risk-adjusted returns for our clients.

We are pleased to share our 2024 Task Force on Climate-Related Financial Disclosures (TCFD) report focused on Asset & Wealth Management and its business activities delivered through two of our material United Kingdom legal entities.

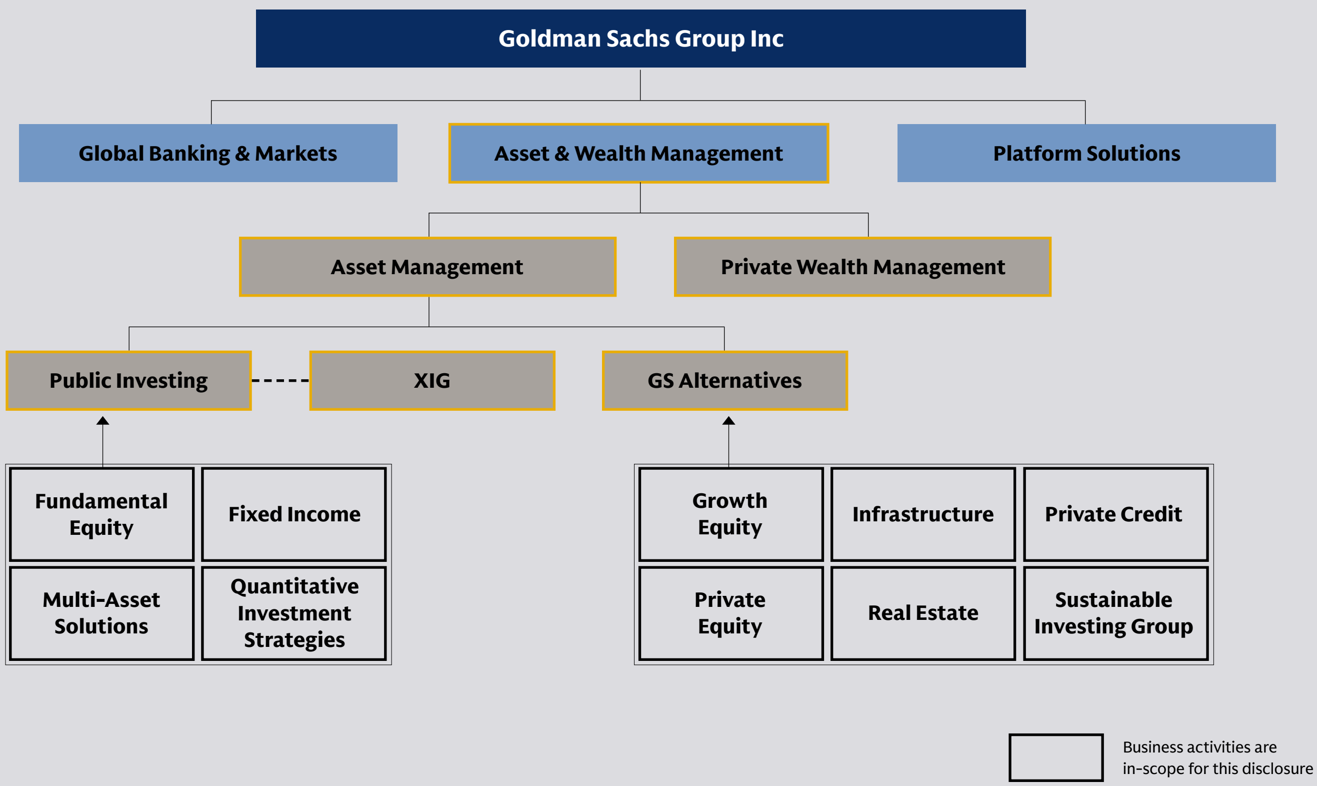
Marc Nachmann
Global Head of Asset
& Wealth Management

About Asset & Wealth Management

AWM (referred to as "we", "our", or "us") is a business segment within The Goldman Sachs Group, Inc. (referred to as "Goldman Sachs", "the firm", or "firmwide"). AWM provides investment services to help clients preserve and grow their financial assets and achieve their financial goals. We provide these services to our clients, both institutional and individuals, including investors who primarily access our products through a network of third-party distributors around the world.[1]

AWM includes Goldman Sachs Asset Management, which includes investing in public markets (referred to as "Public Investing"[2]) and alternatives (referred to as "GS Alternatives"[3]), and Goldman Sachs Private Wealth Management (referred to as "Private Wealth Management" or "PWM"). See Figure 1 for additional details on AWM's position within the broader Goldman Sachs organisational structure.

Figure 1: Goldman Sachs Organisational Structure



1. AWM also invests Goldman Sachs' on-balance sheet alternative assets.
2. Formerly referred to as "Public Markets Investing" in prior reporting years.
3. Formerly referred to as "Private Markets Investing" in prior reporting years.

Today, AWM is a leading global active asset manager with a leading global alternatives business and a premier wealth management franchise. As of 31 December 2024, we have more than $3 trillion in assets under supervision (AUS) globally.[4]

$3TN+

AWM manages assets across a broad range of investment strategies and asset classes, including equity, fixed income, and alternatives. Our GS Alternatives activities, which are typically longer-term, include investments in private equity, private credit, real estate, and infrastructure assets.

Our External Investing Group (XIG) identifies external managers across the risk-return spectrum and partners with them in multiple ways, investing in their products, co-investing alongside them, acquiring positions in the secondaries market, and investing directly into management. Imprint is a dedicated team within XIG focused on thematic research, manager selection, and co-investments across sustainable growth themes.

Private Wealth Management provides tailored wealth advisory services to its clients. We operate globally, serving a wide range of clients from individuals, families, and family offices to foundations and endowments. These services begin with identifying clients' objectives and continue through portfolio construction, asset allocation, risk management, and investment execution. We leverage a broad investment platform, and our global execution capabilities, to help clients achieve their investment goals.

Commentary on This Report

The Asset & Wealth Management Task Force on Climate-Related Financial Disclosures 2024 Report (referred to as "AWM UK TCFD 2024 Report" or "this report") has been developed in line with the United Kingdom (UK) Financial Conduct Authority (FCA) rules and guidance as set out in the Environmental, Social, and Governance (ESG) sourcebook and TCFD Recommendations. This report focuses primarily on progress we have made in the past year to support our clients with their climate-related investment objectives. Across this report, we have distinguished between existing climate-related activities and future initiatives, although this report's focus is on existing activities.

Based on the ESG sourcebook, the Goldman Sachs legal entities in scope for this report (collectively referred to as the "UK legal entities") are Goldman Sachs International (GSI) and Goldman Sachs Asset Management International (GSAMI). Within GSI and GSAMI, the business activities conducted in 2024 within Public Investing and GS Alternatives (both in GSAMI), and Private Wealth Management (in GSI) are in scope of the FCA requirements. For full details of in-scope assets within these business lines, refer to "Appendix A: In-Scope Asset & Wealth Management Assets".

AWM's business activities and processes are largely global in nature, with considerable overlap between legal entities on products, strategies, associated processes, and governance, given that we serve clients in different regions and under different regulated investment vehicle regimes. As a result, certain sections of this report are written from a global AWM perspective (for example, the "Strategy" section), while other sections and details are UK legal entity-specific where appropriate—or required by the FCA guidance—and are highlighted as such. In particular, the "Governance" and "Metrics and Targets" sections focus on the two UK legal entities.

For additional commentary on this report, refer to "Appendix B: Additional Commentary on the AWM UK TCFD 2024 Report".

Note that all data and metrics are as of 31 December 2024, and unless stated otherwise, the information provided in this report relates to the 2024 calendar year.

Note that all references to figures in dollars ($) are in USD.

4. Note: This figure represents global AWM assets under supervision.

Definition of Climate-Related Risks

In evaluating climate-related risks and opportunities, we use definitions and methodologies consistent with the principles of TCFD.

These risk definitions are incorporated into Goldman Sachs' comprehensive firmwide risk taxonomy, which includes both financial and nonfinancial risks to the firm.

Transition Risk

Transition Risk is the risk that asset values may change because of changes in climate policies or changes in the underlying economy due to decarbonisation. Transition risks include technological change risks, policy and regulation risks, liability and legal risks, and market sentiment risks.

Physical Risk

Physical Risk is the risk that asset values may change as a result of changes in the climate. Risks related to the physical impacts of climate change include acute risks and chronic risks.

Compliance Statements

As set out above, this report covers the in-scope businesses of both GSI and GSAMI.

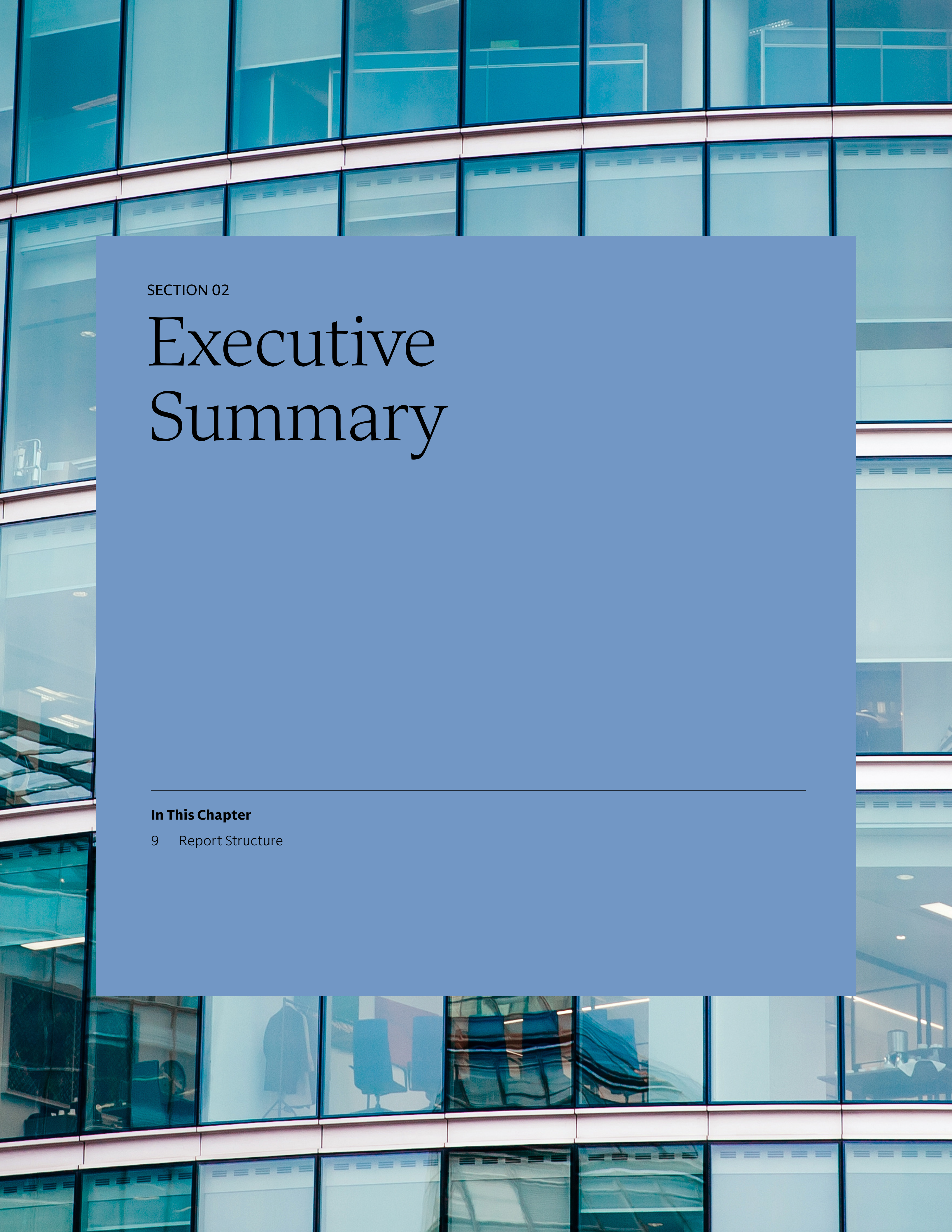
In accordance with the FCA's ESG sourcebook, senior management of GSI and GSAMI confirm—on behalf of the respective UK legal entities—that the information provided in this report in relation to GSI (Private Wealth Management business) and GSAMI (Public Investing and GS Alternatives businesses), as relevant, complies with the requirements set out in Chapter 2 of the ESG sourcebook.

Fadi Abuali
Co-Chief Executive Officer of Goldman Sachs Asset Management International and Global Co-Head of the Institutional Client Business and Co-Chief Executive Officer of Goldman Sachs for the Middle East and North Africa (MENA)

James Reynolds
Co-Chief Executive Officer of Goldman Sachs Asset Management International and Global Co-Head of Private Credit within Goldman Sachs Asset Management

Christopher French
Co-Head of Private Wealth Management for Europe, the Middle East, and Africa (EMEA)

Robert Mullane
Co-Head of Private Wealth Management for Europe, the Middle East, and Africa (EMEA)



SECTION 02

Executive Summary

In This Chapter

Report Structure

This AWM UK TCFD 2024 Report is structured per the regulatory guidelines and is split into four sections. The table below outlines where in the report disclosure recommendations are met and provides a guide to navigating the report.

TCFD Pillar / Recommendation

Governance	Disclosed Summary
a) Describe the board's oversight of climate-related risks and opportunities.	• The boards of directors of GSI and GSAMI are responsible for overseeing their businesses in the UK, including AWM. • For each of GSI and GSAMI, the board is responsible for oversight of management's formulation and implementation of its strategic plans, which include its sustainability and climate strategies. • For further details, refer to "Board Oversight".
b) Describe management's role in assessing and managing climate-related risks and opportunities.	• Management oversees risks and opportunities—including those specifically related to climate—through a multi-layered governance structure, including senior committees, specialised sustainability bodies, and business line-specific groups, ensuring alignment with firmwide strategy and regulatory expectations. • For further details, refer to "Asset & Wealth Management-Specific Governance".

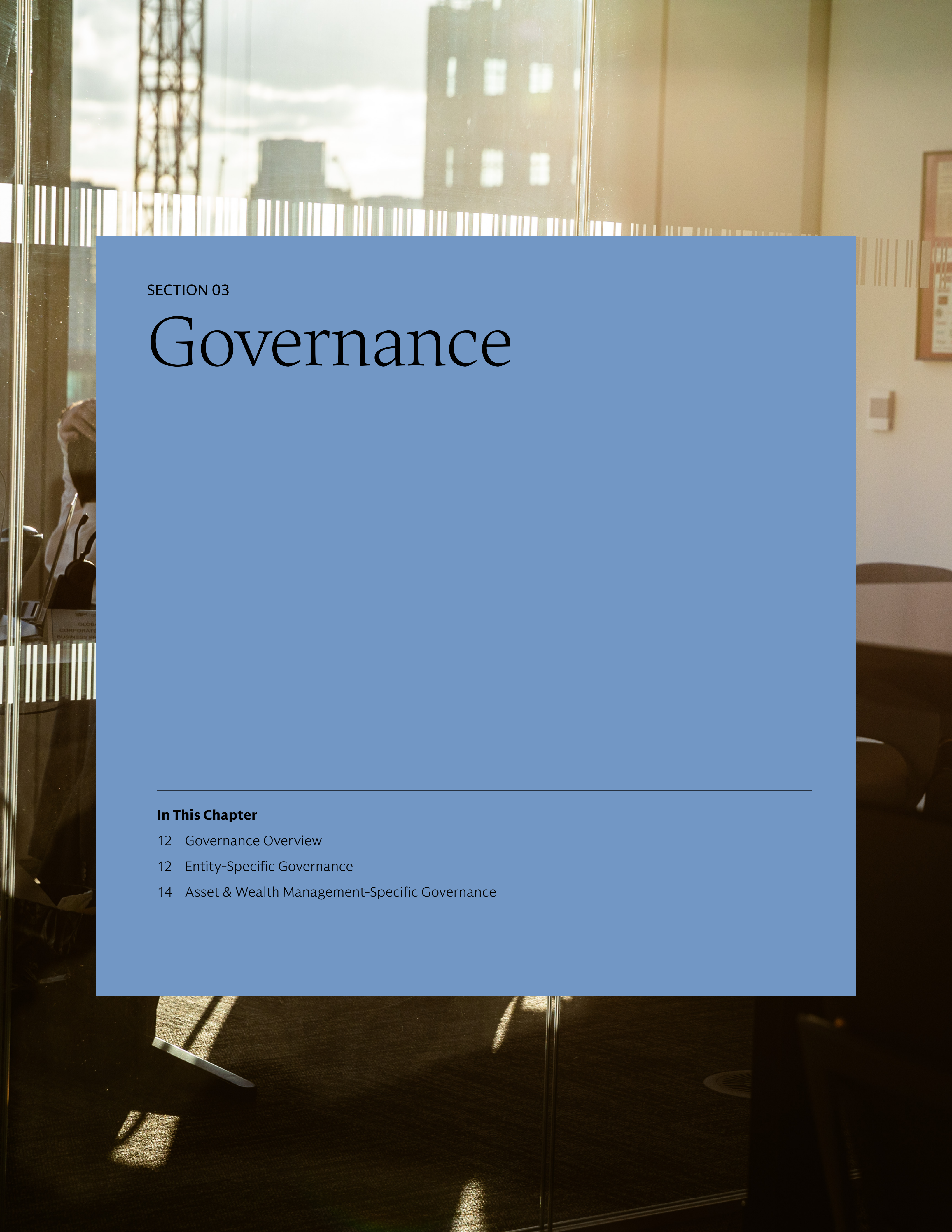
Strategy	Disclosed Summary
a) Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long-term.	• We have identified a set of climate-related risks and opportunities across time horizons for our Public Investing and GS Alternatives businesses. • PWM follows the approach to climate-related risks and opportunities as set forth by other business lines in AWM. • For further details, refer to "Description of Relevant Climate-Related Risks and Opportunities".
b) Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning.	• Our approach to sustainable investing, which is also informed by broader firmwide considerations, aims to manage and mitigate financially material risks, including climate-related risks, while managing value creation opportunities for portfolio companies and client assets. • We invest in climate data, tools, capabilities, and product development, incorporating them into our business strategy and financial planning, where financially material. • We also offer a suite of climate-related resources, tools and solutions to our clients and portfolio companies. • For further details, refer to "Asset & Wealth Management: Our Climate Strategy".
Describe how climate-related risks and opportunities are factored into relevant products or investment strategies.[5]	• Select investment strategies and products have incorporated climate-related considerations in response to identified climate-related risks and opportunities (see examples highlighted in "Invest in Climate Opportunities" and "Mobilise the Full Range of Our Resources to Meet Clients' Needs"). • The degree to which climate considerations are integrated within client portfolios is tailored to each client's specific investment and climate objectives.
c) Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	• We continue to develop and build upon our capabilities for scenario analysis as an input into risk and opportunity assessment. • Our business demonstrates resilience across a range of scenarios for both physical and transition risk across select portfolios. • Details on the approach and results are described in "Approaches and Capabilities for Managing and Mitigating Climate-Related Risks".

5. This entity-level report does not provide a description of the climate-related impact for each product and investment strategy in scope for the AWM report. Individual product-level reports are made available to clients upon request.

Risk Management	Disclosed Summary
a) Describe the organisation's processes for identifying and assessing climate-related risks.[6]	• We consider climate-related risks alongside other financial and nonfinancial risks for certain investment products and strategies. • We currently take a largely qualitative approach when identifying and assessing climate-related risks. This approach may differ by business segment and unit. • For further details, refer to sub-sections "Climate-Related Risk Identification and Assessment" and "Asset & Wealth Management Climate-Related Risk Management".
Describe, where appropriate, engagement activity with investee companies to encourage better disclosure and practices related to climate related risks in order to improve data availability and asset managers' ability to assess climate-related risks.	• Within Public Investing, we engage with companies across our portfolios on material climate-related risks and opportunities related to data disclosures, target setting, and strategy execution. • GS Alternatives engages with certain portfolio companies to improve data availability. • PWM clients benefit from the engagement and climate-related risk mitigation activities of both Public Investing and GS Alternatives across internally managed assets. • For further details, refer to "Help Portfolio Companies and Client Assets Navigate and Benefit from the Climate Transition".
b) Describe the organisation's processes for managing climate-related risks.	• We manage climate-related risks by integrating climate considerations into the investment life cycle for select products and strategies where consistent with our fiduciary duties. • Each business line, as part of its approach to managing climate-related risks, determines the financial materiality of such risks and prioritises them in a largely qualitative manner. • For further details, refer to "Integration of Climate-Related Risks across the Investment Life Cycle".
c) Describe how their processes for identifying, assessing, and managing climate-related risks are integrated into their overall risk management.	• We consider climate-related risks as part of the broader portfolio of financial and nonfinancial risks that we manage on an ongoing basis through our AWM risk management framework. • The AWM's risk management structure aligns with the firmwide approach, is based on a "three lines of defence" structure, and consists of several key processes such as risk identification, assessment, reporting, monitoring, and decision-making. • For further details, refer to "Incorporating Climate-Related Risks into Overall Risk Management".

Metrics and Targets	Disclosed Summary
a) Disclose the metrics used by the organisation to assess climate related risks and opportunities in line with its strategy and risk management process. Where appropriate, asset managers should provide metrics considered in investment decisions and monitoring.[7]	• We use a variety of metrics to assess climate-related risks and opportunities across specific products and investment strategies. • We have provided select examples of metrics that specific investment teams may consider in their investment decisions and monitoring. These include GHG emissions, total carbon footprint, and weighted average carbon intensity (WACI). • For further details, refer to "Metrics Results and Commentary".
b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	• We have disclosed the carbon footprinting metrics for GHG emissions within our investment products and strategies at the business line level across Public Investing, GS Alternatives and PWM. These disclosed metrics do not comprehensively include all AWM's global business activities across other legal entities. • For further details on GHG emissions and carbon footprinting metrics, see "Overview of GHG Emissions Metrics Disclosed". For the specific scope of assets included in the metrics calculation, see "Appendix D: Additional Details on Metrics".
c) Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.	• While AWM has not set business line-level GHG emissions reductions targets, select business units are developing decarbonisation engagement and planning tools and services to support capabilities for scenario-aligned GHG emissions reductions to meet client-specific demand. • Further details are included in the "Targets" section.

