Task Force on Climate-Related Financial Disclosure

J.P. Morgan Asset Management
2023 Global TCFD Report

J.P.Morgan
ASSET MANAGEMENT

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Foreword

Climate change is one of the key risks facing investments held in asset management accounts.

As of December 31st, 2022, J.P. Morgan Asset Management had more than $ 2.36 trillion in assets under management ("AUM") across a broad range of investment strategies and operates in every major market in the world to serve our diversified client base – from institutions to financial intermediaries and individual investors.

We believe that the risks and opportunities relating to climate change can have a material impact on the growth potential, profitability, cash flow and balance sheets of companies held in our client portfolios. It can directly impact the ability of these companies to create long-term investor value.

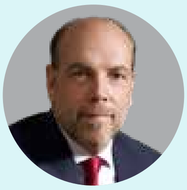
We are an active investment manager and a fiduciary. This means we have a deeply held conviction that in-depth research and rigorous analysis – by experts across functions, sectors and regions – are key to delivering long term, risk-adjusted returns for our clients. We view climate change as a core investment topic and potentially one of the most significant market-wide and systemic risks that cannot be ignored. We have an important role in seeking to identify the risks of investing or remaining invested in companies that we believe are unprepared to navigate the transition and investing in companies that will benefit from the opportunities that arise.

As investors on behalf of our clients, we have been encouraging companies in which we invest to align their climate disclosures to the recommendations of the Task Force on Climate-Related Financial Disclosures ("TCFD") to further inform investment decisions. Our parent company, JPMorgan Chase & Co., published its first TCFD report in 2019. In 2022, J.P. Morgan Asset Management published its inaugural TCFD report. We are now pleased to present the second TCFD report specific to J.P. Morgan Asset Management which looks to provide insights into our approach and our developing commitment to integrating climate related risk considerations in our business and investment processes.

Since our inaugural report, we have continued to invest in our climate-related investment capabilities and enhanced our efforts to help clients consider the material implications of climate change within their portfolios.

We recognize the opportunity to continue to refine our disclosures over time and we expect to evolve our reporting in line with industry developments and regulatory requirements, as well as to reflect our growing climate expertise and the improvement in climate data availability and quality.

We look forward to demonstrating our progress as we continue to focus on climate as a critically important topic.



George Gatch
CEO of Asset Management

Jennifer Wu
Global Head of Sustainable Investing

James Barnett
Global Head of Sustainable Investing Integration

Executive Summary

Scope and Purpose of report

This report describes J.P. Morgan Asset Management's ("JPMAM", "Company", "we" or "our") approach to climate-related risks and opportunities (the "Report"). In this report, we disclose how we consider climate-related risks and opportunities in the assets we manage on behalf of our clients as well as in our operations.[1] Please note, although there is broad alignment across the J.P. Morgan group regarding climate risks and opportunities, J.P. Morgan Asset Management's approach is separate, considered with a fiduciary lens, and may differ for a variety of reasons from the approach taken by JPMorgan Chase & Co. (the "Firm", "JPMC", "Firmwide").

All data in this Report is as of 31st December, 2022 with a reporting period of 1st January 2022 – 31st December 2022.

Who we are

JPMorgan Chase & Co (JPMC) is a leading financial services firm based in the United States of America ("U.S."), with operations worldwide. As of December 31, 2022, JPMC had $3.7 trillion in assets and $292 billion in stockholders' equity.

The Firm is a leader in investment banking, financial services for consumers and small businesses, commercial banking, financial transaction processing and asset management. Under the JPMorgan Chase & Co. brands, the Firm serves millions of customers in the U.S. and globally including many of the world's most prominent corporate, institutional and government clients.

J.P. Morgan Asset & Wealth Management is a global leader in asset and wealth management services. The Asset & Wealth Management line of business serves institutional, ultra-high net worth, high net worth and individual clients. With combined overall client assets of $4 trillion and assets under management of $2.8 trillion as of December 31, 2022, we are one of the largest asset and wealth managers in the world.

J.P. Morgan Asset Management ("JPMAM") is the marketing name for the investment management businesses of JPMorgan Chase & Co. and its affiliates worldwide. Unless otherwise noted, the focus of this Report throughout is on J.P. Morgan Asset Management.[2]

[1] The information provided in this report reflects J.P. Morgan Asset Management's approach as at the date of this report and is subject to change without notice. We do not undertake to update any of such information in this report.

[2] This report describes J.P. Morgan Asset Management's approach to climate-related risks and opportunities, as an asset manager and as a corporate entity. For information on how JPMC is addressing climate related risks and opportunities please refer to The 2022 JPMorgan Chase Climate Report.

J.P. Morgan Asset Management is a leading investment manager of choice for institutions, financial intermediaries, and individual investors, offering a broad range of core and alternative strategies, with investment professionals operating in every major world market providing investment expertise and insights to clients. J.P. Morgan Asset Management oversees more than $2.36 trillion in client assets under management globally as of December 31, 2022.

Approaches to Sustainable Investing, ESG and Climate

JPMAM is committed to acting in its clients' best interests consistent with our fiduciary duty, client goals, and legal requirements.

We offer strategies and products singularly focused on financial goals and objectives. As we strive to meet these objectives, managing financially material Environmental, Social, Governance ("ESG") risks, including climate-related risks and opportunities, is an important part of our investment processes whilst also meeting client objectives for sustainable outcomes through our sustainable investing solutions.

Over the past decade, climate risks have emerged and will continue to be important to investment and stewardship considerations in the future because of the expected potential financial impact on the long-term value of companies.

Our approach to assessing climate-risks and opportunities is multi-faceted and is built around several key elements. These include ESG integration, identifying climate-related risks and opportunities across time horizons, offering strategies for clients with specific climate goals, engaging with portfolio companies on climate change risks and opportunities and adopting our Climate Risk Framework.

Structure of Report

In line with TCFD recommendations, this Report is structured in four sections. The Governance section discusses how climate-related risks and opportunities feature in our governance and management structures. The Strategy section focuses on the key climate-related components of our strategy: ESG integration and research, and investment stewardship. The Risk Management section explores how we identify and manage climate risks through our Climate Risk Framework, development of portfolio and risk management tools and monitoring of our ESG integration approach. Finally, in the Metrics and Targets section, we disclose the data and metrics we currently use and also report our 2022 carbon emissions baseline.

In this Executive Summary, we present the key highlights of the report and provide a summary of our disclosures for each of the TCFD recommendations in **Exhibit I**.

Our approach to engagement on climate risk is to focus on the sectors and companies where, in our view, climate risk poses the greatest material risk to our clients' investments.

Exhibit I. Summary of disclosures aligned to TCFD guidance for all sectors and supplemental guidance for asset managers*

Governance

Describe the board's oversight of climate-related risks and opportunities.

Legal entity boards (or appropriate governance related committees) oversee senior management and challenge business activities and controls, which includes - where appropriate - climate-related matters.

The J.P. Morgan Asset Management Global Risk Committee oversees risk management which includes climate-related risk, as well as various governance frameworks. It is co- chaired by the J.P. Morgan Asset Management Chief Executive Officer (CEO) and J.P. Morgan Asset Management Chief Risk Officer (CRO).

Describe management's role in assessing and managing climate-related risks and opportunities.

Senior management – including certain members of the Operating Committee ("OC") and relevant leaders within each of our LOBs – are responsible for strategy and execution on ESG matters across the Firm.

Executive management bodies tasked with overseeing progress towards strategic AWM business objectives include the J.P. Morgan Asset & Wealth Management Operating Committee and the J.P. Morgan Asset Management Operating Committee.

Sustainable Investing Oversight Committee ("SIOC") oversees sustainable investing activities globally, including via involvement in ESG Integration (re)certification process of investment groups and our commitments under NZAMi.

Business units and functional groups are responsible for overseeing climate-related risks and opportunities as part of oversight in their respective roles.

Strategy

Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term

Our current view is that transition risks and opportunities are particularly important in the short to medium term (3 to 10 years), whereas physical risk are increasingly important over longer time horizons (up to 30 years), although extreme weather events can have short to medium term impacts.

In terms of transition risks, JPMAM considers both the impact of policies that are intended to mitigate climate change, as well as the impact of shifting demand for products and services resulting from policies implemented to combat climate change.

We recognize that the transition to a low-carbon economy can also present an unprecedented business opportunity for companies that are responding to the challenges of climate change and are able to benefit from shifts in market and consumer preferences.

Physical risks which we have identified include acute physical risks such as potential declines in asset values due to the destruction or degradation of property, and chronic physical risks such as reduced availability of insurance for those physical assets.

Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.

In our role as an investment manager, our climate-related strategy is built around several key components:

1. ESG integration across asset classes
2. Identifying climate-related risks and opportunities for investments held in our client accounts across time horizons
3. Developing climate scenario analysis
4. Offering investment strategies for clients with specific climate goals including strategies focused on:
   – Decarbonizing portfolios, including developing a low-carbon transition framework
   – Funding Climate solutions
   – Enabling negative emissions
5. Engaging with portfolio companies on climate change risks and opportunities
6. Adopting the Climate Risk Framework to better manage climate-related risks

JPMAM's annual financial forecasting and budgeting process, which is informed by industry analysis and inputs from product and client subject matter experts, considers potential financial impacts to the business, including where appropriate and material, climate opportunities and risks. In addition, the Firm stresses financial projections, considering adverse market conditions, client outflows and heightened expense environments.

Describe how climate-related risks and opportunities are factored into relevant products or investment strategies.*

Our investment groups assess the financial materiality of different climate-related factors alongside other relevant factors based on the ESG integration process they have adopted.

Describe how each product or investment strategy might be affected by the transition to a low-carbon economy.*

As stewards of our clients' assets, we consider factors that are material to our clients' long-term financial returns, including the investment risks and opportunities arising from the transition to a lower carbon economy.

By leveraging our global research capabilities within our investment analysis, we are working towards better understanding the balance between potential risks and opportunities arising from this transition.

Additionally, we have a proprietary framework for investing in the low-carbon transition, developed by the Sustainable Investing Team in partnership with our Quantitative Solutions team. The low-carbon transition framework is used to construct products across a range of markets for equity and fixed income funds.

Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

We are developing portfolio and risk management tools and research focused on assessing companies' climate-risk exposure and resilience. Our central technology platform provides a hub for our fundamental research analysts to assess companies, share insights and provide updates on engagement efforts.

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.*

As an active investment manager, we consider engagement with investee companies to encourage them to improve disclosures and adopt their own plans to manage climate risks as part of our investment processes across asset classes. Climate risk is one of our firmwide investment stewardship priorities. We discuss our investment stewardship approach in the Strategy section.

Risk Management

Describe the organization's processes for identifying and assessing climate-related risks.

With an aim to identify climate-related risks in our investments on behalf of clients, we are continuing to develop portfolio and risk management tools and research focused on assessing companies' climate-risk exposure and resilience.

As primary risk owners, investment teams are responsible for identification, discussion and escalation of climate-related risks associated with investments, as appropriate.

The Firmwide Climate Risk team will review and challenge the integration of climate-related risks as a part of the existing risk management process.

The JPMAM Risk Management team will review and challenge material climate-related risks in investment portfolios as a part of the existing risk management process in J.P. Morgan Asset Management.

Describe how material climate-related risks for each product or investment strategy are identified and assessed. This might include a description of the resources and tools used in the process.*

We identify and assess climate-related risks and opportunities in our actively managed client accounts and strategies by leveraging our proprietary qualitative and quantitative ESG research and assessments.

Qualitative assessment of financially material ESG factors, including climate risk and opportunities, varies by investment group and strategy. For example, the Global Equity and Global Fixed income Currency & Commodities investment groups have developed a detailed a 40-question ESG checklist that sets a baseline fundamental assessment for over 3,000 companies globally.

The J.P. Morgan Asset Management's Quantitative ESG Score is a proprietary ESG score used by some investment groups to support their quantitative and qualitative ESG analysis.

Describe the organization's processes for managing climate-related risks.