6. This entity-level report does not provide a description of the identification, assessment, and management of climate-related risks for each product and investment strategy in scope for the AWM report. Details for individual products and investment strategies may be included in individual product-level reports that are made available to clients upon request.
7. This entity-level report does not provide a comprehensive description of all metrics used for each product and investment strategy in scope for the AWM report. Details on metrics for individual products and investment strategies may be included in individual product-level reports that can be made available to clients upon request.



SECTION 03

Governance

In This Chapter

Governance Overview

We employ a comprehensive approach to safeguarding the value of our firm by integrating governance, risk management, and regulatory preparedness. From board-level oversight to our internal governance, we manage a broad spectrum of financial and nonfinancial risks across our businesses. This includes the identification and management of climate and other sustainability-related risks and opportunities.

Our governance includes board-level oversight at the firmwide and legal entity levels as well as internal governance structures and responsibilities across our management teams and specific functional groups. Our governance and oversight continue to evolve, including in response to increasing demand for reporting and transparency from key stakeholders, including UK and European regulators.

Entity-Specific Governance

In this section of the report, we describe how specific legal entity boards, management committees, and functional groups combine to provide oversight and governance of climate- and sustainability-related issues for the Asset & Wealth Management activities within GSI and GSAMI.

Board Oversight

At an entity level, the boards of directors of GSI and GSAMI are responsible for overseeing their businesses in the UK, including AWM:

GSI Board

The Goldman Sachs International Board of Directors (GSI Board) is responsible for the oversight of businesses within GSI (which includes client assets in Private Wealth Management).

GSAMI Board

The Goldman Sachs Asset Management International Board of Directors (GSAMI Board) is responsible for the oversight of the businesses within GSAMI (which includes client assets in Public Investing, and both client assets and the firm's on-balance sheet alternative assets from GS Alternatives).

Climate-related considerations may be raised to the GSI Board and/or GSAMI Board, as appropriate, as summarised below.

GSI Board Oversight Bodies

Governance Body	Climate-Related Responsibilities
GSI Board	The GSI Board is responsible for the oversight of management's formulation and implementation of GSI's strategic plans. This includes consideration of climate-related risks and opportunities, and oversight of progress against any potential climate-related goals and targets, where applicable. The GSI Board receives updates, as applicable, on climate-related matters which may from time to time be discussed at the GSI Board Risk and Board Audit Committees.
GSI Board Risk Committee	The GSI Board Risk Committee reviews the effectiveness of the risk management frameworks with reference to climate-related risks, considers GSI's exposure in managing climate-related risks, and escalates climate-related risks issues to the GSI Board, where necessary.
GSI Board Audit Committee	The GSI Board Audit Committee is responsible for advising and assisting the GSI Board by overseeing the integrity of GSI's systems, controls, accounting, financial statements, and financial reporting processes.

GSAMI Board Oversight Bodies

Governance Body	Climate-Related Responsibilities
GSAMI Board	The GSAMI Board is responsible for the oversight of management's formulation and implementation of GSAMI's strategic plans. This includes consideration of climate-related risks and opportunities, and oversight of progress against any potential climate-related goals and targets, where applicable. The GSAMI Board generally discusses climate-related topics at least annually, which includes an update on TCFD disclosures and contextual information on the relevant climate considerations for Public Investing and GS Alternatives that are relevant for GSAMI.
GSAMI Board Risk Committee	The GSAMI Board Risk Committee reviews the effectiveness of the risk management frameworks with reference to climate-related risks, considers GSAMI exposure in managing climate-related risks, and escalates climate-related risks issues to the GSAMI Board, where necessary.

Internal Governance

Oversight of climate-related risks and opportunities forms part of our internal governance structures across Asset & Wealth Management.

Senior Management Committees

Dedicated senior management committees manage climate-related risks and opportunities that sit within GSI and GSAMI:

GSI Executive Risk Committee

The GSI Executive Risk Committee oversees and monitors risks including climate-related risks and provides periodic updates to the GSI Board Risk Committee on climate-related risk management.

GSAMI Executive Risk Committee

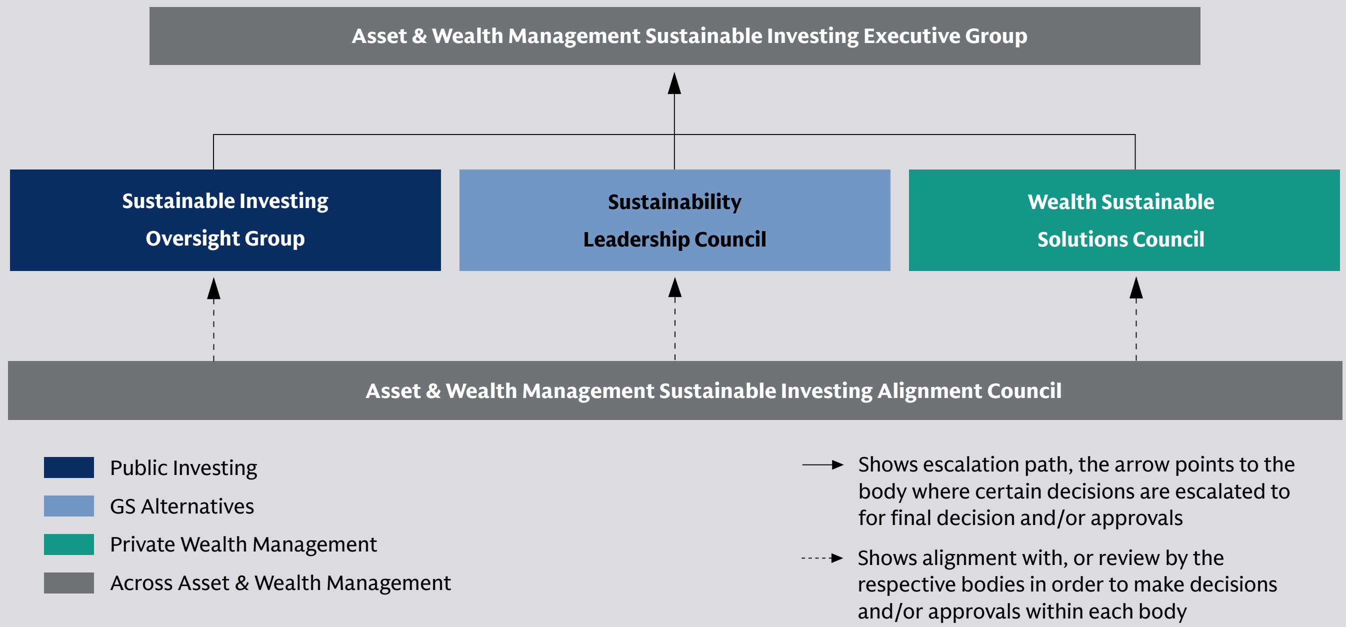
The GSAMI Executive Risk Committee oversees and monitors climate-related risks and provides periodic updates to the GSAMI Board and the GSAMI Management Committee on sustainability risk management, including climate-related risk management, as appropriate.

Asset & Wealth Management-Specific Governance

AWM Sustainable Investing Governance Bodies

Figure 2 provides an overview of the governance bodies with climate-related responsibilities. We have noted where these bodies have oversight across specific business lines.

Figure 2: Asset & Wealth Management Sustainable Investing Governance Bodies[8]



Asset & Wealth Management—Internal Governance Bodies

Governance Body	Overview	Escalation Path
Asset & Wealth Management Sustainable Investing Executive Group	The AWM Sustainable Investing Executive Group oversees AWM's sustainability strategy[9] and resolves conflicts if such arise from other sustainable investing governing bodies. This group contains senior representatives from Public Investing, GS Alternatives, Private Wealth Management, and Client Solutions.[10]	Relevant climate-related issues may be escalated to Goldman Sachs' Executive Office.[11] Additionally, the Global Head of AWM is a member of this group and may escalate climate-related issues to other management committees or oversight bodies, as appropriate.
Asset & Wealth Management Sustainable Investing Alignment Council	The AWM Sustainable Investing Alignment Council is responsible for aligning on AWM's sustainable investing ambition and strategic sustainable investing initiatives across business lines, providing updates to the AWM Sustainable Investing Executive Group, and escalating relevant sustainability risks to AWM leadership.	The group can escalate relevant climate-related issues to the AWM Sustainable Investing Executive Group, as appropriate.

8. The Proxy Voting Council included in the GS AWM UK TCFD 2023 Report overview of Sustainable Investing Governance Bodies has been removed from Figure 2 but is still a part of the overall Governance structure.
9. For the purposes of this report, 'sustainability strategy', 'climate strategy' and 'climate topics' include consideration of climate-related risks and opportunities.
10. The Asset & Wealth Management Sustainable Investing Executive Group operates within the Goldman Sachs Asset & Wealth Management business segment; however, ultimate authority rests with the relevant legal entities pursuant to UK regulation.
11. The Goldman Sachs Executive Office plays an integral role in setting and advancing Goldman Sachs' strategy and in supporting and enhancing the firm's distinctive culture. The Executive Office contains the Sustainable Finance Group (SFG), which serves as the centralised group responsible for advancing the firm's sustainability strategy and related efforts across Goldman Sachs.

Public Investing—Internal Governance Bodies[12]

Governance Body	Overview	Escalation Path
Sustainable Investing Oversight Group[13]	The Sustainable Investing Oversight Group oversees Public Investing's sustainability strategy and goals. It seeks to ensure that Public Investing is meeting firm, client, and regulatory expectations. This is a multidisciplinary body led by the Sustainable Investing Platform (SIP) and comprises members from Public Investing leadership, Sustainable Investing (SI) heads, the Global Stewardship Team, Client Solutions, Legal, Risk, Compliance, Marketing, Product Strategy, and Engineering.	There is a mechanism in place whereby climate-related issues are escalated to the AWM Sustainable Investing Executive Group, when deemed necessary.

GS Alternatives—Internal Governance Bodies

Governance Body	Overview	Escalation Path
Sustainability Leadership Council	The Sustainability Leadership Council is a forum to provide perspectives and insights on sustainability themes for GS Alternatives, including climate-related topics. Members include the Global Head of Sustainability for GS Alternatives, Business Unit Leaders, COOs for each asset class, the AWM CRO, Legal, and Compliance.	Recommendations and areas requiring further discussion may be escalated to the AWM Sustainable Investing Executive Group.
Investment Committees	The GS Alternatives Investment Committees for each asset class are comprised of a senior group of investors, legal, and individuals from the firm's second line of defence. Potential climate-related risks may be identified at Investment Committees through the Investment Committee memo.	If deemed necessary, climate-related issues could be raised to the Sustainability Leadership Council and/or Risk Council (see below).
Risk Council	The Risk Council assesses and proposes mitigation measures for risks related to business activities in GS Alternatives. The Risk Council includes senior business leaders, risk management, and other key stakeholders. Where appropriate, the risk function may recommend escalation of climate-related risks to the Risk Council. Potential climate-related risks identified at a fund or investment level can be escalated to the Risk Council with remedial actions discussed and agreed, as appropriate.	If deemed necessary, climate-related issues could be raised to the applicable Investment Committee and/or the Sustainability Leadership Council.

12. Note: Public Investing also contains other internal governance bodies with a sustainability focus, these bodies do not have climate-related focus.
13. Note: This oversight body was formed in 2023. The Sustainable Investing Oversight Group also assumed governance responsibilities for the Sustainable Investing Leadership Council, as mentioned in prior years' reporting, in order to enhance and streamline sustainability-related governance.

Private Wealth Management—Internal Governance Bodies

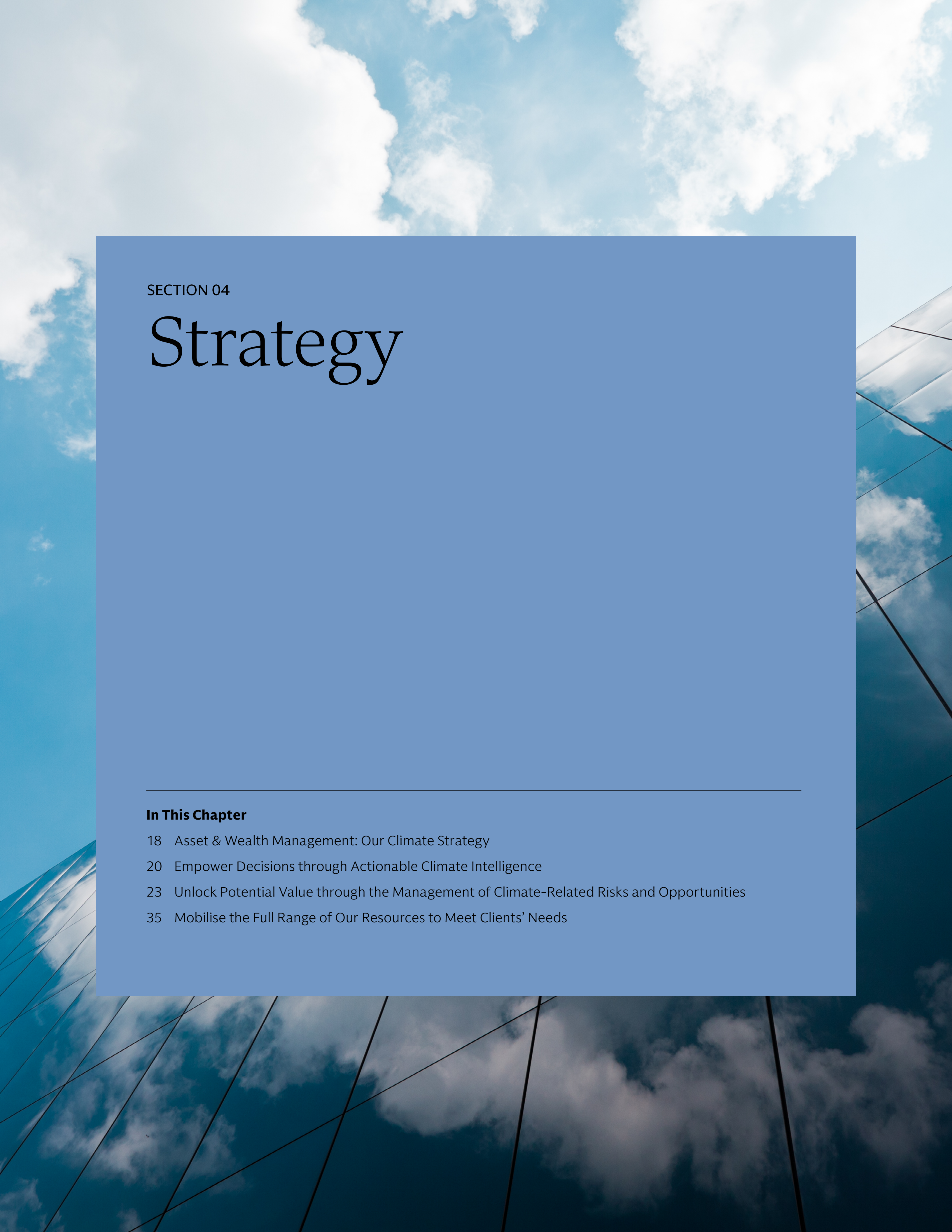
Governance Body	Overview	Escalation Path
Wealth Management Sustainable Solutions Council	The Wealth Management Sustainable Solutions Council supports the curation of climate and sustainability resources for the Private Wealth Management client franchise, as part of the broader sustainability strategy, and oversees climate-related issues for Private Wealth Management.	Climate-related issues may be escalated to the AWM Sustainable Investing Executive Group, when deemed necessary.

AWM Business and Functional Groups

Climate-related governance is also embedded across roles within AWM's business lines and other functional teams.

Sustainability teams within Public Investing (Sustainable Investing Platform), GS Alternatives (Sustainability & Impact Team), and Private Wealth Management (Sustainable Solutions Group) convene to align on climate- and other sustainability-related considerations. These groups help manage climate-related risks within their respective businesses but are also focused on aligning across key topics such as climate strategy, sustainable investing, sustainability integration and regulation, research, stewardship, client strategy and engagement, and thought leadership and policy.

There are various other teams including Legal, Compliance, Risk, and Controllers involved in helping support the governance of climate-related risks and opportunities in AWM.



SECTION 04

Strategy

In This Chapter

Asset & Wealth Management: Our Climate Strategy

Aligned with our diverse and global client base, AWM takes a client-centric approach to climate, which aims to address clients' unique climate objectives through innovative products and services.[14] Our climate strategy is primarily shaped by this client-focused approach and further informed by broader firmwide climate and other sustainability-related considerations.

Managing climate-related risks and opportunities alongside other financial and nonfinancial factors is integral to serving our clients and helping them meet their climate-related objectives. We leverage our expertise and capabilities across the firm to uncover opportunities for our clients.

The broad climate strategy outlined in this section may not be applicable across the entirety of AWM and applies only to select products managed by Public Investing, GS Alternatives, and select Private Wealth Management offerings.[15] The degree to which climate considerations are integrated within client portfolios is tailored to each client's specific investment and climate objectives. This section also includes examples of how select investment strategies and products have incorporated climate-related considerations in response to the potential impacts of the transition to a lower-carbon economy.

Our approach to sustainable investing aims to manage and mitigate financially material risks—inclusive of climate-related risks[16]—while managing value creation opportunities for portfolio companies and client assets. We invest in climate data, tools, and product development, all of which can factor into our business strategy and financial planning, where financially material. We have dedicated sustainability-focused teams that create climate-related products and offer a suite of resources, tools and solutions to assist our clients and portfolio companies in managing climate-related risks and navigating the transition.

14. Each of the Public Investing, GS Alternatives, and Private Wealth Management businesses covered in this report may take a different approach to managing climate-related risks and opportunities, considering factors such as investment size, climate exposures, asset classes, client preferences, and business strategy. Within each business line, individual investment teams may also adopt different approaches to managing climate-related risks and opportunities, as appropriate.
15. The overarching climate strategy framework and approach outlined in this upfront sub-section has remained the same from last year's AWM UK TCFD Report; however, specific products, strategies, tools, and capabilities have evolved from last year's report and are detailed in subsequent sub-sections. It is also important to note that the availability of climate-related investment solutions varies across the Private Wealth Management business due to strategy minimums and suitability relative to the client size. However, this entity-level report does not provide a description of the climate-related impact for each product and investment strategy in scope for the AWM report. Details for individual products and investment strategies will be included in individual product-level reports that are made available to clients (upon request).
16. The portfolio risk management process includes an effort to monitor and manage risk but does not imply low risk. Stategies depend upon the client's investment objectives.

Our Climate Strategy Is Designed To Help Meet Clients' Needs Through The Following Key Pillars:

- **Empower Decisions through Actionable Climate Intelligence**
  The basis of our climate strategy lies in our climate-related insights, tools, and analytics from across Goldman Sachs. This provides us with a foundation of actionable information that can be used in select investment products and strategies for understanding and mitigating climate-related risks, supporting portfolio companies and client assets in the transition, and identifying climate-related opportunities.

- **Unlock Potential Value through the Management of Climate-Related Risks and Opportunities**[17]
  We seek to unlock potential value for our clients by integrating climate considerations in the investment life cycles for select investment products and strategies.

Manage and Mitigate Climate-Related Risks
Our efforts to understand climate-related risks across the investment process help to unlock potential long-term returns for our clients.[18] They may seek to manage climate-related risks, and in doing so, look to our capabilities to actively manage and mitigate exposure, where appropriate.

Help Portfolio Companies and Client Assets Navigate and Benefit from the Climate Transition
We seek to support portfolio companies and client assets in navigating the climate transition by helping them manage risks or create value, supporting operational and strategic improvements within select portfolio companies, and engaging and stewarding these companies through changing economic and climate conditions.

Invest in Climate Opportunities
We also aim to identify investment opportunities that enable the climate transition across regions and markets through our traditional, alternatives, and climate-focused products.

- **Mobilise the Full Range of Our Resources to Meet Clients' Needs**
  Our scale and approach to climate investing allow us to provide tailored investment solutions across public and private markets to satisfy our clients' investment and climate objectives. We deliver a range of products and capabilities across our platform and aim to serve as the partner of choice for clients in navigating the climate transition within their portfolios.[19]

17. As noted in "Appendix B: Additional Commentary on the AWM UK TCFD 2024 Report", we seek to embed climate considerations more comprehensively and systematically across some aspects of our business in-line with client preference.
18. The portfolio risk management process includes an effort to monitor and manage risk but does not imply low risk.
19. This material is provided for informational purposes only and should not be construed as investment advice or an offer or solicitation to buy or sell securities. This material is not intended to be used as a general guide to investing, or as a source of any specific investment recommendations, and makes no implied or express recommendations concerning the manner in which any client's account should or would be handled, as appropriate investment strategies depend upon the client's investment objectives.

Empower Decisions through Actionable Climate Intelligence

Public Investing

Public Investing aims to identify financially material, climate- and other sustainability-related risks and opportunities that may impact risk and return. By considering operational performance and assessing climate or other sustainability-related issues expected to have material financial impacts, the analysis focuses on conditions affecting a company's bottom line, ultimately contributing insights to the investment process to generate financial returns for clients.

We take a structured approach to the diverse sets of data and methodologies we use, and we tailor the application to investment strategies and asset classes, both as foundational tools and for topical deep dives.

Public Investing has developed several tools to support the integration of financially material climate-related factors into investment products and strategies. Where relevant, investment teams may leverage these tools to integrate these factors into investment processes.

HIGHLIGHT

Leveraging Diverse Sets of Data, Methodologies, and Sources for Differentiated Climate-Related and Sustainability Insights

Public Investing leverages a proprietary research tool, **Fluent**, to embed climate- and other sustainability-related considerations, among other factors, into their research on portfolio companies and issuers within certain investment products.[20] Research is provided through a centralised digital platform, storing objective climate-related metrics together with analyst views.

Fluent also houses certain proprietary sustainability toolkits that help support the integration of climate-related topics, including but not limited to, the Sustainability Measurement Toolkit and the Paris Alignment Lens.

The **Sustainability Measurement Toolkit** is a proprietary objective sustainability assessment tool for Public Investing that uses a bottom-up, data-driven approach to assess financially material, operational sustainability-related considerations. The toolkit aims to provide a consistent and modular approach to evaluating companies by leveraging sustainability-related criteria to assess financially material considerations for corporate equity and fixed income. The Toolkit computes a metric based upon a common set of sustainability-related issues, data and materiality map, which includes six climate-related factors: GHG Emissions, Energy Management, Physical Climate Risk, Pollution & Waste, Biodiversity & Land Use, and Water. Its output can be leveraged for direct or indirect input for portfolio construction while allowing investment teams flexibility around sustainability integration and ownership in active views. Where appropriate, it may also be used to identify potential engagement opportunities and/or for certain sustainability-related regulatory requirements.