Describe how material climate-related risks for each product or investment strategy are managed.*

We have three lines of defense to manage risks in client portfolios, including climate-related risks. These lines work together but with distinct responsibilities to provide oversight over business activities, including climate-related risks.

As primary risk owners (first line of defense), investment teams are responsible for considering financially material ESG factors which may include climate risks as part of their investment analysis in actively managed investment strategies that are considered ESG integrated under our governance processes. In addition to J.P. Morgan Asset Management's risk management process, Investment Directors monitor and assess how investment teams are incorporating material sustainability risks into their investment strategies as part of their ESG integration approach. Our Compliance function will independently risk assess the framework and develop testing and monitoring as appropriate. Our Risk Management are part of the second line of defense and our Audit function is part of our third line of defense.

Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management

Climate change is viewed as a driver of risk that may impact existing types of risks managed by the Firm

J.P. Morgan Asset Management leverages the Firmwide Climate Risk Framework and continues to enhance the processes to capture the transmission channels through which transition and physical risk drivers impact each of our risk types (investment, liquidity, counterparty, reputation, market and operational).

At J.P. Morgan Asset Management, the independent Risk Management team is responsible for challenging and monitoring climate risks.

Metrics and Targets

Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.

Describe metrics used to assess climate-related risks and opportunities in each product or investment strategy. Where relevant, asset managers should also describe how these metrics have changed over time.*

We are currently evaluating the most appropriate metrics to use for assessing climate related risks and opportunities, taking into account, as appropriate, data and methodology, quality and availability, the needs of our clients, and regulatory requirements.

Asset managers should disclose GHG emissions for their AUM and WACI for each product or investment strategy, where data and methodologies allow.

Asset managers should consider providing other carbon footprinting metrics they believe are useful for Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.

Currently we use carbon footprint and weighted average carbon intensity data from Trucost to measure the carbon exposure of investment portfolios in Global Equities and Fixed Income, primarily in regions where this is a regulatory requirement, but also for interested clients.

Our carbon exposure metrics for our assets under management for 2022 are:

Total financed emissions: 57 M tCO_2e,
Carbon footprint: 63 tCO_2e /$million invested
WACI: 184 tCO_2e/$million revenue
For more information please refer to our Metrics section which discloses our Scope 1 and 2 GHG emissions.

Asset managers should describe the extent to which their assets under management and products and investment strategies, where relevant, are aligned with a well below 2°C scenario, using whichever approach or metrics best suit their organizational context or capabilities.*

Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

On November 9, 2022, J.P. Morgan Asset Management's interim net zero targets were published.

We included all of our AUM in listed equities and corporate bonds, as well as certain direct investments in forestry, in scope for the net zero targets. Those assets make up 45% of our total assets under management ($1.2 trillion), as of December 31, 2021.

Certain of our sustainable strategies are designed for clients with climate objectives and have specific targets to invest in issuers with reduced carbon intensity or carbon emissions. Outside these strategies, net zero targets do not change how we manage client accounts. We will measure progress towards these net zero targets by the proportion of investee companies that have set their own credible net zero targets. By 2030, we anticipate that the percentage of our AUM held in companies with science-based targets will increase from 20% to 55%.

* Reflects recommendations that are included in the Supplemental Guidance for Asset Managers, which incorporates updates to the guidance for the financial sector released by the TCFD in 2021 (https://assets.bbhub.io/company/sites/60/2021/07/2021-TCFD-Implementing_Guidance.pdf)

Measuring progress since last report

We have made advancements, as highlighted below in the ways we help our clients to address climate risks and seek to act upon opportunities presented by the transition to a lower carbon economy. We will aim to continue to deepen these capabilities over the coming years.

Expanding choices across our sustainable investment products[3]

In 2022, we launched 11 funds within our sustainable product suite, including a new fixed income product. These products invest in businesses that we believe are providing solutions to global sustainability challenges such as climate risk management, preserving biodiversity, retrofitting and constructing resilient transport and infrastructure, and fostering social advancement.

Climate change is an investment stewardship priority

In 2022, we engaged[4] with 539 companies on climate risk across 42 markets and 26 sectors.

Voting on shareholder proposals relating to climate change is another important way of expressing our views where we think company management should be encouraged to better manage climate risk they actually face.

[3] J.P. Morgan Asset Management takes a global approach to sustainable investing, and the solutions offered through our sustainable investing platform meet our internally defined criteria for a sustainable investment. The evolving nature of sustainable finance regulations and the development of jurisdiction-specific legislation setting out the regulatory criteria for a "sustainable investment" or "ESG" investment mean that there is likely to be a degree of divergence as to the regulatory meaning of such terms. This is already the case in the European Union where, for example, under the Sustainable Finance Disclosure Regulation (EU) (2019/2088) certain criteria must be satisfied in order for a product to be classified as a "sustainable investment." Any references to "sustainable investing," "SI" or "ESG" in this document are intended as references to our internally defined criteria only and not to any jurisdiction-specific regulatory definition.

[4] Our engagement is based on our in-depth investment research on companies, alongside our assessment of macroeconomic drivers, sector-specific factors and financially material ESG themes. For more information, please refer to our 2022 Investment Stewardship Report.

We continue developing our climate analytics capabilities

We continue to work towards enhancing our processes for identifying, assessing and managing climate-related risks. This includes working towards developing the capabilities to deliver climate insights as well as integrating climate-related data and metrics into a centralized J.P. Morgan Asset Management platform alongside other material information used for portfolio management and research. The approach integrates what J.P. Morgan Asset Management has identified to be the most appropriate data, scenarios and analytical tools, combined with the expertise from our dedicated climate researchers in the Sustainable Investing team and our 200+ fundamental researchers.

We have reached several key milestones along the journey of enhancing the integration of ESG risk considerations, including climate and sustainable investing.