The **Paris Alignment Lens** provides a forward-looking analysis of a company's progress towards aligning with the goals of the 2015 Paris Agreement, where relevant, and to assist clients in achieving their net-zero goals. This tool combines quantitative and qualitative information from internal and external sources to determine whether a company may be "Achieving Net Zero", "Aligned", "Aligning", "Committed to Aligning", or "Not Aligned" with the Paris Agreement. The output of this assessment can be used for sustainability integration and supplement investment analysis with a forward-looking view of a company's climate performance.

20. As part of the investment process, Public Investing may integrate ESG factors alongside traditional factors. The identification of a risk related to an ESG factor will not necessarily exclude a particular investment that, in the view of Public Investing, is otherwise suitable and attractively priced for investment, and Public Investing may invest in an issuer without integrating ESG factors or considerations into the investment process. Moreover, ESG information, whether from an external and/or internal source, is, by nature and in many instances, based on a qualitative and subjective assessment. An element of subjectivity and discretion is, therefore, inherent to the interpretation and use of ESG data. The relevance and weightings of specific ESG factors to or within the investment process vary across asset classes, sectors, and strategies, and no one factor or consideration is determinative. Public Investing in its sole discretion and without notice may periodically update or change the process for conducting its ESG assessments and implementation of its ESG views in portfolios, including the format and content of such analysis and the tools and/or data used to perform such analysis. Accordingly, the type of assessments depicted may not be performed for every portfolio holding. The process for conducting ESG assessments and implementation of ESG views in portfolios, including the format and content of such analysis and the tools and/or data used to perform such analysis, may also vary among portfolio management teams.

HIGHLIGHT

Biodiversity Toolkit

With investor awareness and focus on biodiversity and nature continuing to progress, as well as growing scientific clarity on nature-based issues being pivotal for climate ambitions,[21] Public Investing has developed a proprietary diagnostic capability. This diagnostic capability may be used to assess biodiversity- and nature-related risks and exposures within certain public portfolios, where applicable. It leverages industry frameworks such as ENCORE and the Taskforce on Nature-related Financial Disclosures (TNFD) to help assess biodiversity risks and impacts.

GS Alternatives[22]

GS Alternatives' approach to climate-related risk assessment, mitigation, and identification of opportunities starts with collecting data. GS Alternatives periodically collects and aggregates data from a number of its portfolio companies and third-party sources, where possible, to help understand climate-related risks across its portfolios and find opportunities to drive value creation.

Climate Data Collection

Since 2023, GS Alternatives has leveraged a software tool to enhance sustainability data collection efforts across select equity portfolio companies in its Private Equity, Infrastructure, Growth Equity, and Sustainable Investing Group (SIG) strategies, and to gather and analyse sustainability related data. Portfolio companies can access their historical submissions and access a sustainability metric library that is aligned with industry and regulatory frameworks, as well as company benchmarks.

The Real Estate team undertakes a separate, dedicated sustainability-related data collection process, using a combination of an in-house proprietary tracker and third-party software. The software helps collect and collate the energy, water, and waste data of certain assets, allowing the Real Estate investment teams to track operational GHG emissions. The Real Estate team provides management teams of the assets with detailed analysis of the data.

Since 2021, GS Alternatives has also received climate data through its participation in the ESG Data Convergence Initiative (EDCI), which aligns general partners and limited partners to standardise sustainability data collection for alternatives, including climate-related data. As part of this effort, GS Alternatives has received anonymised benchmark data on GHG emissions and renewable energy for alternatives.

21. For example, the UN Environmental Programme estimates that conserving and restoring nature would provide one-third of the mitigation effort needed in the next decade.

22. As part of the investment process, GS Alternatives may integrate sustainability-related factors alongside traditional factors. The identification of a risk related to a sustainability-related factor will not necessarily exclude a particular investment that, in the view of GS Alternatives, is otherwise suitable and attractively priced for investment, and GS Alternatives may invest in an issuer without integrating sustainability-related factors or considerations into the investment process. Moreover, sustainability-related information, whether from an external and/or internal source, is, by nature and in many instances, based on a qualitative and subjective assessment. An element of subjectivity and discretion is, therefore, inherent to the interpretation and use of sustainability-related data. The relevance and weightings of specific sustainability-related factors to or within the investment process vary across asset classes, sectors, and strategies, and no one factor or consideration is determinative. GS Alternatives in its sole discretion and without notice may periodically update or change the process for conducting its sustainability-related assessments and implementation of its sustainability-related views in portfolios, including the format and content of such analysis and the tools and/or data used to perform such analysis. Accordingly, the type of assessments depicted may not be performed for every portfolio holding. The process for conducting sustainability-related assessments and implementation of sustainability-related views in portfolios, including the format and content of such analysis and the tools and/or data used to perform such analysis, may also vary among portfolio management teams.

GHG Measurement: Guiding Decarbonisation Opportunities with Data

The Sustainability & Impact (S&I) within GS Alternatives partners with a third-party vendor to deliver GHG emissions accounting services to select portfolio companies within GS Alternatives equity portfolios.[23]

Through a negotiated agreement with the vendor, portfolio companies can conduct Scope 1 and 2 GHG emissions measurement as well as Scope 3 spend-based estimations. Based on footprint results, the provider also shares high-level decarbonisation recommendations with portfolio companies, allowing them to consider actions to increase energy efficiency or reduce their footprint. Companies can also choose to set up an enhanced, custom package of services that unlocks target-setting, upstream Scope 3 supplier analytics, and decarbonisation planning tools.

GS Alternatives continues to expand coverage for its GHG footprinting programme and engages actively with portfolio companies and vendors to improve portfolio company data quality, enhance data validation and controls, and provide more actionable insights to companies across all three GHG emissions' scopes.

In Real Estate, third-party appointed managers and developers of Real Estate investments and borrowers are expected to track climate-related data via a proprietary survey platform developed by Goldman Sachs. This survey platform tracks a variety of metrics, including GHG emissions intensity, embodied carbon, and renewable energy procurement for associated Real Estate investments. For stabilised equity investments, the Real Estate team collects more granular data on how investments are improving energy efficiency and reducing GHG emissions and tracks operational GHG emissions through a third-party software solution.[24] The ESG business leads for Real Estate review climate and sustainability-related data for quality and completeness. Data is leveraged to benchmark performance where relevant—for example, by comparing energy-use intensity against Carbon Risk Real Estate Monitor (CRREM), by identifying engagement opportunities, or by performing quality control where data appears incomplete or inaccurate.

Private Wealth Management

Portfolio Diagnostic Tool

Private Wealth Management clients can leverage the public markets Portfolio Diagnostic Tool which provides curated metrics relevant to climate transition factors to assist with risk management, transparency, and engagement around climate and sustainability objectives. In addition, the tool provides both a portfolio- and strategy-level view of Scope 1, 2, and 3 GHG emissions metrics, carbon intensity attribution analysis, exposure to climate transition business activities, climate risk for sovereign securities, and a climate value-at-risk assessment.

Private Wealth Management Sustainable Solutions Group (SSG) continues to evaluate potential enhancements to the Portfolio Diagnostic Tool regularly and partners with Public Investing teams to further align metrics and methodology across business lines.

23. This includes the Private Equity, Infrastructure, and SIG strategies. GS Alternatives collected reported GHG emissions data for all companies where equity ownership was greater than 25%. For investments with less than 25% ownership, GS Alternatives collects data on a "best-efforts" basis.
24. This Real Estate ESG platform aggregates energy, water, and waste data on an asset (or even metre) level, including the use of electricity, natural gas, diesel, fuels, and district heating and cooling, from primary utility data sources. Both landlord energy consumption (generally Scope 1 and 2) and tenant energy consumption (generally Scope 3) are tracked through this platform.

Unlock Potential Value through the Management of Climate-Related Risks and Opportunities

Manage and Mitigate Climate-Related Risks

Our efforts to understand climate-related risks across the investment process help to unlock potential long-term returns for our clients.[25] Through these efforts, we aim to help clients make climate-related decisions, unlock potential value, and mobilise capital to deliver on their objectives.

In this section, we first detail the relevant climate-related risks and opportunities for our business lines before describing the capabilities and strategies, including climate scenario analysis, deployed across our business lines, asset classes, and investment strategies to manage and mitigate physical and transition risk exposure where consistent with fiduciary duties.

Description of Relevant Climate-Related Risks and Opportunities

Within AWM, the time horizons for considering climate-related risks and opportunities vary across business lines, asset classes, and investment strategies.[26] We consider climate-related risks to our business as an asset and wealth manager, as well as to our portfolio companies and investment assets.

Risks to Our Business

The sub-sections within "Description of Relevant Climate-Related Risks and Opportunities" describe the potential climate-related risks and opportunities, across different time horizons, that could pose a material financial impact to the different business lines in AWM. The process to identify and assess these risks and opportunities was qualitative in nature and based on the risks and opportunities identified by individual business lines, within different stages of their typical investment life cycles.[27]

Risks to Our Portfolio Companies and Investment Assets

As an investor, we are primarily focused on the impact of transition and physical risks on our portfolio companies and investment assets. We use both quantitative and qualitative methods, as appropriate, to identify and assess climate-related risks within our investments, as discussed in the "Approaches and Capabilities for Managing and Mitigating Climate-Related Risks" section.

25. The portfolio risk management process includes an effort to monitor and manage risk but does not imply low risk.
26. We follow the definitions of transition and physical risk as set out in our firmwide risk taxonomy framework. See the "Climate-Related Risk Categorisation" section for more details.
27. Refer to the "Climate-Related Risk Identification and Assessment" section for more information on risks and opportunities that could have a material financial impact on the organisation.

Public Investing Climate-Related Risks and Opportunities

Public Investing considers the following short-, medium-, and long-term horizons relevant for the effective evaluation of climate-related risks and opportunities.[28] These time horizons reflect a combination of horizons over which physical and transition risks may materialise in the investment process and aim to reflect typical holding periods of the Public Investing business. However, Public Investing recognises that these time frames may change depending on, for example, asset class and client preferences.

Short-term:[29] Aligned with portfolio construction, development, and initial investment holding period. Specific examples may include valuation movements resulting from increased regulation directed at addressing climate change.
Medium-term: Aligned with capital appreciation of portfolios and longer-term investment research assessing how an investment may evolve. During this time, certain portfolio companies and issuers may be engaged on climate topics, such as the uptake in electric vehicles or a reduction in overseas travel.
Long-term: Reflects time horizons for long-term strategic planning, changing perceptions of Public Investing response to the climate transition, and the anticipated impacts of chronic climate-related risks such as physical damage to real assets as a result of rising sea levels for coastal properties or infrastructure assets.

Topic	Risk or Opportunity	Time Horizon	Impact
Product-related Risk	Risk	Short- and medium-term	Changes in client preferences as they pertain to climate topics may affect the demand for products and strategies offered by Public Investing. There is a risk that the products offered by Public Investing do not successfully meet clients' climate needs.
Reputational Risk	Risk	Short- and medium-term	Reputational risk could arise if the market perceives Public Investing's response to climate matters as ineffective, delayed, or inappropriate. Reputational risk could adversely impact client relationships, and cause sales reductions.
Regulatory and Legal Risk	Risk	Short- and medium-term	The regulatory landscape for climate topics is evolving. There is a risk that changes to current or emerging climate regulation impacting Public Investing's own products or operations, or those of portfolio companies, could increase compliance costs or alter business and portfolio management activities.
Market Risk	Risk	Short-, medium-, and long-term	Fluctuations in the value of assets due to climate-related risks could impact the value of Public Investing's portfolios and may also trigger the rebalancing or reallocation of portfolio assets.
Physical Risk/ Operations	Risk	Short-, medium-, and long-term	Adverse climate events or natural disasters could pose a risk to the physical assets on which Public Investing depends. Public Investing strives to prevent and protect any against damage to firm assets through various comprehensive controls. Public Investing also maintains business continuity plans to ensure that critical functions can continue to operate in the event of such disruption.
Physical Risk/ Investments	Risk	Short-, medium-, and long-term	Acute physical impacts such as extreme weather or climate events, and the chronic longer-term impacts of a changing climate, could decrease the value of Public Investing's assets and increase capital expenditure and insurance costs.
Transition Risk/ Investments	Risk	Medium- and long-term	Certain industries and activities are at risk of becoming "stranded" in a long-term climate transition. Public Investing may limit exposures to these asset types.
Transition Upside/ Products	Opportunity	Short- and medium-term	Increasing demand from clients for climate-focused products and solutions presents an opportunity for Public Investing to meet demand by investing in transformative climate solutions that provide positive returns to investors and the broader economy.
Transition Upside/ Products	Opportunity	Short- and medium-term	Increasing client demand for tailored solutions, specific to their climate and investment objectives, presents an opportunity for Public Investing to leverage a platform and co-create strategies and solutions to meet clients' needs.

28. See note 25.
29. The definition of short, medium, and long-term varies between asset class. For Quantitative Investment Strategies (QIS), short-term is 1–2 years, medium-term ranges from 2–5 years and long-term from 5+ years. For Fixed Income short-term is 1–3 years, medium-term is 3–10 years, and long-term is 10+ years. Fundamental Equities consider time horizons in the context of stock performance assessment periods (6m, 1Y, 2Y, 3Y, and 5Y).

GS Alternatives Climate-Related Risks and Opportunities

GS Alternatives defined the following short-, medium-, and long-term horizons, which are generally relevant for the evaluation of climate-related risks and opportunities. These were selected to reflect a combination of horizons over which transition and physical risks are generally relevant to the investment process, typical investment holding periods, and longer-term impacts on the positioning of GS Alternatives. GS Alternatives recognises some of these risks and opportunities are subject to change over time and this is not an exhaustive list.

Short-term (1-5 years): Reflects the time horizon for fund development, investment due diligence, and the selection of future assets. Also reflects the anticipated exit and liquidation of the majority of current assets and funds.
Medium-term (5-10 years): Reflects continued fundraising and product development, and the anticipated exit and liquidation of next-generation future investments.
Long-term (10+ years): Aligned with long-term fund raising, product development, risk analysis, and market positioning.

Topic	Risk or Opportunity	Time Horizon	Impact
Product-related Risk	Risk	Short-term	Changes in client preferences as they pertain to climate topics may affect the demand for products and strategies offered by GS Alternatives. There is a risk that the products offered by GS Alternatives do not successfully meet clients' climate needs.
Regulatory and Legal Risk	Risk	Short- and medium-term	The regulatory landscape for climate topics is evolving. There is a risk that changes to current or emerging climate regulation impacting GS Alternatives own products or operations, or those of portfolio companies, could increase compliance costs or alter business and portfolio management activities.
Transition Risk/ Investments	Risk	Short-term	Inadequate management of carbon exposure in investments could lead to declining market share, higher compliance and operating costs, and lower investment returns.
Market Risk	Risk	Medium-term	Value or liquidity markdowns could occur, due to underperformance or under-reporting on climate issues relative to buyer expectations (e.g., public markets ESG funds).
Market Risk	Risk	Medium- and long-term	Investment risk could occur in earlier-stage climate innovations disrupted by a range of potential factors, including unforeseen technologies, market events, and shifts in consumer demand.
Physical Risk/ Investments	Risk	Short-, medium-, and long-term	Increasing likelihood of damages from physical risks to investments, which could negatively impact valuations. Even when this is beyond the investment time horizon for a company, it could still be "priced in" to exits.
Reputational Risk	Risk	Long-term	The performance of investments and the credibility of GS Alternatives' climate-related risk management practices could impact future capital raises.
Transition Upside/ Investments	Opportunity	Short- and medium-term	Climate and environmental impact investments could see increasing market share relative to their higher-carbon, industrial, or conventional peers.
Value Creation/ Investments	Opportunity	Short- and medium-term	Decarbonisation and energy efficiency initiatives could lead to reductions in operating costs and the realisation of a green premium from consumers.
Value Creation/ Investments	Opportunity	Short- and medium-term	The implementation of adaptation measures could lead to increased resilience in investments and decreased costs (e.g., through lower insurance premiums or climate loss avoidance).
Value Creation/ Investments	Opportunity	Medium- and long-term	Changes in the strategy or operations of portfolio companies and client assets to capitalise on the climate transition could lead to a lower cost of capital and higher valuations.
Value Creation/ Investments	Opportunity	Medium- and long-term	Decarbonisation initiatives could lead to improved cash flows and margins, resulting in a lower cost of capital and higher valuations.
Transition Upside/ Products	Opportunity	Long-term	A successful long-term track record on climate solutions investments, as well as value creation from decarbonisation initiatives and resilience support within investments, could drive greater client demand as transition and physical risks increase.

Private Wealth Management Climate-Related Risks and Opportunities

Private Wealth Management relies on the climate-related risk management of other business lines in AWM for internal products and strategies, and on Public Investing (through XIG) for external products and strategies. As such, Private Wealth Management follows the approach to climate-related risks and opportunities across time horizons as set forth by other business lines in AWM when accessing their products and strategies.

Approaches and Capabilities for Managing and Mitigating Climate-Related Risks

Public Investing

Within Public Investing, investment teams adopt different approaches to managing and mitigating climate-related risks, depending on the asset class, strategy, client preferences, and other factors. While investment teams assessed climate-related risks and opportunities for some individual investments, Public Investing does not comprehensively assess climate-related risks and opportunities across the entire business line.

For more information about how Public Investing integrates physical and transition risks into its decision-making processes, please see the "Integration of Climate-Related Risks across the Investment Life Cycle" section.

HIGHLIGHT

Approach to Climate Scenario Analysis

The development of climate scenario analysis capabilities continues to be viewed as a valuable step in improving Public Investing's understanding of exposure to climate-related risks and opportunities within its managed portfolios.

At this time, Public Investing assesses resilience to climate-related risks and opportunities predominantly through the investment process for individual portfolios and/or investment strategies, rather than systematically conducting qualitative and quantitative scenario analysis across the entire business line.

In 2024, Public Investing Risk began performing scenario analysis on climate-linked (defined as being climate-aligned, Paris-aligned, or environment-aligned) portfolios, exploring the impact on portfolios of a 1.5-degree, 2-degree, and 3-degree shift in global temperatures.

Climate Value at Risk (CVaR) data for select portfolios is now embedded into a risk dashboard and made available to investment teams.

CVaR is designed to provide a forward-looking and return-based valuation assessment to measure climate-related transition and physical risks and opportunities in an investment portfolio. This can inform investment managers about the climate resilience of their portfolios under different climate outcomes.[30]

Public Investing continues to review and evolve the framework to integrate physical and transition risks into the investment process, which includes climate scenario analysis tools and capabilities.

30. Public Investing does not comprehensively assess the resilience of its strategies to climate-related risks and opportunities across the entire business line.

GS Alternatives

GS Alternatives seeks to invest in companies with resilient business models. GS Alternatives assesses climate-related risks of select new investments and actively monitors and manages these risks over the investment period.[31]

GS Alternatives uses a toolkit designed to help investment teams raise questions on climate-related risks relevant to their businesses, understand exposures in quantitative terms, and assist them in calibrating the sensitivity of their investments to climate risk.[32]

Approach to Climate Risk Assessment

GS Alternatives' approach to climate risk assessment is comprised of:

Vulnerability Assesments

Qualitative approach to identify the vulnerabilities of a business to transition or physical risks and their relevant mitigants.

Scenario Analysis

Quantitative, climate scenario-based tools to help assess the sensitivity of company financials to different transition and physical risk outcomes.

GS Alternatives may apply this climate risk toolkit to assess the resilience of select portfolios across Private Equity, Infrastructure, Growth Equity, SIG, and Private Credit strategies.[33] The analysis may include combining qualitative vulnerability assessments with quantitative scenario-based modeling to evaluate both physical and transition risk resilience, where consistent with our fiduciary duties. For details on the current integration of climate-related risks into the investment process for GS Alternatives, see the section "Integration of Climate-Related Risks across the Investment Life Cycle".

Approach to Vulnerability Assessments

For products within the scope of this report, GS Alternatives may conduct a vulnerability assessment to provide investment teams with an additional lens for understanding the potential effects of climate risk on investments. The vulnerability assessment is based on climate risk ratings of industries, informed by expert consultation and widely-used market research on vulnerability to transition and physical risks. The assessment consists of a qualitative questionnaire to help identify the need for further evaluation of potential risks. Deal team responses on mitigants and risks are determined by their professional judgement and are based on the information made available to them by portfolio companies and diligence, support services; these considerations and practices are meant to be broadly in line with traditional investment diligence.

Approach to Scenario Analysis

GS Alternatives continues to build capabilities to assess and understand the potential impacts of climate-related risks and opportunities across its investments. Recognising the complexity and evolving nature of climate scenario analysis, GS Alternatives continues to pilot tools that evaluate both physical and transition risks at the company and portfolio level.

These tools are currently used on a targeted basis by business unit and are not yet applied systematically across all investment or risk decisions. They serve to inform investment teams, support qualitative and quantitative assessments, and promote a deeper understanding of climate-related exposures.

Transition Risk Scenario Analysis

GS Alternatives has developed proprietary capabilities to assess the financial impact of climate transition risks and opportunities on select portfolio companies. These tools enable value-based analysis—such as impacts on EBITDA or valuation—under various scenarios, including Net Zero 2050. The transition risk tool evaluates exposures to drivers such as carbon pricing, macroeconomic shifts, mitigation opportunities, and revenue sensitivity to the low-carbon transition.

These analyses help GS Alternatives identify where transition-related risks or opportunities may meaningfully affect financial outcomes. For a practical example of this tool in action, refer to the 2023 GS AWM UK TCFD report.

31. This section refers only to GS Alternatives strategies within the scope of this report where GSAMI carried out portfolio management activities (whether on a direct or delegated basis) as of 31 December 2024. This includes new and existing investments within certain Private Equity, Infrastructure, Growth Equity, SIG, Private Credit, and Real Estate strategies.
32. Approaches to climate risk are rapidly advancing and GS Alternatives will continue to learn from its pilot capabilities and implementation experience. Consequently, GS Alternatives climate risk analysis approach will be iterative as we explore additional methodologies and the programme matures.
33. This section refers only to GS Alternatives strategies within the scope of this report where GSAMI carried out portfolio management activities (whether on a direct or delegated basis) as of 31 December 2024. This does not include portions of the Private Credit portfolio, including asset finance and trade receivables strategies, for which there are methodological challenges in calculating emissions due to data availability and asset type.