Exhibit II. Key Milestones[5]

Year	J.P. Morgan Asset Management Business	J.P. Morgan Asset Management Products
2007	• Became a signatory to the Principles for Responsible Investing (PRI)	
2016	• Joined Institutional Investors Group on Climate Change (IIGCC)	
2019	• Formalized ESG integration process with working groups which includes systematic consideration of financially material ESG factors which may include climate change risk	
2020	• Enhanced the new 5 global Investment Stewardship priorities, one of which focuses on climate risk disclosure • Joined Climate Action 100+ • Long-Term Capital Market Assumptions (LTCMA) thematic paper on low carbon transition policy impact	• Launched two thematic strategies which focus on carbon transition
2021	• Expanded the dedicated global Sustainable Investment team including the addition of 3 climate specialists • Joined the Asia Investor Group on Climate Change (AIGCC) and Net Zero Asset Managers Initiative (NZAMi) • Establishment of JPMAM SIOC which oversees sustainable investing frameworks and governance of ESG integration • Built a proprietary ESG Quantitative scoring system which incorporates, among others, key climate metrics • Successful acquisition of Campbell Global adding diversified investment opportunities related to climate change and conservation of biodiversity • Onboarded additional climate data vendors, such as Trucost • Published Understanding Carbon Exposure Metrics paper	• Launched our first actively managed global equity strategy which focuses on climate change solutions • Selected real estate products which considers GHG in one of its performance measures funds ranked #1 amongst peers by GRESB
2022	• Launched JPMAM's inaugural Global TCFD report • Set 2030 interim emissions reductions targets • Published an explanatory guide on climate scenarios modelling • Updated global Investment Stewardship priorities and included a sixth priority, Natural Capital and Ecosystems	• Launched our first fixed income strategy which focuses, among others, on use of proceeds specifically directed to projects with environmental benefits, positive social outcomes and green and social projects • Launched other strategies on themes such as sustainable infrastructure, social advancement and sustainable consumption consumption

5 For milestones relating to Firmwide climate action to date, please refer to the JPMC 2022 Climate Report.

Governance

Governance

Board and Committee oversight

Under the oversight of our boards and the leadership of our senior management, we aim to foster an effective and efficient risk and control environment. Matters related to our long-term business success, including management of climate-related risk, form an important component of our business strategy.

From a Firmwide perspective, the JPMorgan Chase & Co. Board of Directors is responsible for overall oversight of the business and affairs of the Firm.

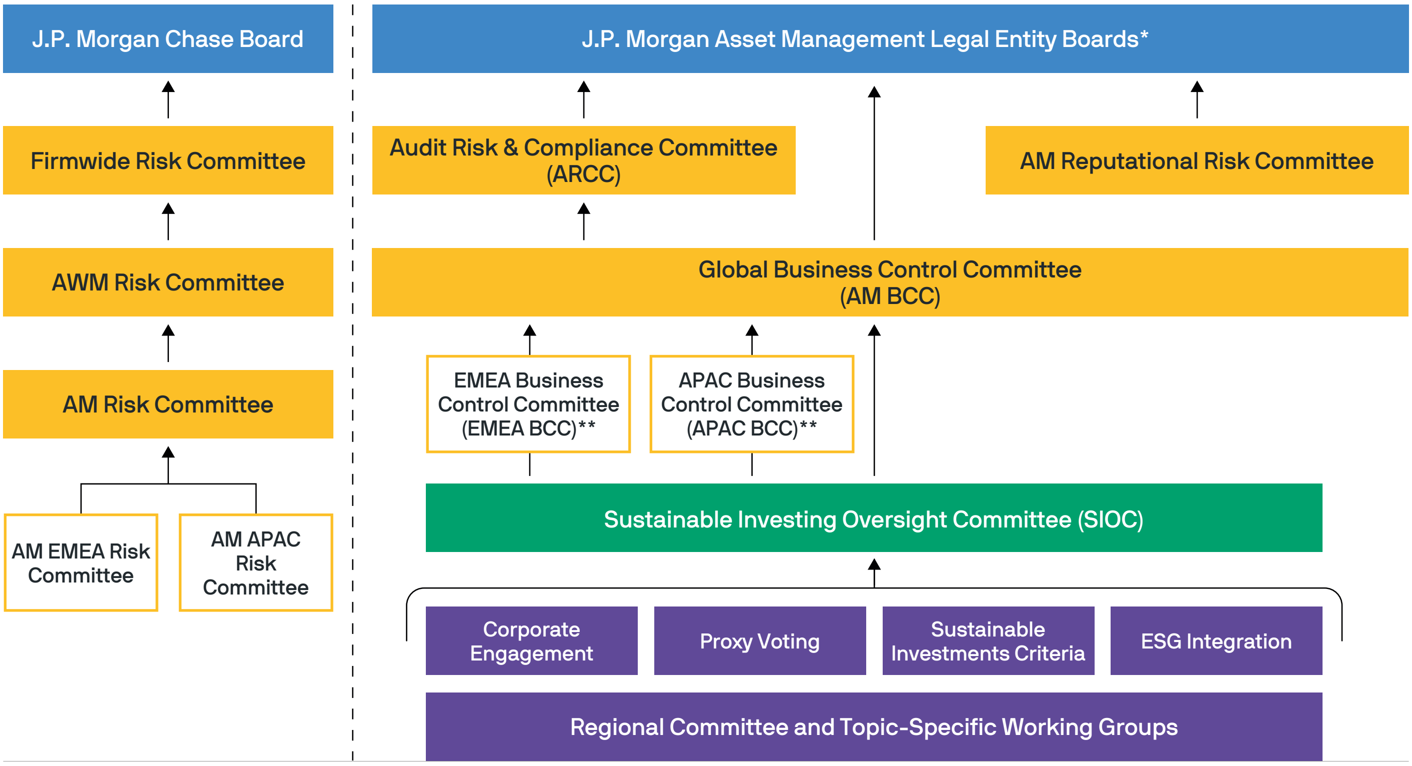
Within J.P. Morgan Asset Management, the global Risk Committee oversees risk management, as well as various governance frameworks. It is co-chaired by the J.P. Morgan Asset Management Chief Executive Officer (CEO) and J.P. Morgan Asset Management Chief Risk Officer (CRO). The co-chairs are responsible for escalating information raised in this Committee that should be provided to the JPMC Board of Directors (including its committees) to assist it in meeting its responsibilities.

Locally, legal entity boards (or appropriate governance committees) oversee local senior management, who are responsible for setting business strategy aligned to long-term value creation for our clients. Legal entity boards provide oversight to senior management and challenge of business activities and controls. In the Asia Pacific (APAC) and Europe, Middle East and Africa (EMEA) regions, escalations on sustainability-related matters, including climate risk strategy, in funds and client accounts, managed or sponsored, as applicable, by JPMAM entities in these regions, are expected to follow the path to certain local legal entity boards as outlined in **Exhibit III** below.

Governance of our activities related to Sustainable Investing is overseen by our Sustainable Investing Oversight Committee. The Committee's members include full participation by the AM Chief Risk Officer, AM Chief Legal Officer, AM Chief Compliance Officer and all senior control functions within the organization. SIOC can escalate risk and controls issues, including climate-related risks to the Business Control Committees (BCC) of the relevant region, and in turn, the relevant legal entity board where required.

SIOC was responsible for approving JPMAM's Net Zero Asset Managers Initiative (NZAMi) related efforts, including approving setting of JPMAM's own interim targets before their publication date, which was in November 2022. These targets are also formally approved at the AM Business Control Committee.

Exhibit III. J.P. Morgan Asset Management Governance Structure



* For additional regional oversight of legal entities that are in scope for TCFD, please refer to the local addendums (where applicable).
** Local committees are also responsible for escalating matters to respective LE Boards as required.

Exhibit IV. Description of global governance bodies/committees

Governance body/committee name	Responsibility for climate-related risks and opportunities	2022 meeting frequency*
J.P. Morgan Asset Management Legal Entity Boards	Oversight of each legal entity's business. Please refer to local addendums (where applicable) for more information on certain legal entities.	
Business Controls Committees (BCC) (Global)	Provides oversight of the operational risk and control environment for the Asset Management business, inclusive of Operational Risk, Compliance, and Conduct Risks, to ensure proper identification, management and monitoring of existing and emerging risks, control issues, errors, remediation actions, and trends. **Chair**: Chief Executive Officer and Business Control Manager	11
Sustainable Investing Oversight Committee (Global)	Oversees core areas including corporate engagement, proxy voting, sustainable investments criteria and ESG integration, and when necessary, escalates to the BCC(s) **Chair**: Global Heads of Sustainable Investing	7
Asset Management Risk Committee (Global)	Provides oversight of risks inherent in the asset management business. This committee also provides an escalation channel for issues and risks, as well as oversight of the various governance frameworks. This committee also provides oversight of the governance frameworks for operational risk, reputation risk and compliance risk, including fiduciary risk. **Chair**: Chief Executive Officer and Chief Risk Officer Asset Management	10
Asset Management Audit, Risk and Compliance (EMEA)	Remit includes assisting the Legal Entity Boards in meeting their responsibilities related to the oversight of, among other matters, controls, compliance with applicable statutory and regulatory requirements and overall risk management. **Chair**: Independent Non-Executive Director	4

* Each of the governance bodies/committees meets with such frequency and at such times as it is determined in their respective charters (which may allow for additional ad hoc meetings).

Firmwide Climate Risk Framework

The Firm's climate risk governance framework is managed on a Firmwide basis to provide a consistent approach to managing climate risk across the Firm, including climate risk identification, escalation, and monitoring. The Climate Risk Management function engages across the Firm to help integrate climate risk considerations into existing risk management frameworks, as appropriate, and is responsible for establishing the Climate Risk Framework and strategy for climate risk and developing and advancing climate risk policy and standards. The climate risk policy and standards are subject to review by the Firm's CRO, as required.

The Line of Business (LOB) Risk Committees (including the Asset and Wealth Management (AWM) Risk Committee) are responsible for providing the JPMC Board Risk Committee with information on significant climate risks and climate-related initiatives, as appropriate.

Management oversight

Senior management – including certain members of the JPMorgan Chase & Co Operating Committee ("OC") and relevant leaders within each of our LOBs – are responsible for strategy and execution on ESG matters across the Firm.

The OC is the senior management body for the firm and includes the Chief Executive Officer of Asset & Wealth Management (AWM).

Subsidiary level executive management bodies tasked with overseeing progress towards strategic AWM business objectives include the J.P. Morgan Asset & Wealth Management Operating Committee and the J.P. Morgan Asset Management Operating Committee.

Exhibit V. Management Committees

Management Committee	Responsibilities
JPMorgan Chase & Co. Operating Committee	• Most senior firmwide management body, responsible for developing and implementing corporate strategy and managing operations. • The OC is comprised of the Firm's Chief Executive Officer, Chief Risk Officer, Chief Financial Officer, General Counsel, CEOs of each of the LOBs and other senior executives. • J.P. Morgan Asset Management AWM CEO is a member of the JPMC Operating Committee. • The CRO and/or senior management provide the full Board and/or the Board Risk Committee with more in-depth information on specific climate-related matters.
J.P. Morgan Asset & Wealth Management Operating Committee	• Senior management body overseeing business segment operations and strategy across J.P. Morgan Asset Management and J.P. Morgan Wealth Management businesses. • The committee is run by the CEO of Asset & Wealth Management. • J.P. Morgan Asset Management CEO is a member of the AWM Operating Committee.
J.P. Morgan Asset Management Operating Committee	• Led by the CEO of J.P. Morgan Asset Management business segment, the Asset Management Operating Committee sets JPMAM's priorities and business vision. • This body of senior leaders receives periodic updates on sustainability and climate-related initiatives, such as approving the inaugural JPMAM Global TCFD Report in 2022. • JPMAM Global Head of Sustainable Investing, is a member of the Asset Management Operating Committee and provides regular updates to that body on climate-related topics, including the firm's strategy for developing climate analytical tools, climate-related research projects and climate-aware investment solutions.

Role of functional groups

At J.P. Morgan Asset Management, consideration of financially material sustainability risks including climate risks is led by specialist groups such as our Sustainable Investing team as well as incorporated in existing responsibilities of broader functions, including Investment groups[6] and Risk team.

Investment groups will operate within the JPMAM-wide climate framework described in this Report, but the approach adopted on climate may vary across investment teams and products, based on factors such as investment strategy, guidelines, portfolio holdings, asset classes or regions (among others).