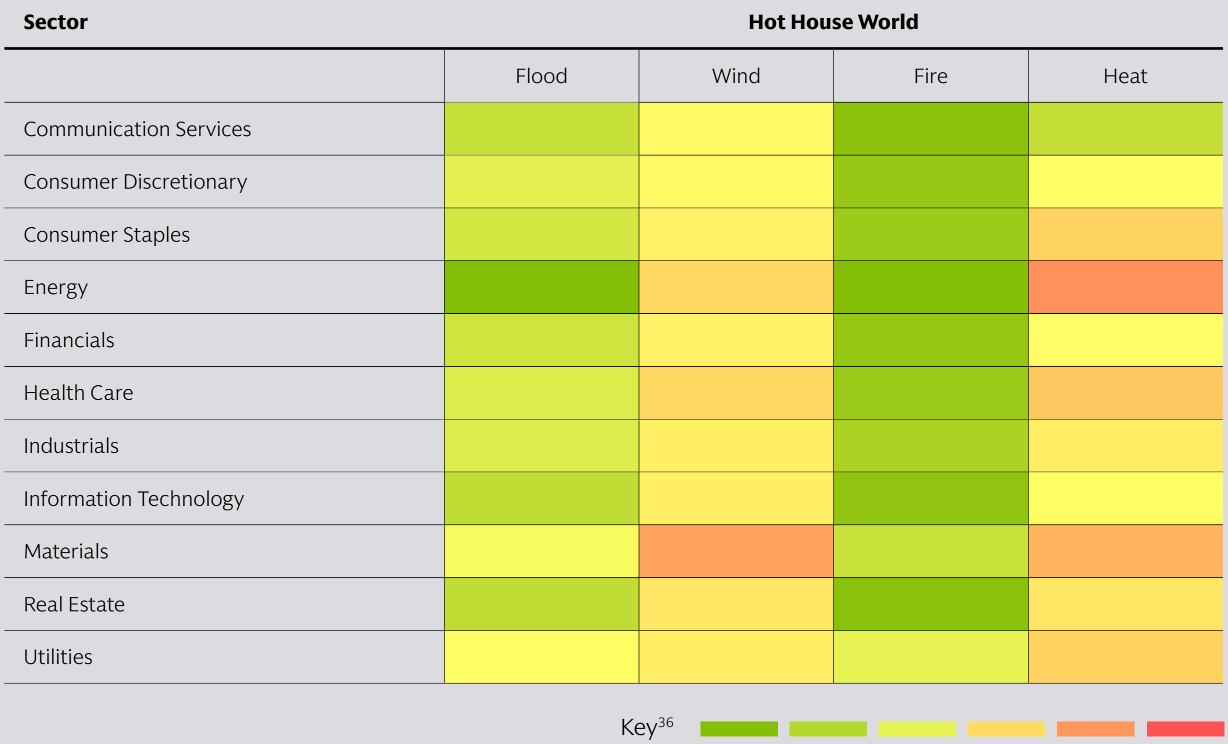
Physical Risk Scenario Analysis

In 2024, GS Alternatives continued piloting physical risk scenario analysis to assess CVaR across select investment strategies.[34] Conducted with external vendors, this analysis uses climate hazard models—based on multiple climate projections—to estimate the financial impacts of acute and chronic physical risks, including flood, wind, fire, and heat.

CVaR quantifies potential asset value losses over a ten-year period, factoring in projected costs such as insurance premiums, property damage, inventory loss, productivity disruptions, and cooling expenses. These impacts are discounted to reflect their effect on asset valuation.

Results indicate that under a "Hot House World" scenario—characterised by limited global climate policy—physical risk exposure is generally low to moderate across sectors. However, sectors like Materials and Real Estate show higher vulnerability to specific perils such as flood and fire. These insights help identify concentrated risk exposures and guide more targeted risk management practices.

Figure 12: Exposure-weighted Climate-Related Physical Risk Scores by Segment for In-Scope Strategies[35]



Overview of Climate Risk Analysis Results

The analyses show that, on average, the portfolios showed resilience across the range of scenarios for both physical and transition risk. Specifically, portfolios exhibit greater exposure to acute and chronic physical risks under a "Hot House World" scenario—characterised by limited climate policy action and continued global warming.

34. As part of GS Alternatives' climate scenario analysis pilot assessment GS Alternatives developed CVaR metrics for both transition risk and physical risk. For transition risk, GS Alternatives assessed "Net Zero 2050 CVaR", an internally developed metric informed by NGFS, macro assumptions, and pro forma analysis. For physical risk, GS Alternatives adopted "Hot House World CVaR" from the vendor. Capabilities and assessments may differ from firmwide processes in terms of relevant monitoring and reporting thresholds.
35. This analysis refers only to GS Alternatives strategies within the scope of this report where GSAMI carried out portfolio management activities (whether on a direct or delegated basis) as of 31 December 2024 and where site data to assess physical risk was available. This includes new and existing investments within certain Private Equity, Infrastructure, Growth Equity, SIG, and Real Estate strategies. It does not include Private Credit strategies.
36. The heatmap banding is representative of percentiles informed by hazard scoring from a third-party vendor.

Private Wealth Management

For clients who express interest in climate- and sustainability-related investment products and strategies, Private Wealth Management offers solutions which may incorporate climate-related screens and provide lower exposure to carbon-intensive companies across a portfolio. Private Wealth Management's assessment and integration of climate-related risks into its investment decision-making is primarily dependent on the climate-related risk management, engagement, and stewardship capabilities of AWM business units (when sourcing products and strategies from within AWM), and on external managers (when sourcing products and strategies from outside Goldman Sachs). As a result, Private Wealth Management does not specifically assess the impact of climate-related risks and opportunities for all its investment products and strategies.

Approach to Climate Scenario Analysis

Private Wealth Management has an ongoing relationship with an established third-party data vendor to enhance its climate scenario analysis capabilities. Within its Portfolio Diagnostic Tool, Private Wealth Management offers analysis of climate risk for sovereign securities as well as CVaR assessments, leveraging data and analysis from the third-party vendor. These insights and analyses are offered for individual client portfolios and are available on an on-demand basis.

Help Portfolio Companies and Client Assets Navigate and Benefit from the Climate Transition

Public Investing

Given the scale and complexity of the global climate transition, managing climate-related risks and opportunities is integral to serving Public Investing's diverse client base. Public Investing sees this transition playing out across the real economy, the markets in which it transacts, investment portfolios, and the client franchise. Climate change is an important and growing area of focus for many clients, both from a risk-return and an impact perspective. At the same time, it is increasingly affecting clients' investments through physical risk impacts to operations and challenges in navigating the transition to a lower-carbon economy.

How Public Investing Engages on Climate-Related Issues

Engagement is a key component of our approach to stewardship. It provides us with a forum to share our views and provide feedback to company management and/or directors on the material issues that we believe can drive long-term value creation. It may also help our investment teams make more informed investing decisions on behalf of our clients.

The engagement approach for Public Investing combines the expertise and resources of the Global Stewardship Team with the deep sector knowledge of our public markets investment teams. The Global Stewardship Team oversees our approach to engagement and leads most of our thematic and proxy-related engagements. These engagements are in addition to the hundreds of engagement meetings that the Fundamental Equity and Fixed Income investment teams conduct each year as part of their ongoing research.

We seek to engage with the companies that account for the largest contributions to our financed emissions. We also seek engagement with companies for which we think climate is a material investment consideration.[37]

To guide these engagements, we assess companies against criteria in our internal screening tool. This tool combines quantitative and qualitative information from internal and external data sources on a company's ambitions and target-setting, emissions performance, climate disclosures, decarbonisation strategies, and capital allocation. We use data from various third-party sources in this assessment, supplemented as needed with research conducted by the Global Stewardship Team and the investment teams.

37. Financed emissions contributions are based on our Sustainable Finance Disclosure Regulation (SFDR) Article 8 and 9 Fund holdings. The portfolio risk management process includes an effort to monitor and manage risk, but does not imply low risk.

Engaging on Biodiversity

Biodiversity loss can pose a key investment risk that can manifest itself in a company's operations or supply chain. Biodiversity plays a role in ensuring the resilience and preservation of natural-capital assets on which society and business depend. However, land use change, climate change, exploitation, and pollution drive biodiversity and ecosystem loss, creating risks and opportunities for society, business, and investors.[38]

Where consistent with fiduciary duties, recognising this risk and understanding the regulatory landscape, Public Investing seeks to engage with a targeted group of companies across its business portfolios to understand their approach to managing risks associated with nature and biodiversity and to promote accountability and best practices.

Over the past two years, Public Investing has focused its stewardship work related to biodiversity and nature on two themes:

- **Plastics**
  Encouraging companies to disclose plastics packaging usage in line with the SASB standards for Fast-Moving Consumer Goods (FMCG) companies.
- **Deforestation**
  Engaging with companies in sectors identified as being exposed to potentially material deforestation risk to understand their approach to addressing deforestation in their supply chains.

GS Alternatives

GS Alternatives views decarbonisation and risk mitigation efforts as potentially accretive to the value of portfolio companies, helping to increase companies' resilience and competitiveness, while potentially enhancing returns and exit multiples.[39]

Pre-investment, GS Alternatives aims to integrate an assessment of climate- and sustainability-related risks, along with numerous other factors, into new investment decisions.

This provides a foundation for evaluating climate-related risks where relevant and supports discussions on how to mitigate these risks and create value. Investment teams complete an ESG due diligence questionnaire, which is generally integrated into the Investment Committee memo.[40] Climate-related questions may include the company's GHG emissions and GHG emissions intensity, renewable energy usage, and carbon reduction initiatives. Furthermore, nonfinancial risks are summarised in the Investment Committee memo, which may include climate- and sustainability-related issues, where relevant, to highlight areas to be addressed before or after closing the investment.

Post-investment, for certain GS Alternatives' equity strategies,[41] investment teams may develop uplift plans in partnership with portfolio company management, advisors, and/or other co-investors, as appropriate. These plans may include increased engagement with portfolio company management to develop targeted mitigation actions for potential climate-related risks, evaluate how to best capitalise on identified opportunities, identify potential decarbonisation initiatives, and assess capital expenditures needed to decarbonise, where required by a strategy's mandate, or to create value.

Goldman Sachs Value Accelerator

GS Alternatives supports a number of its equity portfolio companies by facilitating access to the wider Goldman Sachs network and its highly knowledgeable operating advisors and sector experts through the Goldman Sachs Value Accelerator (Value Accelerator). One of the Value Accelerator's five pillars includes ESG & Risk Optimisation, and assists companies with a range of sustainability- and climate-related resources. You can read more about the Value Accelerator here.

Decarbonisation Planning

Where consistent with our fiduciary duty, GS Alternatives may engage with certain portfolio companies on decarbonisation. Working with third-party service providers, the decarbonisation[42] planning programme is based on a value-first approach to the climate transition: Carbon is treated as a waste product, and lower GHG emissions are considered a potential strategic value creation lever to increase market competitiveness or reduce transition risk. GS Alternatives provides optional and tailored support to companies at different stages of their decarbonisation journeys. This includes, for example, a decarbonisation playbook (available on demand via the Value Accelerator).

38. https://www.unpri.org/sustainability-issues/environmental-social-and-governance-issues/environmental-issues/biodiversity.
39. This section refers to GS Alternatives strategies within the scope of this report, where GSAMI carried out portfolio management activities (whether on a direct or delegated basis) as of 31 December 2024. This includes new investments and existing assets within certain Private Equity, Infrastructure, Growth Equity, and SIG strategies.
40. ESG due diligence questionnaires vary depending on the business unit and the strategies in question.
41. This section refers to GS Alternatives strategies within the scope of this report, where GSAMI carried out portfolio management activities (whether on a direct or delegated basis) as of 31 December 2024. This includes assets within certain Private Equity, Infrastructure, Growth Equity, and SIG strategies.
42. This section refers to GS Alternatives strategies within the scope of this report, where GSAMI carried out portfolio management activities (whether on a direct or delegated basis) as of 31 December 2024. This includes new investments and existing assets within certain Private Equity, Infrastructure, Growth Equity, and SIG strategies.

Private Wealth Management

Private Wealth Management does not directly undertake traditional public markets shareholder engagement activities or engagement with portfolio companies and client assets in alternatives. Private Wealth Management clients benefit from the engagement and climate-related risk mitigation activities of both Public Investing and GS Alternatives across internally managed assets.

For assets managed by external managers, Private Wealth Management benefits from the climate- and sustainability-related due diligence conducted by Public Investing (through XIG), including the assessment of external managers' approach to engagement.

Invest in Climate Opportunities

Public Investing

Public Investing has long acknowledged and operated under the view that the sustainable transformation of the global economy will be a complex, long-term process and will require the involvement of companies across industries. Public Investing believes that investment is needed in three key areas:

Transition

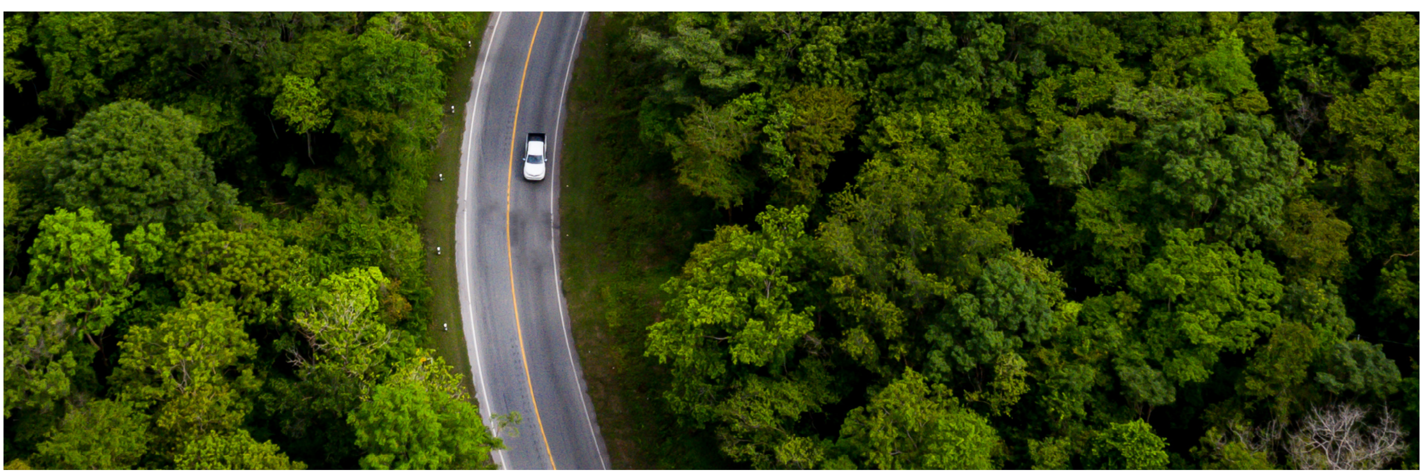
From a climate perspective, Public Investing acknowledges that companies in today's high-intensity industries can play a large role as market actors seek net zero and other environmental targets. Public Investing also believes that there are potentially significant opportunities for investors to benefit from companies improving their sustainability profiles.

Efficiency

A general drive for resource efficiency is being amplified by various levers (e.g., supply chain partners, regulators, investors), leading to potentially significant investment opportunities in companies that are more carbon efficient.

Solutions

Public Investing expects growing revenue, profit, and market capitalisation to accrue to climate solutions that enable decarbonisation across the economy.



HIGHLIGHT

Goldman Sachs Global Environmental Transition Equity Strategy[43]

Public Investing's Global Environmental Transition Equity Strategy is Fundamental Equity's first strategy dedicated to the transition from an emissions-intensive economy to one that is increasingly renewable energy-based and low carbon. With 80% of emissions generated by sectors representing 20% of the market,[44] companies with heavy environmental footprints hold the potential to support efforts to achieve net-zero emissions and other environmental targets. By working with companies committed to improving sustainability, we seek to capitalise on this transition.

The strategy invests in high-emitting sectors significantly impacting GHG emissions, water consumption, and waste. It primarily comprises of established, high-quality, value-oriented companies that we believe to have strong free cash flow, attractive valuations, and an alignment with decarbonisation themes. The strategy targets five key sectors: extraction, power generation, manufacturing, transportation, and consumption.

Pre-investment—for all holdings—the environmental progress of the companies pertaining to core themes of the strategy (GHG emissions, water, and waste) are assessed by the portfolio team. This assessment helps to determine expectations for each company's transition journey.

During investment, it is crucial that Public Investing partners with the portfolio companies, to identify synergies, advance sustainability practices, and focus on shareholder value creation. The Global Stewardship team is critical to Public Investing's process in its role as an active asset manager and can support the portfolio team in developing and setting appropriate KPIs designed to continually monitor portfolio companies' transition progress and engage directly with company management to give targeted feedback.

This strategy leverages Public Investing's proprietary internal tools and systems—for example, the Paris Alignment Lens (see "Empower Decisions through Actionable Climate Intelligence")—to both qualitatively and quantitatively assess the environmental impact and transition plans of the companies in which they invest for clients.

HIGHLIGHT

Goldman Sachs Proprietary Green Bond Methodology

We believe the global bond market will be an important source of investment to drive the climate transition. The green bond market—made up of debt instruments that fund projects that benefit the environment or climate—has experienced significant growth, increasing 41% per year from 2016 through 2024.[45] Once a niche product, these bonds have expanded into a $2.5 trillion market.[46]

Goldman Sachs Asset Management is a leading global manager with extensive experience of managing Green Bonds. Our dedicated Green, Social & Impact Bonds AUS sits at $12.5 billion, and we are EMEA's largest active Green Bond open-ended UCITS fund manager by AUM.[47] The dedicated Public Markets Investing Green, Social, and Impact Bonds team utilises a proprietary framework to help clients manage the risk from—and capitalise on—opportunities created by the transition to a more sustainable economy.

43. For illustrative purposes only. Performance results vary depending on the client's investment goals, objectives, and constraints. There can be no assurance that the same or similar results to those presented above can or will be achieved.
44. Market as denoted by MSCI ACWI, as of 31 December 2024.
45. Goldman Sachs Asset Management, Bloomberg. As of 31 December 2024. The growth value provided is the geometric mean covering the years stated.
46. Goldman Sachs Asset Management, Bloomberg. As of 30 June 2024.
47. Source: Broadridge as of 31 December 2024. Includes cross-border UCITS bond funds branded Green, Social, Impact, Climate, Inclusion or Transition. Sustainable and ESG-only branded funds are excluded. Includes Active ETFs and active mutual funds, which make Article 8 or 9 disclosures under SFDR.

GS Alternatives

Climate Solutions Investments

In GS Alternatives, the Horizon platform seeks to identify investments that have the potential to disrupt and positively transform industries through decarbonisation, risk mitigation,[48] and adaptation; especially across emerging trends such as growing clean energy demand, electrification, and decarbonised industrial processes. Additionally, GS Alternatives believes there are opportunities to invest in the transition, including energy transition infrastructure and strategies aimed at transforming higher carbon intensity companies into assets better positioned for the climate transition.

HIGHLIGHT

Examples of Climate Solutions Investment across GS Alternatives[49]

Energy Efficiency

In 2024, SIG invested in a systems integrator that can help data centres optimise energy use and reduce consumption. Specialising in facility management automation, the company is a large independent contractor in the global shared infrastructure data centre market and serves large data centre owners and developers worldwide. The company's solutions, such as its cooling staging optimisation technology, can potentially enable increased energy efficiency in high-emitting sectors by providing real-time insights allowing data centre operators to implement actionable, measurable performance gains that can potentially reduce energy waste and increase uptime for critical infrastructure.

Renewable Power

The GS Alternatives Infrastructure team invested in a developer, builder, and operator of renewable power infrastructure. The company works with utility, commercial, and industrial customers to meet their growing need for power, as well as storage solutions to help manage the intermittent nature of renewable generation. The company takes a distinctive approach to renewables development, targeting high-value interconnection positions in US power markets that are not operated by a regional transmission organisation or independent system operator.

Private Wealth Management

Private Wealth Management offers clients a range of climate-related investment opportunities across its platform. The platform provides access to a variety of Goldman Sachs products managed by teams within AWM including Fixed Income, Fundamental Equity, Quantitative Investment Strategies, and SIG. Clients also have access to a wide range of mutual funds and exchange-traded funds (ETF) managed by external third parties and sourced by Public Investing (through XIG). XIG has a dedicated team that performs due diligence on both private and public market climate, sustainability, and impact funds. The Portfolio Management Group implements these funds within model asset allocations to offer EMEA clients dedicated ESG multi-asset class portfolios.

Private Wealth Management regularly collaborates with investment teams within AWM and with XIG for external managers. This collaboration is used to determine which investment strategies are suited for clients' specific investment and climate objectives, including where clients have expressed interest in monitoring and addressing climate-related risks and opportunities.

Climate- and sustainability-related strategies available to clients on the Private Wealth Management platform include:

- **Screening Strategies:**
  Strategies that apply rules based on defined criteria that determine whether an investment is permissible. Screening strategies are most often achieved via passive, public market strategies.
- **Thematic Strategies:**
  Strategies that select assets to access specified climate transition and/or inclusive growth opportunities. Similar to integration strategies, thematic strategies are most commonly pursued via active, public market strategies.
- **Integration Strategies**
  Strategies that have ongoing consideration of ESG factors within the investment analysis and decision-making process, with the aim of improving risk-adjusted returns. Integration strategies are most commonly pursued via active, public market strategies.
- **Impact Investments**
  Products that invest with the intention to generate positive, measurable social and/or environmental impact alongside a financial return. Impact investing is most commonly applied to alternative investments.

48. Risk management processes include an effort to monitor and manage risk but should not imply low risk.
49. Any data provided in select case studies has been obtained from sources, including those publicly available, believed to be reliable, but no representation or warranty is made by GSI and GSAMI (or any other Goldman Sachs entity) as to the quality, completeness, accuracy, fitness for a particular purpose, or non-infringement of such information. GSI and GSAMI (or any other Goldman Sachs entity) have not assured, verified, or validated this third-party information and are not liable for the adequacy, accuracy, or completeness of such information. Data relied upon may be produced based on methodologies that are not transparent to GSI and GSAMI (or any other Goldman Sachs entity), and the data used and underlying methodologies are subject to change without notice. For illustrative purposes only. Performance results vary depending on the client's investment goals, objectives, and constraints. There can be no assurance that the same or similar results to those presented above can or will be achieved.