[6] We define investment groups as investment teams which share a common investment process and ESG integration approach and common investment strategies.

Exhibit VI. Role of Functional Groups

Team	Responsibilities/Description	Reporting line
Sustainable Investing Team		
J.P. Morgan Asset Management Global Sustainable Investing Team	● Spearheads sustainable investing globally in partnership with investment groups. ● Provides sustainable investing expertise including climate-related risks and opportunities that can be applied across asset classes and for the development of investment solutions for clients. The team is structured into three pillars with dedicated climate-related responsibilities: ● The **Sustainable Investing Research** pillar develops proprietary ESG and climate modeling and research by partnering with data scientists, research analysts and portfolio managers, to enhance our investment capabilities and product innovation. In 2021, we hired dedicated climate specialists with extensive expertise in climate-related transition and physical risks. ● The **Client Solutions** pillar provides sustainable investing expertise to design and build, sustainable investment products and customized client solutions. They engage with clients to help them meet their ESG and climate objectives and partners with a broad range of functions and teams to advance our sustainable leadership. ● The **Investment Stewardship** pillar defines and directs company- and industry-level engagements on our six global stewardship priorities, including encouraging disclosure from investee companies on material climate risks and opportunities.	● The Global Head of Sustainable Investing is a member of the Asset Management Operating Committee. ● The Global Head of Sustainable Investing reports into both the Chief Investment Officer for Global Equities and the Chief Investment Officer for Global Fixed Income, Currencies and Commodities, and leads the firmwide strategic efforts in sustainable investing. ● The Global Head of Sustainable Investing Integration also reports into the Chief Investment Officer for Global Equities and the Chief Investment Officer for Global Fixed Income, Currencies and Commodities and is responsible for leading the development of the Sustainable Investing business and the firm-wide strategic efforts in integrating our global sustainable investing platform across all asset classes and client channels.
Broader Functional Groups embedding climate considerations		
Investment Groups[7]	● Investment Groups, including portfolio managers are responsible for implementing consideration of financially material ESG factors including climate-related risks and opportunities (alongside other relevant factors) in actively managed investment processes, as applicable. ● Our portfolio managers are accountable for the performance of relevant funds/strategies and contribution to client's risk and return objectives, including the consideration of financially material climate related risks and opportunities.	● Chief Investment Officers of respective asset classes are members of the Asset Management Investment Committee and the Asset Management Operating Committee.
JPMAM Risk team / Compliance	● Responsible for providing independent challenge, monitoring and review of the investment process. ● Responsible for risk assessing the framework for climate change, independently challenging as appropriate and developing any additional monitoring and testing as needed	● JPMAM Risk is responsible for independent risk oversight and challenge, including climate-related items presented to the relevant Boards and Committees. The Chief Risk Officer is a member of the Asset Management Operating Committee, Sustainable Investing Oversight Committee and Asset Management Business Controls Committee.

7 We define investment groups as investment teams which share a common investment process and ESG integration approach and common investment strategies

Sustainable Investing Operating Committee

To enhance the governance of our activities related to sustainable investing, J.P. Morgan Asset Management established the Sustainable Investing Oversight Committee (SIOC)

Sustainable Investing Governance

To enhance the governance of our activities related to sustainable investing, J.P. Morgan Asset Management established the Sustainable Investing Oversight Committee (SIOC).

SIOC serves as a single point of ongoing strategic oversight, effective decision-making, review, and assurance across the key components of sustainable investing. This includes engagement, proxy voting, sustainable investing criteria, as well as oversight of ESG integration. SIOC also follows regulatory developments and reviews their impact on climate policies and provides oversight and an annual review of implementation plans and progress for J.P. Morgan Asset Management's interim targets.

SIOC includes Heads of Investment teams and Chief Investment Officers (CIOs), the Global Head of Sustainable Investing, the Global Head of Sustainable Investing Integration, the Global Head of Investment Stewardship, J.P. Morgan Asset Management's General Counsel and global heads of control functions such as Risk and Compliance.

Where and when required from a controls and risk oversight perspective, formal escalation from SIOC is to the Global Asset Management Business Control Committee (AM BCC) and the AM Bank Fiduciary Committee (for specific fiduciary responsibilities). The AM BCC committee provides oversight of the operational risks and control environment across the entire AM business, with respect to proper identification, management and monitoring of existing and emerging operational risks, control issues and trends. This committee, which is co-chaired by the AM CEO and AM Business Control manager, includes decision-making members comprising all global heads of controls functions, CIOs across all asset classes/product groups and global heads of all major business areas.

Additionally, SIOC:

- Oversees, advises and supports effective sustainable investing activity across core areas including corporate engagement, proxy voting, sustainable investments criteria and ESG integration which are led by SI specialists in partnership across AM
- Monitors policies, procedures and regulatory environment for SI and investment stewardship
- Reviews and approves as subject matter experts regulatory submissions as applicable including TCFD disclosure.

In 2022, SIOC met seven times to accommodate the growing focus within our business on these issues. Currently, SIOC is scheduled to meet eight times in 2023, and at least once per quarter. As part of governance and continuous improvement in 2023, members of SIOC will receive ongoing education and training on new trends as well as regulatory and industry developments in sustainable investing and climate-considerations.

Strategy

Strategy

Introducing our Climate Strategy

As stewards of our clients' portfolios, we consider factors that are material to our clients' long-term financial returns, including the investment risks and opportunities arising from the transition to a lower carbon economy.

Where aligned with our clients' investment objectives, we believe we can address climate-related risks and act on opportunities through carbon emissions reductions in our portfolios, investing in companies which are on a path to reduce carbon emissions, growing our sustainable product suite and actively engaging with our investee companies.

Our climate-related strategy is multi-faceted

Our climate-related strategy is built around several key components:

1. ESG integration across asset classes
2. Identifying climate-related risks and opportunities for investments held in fund and client accounts across time horizons
3. Developing climate scenario analysis
4. Offering investment strategies for clients with specific climate goals including strategies focused on:
   - Decarbonizing portfolios, including developing a low-carbon transition framework
   - Funding climate solutions
   - Enabling negative emissions
5. Engaging with portfolio on climate change risks and opportunities
6. Adopting our Climate Risk Framework to better manage risk

Our approach to ESG Integration

J.P. Morgan Asset Management defines ESG integration as the systematic inclusion of financially material ESG factors (alongside other relevant factors) in investment analysis and investment decisions.