HIGHLIGHT

New Green and Social Bond Discretionary Strategy Offering on Private Wealth Management Platform

In 2024, Private Wealth Management began to offer a new Fixed Income (Green and Social Bond) separately managed account strategy. The strategy invests across investment grade fixed income securities (sovereign, agency, and corporates) with a focus on impact bonds (defined as labelled bonds, including—but not limited to—green and social bonds). The strategy may also invest in traditional unlabelled bonds that meet criteria set under Public Investing's proprietary framework (see the Public Investing sub-section of "Invest in Climate Opportunities" for more information).

Green bonds are types of bond instruments where the proceeds will be applied to finance or refinance, in part or in full, new and/or existing projects that are intended to be beneficial to the environment. These bonds are mainly issued by supranationals, sub-sovereigns, agencies, and corporates pursuing policies of sustainable development while observing ESG principles.

While the strategy is managed by Private Wealth Management, portfolio management is delegated to the dedicated Green, Social, and Impact Bond team embedded in the Investment Grade Credit team in Public Investing, leveraging their proprietary framework (details on framework noted above).

HIGHLIGHT

Series D Private Placement Opportunity for a Next-Generation Geothermal Assets Operator[50]

Private Wealth Management introduces certain eligible clients to private placement opportunities through other divisions in the firm. One such opportunity during the reporting period related to a Series D capital raise of a next-generation geothermal assets operator, developer, and owner that engages with project stakeholders and communities to build relationships in each local environment as they work towards a decarbonised grid.

50. For illustrative purposes only. Performance results vary depending on the client's investment goals, objectives, and constraints. There can be no assurance that the same or similar results to those presented above can or will be achieved.

Mobilise the Full Range of Our Resources to Meet Clients' Needs

Our platform allows us to provide our clients with a wide range of climate investment solutions across capital markets. We also support clients with portfolio construction tools and work with clients to co-create strategies that will meet their climate and investment objectives. In this section, we outline various case studies highlighting our work with clients in this area.

Public Investing

Fixed Income: Bespoke Portfolio Approaches[51]

In partnership with its clients, Fixed Income designs bespoke portfolios with unique objectives and constraints, including the integration of climate characteristics alongside traditional bond features such as duration, volatility, sector, and fundamental risk.[52] These tailored solutions use proprietary tools and analytics, and focus on engagement with portfolio companies.

Fixed Income uses several key building blocks as the foundation for a customisable framework that utilises forward-looking indicators in pursuit of GHG emissions reductions. Each building block can then be tailored in consideration of the client's climate and investment objectives, including the portfolio's risk-return objectives and its starting point. This approach sits alongside Fixed Income's fundamental credit selection process, which remains the core driver of portfolio positioning.

Climate Transition Building Blocks

Net-Zero Investment Strategy Objectives	Climate Transition Building Block	Baseline Approach[53]
Decarbonise investment portfolios	**GHG Emissions** (Backward-looking)	• Starting point for decarbonisation strategy • Utilises a **bottom-up sector specific** approach to define a pathway • GHG emissions data is reported with a lag and is **backward-looking**
	Alignment (Forward-looking)	• **Forward-looking** measure evaluating companies' alignment with net zero • Companies assessed using Public Investing's proprietary **Paris Alignment Lens**
	Engagement (Forward-looking)	• Focused engagement is critical to build a **forward-looking** understanding of companies, **support alignment**, and facilitate real-world GHG emissions reduction
	Exclusions	• Exclusions may be considered for companies whose primary activity is not consistent with the client's objectives
Increase investment in the range of 'climate solutions'	**Climate Solutions**	• Invest in green bonds with positive environmental impact (see the "Invest in Climate Opportunities" section for more details) • Identify companies making a positive environmental contribution

51. For illustrative purposes only. Performance results vary depending on the client's investment goals, objectives, and constraints. There can be no assurance that the same or similar results to those presented above can or will be achieved.
52. As part of the investment process, Public Investing may integrate ESG factors alongside traditional factors. The identification of a risk related to an ESG factor will not necessarily exclude a particular investment that, in the view of Public Investing, is otherwise suitable and attractively priced for investment. Public Investing may invest in an issuer without integrating ESG factors or considerations into the investment process. Moreover, ESG information—whether from an external and/or internal source—is, by nature and in many instances, based on a qualitative and subjective assessment. An element of subjectivity and discretion is therefore inherent to the interpretation and use of ESG data. The relevance and weightings of specific ESG factors to or within the investment process vary across asset classes, sectors, and strategies and no one factor, or consideration is determinative. Public Investing in its sole discretion and without notice may periodically update or change the process for conducting its ESG assessments and implementation of its ESG views in portfolios, including the format and content of such analysis and the tools and/or data used to perform such analysis. Accordingly, the type of assessments depicted here may not be performed for every portfolio holding. The process for conducting ESG assessments and implementation of ESG views in portfolios, including the format and content of such analysis and the tools and/or data used to perform such analysis, may also vary among portfolio management teams.
53. Note: Building blocks can be customised based on clients' unique investment and climate objectives.

HIGHLIGHT

Multi-Asset Solutions: Climate Capital Market Assumptions (Climate CMA) Model

Our Multi-Asset Solutions (MAS) team, in partnership with S&P Global Market Intelligence has developed proprietary top-down tools and resources aimed at understanding and navigating the prospective implications of climate change on the Capital Market Assumptions (CMAs) that drive asset allocation considerations. This collaborative Climate-Aware CMAs model seeks to evaluate the possible impact of climate change on the macro economy and financial markets across various climate scenarios.

This model uses a wide range of inputs, such as carbon prices, abatement costs, energy prices, and the sector-level impacts of the pace of technological disruption and the associated capital expenditure needs to reach climate targets. These variables are overlaid on macroeconomic indicators, such as GDP growth, inflation, and policy rates, which then feed into financial returns projections across a broad range of asset classes.

For certain client portfolios, MAS uses the Climate CMA Model to integrate climate risk considerations to monitor the impact of climate-related risk within their portfolios, perform climate stress testing, and respond to requests for climate reporting.

GS Alternatives

Supporting Decarbonisation Transparency for GS Alternatives Client[54]

Depending on fund- and client-related commitments, GS Alternatives uses a Climate Transition Maturity Framework to track the maturity of borrowers or portfolio companies within certain strategies against operational and strategic practices to measure, plan, set, and achieve GHG emissions reduction goals. The framework is informed by industry standards including IIGCC's Net Zero Investment Framework and the Private Markets Decarbonisation Roadmap (PMDR), and is provided by request to clients in particular sleeves. The framework emphasises the importance of GHG measurement, economic decarbonisation planning, and climate solutions exposure as potential value creating levers.

54. For illustrative purposes only. Performance results vary depending on the client's investment goals, objectives, and constraints. There can be no assurance that the same or similar results to those presented above can or will be achieved.

Private Wealth Management

Private Wealth Management believes climate-related considerations are more relevant in the analysis of specific products and investment strategies once a strategic asset allocation is set and, therefore, does not incorporate climate-related considerations at the strategic asset allocation level. Private Wealth Management has a framework to assist clients in the development of their individual sustainable investing strategy as outlined below.

Private Wealth Management's Framework for Assisting Clients in the Development of Their Individual Sustainable Investing Strategies:

Framework Element	Description
Educate	Private Wealth Management believes a successful sustainable investing strategy starts with a strong baseline understanding of the unique challenges and opportunities that ESG and impact investing present.
Clarify	Private Wealth Management works with clients to understand their impact and ESG values, alongside their investment objectives such as risk tolerance, time horizon, spending, and liquidity needs.
Implement	Private Wealth Management helps each client achieve both their financial and sustainability goals through bespoke implementation; there is no "one-size-fits-all" approach to sustainable investing.
Report	Private Wealth Management provides custom ESG portfolio analytics to show the relative impact of implementation decisions made in client portfolios.
Evolve	Private Wealth Management performs ongoing monitoring of client portfolios to ensure values-alignment and performance objectives are met and to address any new ESG-related risks that may arise.

SECTION 05

Risk Management

In This Chapter

Identifying and Assessing Climate-Related Risks

AWM uses Goldman Sachs' firmwide climate-related risks definitions as a foundation when identifying and assessing climate-related risks, adapted for each business line.

Across Public Investing, GS Alternatives, and Private Wealth Management, dedicated sustainability teams (supported by Legal, Risk, Compliance, Controllers, and the Office of Government & Regulatory Affairs) are responsible for monitoring existing and emerging climate-related regulations and assessing their potential impact on the business, as further detailed in the "Asset & Wealth Management-Specific Governance" section.

Private Wealth Management integrates climate-related risks into its investment decision-making by primarily relying on the climate-related risk management, engagement,[55] and stewardship capabilities of AWM Public Investing and GS Alternatives business units (when sourcing products and strategies from within AWM), and from external managers (when sourcing products and strategies from outside Goldman Sachs) through Public Investing (XIG) as consistent with what was reported for 2023.

Firmwide Climate-Related and Environmental Risk Management Programme

As a global financial institution, Goldman Sachs is exposed to climate-related risks that manifest in different ways across our businesses. To identify, mitigate, and adapt to these risks, we are committed to advancing our climate risk management capabilities.

Where applicable, AWM leverages Goldman Sachs' firmwide risk taxonomy and climate-related risk management processes, building on the firm's risk management practices. In particular, select on-balance sheet investments in AWM are included in the firmwide risk scope of climate scenario analysis and integration.

Climate-Related Risk Categorisation

As described in the "Definition of Climate-Related Risks" section, Goldman Sachs categorises climate-related risks into physical risk and transition risk. These risks are incorporated into the firmwide risk taxonomy, which includes both financial and nonfinancial risks.[56] The firmwide risk taxonomy categorises climate-related risks within the broader Strategic and Business Environment Risk category as distinct, stand-alone risks. Additionally, climate-related risks are considered as potential drivers across risk categories (e.g., credit risk, market risk, operational risk).

Physical risk includes acute risks (e.g., flood, wildfire) and chronic risks (e.g., heat stress, water stress), while transition risk emerges from policy, legal, technology and market changes resulting from the shift to a lower carbon economy. Physical and transition risks may have meaningful impacts in the short, medium, and long-term.

Climate-Related Risk Identification and Assessment

Across Public Investing and GS Alternatives, we recognise the importance of a detailed understanding of the climate-related risks that can impact our business and clients. We are committed to developing our approach further to quantify these risks and potential financial impacts. At present, we consider climate-related risks and opportunities alongside other financial and nonfinancial risks for certain investment products and strategies. We currently take a largely qualitative approach when determining the relative significance of climate-related risks in relation to other risks, which may differ across business lines.

For Public Investing and GS Alternatives, the GSAMI Risk Appetite Statement—which articulates GSAMI's approach to risk taking—includes additional detail on how climate and environmental financial risks are evaluated and monitored. Other factors specific to each business line are outlined below.

55. Private Wealth Management does not directly undertake traditional public markets shareholder engagement activities or engagement with portfolio companies and client assets in alternatives.
56. The firmwide risk taxonomy covers on-balance sheet alternative assets within AWM in addition to our clients' assets.

Public Investing

Public Investing continues to formalise and develop its approach to identifying and measuring climate-related risk that could have a material financial impact on investment portfolios.

For the first line of defence, in 2024, climate-related risks were predominantly assessed through a qualitative lens but complemented with quantitative approaches developed within specific investment teams.

The implementation of Public Investing's risk governance structures and risk management processes is overseen by the Asset Management Public Global Risk team (Public Markets Risk), which operates independently of the investment teams, and reports to the Asset Management Public Markets CRO.

While sustainability risk—including climate-related risk integration—plays an important part in its investment approach, Public Investing considers sustainability risks alongside the other risks relevant to the portfolios and takes a holistic view on the composition of a portfolio or the holding of specific investments from a risk perspective. In line with existing risk management processes, Public Investing takes steps to mitigate and manage that risk as assessed on a case-by-case basis.

As described below in the "Incorporating Climate-Related Risks into Overall Risk Management" section, over the past year, Public Markets Risk has continued the development and implementation of a sustainable risk structure including the enhancement of risk systems to incorporate climate-related scenarios for certain asset classes. Implementation of CVaR analysis seeks to allows investment managers to access a forward-looking and return-based valuation assessment to measure climate-related risks and opportunities within any given investment portfolio.

The Public Markets Risk team includes dedicated risk managers aligned to sustainability who carry out risk management activities across the global Public Investing platform, including areas within the scope of this report. The Public Markets Risk team's sustainability-aligned risk managers continue to build out GSAMI's climate-related risk management framework.

GS Alternatives

Within GS Alternatives, the goal is to identify, measure, and manage climate-related risks that could have a material financial impact on investments and client portfolios. As noted in the "Manage and Mitigate Climate-Related Risks" sub-section, investment teams and external advisors assessed the exposure of sectors and select individual investments to physical and transition risks.[57] This provides GS Alternatives with a view of the percentage of assets under supervision (for portfolio management activities) that are qualitatively vulnerable to transition and physical risks. The vulnerability assessment for transition and physical risks was leveraged for portfolio-wide risk ratings based on 2023 company exposure data and for newly onboarded exposures in 2023, meeting a threshold sector risk of moderate or above.

At a portfolio level, tools that began development in 2023 were used to evaluate the potential materiality of financial impacts to portfolio companies under various climate scenarios. These sensitivity analyses are not intended to provide a revised financial outlook for investments but provide a "what-if" analysis of potential company sensitivity to transition and physical risks under different potential climate scenarios, and guide related conversations across relevant investment teams. Although Network for Greening the Financial System (NGFS) scenarios are currently used for this analysis, GS Alternatives does not ascribe probability to these scenarios. They represent a range of potential outcomes (under a particular set of assumptions that may or may not be realised). As GS Alternatives leverages third-party climate scenarios, reliance on these tools is inherently limited by scenario assumptions, and economic and scientific modelling capabilities that may not reflect GS Alternatives' investment assumptions.

In Real Estate, internal and external qualitative climate-related risks assessment tools are used to analyse physical risk exposure for all new equity and credit investments.

57. This refers to GS Alternatives strategies within the scope of this report where GSAMI carried out portfolio management activities (whether on a direct or delegated basis) as of 31 December 2024. This includes assets within certain Private Equity, Infrastructure, Growth Equity, SIG, Private Credit and Real Estate strategies.

Asset & Wealth Management Climate-Related Risk Management

Climate-related risks are an increasingly important consideration in our risk management approach. Our sustainable investing philosophy considers climate- and sustainability-related factors that can impact the risk profile and performance of our investments and may also result in operational and reputational risks. We continue to develop and evolve our internal approaches to identify, assess, and manage climate-related risks alongside other financial and nonfinancial risks, in line with clients' preferences and objectives.

The following sections further detail AWM's climate-related risk management practices across business lines, business units, strategies, and products. While this report focuses on climate-related risk identification, assessment, and management at the entity level, it also includes select descriptions of climate-related risk management practices for individual investment products and strategies in scope for this report.

AWM's risk management framework, aligned with the firmwide approach, consists of several key processes including risk identification and assessment, risk reporting and monitoring, and risk decision-making. Our risk management framework is based on a "three lines of defence" structure, which covers financial and nonfinancial risks, including climate-related risks.

First Line

The first line of defence is responsible for its risk generating activities, as well as for the design and execution of controls to mitigate such risks.

Second Line

Our Risk and Compliance functions are considered our second line of defense and provide independent assessment, oversight and challenge of the risks taken by our first line of defense, as well as lead and participate in firmwide risk committees.

Third Line

Internal Audit is considered our third line of defence. Internal Audit includes professionals with a broad range of audit and industry experience, including risk management expertise. Internal Audit is responsible for independently assessing and validating the effectiveness of key controls, including those within the risk management framework, and providing timely reporting at the board-level as well as to senior management and regulators.

Integration of Climate-Related Risks across the Investment Life Cycle

Within Public Investing and GS Alternatives, we manage climate-related risks by integrating climate considerations into the investment life cycle for select products and strategies where consistent with fiduciary duties. Although business lines differ in how climate-related risk management activities are integrated, each business line prioritises climate-related risks in a largely qualitative manner and determines the financial materiality of those risks as part of its approach to managing climate-related risks.

Public Investing

Within Public Investing, investment teams follow a standardised risk management framework, while integrating climate-related risks into their investment decisions, company engagement, and product development processes in a manner consistent with their specific strategies and client preferences. Climate-related risks may be considered from a "top-down" perspective (i.e., in the construction of portfolios and overall risk management), or "bottom-up" (i.e., at an individual investment level), as described in the case studies within this report.

Public Investing focuses on identifying financially material, operational sustainability risks and opportunities. We seek to identify what we believe to be material factors impacting a company's bottom line and which may impact risk and return. We believe these insights can be additive to our investment process as we work to generate financial returns for our clients.

Sustainability considerations can differ by industry. With this in mind, Public Investing leverages a proprietary materiality map to determine which sustain issues are relevant by industry, and how relevant they are relative to each other. Our materiality map incorporates a number of individual sustainability issues across environmental, social and governance themes. We have developed a proprietary weighting schema, informed by industry standards[58] and our investment teams' expertise.[59]

The materiality results feed into our proprietary Sustainability Measurement Toolkit,[60] which can be leveraged in our investment processes.

Investment Decision-Making

The following example approaches are taken by investment teams to incorporate climate-related risk considerations into their investment processes. These approaches may evolve over time in response to regulatory requirements and market developments.

- The use of climate- and sustainability-related risk analysis, alongside other considerations, to inform the selection process for companies, issuers, and portfolio management processes, as well as investment decisions.
- Tilting portfolios towards climate- and sustainability-related factors and selecting companies that Public Investing considers to have less climate-related risk exposure, based on metrics such as carbon intensity and other KPIs. These factors can be combined into an overall ESG score, which may use both external vendor and internal proprietary models, to aid portfolio construction and to compare scores across factors and relative to the relevant benchmarks.
- The use of screens to identify companies or sectors, via guideline management processes, that do not meet certain climate- and sustainability-related criteria. This can include companies with more than a prescribed percentage of revenue derived from certain products or activities where climate-related risks are deemed financially material, or screening companies in particular industries with elevated climate-related risks.

58. For example, we have been a member of the Sustainability Accounting Standards Board (SASB) Investor Advisory Group since 2018 and continue to support its work as part of the International Sustainability Standards Board (ISSB).
59. The materiality map is designed to be updated periodically according to analysis or new information as deemed appropriate.
60. The Sustainability Measurement Toolkit is an ESG measurement process across the Public Investing platform utilising a bottom-up-, data-driven approach to assess operational ESG considerations. It is designed by the Sustainable Investing Platform (SIP) with input from Public Investing teams to create a grounded set of metrics.

Several of the climate-related risk measurement and management approaches in individual Public Investing business units are included as follows.

Fixed Income

The Fixed Income investment team incorporates climate-related risk assessments (inclusive of physical and transition risk) into investment decisions for certain investment strategies. Public Investing's portfolio management systems provide investment teams and portfolio managers with access to information on key climate-related exposures at the portfolio-level and relevant benchmark information. These include carbon intensity, financed GHG emissions, carbon footprint, and alignment to net zero. Investment teams can use this information to understand and manage financially material climate-related risks impacting portfolios. From a top-down perspective, our portfolio managers may consider ESG factors in portfolio construction and risk management. ESG can be a component of our bottom-up fundamental research process where we have developed and may utilise proprietary ESG ratings across sectors including corporate credit and sovereign debt.

Fundamental Equity

The Fundamental Equity investment team conducts ongoing monitoring of financially material climate-related factors at the individual stock and portfolio level for certain investment products and strategies. As part of their investment dashboard tool, investment teams have access to GHG emissions metrics, such as carbon footprint and carbon intensity, which are also captured in daily risk monitoring. This allows investment teams to monitor the carbon exposure of portfolios and individual holdings across Scope 1, 2, and 3 GHG emissions, providing visibility into the contribution of individual positions to portfolio-level metrics. It also allows teams to simulate the impact of potential trades on overall climate metrics, enabling them to incorporate carbon exposure into risk management decisions and daily risk monitoring.

Quantitative Investment Strategies (QIS)

The Equity Alpha business unit within QIS manages equity portfolios using data-driven investment models that aim to evaluate public companies globally through fundamentals-based and economically motivated investment themes. Within Equity Alpha, climate- and sustainability-related considerations are expressed through the Climate Transition Framework, which leverages proprietary metrics to help measure and limit climate risk against a reference benchmark[61] and the Alpha Model, which integrates short- to medium-term "alpha" drivers into the equity investment model. These drivers include a factor relating to a company's environmental impact.

Additionally, the team offers a two-step optimisation strategy that focuses on transparency and active risk efficiency, seeking to provide a systematic and holistic balance between risk, return and sustainability characteristics of a portfolio. This setup seeks to allow for transparent attribution across financial (risk and return) and nonfinancial objectives (such as ESG exclusion list, carbon reduction pathway).

Imprint

Our External Investing Group (XIG) identifies external managers across the risk-return spectrum and partners with them in multiple ways, investing in their products, co-investing alongside them, acquiring positions in the secondaries market, and investing directly into management. Imprint is a dedicated team within XIG focused on thematic research, manager selection, and co-investments across sustainable growth themes.

Company Engagement

The Global Stewardship team may support the portfolio team to develop and set appropriate KPIs designed to continually monitor portfolio companies transition progress and engage directly with company management (refer to the "Help Portfolio Companies and Client Assets Navigate and Benefit from the Climate Transition" section for more details).

Product Development Process

Climate-related risks have the potential to materially impact investment strategies and outcomes for Public Investing's clients. Climate-related risks, where relevant, have been integrated into the product development process and associated product governance forums.

61. The reference portfolio/benchmark is not an ESG benchmark, and the portfolios are not managed with a view to achieving the long-term global warming objectives of the Paris Agreement.

GS Alternatives

Sourcing and Due Diligence

Climate-related risks are integrated into investment due diligence in a manner consistent with specific strategies and client preferences.[62] As noted previously, investment teams are required to complete an ESG questionnaire for select prospective investments, which summarises climate- and sustainability-related issues identified through diligence. These findings are then generally included in the Investment Committee Memo.

Investment teams may also work with ESG Business Leads,[63] and other internal teams such as Legal, Compliance, the Operational Risk–Environmental, Health & Safety team, and the Enterprise Risk team, who are climate-related risks specialists, to determine material nonfinancial and environmental health and safety risks, which may include climate-related risks when reviewing opportunities.

HIGHLIGHT

For example, in certain Private Credit strategies, investments go through a due diligence process that incorporates factors ranging from macroeconomic and industry factors to company, asset, and structure-specific considerations. All potential investments are cross-referenced with fund-level exclusions lists. Investments in ESG-focused funds are evaluated through a proprietary assessment, which is used to evaluate potential investments' ESG performance, risk level, and eligibility for the fund. The assessment takes into account the GHG emissions intensity of each investment, helping Private Credit assess risk and understand whether existing GHG emissions reductions initiatives that have been implemented are having a measurable impact.

For more information on other climate-related tools or analysis used to inform certain investments, see the "Approaches and Capabilities for Managing and Mitigating Climate-Related Risks" section above.

Holding Period

From an early point in our ownership period, where consistent with our fiduciary duty, deal teams support their portfolio companies to improve their ESG performance. GS Alternatives' equity ESG data collection exercise helps provide transparency on the portfolio company's ESG data performance and helps identify key metrics and opportunities to mitigate risk and/or create value.[64] GS Alternatives engages proactively with select portfolio companies to identify and manage climate-related risks. Furthermore, GS Alternatives may support management teams from select portfolio companies to consider—where appropriate and financially material—post-closing uplift plans to help address physical and transition risks through adaptation and mitigation measures, over the ownership period. Additionally, in order to encourage the mitigation of climate risk within GS Alternatives' portfolio, companies can be provided with resources to support decarbonisation planning. These are further detailed in the "Help Portfolio Companies and Client Assets Navigate and Benefit from the Climate Transition" section above.

Exit

GS Alternatives considers risk and mitigants throughout ownership (including climate-related risks for select portfolio companies) and is focused on positioning portfolio companies and assets for success at exit (whether through public or private markets).

62. This process relates to GS Alternatives strategies within the scope of this report, where GSAMI carried out portfolio management activities (whether on a direct or delegated basis) as of 31 December 2024. This includes assets within certain Private Equity, Infrastructure, Growth Equity, SIG, and Real Estate strategies.
63. Note: There are ESG Business Leads embedded within the Private Equity, Infrastructure, SIG, Private Credit, and Real Estate business units, but not Growth Equity.
64. For illustrative purposes only. For example, levels of engagement vary across equity and credit strategies.

Incorporating Climate-Related Risks into Overall Risk Management

AWM considers climate-related risks as part of the broader portfolio of financial and nonfinancial risks that is managed on an ongoing basis. We improved our climate-related risk measurement and management capabilities during 2024 and further integrated climate-related risks into existing risk management frameworks and processes, including the second line of defence.[65]

Public Investing

The approach to climate-related risk management and integration into the independent Public Markets Risk processes has evolved over the past several years.

The Public Markets Risk team uses a set of proprietary risk management tools, developed to support risk managers' needs and objectives. These tools continue to be adapted and developed so that they can be deployed for the purpose of managing climate-related risks.

Examples of recent developments include the implementation in Public Investing's systems of an approach to monitor 1.5°C, 2°C, and 3°C climate shocks at the issuer and portfolio level. AWM Public Risk continues to develop and evolve its approach to climate scenario analysis, including the development of a monitoring framework with alerts and thresholds to assess the performance impacts considering different climate scenarios. In 2024, AWM Public Risk incorporated the CVaR model into its monthly risk report across climate-linked funds.

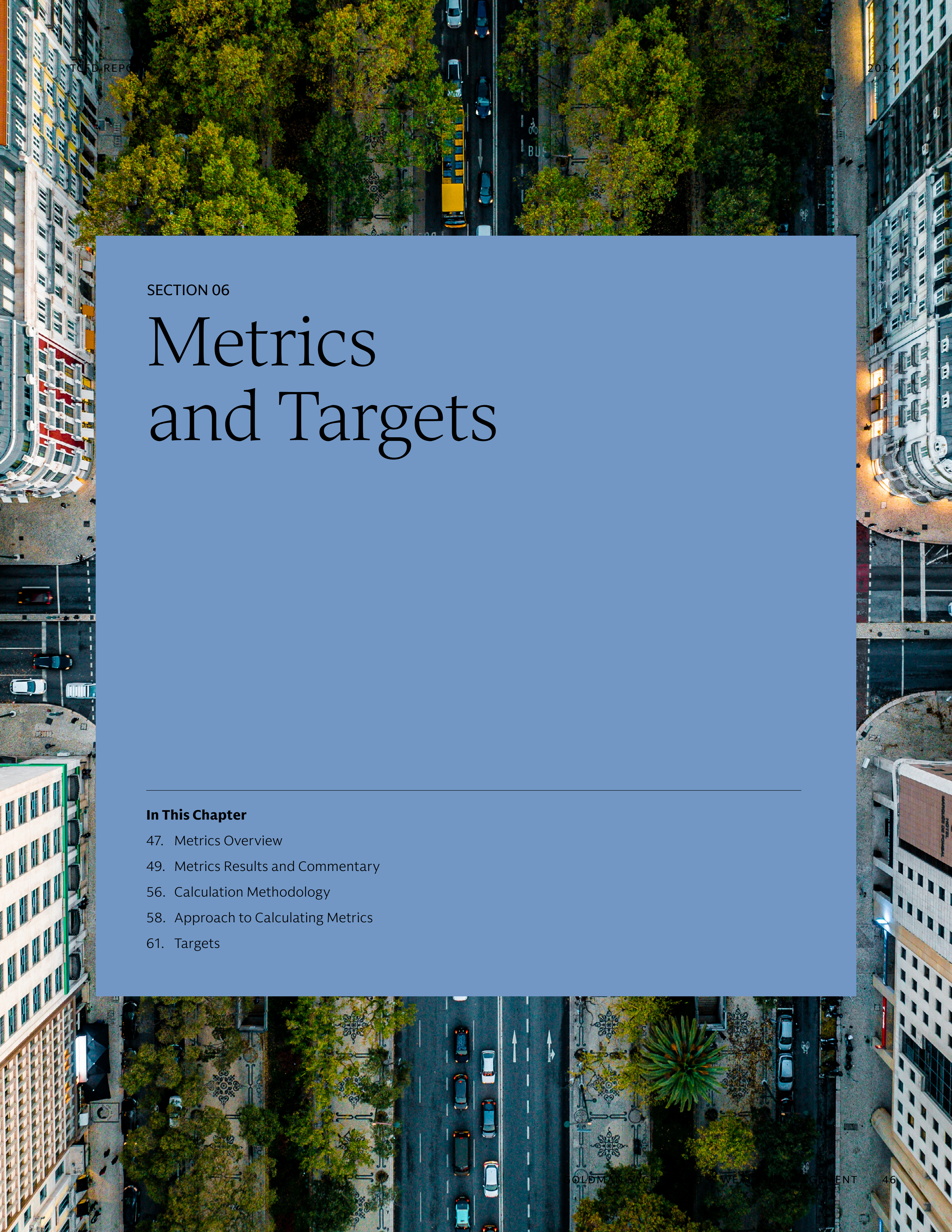
The Public Markets Risk team participates in various Public Investing forums—in addition to engaging with investment teams—on both a formal and informal basis, as part of the business-as-usual risk management oversight and monitoring framework. In line with the evolution of the overall risk management approach, these interactions increasingly include discussions on climate-related risks.

Senior members of the Public Markets Risk team also participate in the relevant sustainable investing and GSAMI governance and oversight forums, as detailed in the "Governance" section of this document.

GS Alternatives

Climate-related risks for portfolio companies and assets may be escalated for review by the GS Alternatives Risk team. Where relevant, this Risk team escalates financially material climate-related risks to the GS Alternatives CRO, who then assesses the climate-related risk and determines whether the matter should be further escalated to the relevant Investment Committee to discuss how to mitigate the risk. Alternatively, the GS Alternatives CRO can also escalate the relevant climate-related risk to the Risk Council if the risk is relevant for the broader portfolio.

65. The incorporation of climate-related risks into overall risk management for Private Wealth Management is still evolving and, as such, the approaches outlined below may not apply across the entirety of Private Wealth Management.



SECTION 06

Metrics and Targets

In This Chapter

Metrics Overview

Decision-useful data is a critical enabler for our climate strategy; it can help us measure and understand how climate-related risks and opportunities may influence investment performance.

Metrics to Assess Climate-Related Risks and Opportunities

We use a variety of metrics to assess climate-related risks and opportunities across specific products and investment strategies. Within this report, we have provided select examples of metrics that specific investment teams may consider in their investment decisions and monitoring. However, investment teams across the entirety of AWM are not systematically conducting climate scenario analysis or measuring the extent to which assets under supervision and products and strategies are aligned with a well below 2°C scenario.[66]

Furthermore, this entity-level report does not provide a description of all metrics used for each product and investment strategy in scope for the AWM report. Details on metrics for individual products and investment strategies will be included in individual product-level reports that are made available to clients (upon request).

GHG Emissions and Associated Metrics

Within this section, we have disclosed the carbon footprinting metrics for GHG emissions within our investment products and strategies at the business line level, with separate disclosures for Public Investing, Private Wealth Management, and GS Alternatives.[67,68] The scope and calculation methodologies of reported climate metrics may change with evolving industry standards and the development of our climate capabilities.

GHG Emissions Re-Baselining Process

Consistent with the GHG Protocol and Goldman Sachs' corporate practice, AWM reviews and restates previously reported metrics when appropriate. This re-baselining process may be triggered by significant changes to the calculation methodology, historical data, organisational structure (e.g., mergers and acquisitions), or material errors.

As climate-related reporting continues to mature, we have enhanced our scoping approach for our FY24 reporting, which has resulted in the inclusion of additional portfolios within the scope of the metrics set out in this report for Public Investing. This change affects the comparability of certain FY24 metrics, primarily absolute Scope 3 GHG emissions and total GHG emissions (Scope 1, 2, and 3), compared to FY23. The estimated impact of this change is not significant and, as further detailed below, additional factors such as improved data quality or data coverage, and changes in methodologies of our data providers can also impact the comparability of metrics across periods. Given the estimated limited impact and the inability to apply some factors retrospectively, the FY23 metrics have not been restated. Comparison of the FY23 and FY24 absolute metrics need to be made with this in mind.

66. AWM does not conduct a systematic, business-segment wide assessment of the alignment of assets under supervision with a well below 2°C scenario.
67. Both Public Investing and GS Alternatives operate within GSAMI. However, there is no aggregation of metrics across the two business lines in the GS AWM UK TCFD report, given the different types of business performed within the business lines and the different recommended calculation methodology for the alternative assets managed by GS Alternatives. The GSI legal entity report covers in-scope assets for Private Wealth Management. Hence, the business line- and entity-level report aligns for GSI.
68. For 2024, metrics this excludes third-party managed portfolios and alternative holdings through XIG given challenges in data transparency and quality.

Overview of GHG Emissions Metrics Disclosed

For the specific scope of assets included in the metrics calculation, see "Appendix D: Additional Details on Metrics". The GHG emissions and carbon footprinting metrics disclosed below specifically include business activities within the UK legal entities (GSI and GSAMI), but do not comprehensively include all AWM's global business activities across other legal entities.

Metric	Relevant Asset Class	Units	Strengths	Limitations	Use Cases
Absolute Financed GHG Emissions	GS Alternatives: Private Equity, Infrastructure, Growth Equity, SIG, Private Credit, Real Estate Public Investing and Private Wealth Management: Listed Equities and Corporate Bonds	tCO_2e	• Provides an absolute GHG emissions measurement attributed to AWM based on its share in an asset's capital base	• Increases with portfolio or asset size, making comparisons difficult across companies and asset classes/portfolios • Relies on metrics[69] to 'attribute' GHG emissions, which may not reflect influence or ownership share and may be affected by volatility	• Track a measure of absolute GHG emissions attributed to portfolios over time
Total Carbon Footprint	GS Alternatives: Private Equity, Infrastructure, Growth Equity, SIG, Private Credit, Real Estate Public Investing and Private Wealth Management: Listed Equities and Corporate Bonds	tCO_2e/ $million invested	• Facilitates comparison of GHG emissions over time, between asset classes and portfolios • Normalises for portfolio size and size of the asset's capital base	• Potentially volatile, particularly due to market fluctuations in market value, which may be unrelated to changes in GHG emissions • Less directly links to company activities or property characteristics	• Measure the carbon efficiency of the portfolio/asset class
WACI	GS Alternatives: Private Equity, Infrastructure, Growth Equity, SIG, Private Credit Public Investing and Private Wealth Management: Listed Equities and Corporate Bonds	tCO_2e/ $million revenue	• Facilitates comparison of GHG emissions over time, between asset classes and portfolios • Normalises for portfolio size and magnitude of the company's sales or property's revenues	• Potentially volatile due to year-to-year revenue performance and the inflation of sales values, which may be unrelated to changes in GHG emissions • Normalisation on revenue is less direct than using sector-specific activity metrics	• Measure exposure of portfolio/asset classes to carbon intensive companies or properties • Provide a common normalised measure of fund GHG emissions performance
	Public Investing and Private Wealth Management: Sovereign Debt	tCO_2e/ $million GDP-PPP (Production)	• Facilitates comparison of GHG emissions over time, between asset classes and portfolio • Normalises for portfolio size and magnitude of countries' economic output • Avoids limitations related to consumption-based metrics (e.g., difficulty in allocating GHG emissions along supply chain, assumptions around input-output models)	• Potentially volatile due to fluctuations in countries' economic activity, which may be unrelated to changes in GHG emissions • Does not fully account for a country's collective GHG emissions demand, which may understate GHG emissions for countries with significant imports of goods with high embedded GHG emissions	• Measure exposure of portfolio/asset classes to carbon intensive countries • Focus on countries' domestic GHG emissions from sources within the country and exported goods and services
	GS Alternatives: Real Estate	$kgCO_2e$/ $metres^2$	• Facilitates comparison of GHG emissions over time, between asset classes and portfolios • Normalises for property size, while avoiding potential volatility associated with year-over-year revenue changes	• Does not normalise for the size of the capital base	• Measure exposure of portfolio/asset classes to carbon-intensive properties • Provide a common normalised measure of fund GHG emissions performance

69. EVIC (Enterprise Value Including Cash) for non-Real Estate, issuer equity and debt for equity Real Estate funds, and property value at origination for credit Real Estate funds.

Metrics Results and Commentary

The tables below detail the GHG emissions metrics for GSI and GSAMI in-scope AUS for 2024. We have referenced the guidance on calculating metrics set forth by the Partnership for Carbon Accounting Financials Global GHG Accounting Standard (PCAF Standard)[70] and TCFD, where applicable.

Public Investing

For the purposes of this UK TCFD report, the scope of Public Investing disclosures includes Listed Equities, Corporate Bonds, and Sovereign Debt assets within the legal entity scope described in "Appendix A: In-Scope Asset & Wealth Management Assets". Refer to the "Approach to Calculating Metrics" section for further information on data gaps, challenges, and limitations.

Listed Equities and Corporate Bonds

Metric	Scope	2024	2023	Units
Absolute Financed GHG Emissions	Scope 1	10,933,410	9,661,293	tCO_2e
	Scope 2	2,839,342	2,086,930	
	Scope 3[71]	81,260,724	61,613,586	
	Scope 1 and 2[72]	13,773,966	11,748,036	
	Scope 1, 2, and 3	95,033,476	73,361,622	
Total Carbon Footprint	Scope 1 and 2	53.7	60.0	tCO_2e/$million invested
	Scope 1, 2, and 3	369.6	374.5	
WACI	Scope 1 and 2	129.7	158.8	tCO_2e/$million sales
	Scope 1, 2, and 3	779.7	809.8	

Commentary on Changes from 2023 to 2024

Scope 1, 2, and 3 Absolute Financed GHG Emissions increased from 2023 to 2024 due to several factors. The predominant factor was an increase in the size of in-scope assets driven by a change in scoping approach, the inclusion of some external accounts that were excluded in 2023 due to data quality issues, and improvements in third-party data coverage, which enabled calculation of emissions metrics for more holdings than in the previous year. While the portfolio's sectoral composition remained broadly consistent compared to last year, the increase in metrics was also driven by a shift towards higher-emitting companies within the sector. Other potential factors, such as an increase in GHG emissions related to in-scope assets, were not significant contributors to the change.

Total Carbon Footprint values for Scope 1 and 2 decreased from 2023 to 2024, primarily due to the investment value of in-scope assets increasing at a higher rate compared to the increase in Scope 1 and 2 Absolute Financed GHG Emissions. However, Total Carbon Footprint values considering all Scopes remained at a similar level compared to last year.

The decrease in WACI from 2023 to 2024 was primarily driven by company revenues increasing at a higher rate than the increase in Absolute Financed GHG Emissions for select higher-emitting holdings.

70. PCAF (2022). The Global GHG Accounting and Reporting Standard Part A: Financed Emissions. Second Edition.
71. This includes all Scope 3 categories (1-15), as estimated by the third-party data vendor.
72. Due to third-party data vendor calculation methodology, the break-out numbers for Scope 1 and 2 do not equate to the summed total of Scope 1 and 2.

Data Coverage

In 2024, the Scope 1, 2, and 3 Absolute Financed GHG Emissions and Total Carbon Footprint metrics for Public Investing cover 76% of AUS for in-scope Listed Equities and Corporate Bonds (previously 64% in 2023), while the Scope 1, 2, and 3 WACI metrics cover 80% of AUS for in-scope Listed Equities and Corporate Bonds (previously 72% in 2023). From 2023 to 2024, the data coverage for Absolute Financed GHG Emissions, Total Carbon Footprint, and WACI increased primarily due to the resolution of select data quality issues identified in 2023 impacting some external accounts and improved data availability which enabled metrics calculations for a larger number of holdings. Refer to the "Approach to Calculating Metrics" section for further information on data gaps, challenges, and limitations.

Public Investing relies on the GHG emissions data provided by a third-party vendor. This vendor provides GHG emissions from reported company disclosures as well as GHG emissions estimated by the third-party vendor using their internal methodology. Note that the data coverage for the WACI metrics remains higher than for the other disclosed metrics, given that there are holdings for which the third-party vendor does not provide EVIC data but does provide GHG emissions and sales data.

The remaining holdings, which do not have the requisite data needed to calculate a metric provided by the third-party vendor, have been excluded from the calculation of the relevant metric, and the weights of the remaining in-scope holdings have been normalised accordingly.

Public Investing prioritises data sources based on the data hierarchy within the PCAF Standard and has calculated weighted data quality scores in accordance with the PCAF Standard (Score 1 = highest data quality; Score 5 = lowest data quality).

Data Quality Scores (Weighted Average)	2024	
Asset Classes	**Scope 1**	**Scope 2**
Listed Equities and Corporate Bonds	2.2	2.2

Sovereign Debt

Metric	Scope 1	2024	2023	Units
WACI	Scope 1 (excluding LULUCF,[73] including exports)	197.2	218.4	tCO_2e/$million GDP-PPP

In 2024, Public Investing continued to disclose WACI Scope 1 metrics for Sovereign Debt in alignment with PCAF's sovereign debt-financed GHG emissions methodology, first published in December 2022.[74] The methodology defines GHG emissions based on national production[75] and uses GDP-PPP for emissions attribution. Given the evolving nature of methodologies for Sovereign Debt, Public Investing expects that disclosed metrics will continue to evolve for future disclosures as industry practices mature.

In addition, FY 2023 Sovereign Debt emissions data were used for FY 2024 calculations due to challenges regarding data availability.

Public Investing relies on a third-party vendor for Sovereign Debt GHG emissions data.[76] The PCAF Standard weighted data quality scores for the in-scope Sovereign Debt portfolio are included in the following table (Score 1 = highest data quality; Score 5 = lowest data quality).

Data Quality Scores (Weighted Average)	2024
Asset Classes	Scope 1
Sovereign Debt	4.0

73. Land Use, Land-Use Change, and Forestry.
74. PCAF (2022). The Global GHG Accounting and Reporting Standard Part A: Financed Emissions. Second Edition.
75. Production GHG emissions are GHG emissions attributable to GHG emissions produced domestically and include domestic consumption and exports. This definition follows the territorial GHG emissions approach adopted by the United Nations Framework Convention on Climate Change (UNFCCC) for annual national inventories and is typically referenced by sovereigns in their Nationally Determined Contributions (NDCs).
76. FY 2023 Sovereign Debt emissions data were used for FY 2024 calculations due to challenges with data availability.

GS Alternatives

For the purposes of this UK TCFD report, the scope of GS Alternatives disclosures includes assets within Private Equity, Infrastructure, Growth Equity, SIG, and Private Credit strategies), and Real Estate investment holdings in strategies where GSAMI carried out portfolio management activities (whether on a direct or delegated basis) in 2024.[77] Given the scope of reporting, GSAMI-entity exposure may not be representative of overall GS Alternatives exposure or related fund family exposures, which are reported in on-demand product-level reports. The reporting below includes exposure with active GHG emissions, investment holdings, revenue, and asset values within these bounds. Refer to the "Approach to Calculating Metrics" section for further information on data gaps, challenges, and limitations.

Metrics for Private Equity, Infrastructure, Growth Equity, SIG, and Private Credit[78]

Metric	Scope	2024	2023	Units
Absolute Financed GHG Emissions	Scope 1	808,157	145,193	tCO_2e
	Scope 2[79]	202,358	73,529	
	Scope 3[80]	1,852,766	717,193	
	Scope 1 and 2	1,010,515	218,722	
	Scope 1, 2, and 3	2,863,281	935,915	
Total Carbon Footprint	Scope 1 and 2	43.7	20.0	tCO_2e/$million invested
	Scope 1, 2, and 3	123.7	85.8	
WACI	Scope 1 and 2	70.2	43.7	tCO_2e/$million revenue
	Scope 1, 2, and 3	315.4	373.9	

77. These emissions do not cover certain Private Credit investments, including asset finance & trade receivables assets for which there are significant challenges in emissions estimations due to methodological gaps and data availability.
78. Apex Companies LLC, (Apex) was engaged to conduct an independent verification of the GHG emissions reported by GS Alternatives (specifically, within Private Equity, Infrastructure, Growth Equity, SIG, and Private Credit investments subject to UK FCA TCFD requirements) for the period 1 January 2024 to 31 December 2024. GS Alternatives was provided a Limited Assurance verification opinion by Apex, details are available here.
79. GS Alternatives' Scope 2 GHG emissions reporting privileges the use of market-based accounting methods over location-based estimates when portfolio companies directly report footprints. When market-based accounting methods are not used, estimated, or reported, footprints are based on location-based methods.
80. We cannot guarantee the completeness of Scope 3 estimates across all categories when directly reported or publicly disclosed by portfolio companies. When calculated by GS Alternative's recommended GHG accounting provider, Scope 3 categories, which are defined by the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard, have been included based wholly on vendor and company determination of relevance and materiality. When financial estimates were calculated by this service provider, Scope 3 categories 13-15 were excluded from estimations at the determination of the vendor based on methodological considerations. See the "Approach to Calculating Metrics" section for further details.