In actively managed strategies deemed by J.P. Morgan Asset Management to be ESG integrated under our governance process, we systematically assess financially material ESG factors including climate-related risks in our investment decisions with the goals of managing risk and improving long-term returns. As ESG integration considers financially material ESG factors, it does not by itself change a strategy's investment objective, exclude specific types of companies or constrain a strategy's investable universe.

A limited number of strategies are not deemed ESG integrated under our internal processes. Therefore, these strategies do not currently include specific climate considerations unless deemed a material investment risk which would be considered in accordance with our fiduciary duty.

We believe that climate-related risks and opportunities are important for many different sectors and conduct materiality assessments to help us identify the sectors for which these are most relevant.

ESG Factors that we consider

Environmental

- Air pollution
- Wastewater management
- Biodiversity impacts
- Greenhouse Gas (GHG) Emissions

Social

- Product safety
- Diversity and inclusion
- Local community impacts

Governance

- Board composition
- Executive remuneration
- Capital allocation

For those financial products that track the composition of a specific index (specifically pure passive funds tracking a non-sustainable reference benchmark) sustainability risks are not considered due to the passive nature of the strategy.

ESG factors include issues such as:

- Climate risk
- Natural resource use
- Human capital management
- Diversity
- Business conduct
- Governance practices
- Shareholder right
- Executive compensation

ESG Integration in Investment Strategies

As discussed in the Governance section, SIOC reviews ESG integration by investment groups. In order for strategies managed by an investment group (investment teams which share a common investment process and ESG integration approach) to be deemed ESG integrated, they need to be reviewed under J.P. Morgan Asset Management's governance process. Our **ESG Integration report** outlines this approach in detail.

Our investment groups assess the financial materiality of different climate-related factors alongside other factors based on the ESG integration process they have adopted. Please note that the impact of ESG integration on performance is not specifically measurable as investment decisions are discretionary regardless of ESG considerations. ESG integration does not happen in isolation and is one element alongside other factors considered in our investment processes. The assessment of environmental, social and governance information and events requires subjective judgments, which may include consideration of third party data that may be incomplete or inaccurate.

There can be no guarantee we will correctly assess such impact.

Approach for our Alternatives Business

J.P. Morgan Asset Management's Global Alternatives team provides investment solutions in private equity, private debt, real assets, and hedge funds.

Global Alternatives is fully embedded within the broader J.P. Morgan Asset Management ESG governance framework and SIOC review and approval process.

Within Global Alternatives ongoing monitoring and review of ESG integration occurs within formal Oversight Committees (or equivalent) which will typically include qualitative and where applicable quantitative ESG data. Any material findings from ongoing monitoring processes are escalated to the CIOs / Business Heads of the relevant asset class using the established investment oversight/escalation process. CIOs are then able to further escalate any issues, including material negative ESG exposures, as needed.

For investment groups with strategies invested in real assets, we believe proactive efforts to manage exposure to climate-related risks, particularly physical risks, are essential where they are financially material given their long-term investment horizons.

The Global Real Estate Group for example will review potential physical risks, such as hurricanes, earthquakes, wildfires, flooding, water stress and heat stress, associated with an asset. This helps them assess the potential future risks and can be used to evaluate any potential mitigation strategies that could potentially be implemented.

ESG assessments for Climate-related risks and opportunities

We identify and assess, as appropriate, climate-related risks and opportunities in our actively managed funds, client accounts and strategies by leveraging our proprietary qualitative and quantitative ESG research and assessments.

Qualitative Assessment of ESG factors

Qualitative assessment of financially material ESG factors, including climate risk and opportunities, varies by investment group and strategy. For example, Global Equity and Global Fixed income Currency & Commodities have developed a detailed 40-question ESG checklist that sets a baseline fundamental assessment for over 3,000 companies globally. The assessment informs discussions between portfolio managers and fundamental analysts, and our engagements with the companies we cover.

Along with questions on social and governance considerations, the ESG checklist also asks questions addressing environmental considerations, including how companies are taking climate and climate-related risks and opportunities into consideration in managing their businesses.

Exhibit VII. ESG checklist sample questions

Is the company vulnerable to regulation aimed at limiting greenhouse gas emissions?

Does the company have issues with toxic emissions, waste management, non-recyclable waste or other environmental damage?

Is the company poised to benefit as a result of their actions related to environmental considerations?

As part of the ESG Integration process within Global Equities, analysts conduct deep-dive research into ESG topics identified as material to our investment process.

A fundamental materiality framework is also used to identify the ESG issues including climate-related risks that are most likely to have a material negative financial impact on an investee company were it to be mismanaged, or conversely, a financially material positive impact in the case of good management.

Across more than 50 different sub-industries, financially material issues alongside ESG related risks are identified by research analysts in our 100+ strong global network, who come together to share perspectives with their sector group peers. Each investee company under coverage receives a score from 1 (best) to 5 (worst) on each of the material issues identified.

Leveraging ESG research to identify climate-related risks

With the aim to identify climate-related risks in our investments on behalf of clients, we are continuing to develop portfolio and risk management tools and research focused on assessing companies' climate-risk exposure and resilience. Our central technology platform provides a hub for our investment teams to assess companies, share insights and provide updates on engagement efforts. It also houses quantitative data including climate-related data and metrics that may serve as an additional input into qualitative assessments that are used by over 300 research analysts across asset classes that are situated globally and organized by sector.

Quantitative ESG assessments

Improvement in the breadth and quality of ESG-related data has enabled us to conduct in-depth quantitative assessments on the extent to which companies face and manage financially material ESG risks and opportunities. In these analyses, we use granular data including a company's management of natural resources and environmental impacts leveraging company disclosures, third-party estimates of environmental impact and data science signals. As a result, we obtain a number of important climate-related metrics which help us both identify as well as manage the associated risks and opportunities.