Commentary on Changes from 2023 to 2024

In 2024, certain Private Credit strategies migrated to GS Alternatives from Public Investing, and investments represented under the Private Credit business increased due to organic growth. As a result, investments where GSAMI carried out portfolio management activities (whether on a direct or delegated basis) increased substantially in 2024; accordingly, relevant emissions represented in the table above have increased due to this portfolio growth.

When comparing 2023 and 2024 numbers, Scope 1, 2, and 3 Absolute Financed GHG Emissions, WACI, and Total Carbon Footprint for these asset classes increased primarily due to the newly migrated portfolios. Increases in Absolute Financed GHG Emissions were due primarily to new investments in scope from a combination of organic and inorganic growth. Changes to Total Carbon Footprint and WACI reflect increased sector skew toward Real Estate, Construction, and Utilities from these portfolio additions; these sectors tend to have higher intensities than previously reported Scope 1 and 2 averages. After controlling for portfolio changes from inorganic growth, Scope 1 and 2 Absolute Financed GHG Emissions increased less than 10%, Total Carbon Footprint significantly declined, and WACI declined slightly.

Changes to emissions reflect not only shifting company behaviour and financial growth, but also the emissions factor model used for estimation, which was updated in 2024 by GS Alternatives' vendor to reflect contemporary trade and energy use patterns. Scope 3 emissions may additionally be driven by shifting reporting coverage and practices by companies across various Scope 3 categories.

Portfolio and Target Coverage

GS Alternatives engages directly with select portfolio companies to collect and review GHG emissions data, and works with partners to provide estimates, offer carbon footprinting services aligned with the GHG Protocol, and aggregate existing public disclosures. Approximately half of GS Alternatives' financed GHG emissions exposure is currently derived from direct company disclosures to GS Alternatives or through public sources. Changes in the proportion of reported emissions reflect the growth of Private Credit investments, for which directly reported data is less easily obtained. The following weighted data quality scores have been calculated in accordance with the PCAF Standard (Score 1 = highest data quality; Score 5 = lowest data quality).

Data Quality Scores (Weighted Average)	**2024**	
Asset Classes	Scope 1	Scope 2
Private Equity, Infrastructure, Growth Equity, SIG, and Private Credit	3.2	3.2

GS Alternatives relies on third parties for the accuracy of estimates and disclosures, and limitations in reporting quality may contribute to variance from actual footprints due to portfolio company assumptions, vendor assumptions, and methodology decisions.

Within the reporting parameters, 34% of financed GHG emissions portfolio exposure is to companies with commitments to a Science Based Targets Initiative (SBTi) target or with a validated target by SBTi.

Real Estate Metrics[81]

Metric	Scope	2024	2023	Units
Absolute Financed GHG Emissions	Scope 1	40,564	712	tCO_2e
	Scope 2	48,815	3,111	
	Scope 3	617,129	75,879	
	Scope 1 and 2	89,379	3,823	
	Scope 1, 2, and 3	706,508	79,702	
Total Carbon Footprint	Scope 1 and 2	2.2	0.8	tCO_2e/$million invested
	Scope 1, 2, and 3	17.4	17.5	
WACI (Physical Intensity-based)	Scope 1 and 2	6.7	4.4	$kgCO_2e/metres^2$
	Scope 1, 2, and 3	35.5	60.8	

Commentary on Real Estate Metrics

In 2024, certain Real Estate credit portfolios migrated to GS Alternatives from Public Investing. As a result, investments where GSAMI carried out portfolio management activities (whether on a direct or delegated basis) increased substantially in 2024; accordingly, relevant emissions represented in the table above have increased due to this portfolio growth.

The interpretation of financial metrics in normalisation and weighting varies significantly between Real Estate strategies and other business units. While Corporate metrics often focus on revenue and profit margins, Real Estate metrics must consider factors such as floor area and construction activities. This necessitates a tailored approach to normalisation and weighting, reflecting the physical and economic attributes of the properties themselves.

Landlord-tenant dynamics also present unique challenges in Real Estate, particularly concerning energy-related data. Landlords may have limited visibility into tenant energy use, which makes it difficult to collect accurate data for reporting. To aid the process, the Real Estate team has onboarded a third-party GHG accounting software solution that collects and analyses utility data including energy, water, and waste data. A full-time consultant from the third-party vendor has been appointed to drive the data collection approach across the Real Estate global portfolio.

Additionally, the materiality of Scope 3 categories and the capabilities for reporting these categories vary widely. In Real Estate, certain Scope 3 categories, such as tenant energy use and upstream construction GHG emissions, are particularly significant. The ability to report accurately on these categories depends heavily on data availability and quality, which can be challenging to obtain compared to direct GHG emissions data from GS Alternatives' other investing strategies.

As a result, GHG emissions metrics for Real Estate include GHG emissions from both credit and equity investments with differing Scope 3 categories included due to data availability and materiality. For equity and credit investments, GHG emissions from Capital Goods (Category 2) and Downstream Leased Assets (Category 13) were determined to be material. Given differences in operational and financial control, proxies were required to estimate the breakdown of GHG emissions between landlord vs. tenant sources for credit investments.

81. This data includes GS Alternatives Real Estate strategies within the scope of this report, where GSAMI carried out portfolio management activities (whether on a direct or delegated basis) as of 31 December 2024. Where the assets underlying these strategies were also investments in other GS Alternatives Real Estate strategies not in the scope of this report, financed GHG emissions data are reported on behalf of all relevant GS Alternatives Real Estate strategies. Note this data does not include GHG emissions data from the operating companies within the Real Estate strategies within scope of this report. This is because the data captured is at an asset level for GS Alternatives Real Estate investments. While the data has been reviewed, GS Alternatives has relied on third-party vendors to produce and/or review the data, and therefore, it may be subject to limitations and GS Alternatives makes no representation or warranty as to the accuracy, consistency, or completeness of this information. GS Alternatives cannot guarantee that data provided in the future will be provided in the same format as this data. GS Alternatives continues to develop its ESG data collecting and reporting framework, and data provided in the future may differ in terms of content and format from this data.

Private Wealth Management

For the purposes of this UK TCFD report, the scope of Private Wealth Management disclosures includes Listed Equities, Corporate Bonds, and Sovereign Debt assets within the legal entity scope described in “Appendix A: In-Scope Asset & Wealth Management Assets”. Refer to the "Approach to Calculating Metrics" section for further information on data gaps, challenges, and limitations.

Listed Equities and Corporate Bonds

Metric	Scope	2024	2023	Units
Absolute Financed GHG Emissions	Scope 1	261,034	175,781	tCO_2e
	Scope 2	56,568	42,866	
	Scope 1 and 2[82]	317,594	218,642	
	Scope 3[83]	2,013,271	1,655,179	
	Scope 1, 2, and 3	2,330,873	1,873,822	
Total Carbon Footprint	Scope 1 and 2	34.7	31.7	tCO_2e/$million invested
	Scope 1, 2, and 3	254.9	271.5	
WACI	Scope 1 and 2	108.9	124.2	tCO_2e/$million sales
	Scope 1, 2, and 3	679.8	670.2	

Commentary on Changes from 2023 to 2024

Scope 1, 2, and 3 Absolute Financed GHG Emissions increased from 2023 to 2024 due to several factors. The predominant factor was an increase in the size of in-scope assets driven by the inclusion of some external accounts that were excluded in 2023 due to data quality issues, and improvements in data availability, which enabled calculation of emissions metrics for more holdings than in the previous year. To a lesser extent, an increases in the valuation of in-scope assets also contributed to the increase in the metrics. While the portfolio's sectoral composition remained broadly consistent compared to last year, the increase in metrics was also driven by a shift towards higher-emitting companies within the sector. Other potential factors, such as an increase in GHG emissions related to in-scope assets, were not significant contributors to the change.

Total Carbon Footprint values for Scope 1 and 2 increased from 2023 to 2024, primarily due to the investment value of assets in-scope increasing at a lower rate compared to the increase in Scope 1 and 2 Absolute Financed GHG Emissions. However, Total Carbon Footprint values considering all Scopes decreased, primarily due to Absolute Financed GHG Emissions considering all Scopes increasing at a lower rate compared to the increase in investment value of in-scope assets.

The decrease in WACI for Scope 1 and 2 from 2023 to 2024 was primarily driven by company revenues increasing at a higher rate than the increase in Scope 1 and 2 Absolute Financed GHG Emissions. However, WACI values considering all Scopes remained at a similar level compared to last year.

82. Due to third-party data vendor calculation methodology, the break-out numbers for Scope 1 and 2 do not equate to the summed total of Scope 1 and 2.
83. This includes all Scope 3 categories (1-15), as estimated by the third-party data vendor.

Data Coverage

In 2024, the Scope 1, 2, and 3 Absolute Financed GHG Emissions and Total Carbon Footprint metrics for Private Wealth Management cover 92% of AUS for in-scope Listed Equities and Corporate Bonds (previously 88% in 2023), while the Scope 1, 2, and 3 WACI metrics cover 94% of AUS for in-scope Listed Equities and Corporate Bonds (previously 93% in 2023). Compared to last year's report, data coverage has slightly increased for Absolute Financed GHG Emissions, Total Carbon Footprint, and WACI metrics primarily due to the resolution of select data quality issues identified in 2023 impacting some external accounts and improved data availability which enabled metrics calculations for a larger number of holdings. Refer to the "Approach to Calculating Metrics" section for further information on data gaps, challenges, and limitations.

Note that the data coverage for the WACI metric remains higher than for the other disclosed metrics, given that there are holdings for which the third-party vendor does not provide EVIC data but does provide GHG emissions and sales data.

The remaining holdings, which do not have the requisite data needed to calculate a metric provided by the third-party vendor, have been excluded from the calculation of the relevant metric and the weights of the remaining in-scope holdings have been normalised accordingly.

Private Wealth Management relies on a third-party vendor for GHG emissions data and has calculated weighted data quality scores for the in-scope Listed Equities and Corporate Bonds assets according to the PCAF Standard in the following table (Score 1 = highest data quality; Score 5 = lowest data quality).

Data Quality Scores (Weighted Average)	2024	
Asset Classes	Scope 1	Scope 2
Listed Equities and Corporate Bonds	2.1	2.1

Sovereign Debt

Metric	Scope	2024	2023	Units
WACI	Scope 1 (excluding LULUCF, including exports)	179.9	188.1	tCO_2e/$million GDP-PPP

In 2024, Private Wealth Management continued to disclose WACI Scope 1 metrics for Sovereign Debt metrics in alignment with PCAF's sovereign debt-financed GHG emissions methodology, first published in December 2022.[84] The methodology defines Scope 1 GHG emissions based on national production[85] and uses GDP-PPP for emissions attribution. Given the evolving nature of methodologies for Sovereign Debt, Private Wealth Management expects that disclosed metrics will continue to evolve for future disclosures as industry practices mature. In addition, FY 2023 Sovereign Debt emissions data were used for FY 2024 calculations due to challenges regarding data availability.

Private Wealth Management relies on a third-party vendor for Sovereign Debt GHG emissions data[86] and has provided PCAF Standard weighted data quality scores in the following table (Score 1 = highest data quality; Score 5 = lowest data quality).

Data Quality Scores (Weighted Average)	2024
Asset Classes	Scope 1
Sovereign Debt	4.0

84. PCAF (2022). The Global GHG Accounting and Reporting Standard Part A: Financed Emissions. Second Edition.
85. Production GHG emissions are GHG emissions attributable to GHG emissions produced domestically and include domestic consumption and exports. This definition follows the territorial GHG emissions approach adopted by UNFCCC for annual national inventories and is typically referenced by sovereigns in their Nationally Determined Contributions (NDCs).
86. FY 2023 Sovereign Debt emissions data were used for FY 2024 calculations due to challenges with data availability.

Calculation Methodology

Public Investing, GS Alternatives, and Private Wealth Management calculated GHG emissions per the formulas below, which reference the formulas provided by the TCFD Annex, supplemented by the PCAF Standard.

Formulas Covering Listed Equities and Corporate Bonds (Public Investing and Private Wealth Management) and Private Equity, Infrastructure, Growth Equity, SIG, and Private Credit (GS Alternatives)

Absolute Financed GHG Emissions[87]

$$\sum \frac{\text{Current value of investment}}{\text{Issuer EVIC}} \times \text{Issuer GHG emissions } (tCO_2e)$$

Also written as

$$\sum \frac{\text{Outstanding amount}}{\text{Company EVIC}} \times \text{Company GHG emissions } (tCO_2e)$$

Total Carbon Footprint

$$\frac{\sum \frac{\text{Current value of investment}}{\text{Issuer EVIC}} \times \text{Issuer GHG emissions } (tCO_2e)}{\text{Current value of all in-scope investments (\$million)}}$$

Also written as

$$\frac{\sum \frac{\text{Current value of investment}}{\text{Company EVIC}} \times \text{Company GHG emissions } (tCO_2e)}{\text{Current value of all in-scope investments (\$million)}}$$

WACI

$$\sum \frac{\text{Current value of investment}}{\text{Current value of all in-scope investments}} \times \frac{\text{Issuer GHG emissions } (tCO_2e)}{\text{Issuer Revenue or Sales (\$million)}}$$

Also written as

$$\sum \frac{\text{Current value of investment}}{\text{Current value of all in-scope investments}} \times \frac{\text{Company Scope GHG emissions } (tCO_2e)}{\text{Company Revenue or Sales (\$million)}}$$

87. GS Alternatives defines EVIC as the market value of equity and the book value of debt for the purposes of these calculations. The current value of investment is defined as disbursed debt net of repayments plus Goldman Sachs' ownership share times total company equity market value.

Formulas Covering Sovereign Debt (Public Investing and Private Wealth Management)

WACI—Production-based (Scope 1 excluding LULUCF intensity)

$$\sum \frac{\text{Current value of investment}}{\text{Current Portfolio Value}} \times \frac{\text{Sovereign Scope 1 (excluding LULUCF intensity) GHG emissions}}{\text{Sovereign PPP Adjusted GDP (\$million)}}$$

Formulas Covering Real Estate (GS Alternatives)

Absolute Financed GHG Emissions—Equity Funds

$$\sum \frac{\text{Current value of investment}}{\text{Total Issuer's equity \& debt}} \times \text{Issuer GHG emissions}$$

Absolute Financed GHG Emissions—Credit Funds

$$\sum \frac{\text{Outstanding amount}}{\text{Property value at origination}} \times \text{Issuer GHG emissions}$$

Total Carbon Footprint—Equity Fund

$$\sum \frac{\frac{\text{Current value of investment}}{\text{Total Issuer's equity \& debt}} \times \text{Issuer GHG emissions}}{\text{Current Portfolio Value}}$$

Total Carbon Footprint—Credit Fund

$$\sum \frac{\frac{\text{Outstanding amount}}{\text{Property value at origination}} \times \text{Issuer GHG emissions}}{\text{Current Portfolio Value}}$$

WACI (physical intensity)—Equity Fund

$$\sum \frac{\text{Current value of investment}}{\text{Current Portfolio Value}} \times \frac{\text{Issuer GHG emissions}}{\text{Asset m}^2}$$

WACI (physical intensity)—Credit Fund

$$\sum \frac{\text{Outstanding amount}}{\text{Property value at origination}} \times \frac{\text{Issuer GHG emissions}}{\text{Asset m}^2}$$

Approach to Calculating Metrics

Across Public Investing, GS Alternatives, and Private Wealth Management, data coverage continues to improve as climate data reporting and estimation methodologies improve and evolve. However, industry-wide challenges remain, related to data quality, data coverage, evolving estimation methodologies, financial volatility and inflation, and other factors. Additionally, year-end reporting of financial and GHG emissions-related data can stretch well into the subsequent year, leading to condensed timelines for data to undergo internal and vendor-processes for the purposes of UK TCFD reporting. As a result, we acknowledge that financial and GHG emissions-related data may change for future reporting.

Data Gaps, Challenges, and Limitations across Asset & Wealth Management

- **Limitations Related to Financial Volatility and Inflation:**

  GHG estimates and all TCFD reporting metrics rely on financial data for normalisation and/or estimation. Enterprise value, revenues, and sales may vary due to volatility, exchange rates, and inflationary pressures. Metrics using these financial values for estimation, attribution, or normalisation may display differences from year to year that do not necessarily reflect changes in real-world GHG emissions.

- **Limitations Related to Aggregating Primary and Proxy Data:**

  When aggregating GHG estimates based on business activities with GHG emissions estimates based on financials, the data quality and reliability of estimates may vary across asset classes and strategies.

- **Limitations Related to Reporting Timelines:**

  To execute on UK FCA TCFD reporting timelines, processes related to data collection will, in some cases, precede companies' or assets' reporting of finalised financial metrics and GHG metrics. In these cases, this requires AWM business lines and vendors to rely on older reported or estimated figures (e.g., from the prior quarter or year) in order to produce GHG emissions metrics. As a result, adjustments and corrections maybe made to reported GHG emissions metrics and financial normalisations based on changes to companies' and assets' reported financial and operational data after the reporting period is closed.

Public Investing and Private Wealth Management: Approach to Calculating Metrics

Data Sources and Collection Process

Public Investing and Private Wealth Management use a third-party vendor as the primary market data provider for portfolio companies' GHG emissions (Scope 1, 2, and 3), sovereign GHG emissions (Scope 1), financial data (EVIC and sales), and sovereign economic output (GDP-PPP) for metric calculation. Data providers, including the third-party vendor, continue to rely on estimates and proxies where there is a gap in reported GHG emissions data. This report's metric calculations include the reported data published by the portfolio company or country, where available, or the estimated data, both sourced from the third-party vendor. Public Investing and Private Wealth Management acknowledge that changes in the third-party vendor's coverage of portfolio company data and their data estimation methodologies may have a significant impact on the calculations of financed GHG emissions resulting in either higher or lower values; as such, Public Investing and Private Wealth Management will continue to monitor the impact to previously reported GHG emissions for the purpose of future reporting.

Data Gaps, Challenges, and Limitations in Public Investing and Private Wealth Management

- **Data Gaps Related to External and Alternative Holdings:** Data transparency and quality continue to be a challenge for third-party managed funds and alternative holdings. As such, these holdings are excluded from the scope of assets for this report's metric calculation.
- **Limitations Related to Data Coverage:** Public Investing and Private Wealth Management rely on a third-party vendor for portfolio company and sovereign data, and the coverage universe may contain gaps for certain issuers, securities, or sovereigns, such as those recently matured or expired. Where there are data gaps, a normalisation process is applied to increase the weights of holdings in the portfolio for which there is data coverage. Future improvements in data coverage may have a significant impact on the calculations of financed GHG emissions, resulting in either higher or lower values; as such, Public Investing and Private Wealth Management will continue to monitor the impact on future reports.

- **Limitations Related to Financial and GHG Emissions Data:** EVIC data available for select issuers in the third-party vendor's coverage universe may be too outdated to be usable for meaningful metric calculation; to ensure FY24 metrics provided in this report are timely and relevant, Public Investing and Private Wealth Management have primarily used the latest EVIC data available published up to March 2025 that is no earlier than 2023 for metric calculations. Where EVIC data are not available for 2023 or later, a normalisation process is applied to increase the weights of holdings in the portfolio for which there is data coverage. Nonetheless, the reporting period for EVIC, sales, and/or GHG emissions data for select issuers in the third-party vendor's coverage universe may not be aligned due to differences in timing between financial and climate reporting.
- **Limitations Related to Estimation Methodologies:** Public Investing and Private Wealth Management rely on the third-party vendor's GHG emissions estimation methodologies. Evolving updates to methodologies may have a significant impact on the calculations of financed GHG emissions; as such, Public Investing and Private Wealth Management will continue to monitor the impact on historical and future reports. This is particularly relevant for Sovereign Debt and Scope 3 GHG emissions, where methodologies are still nascent and may evolve for future reporting.
- **Limitations Related to Influence for Sovereign Debt Issuers:** In contrast to GHG emissions metrics for companies—where investment in a company provides ownership within the company and potential influence in the operations of the company—investment in sovereign debt doesn't provide potential influence in the operations of a sovereign nation. As such, Public Investing and Private Wealth Management do not have the ability to influence the GHG emissions intensity of their individual Sovereign Debt holdings, given that there is no influence over GHG emissions within a sovereign nation.
- **Limitations Related to GDP-PPP:** The use of PPP-adjusted GDP within the attribution factor for Sovereign Debt metrics favours countries with larger GDP output. Additionally, as noted by PCAF, there is less of a straightforward relationship between GDP and a financial institution's purchase of a sovereign's outstanding debt. However, empirical evidence suggests that a country's output production is more closely linked to the generated GHG emissions than sovereign debt.[88]
- **Double Counting:** Private Wealth Management invests in funds managed by Public Investing. As a result, there will be double counting of GHG emissions if aggregated between the two business lines; as such, they are reported separately. Furthermore, GHG emissions metrics for Sovereign Debt are calculated to include all public and private enterprise activity within a sovereign's territory. As a result, Sovereign Debt metrics must be reported separately, to avoid double counting the GHG emissions associated with private companies operating within their country.

Forward-Looking Focus

Going forward, the main areas of focus for Public Investing and Private Wealth Management continue to include:

- **Data Availability and Quality:** Public Investing and Private Wealth Management will continue to engage with third-party vendors to seek to improve the coverage and quality of data for its holdings. In 2024, improved data availability from the third-party vendor has expanded the set of holdings to which emissions calculations could be applied.
- **Coverage of External Holdings:** Public Investing and Private Wealth Management will continue to seek to improve the transparency and coverage of third-party managed portfolios and holdings, in order to improve the overall portfolio coverage. In 2024, both business lines have resolved some of the previously identified data quality issues in external accounts, expanding holdings data coverage for GHG emissions metrics.
- **Improvements to Calculation and Estimation Methodologies:** Public Investing and Private Wealth Management will continue to monitor changes to calculation and estimation methodologies and evaluate their potential impact on future GHG emissions disclosures.

88. PCAF (2022). The Global GHG Accounting and Reporting Standard Part A: Financed Emissions. Second Edition.

GS Alternatives: Approach to Calculating Metrics

Data Sources and Collection Process

GHG Emissions Data Collection for Corporate and Infrastructure Asset Classes[89]

GS Alternatives references the PCAF Standard in prioritising sources of data in the following order of precedence: reported GHG emissions, physical activity-based GHG emissions estimates, and economic activity-based (financial) GHG emissions estimates. GS Alternatives acknowledges that the quality of data increases as more portfolio companies directly report GHG emissions and is focused on reducing reliance on economic/financial estimates of GHG emissions over time.

In 2024, GS Alternatives collected company-reported GHG emissions data for recent investments where equity ownership was greater than 25%[90] in Private Equity, Infrastructure, and Growth Equity. Additionally, all SIG investments were required to report GHG emissions data for 2024. Although no specific tool or process is required, GS Alternatives encourages companies with no established method to engage with GS Alternatives' recommended GHG accounting provider. These portfolio companies submit GHG emissions data on the sustainability-related data software tool and/or through the GHG accounting provider, together with other ESG metrics. While filling out the report on the sustainability-related data portal, GS Alternatives requests that the portfolio company's Chief Financial Officer reviews and attests to the accuracy of this data before submitting the data. GHG emissions accuracy ultimately relies on the reporting portfolio company and the quality of underlying accounting methods.

For portfolio companies that did not submit reported GHG emissions data through the sustainability data tool, GS Alternatives relies on publicly available information or third-party GHG emissions estimates from a GHG accounting provider based on financials and operating characteristics, including a combination of the portfolio company's country, BEA[91] industry, employee count, square footage, and financials as available.

Where there are concerns or questions regarding data quality, GS Alternatives engages with the GHG accounting provider. Regardless of these checks, the accuracy of GS Alternatives' disclosures ultimately depends on the direct reporting or estimation data quality from vendors and portfolio companies.

ESG and GHG Emissions Data Collection for Real Estate[92]

During due diligence, GS Alternatives evaluates how GHG emissions performance impacts risk management, energy consumption, and the attraction and retention of tenants, through the lens of growing and/or preserving an asset's value.

As well as collecting and assessing GHG emissions as part of due diligence, GS Alternatives considers GHG emissions factors as part of ongoing portfolio management processes. As part of the Real Estate ESG Framework, managers of stabilised Real Estate equity investments are generally expected to track sustainability data via a combination of an in-house proprietary ESG survey as well as a third-party software solution.

- **ESG Survey:** The ESG survey is completed on a biannual basis for the majority of the Real Estate portfolio,[93] enabling us to monitor performance over time for the same set of metrics evaluated during due diligence. As part of the ESG survey, managers (e.g., third-party asset managers, property managers, operating partners) of Real Estate investments are asked to share information related to energy use intensity; upfront embodied carbon from construction, where applicable; use of carbon offsets, where relevant; among other metrics.
- **Software Solution:** The third-party software solution is a utility data collection platform for energy, water, and waste data on an asset level, including the use of electricity, natural gas, diesel, fuels, and district heating and cooling. Both landlord energy consumption (typically Scope 1 and 2 GHG emissions) and tenant energy consumption (typically Scope 3 GHG emissions) are collected on this platform.

Data Gaps, Challenges, and Limitations for GS Alternatives

There are various limitations associated with climate-related metrics due to emerging methodologies and data gaps.

- **Limitations Related to Proxy Data and Estimates:** For portfolio companies in scope for the ESG data collection programme that are not required or are not able to report GHG emissions (typically investments where GS Alternatives has minority stakes), GS Alternatives used proxy data. For Real Estate assets, proxy data might be used where actual

89. This statement applies to certain GS Alternatives strategies within the scope of this report, including strategies where GSAMI carried out portfolio management activities (whether on a direct or delegated basis) as of 31 December 2024. This includes assets within certain Private Equity, Infrastructure, Growth Equity, and SIG strategies.
90. This statement applies to certain GS Alternatives strategies within the scope of this report, including strategies where GSAMI carried out portfolio management activities (whether on a direct or delegated basis) as of 31 December 2024. This includes assets within certain Private Equity, Infrastructure, Growth Equity, and SIG strategies.
91. The North American Industry Classification System, followed by the Bureau of Economic Analysis (BEA).
92. While the data has been reviewed, GS Alternatives has relied on third-party vendors to produce and/or review the data and therefore it may be subject to limitations and GS Alternatives makes no representation or warranty as to the accuracy, consistency, or completeness of this information.
GS Alternatives cannot guarantee that data provided in the future will be provided in the same format as this data. GS Alternatives continues to develop its ESG data collecting and reporting framework, and data provided in the future may differ in terms of content and format from this data.
93. Exclusions: Non-Real Estate assets, assets under litigation or relationship issues, land without design or with design that won't move forward or pending sale within one to two months of the scope of reporting.

data could not be accessed. GS Alternatives has relied on third parties to gather this proxy data and has not verified, edited, or amended this data in any way.

- **Limitations Related to Reliance on Primary Data:** While GS Alternatives has recommended a preferred GHG accounting provider for Corporate and Infrastructure asset classes, portfolio companies in scope for ESG data collection are able to select a different method or tool/service to calculate and report activity-based GHG emissions. As a result, portfolio companies may use different methodologies, primary data sources, and assumptions to calculate their GHG emissions. This could result in differences in data quality and reliability, as GS Alternatives cannot, in all cases, verify, audit, or amend this data. Further, as estimations, attribution factors, and GHG emissions normalisations are derived from financial and operating data provided by companies or sponsors, GS Alternatives relies on the accuracy of external party representations to provide correct inputs into these fields. Even when data is collected and executed by the preferred GHG accounting provider, GS Alternatives (including Real Estate) cannot obtain full transparency on calculation flows, GHG emissions factor sources, and activity source data to guarantee the accuracy of GHG emissions outputs.
- **Limitations Related to Scope 3 Data Accuracy and Availability:** To report on Scope 3 GHG emissions, companies must either collect activity-based data of their suppliers, customers, and other value chain constituents or provide financial ledger data for spend-based estimations. Due to company maturity and size, Corporate and Infrastructure portfolio companies in GS Alternatives may not yet have the data environment, operational capabilities, or value chain relationships to accurately collect and report on data required to calculate Scope 3 GHG emissions. As a result, Scope 3 GHG emissions may be of limited utility to investors as outside-in estimation methodologies for Scope 3 are ultimately based on industry benchmarks for some categories. The accuracy of industry benchmarks is also subject to the data quality of reported information, which may not be sufficient for accurate representations of Scope 3 GHG emissions. In 2024, GS Alternatives engaged its GHG accounting provider to provide methodologies for Scope 3 estimates across categories. The provider, however, has been unable to-date to develop estimation methods for Categories 13–15.

Forward-Looking Focus

Going forward, GS Alternatives' main areas of focus include:

- **Data Collection Infrastructure:** GS Alternatives continues to work on automating portions of the ESG data collection process, including how information is collected, controlled, and reported across investments.
- **Data Availability and Quality:** GS Alternatives is engaging with portfolio companies as well as the Real Estate supply chain and tenant base to encourage tracking and reporting of data to help increase access to primary data and support decarbonisation initiatives. GS Alternatives' efforts include:
  - Enhancements to centralised data governance and controls to improve the quality of reported data.
  - Training webinars for select portfolio companies, investment professionals, and Real Estate stakeholders on data collection and measurement best practices.
  - Ongoing partnership with a GHG accounting provider to help select portfolio companies measure GHG emissions and report their GHG emissions in a cost-effective manner. In 2024, we provided data recommendations to portfolio companies who use the GHG accounting provider on potential improvements in data quality, in addition to inventory management planning.

Targets

While Public Investing, GS Alternatives, and Private Wealth Management have not set business line-level, AWM-specific GHG emissions reductions targets, select business units are undergoing build-out of decarbonisation engagement and planning tools and services to support capabilities for scenario-aligned GHG emissions reductions to meet client-specific demand. Our approach to the investments we manage is intended to be data-driven; it will evolve in response to our clients' investment objectives and based on our individual business lines and investment activities.

Appendices

In This Chapter

APPENDIX A

In-Scope Asset & Wealth Management Assets

The FCA's requirements are set out in the ESG sourcebook of the FCA Handbook, which mandates TCFD-aligned disclosures for asset and wealth management entities domiciled in the UK. The AWM UK TCFD 2024 Report has been developed in line with the ESG sourcebook.

The Goldman Sachs legal entities that meet the threshold for disclosure are GSI and GSAMI.

GSI is a subsidiary of The Goldman Sachs Group, Inc., and delivers a broad range of financial services to clients located worldwide. GSI also operates a number of branches and representative offices across EMEA, providing financial services to clients in those regions. The company generates revenue from the following business activities: Investment Banking; Fixed Income, Currency, and Commodities (FICC); Equities; and Private Wealth Management.

GSAMI is a subsidiary of The Goldman Sachs Group, Inc., and an asset management company principally operating in the EMEA region. In 2024, GSAMI's asset management activities focused on public and alternative investments.

The ESG sourcebook only requires an in-scope firm to prepare a TCFD entity report for the assets managed or administered by the firm in relation to its TCFD in-scope business (i.e., portfolio management). Accordingly, a firm will not need to include all business activity in the TCFD entity report, only those that carry out TCFD in-scope business. On that basis, we have concluded that only business conducted within: Public Investing (under the purview of GSAMI), GS Alternatives (under the purview of GSAMI), and Private Wealth Management (in GSI) business lines is in the scope of the requirement to make UK TCFD reports at the legal entity level.[94]

For Public Investing, the scope of assets is taken to include:

- Separately managed accounts managed by GSAMI (including sub-advised mandates where external fund managers delegate to GSAMI)
- Separately managed accounts where GSAMI delegates portfolio management to affiliates (e.g., Goldman Sachs Asset Management, L.P.) or to external managers
- Separately managed accounts where GS affiliates have delegated portfolio management to GSAMI
- Public Investing funds delegating portfolio management to GSAMI (including funds managed by GSAMI and sub-delegated to external managers and other GS-affiliated entities); this includes all Goldman Sachs Asset Management Fund Services Limited funds, and certain funds under the management of Goldman Sachs Asset Management B.V.
- Products on the Private Wealth Management platform that are delegating portfolio management to GSAMI

For GS Alternatives, the scope of assets is taken to include:

- GS Alternatives where portfolio management is conducted either directly or by an affiliate of GSAMI (e.g. Goldman Sachs & Co) to which it has delegated portfolio management, in respect of GS Alternatives funds or separately managed accounts.

For Private Wealth Management, the scope of assets is taken to include:

- All holdings within discretionary accounts contracted to GSI.

94. Following an internal reorganisation that took place on 1 April 2023, the UK GS Alternatives business now sits within GSAMI.

APPENDIX B

Additional Commentary on the AWM UK TCFD 2024 Report

This entity-level TCFD report is separate from any on-demand TCFD product reports developed by AWM in accordance with the ESG sourcebook. When appropriate, this report leverages and references information from these TCFD product reports.[95] However, this report focuses on climate activities at the GSI and GSAMI entity level, rather than at the product level.

This AWM UK TCFD 2024 Report only focuses on AWM's activities in the UK legal entities, but refers back to Goldman Sachs' climate activities and other firmwide climate and sustainability reports, where relevant.

Additionally, this report focuses solely on AWM's investment activities within the scope of the GSI and GSAMI legal entities. For details related to GSI's operations, including carbon, energy, and business travel consumption and reporting, refer to the GSI 2024 Annual Report.[96] Outside this report, for more information on Goldman Sachs' firmwide sustainability initiatives, see here.

Further, this report focuses on climate-related considerations per the TCFD Recommendations. However, within AWM, we consider climate-related risks and opportunities typically alongside other related sustainability risks and opportunities, where financially material. As such, this report includes areas where our business lines and units consider climate and sustainability factors alongside each other.

Note: As part of the investment process, Public Investing may integrate ESG factors alongside traditional factors.[97]

95. Note: Product-level reporting may also draw from and reference entity-level reporting where applicable.
96. GSAMI also produces an annual report with details on its operations. However, Goldman Sachs International only publishes an annual report if the entity has listed debt or significant public interest. GSAMI does not meet this criterion, and therefore the report is not publicly available.
97. The identification of a risk related to an ESG factor will not necessarily exclude a particular investment that, in the view of Public Investing, is otherwise suitable and attractively priced for investment, and Public Investing may invest in an issuer without integrating ESG factors or considerations into the investment process. Moreover, ESG information, whether from an external and/or internal source, is, by nature and in many instances, based on a qualitative and subjective assessment. An element of subjectivity and discretion is, therefore, inherent to the interpretation and use of ESG data. The relevance and weightings of specific ESG factors to, or within the investment process vary across asset classes, sectors, and strategies and no one factor, or consideration is determinative. Public Investing in its sole discretion and without notice may periodically update or change the process for conducting its ESG assessments and implementation of its ESG views in portfolios, including the format and content of such analysis, and the tools and/or data used to perform such analysis. Accordingly, the type of assessments described here may not be performed for every portfolio holding. The process for conducting ESG assessments and implementation of ESG views in portfolios, including the format and content of such analysis and the tools and/or data used to perform such analysis, may also vary among portfolio management teams.

APPENDIX C

Engaging with Third Parties

The AWM climate strategy approach detailed in the "Asset & Wealth Management: Our Climate Strategy" section has influenced, and continues to influence, the process and decision-making for engaging third parties and the services and products we offer and employ from those third parties (including third-party data vendors). In practice, considerations and decisions around engaging third parties (including where we delegate to such entities) are made, where relevant, in view of:

(1) The extent to which the engagement (or delegation) may directly or indirectly enhance the development and ongoing delivery of a platform that allows clients to optimise their unique climate preferences, and/or enable us to more effectively manage climate-related risks and opportunities.

(2) Conversely, the extent to which the engagement (or delegation) may directly or indirectly impede our ability to deliver on our strategic aims under (1).

When assessing third-party tools and data vendors, critical consideration is given to our vendor relationships, vendor capabilities, and applicability to our investment strategies. This includes an assessment of their climate- and sustainability-related capabilities, where applicable to our investment products and strategies. We are committed to developing our approach to further quantify our exposure to climate-related risks and to assess the potential financial impacts of climate-related risks, as well as evaluating enhancements to our approach, including staying abreast of industry-wide capabilities and tools.

When assessing third-party asset managers—whose products and strategies we may leverage through our open architecture platform—we rely on XIG, which performs comprehensive investment and operational due diligence processes on third-party managers across public markets and alternatives.

APPENDIX D

Additional Details on Metrics

Additional Details on Metrics for Public Investing and Private Wealth Management

Scope of Metrics Calculated

As noted in the "Metrics and Targets" section, Public Investing and Private Wealth Management reference the PCAF Standard[98] for calculation of financed GHG emissions for investments managed within these business lines. PCAF sets out metrics to be calculated and disclosed at an asset class (or sectoral) level, where asset class is defined as one of the seven listed below.

- Listed Equity & Corporate Bonds
- Business Loans & Unlisted Equity
- Project Finance
- Commercial Real Estate
- Mortgages
- Motor Vehicle Loans
- Sovereign Debt

PCAF acknowledges that there are recognised limitations in data availability and quality for many asset classes, and, therefore, calculation methodologies continue to improve and evolve. As such, calculations have been performed for asset classes where calculation methodologies are provided by PCAF and where data availability and quality limitations do not prevent calculation. For this report, this includes Listed Equity (including Real Estate Investment Trusts), Corporate Bonds, and Sovereign Debt for Public Investing and Private Wealth Management. Given data limitations and/or the nascency of calculation methodologies, other asset classes have been excluded (i.e., Business Loans and Unlisted Equity, Project Finance, Commercial Real Estate, Mortgages, and Motor Vehicle Loans).

The PCAF Standard does not yet provide guidance for Alternative Investment Funds holding Unlisted Equity and/or Commercial Real Estate. As such, and in line with the approach in the AWM UK TCFD 2023 Report, Alternative Investment Funds will be excluded from metrics calculation for Public Investing and Private Wealth Management. GS Alternatives will continue to perform metrics calculation at the level of the individual Unlisted Equity and Real Estate holdings within their funds.

Where data limitations exist for a holding that is in scope for disclosure, the holding is excluded from the calculation of the relevant metric, and the weights of the holdings remaining in the portfolio are normalised accordingly.

Additional Details on Metrics for GS Alternatives

Data Verification

GS Alternatives uses reasonable commercial means to obtain accurate data to transparently report on investments' GHG emissions. Apex Companies LLC (Apex) was engaged to conduct an independent verification of the GHG emissions reported by GS Alternatives (specifically, within Private Equity, Infrastructure, Growth Equity, SIG, and Private Credit investments subject to UK FCA TCFD requirements) for the period 1 January 2024 to 31 December 2024. GS Alternatives was provided a Limited Assurance verification opinion by Apex; details are available here. Where proxied GHG emissions data has been used, GS Alternatives has relied on third parties to gather this data and has not edited or amended it in any way.

For GHG emissions estimates, company and financial data were gathered from centralised data storage systems, where company profiles are completed by investment teams. This data is then consolidated and prepared by the Fund and Information Management Group (FIMG). ESG and operational metrics may supplement GHG emissions estimates in some cases, based on GS Alternatives' ESG data collection process or direct collection from deal teams.

In cases where financial data may not be readily available in centralised data storage systems, or may not have been updated in time, GS Alternatives engages with FIMG to complete financial data used for GHG emissions estimates. To fill gaps related to supplementary ESG and operational metrics for estimation, this may include reaching out to a limited number of investment teams, as well as leveraging FIMG.

98. Financed GHG Emissions: The Global GHG Accounting & Reporting Standard, https://carbonaccountingfinancials.com/en/standard.

APPENDIX E

Disclaimer

THIS MATERIAL DOES NOT CONSTITUTE AN OFFER OR SOLICITATION IN ANY JURISDICTION WHERE, OR TO ANY PERSON TO WHOM, IT WOULD BE UNAUTHORISED OR UNLAWFUL TO DO SO.

This report is provided for informational purposes only and should not be construed as investment advice or a direct or indirect offer or solicitation to buy or sell securities. This report is not intended to be used as a general guide to investing or as a source of any specific investment recommendations; it makes no implied or express recommendations concerning the manner in which any person's investments should or would be handled, as appropriate investment strategies depend upon factors such as the relevant person's investment objectives and financial circumstances.

Views and opinions expressed are for informational purposes only and do not constitute a recommendation by Goldman Sachs International (GSI), Goldman Sachs Asset Management International (GSAMI) and its affiliates to buy, sell, or hold any security, including (without limitation) any securities or investment products offered or manufactured by GSI, GSAMI, or its affiliates. This report should not be relied on in whole or part in making an investment decision, evaluating an investment, or for any other purpose. Views and opinions are current as of the date of this report and may be subject to change; they should not be construed as investment advice.

Prospective investors should inform themselves and take appropriate advice as to any applicable legal requirements, taxation, and exchange control regulations in the countries of their citizenship, residence, or domicile that might be relevant to the subscription, purchase, holding, exchange, redemption, or disposal of any GSI or GSAMI product.

GSI, GSAMI, or its affiliates do not provide legal, tax, or regulatory advice to prospective investors in any product; each prospective investor is urged to discuss any prospective investment in a product with its legal, tax, and regulatory advisers in order to make an independent determination of the suitability and consequences of such an investment.

This report includes certain information on GSI, GSAMI, and its affiliates' approaches to sustainability, climate risks, and opportunities at an organisational or business-line level, which may not be reflected within specific products or strategies offered or managed by these businesses. Nothing contained in this report shall be relied on as a promise or representation regarding the historic, current, or future position or performance of any GSI, GSAMI, or its affiliates product, or any other investment referenced herein. In particular, no representation or warranty is made with respect to the reasonableness of any estimates, forecasts, prospects, or returns, which should be regarded as illustrative only, or that any profits will be realised.

ESG strategies may take risks or eliminate exposures found in other strategies or broad market benchmarks that may cause performance to diverge from the performance of these other strategies or market benchmarks. ESG strategies will be subject to the risks associated with their underlying investments' asset classes. Further, the demand within certain markets or sectors that an ESG strategy targets may not develop as forecasted or may develop more slowly than anticipated. Any ESG characteristics, views, assessments, claims or similar referenced herein (i) will be based on, and limited to, the consideration of specific ESG attributes or metrics related to a product, issuer or service and not their broader or full ESG profile, and unless stated otherwise, (ii) may be limited to a point of time assessment and may not consider the broader lifecycle of the product, issuer or service, and (iii) may not consider any potential negative ESG impacts arising from or related to the product, issuer or service.

This report contains certain information, including data, which has been provided by third parties. While such information has been obtained from third parties that GSI, GSAMI, and its affiliates consider to be reliable, GSI, GSAMI, and its affiliates do not warrant or guarantee the accuracy or completeness of such information. GSI and GSAMI (or any other Goldman Sachs entity) shall have no liability for any errors or omissions in the information contained in this report, whether such information has been obtained from third parties or not. Where the proprietary, diagnostic, or data collection tools are mentioned, the quantitative outputs may be affected by the existing data gaps.

Any data provided in select case studies has been obtained from sources, including those publicly available, believed to be reliable, but no representation or warranty is made by GSI and GSAMI (or any other Goldman Sachs entity) as to the quality, completeness, accuracy, fitness for a particular purpose, or non-infringement of such information. GSI and GSAMI (or any other Goldman Sachs entity) has not assured, verified, or validated this third party information and is not liable for the adequacy, accuracy, or completeness of such information. Data relied upon may be produced based on methodologies that are not transparent to GSI and GSAMI (or any other Goldman Sachs entity), and the data used, and underlying methodologies are subject to change without notice.

Website links provided are for your convenience only and are not an endorsement or recommendation by GSI, GSAMI, or its affiliates of any of these websites or the products or services offered. GSI, GSAMI, and its affiliates are not responsible for the accuracy and validity of the content of websites that are not maintained by GSI and GSAMI themselves.

GSI, GSAMI, and its affiliates leverage the resources of Goldman Sachs & Co. LLC subject to legal, internal, and regulatory restrictions.