These are referenced in our 'Metrics and Targets' section. As such, climate risks may be considered alongside other ESG related risks, and the relative significance is determined using industry-level materiality assessments where relevant data is available. The aforementioned assessments require that relevant data is available in sufficient quality in respect of individual companies, issuers and industries and absent such data, no or only limited assessments can be performed.

Where available and appropriate, our ESG data not only supports an investment team's quantitative analysis, but also helps to inform qualitative assessments of individual investee companies. This capability aims to enhance our understanding of what ESG information is available for research and investment decision making and provides a consistent view around the material ESG factors of each sector in order to manage the associated risks and opportunities.

Quantitative ESG Score

J.P. Morgan Asset Management's Quantitative ESG Score is a proprietary ESG score used by some investment groups in active investment processes to support their quantitative and qualitative ESG analysis of individual companies/issuers. This score draws on granular, outcomes-focused data, making use of the significant increase in ESG disclosures and available data over recent years. The score also leverages our data science capabilities, such as machine learning, algorithms and natural language processing to provide another reference point to enhance the consideration of material ESG risks and opportunities in active investment processes.

Exhibit VIII. Select climate metrics used in quantitative assessments, subject to data availability and quality considerations

GHG Emissions

- Scope 1 and Scope 2 GHG emissions intensity
- Assessment of carbon reduction target by Science-Based Targets Initiative
- Does the company have a climate change policy?

Business Model Resilience

- Products relating to climate change opportunities

Energy Management

- Controversies around energy use and GHG emissions

Product Design and Lifecycle

- Scope 3 sales intensity
- Controversies around carbon impact of products
- Assessment of a carmaker's sales-weighted fleet average CO_2 emissions

Integration of climate expertise within the organization

As mentioned in our Sustainability Investing statement, climate change is considered a major sustainability theme. This drives our strategic approach across our sustainability-focused investment research, investment stewardship and engagement priorities and development of dedicated sustainable products and solutions.

J.P. Morgan Asset Management's dedicated global Sustainable Investing platform includes specialists with climate-related expertise. This includes climate researchers and professionals with climate experience that contribute to product development and client engagement.

One of the team's priorities is to support the provision of climate-related metrics and analytics. This requires close collaboration with technology teams across J.P. Morgan Asset Management.

For example, over the last year, the Sustainable Investing team has worked with the Technology team to implement a framework for calculating carbon exposure metrics that can be used to identify and assess climate-related risks and opportunities across asset classes.

Identifying climate-related risks and opportunities across time horizons

J.P. Morgan Asset Management is committed to understanding how climate change may influence the risks it manages, including evaluating how our business as well as our clients' portfolios could be impacted through transition or physical risks driven by climate change.

The relevance and time horizon of climate-related risks and opportunities to the client accounts and products we manage depends on a number of variables, including investment style, guidelines and objectives, region and asset class. While the investment horizon varies across different investment groups and styles, J.P. Morgan Asset Management's fundamental active portfolios typically look to hold investments for five years or more, which is why we consider climate change to be one of the core topic in our investment analysis.

The time horizons associated with climate-related risks are different from our investment time horizons, and vary by risk type and asset class. Our current view is that transition risks and opportunities, as defined in **Exhibit XI**, are particularly important in the near term (3 to 10 years), whereas physical risks, as defined in **Exhibit XI**, are increasingly important over longer time horizons (up to 30 years), although extreme weather events can have near-term impacts.

Even if some climate-related impacts do not materialize within the next five years, we believe there is a probability that expected future impacts will start to be reflected in asset prices and affect financial returns within our long-term investment time horizons. We reflect this view in our interactions with investee companies, such as through our investment stewardship activities.

Exhibit IX. Time Horizons

Short-term: Less than 5 years; Perception of not having responded appropriately to climate challenges and regulatory requirements used for reputation risk assessments.	**Medium-term: 5-10 years;** aligns to time horizons used for investment risk assessment.	**Long-term: More than 10 years;** aligns to physical risk assessments.

The transition to a low carbon economy can also present an unprecedented business opportunity for companies that are responding to the challenges of climate change.

Physical and Transition risks and opportunities

Physical risks

We are working towards improving our understanding of physical risks across relevant sectors, and these are already a key consideration for our infrastructure and real estate strategies.

Our analysts assess the impact of near-term risks on physical assets for the following core components:

- Operation location
- Human capital (e.g. employees) location
- Core business/economy exposure
- Indirect exposure (Supply-chain and distribution network location)

We provide examples of the physical risks we have identified in **Exhibit XI**.

Transition Risks

In terms of transition risks, J.P. Morgan Asset Management seeks to consider both the impact of policies that are intended to mitigate climate change, as well as the impact of shifting demand for products and services resulting from policies. A transition to a low-carbon economy entails legislative and regulatory changes, new national or regional commitments, such as the Paris Agreement, the Inflation Reduction Act (IRA) in the US and the European Union (EU) Green Deal, as well as the natural shift of supply and demand landscape within industries. Some of these elements are discussed in more detail in the 2023: Long Term Capital Markets Assumptions paper. Additionally, the cost of capital is expected to increase for companies that are more exposed to climate risks as these become increasingly priced into financing decisions.

At the same time, we recognize that the transition to a low-carbon economy can also present an unprecedented business opportunity for companies that are responding to the challenges of climate change and are able to benefit from shifts in market and consumer preferences. By leveraging our global research capabilities within our investment analysis, we are working towards better understanding the balance between potential risks and opportunities arising from this transition.

Examples of the transition risks and opportunities we have identified are in **Exhibit XI**.

Exhibit X. Physical and Transition Risks

Climate risk is categorized into physical risk and transition risk.

Physical risk refers to economic costs and financial loss associated with a changing climate. Acute physical risk drivers include the increased frequency or severity of climate and weather events, such as floods, wildfires and tropical storms. Chronic physical risk drivers include more gradual shifts in the climate, such as rising sea levels, persistent changes in precipitation levels and increases in average ambient temperatures.

Transition risk refers to the financial and economic implications associated with a societal adjustment to a low-carbon economy. Transition risk drivers include possible changes in public policy, adoption of new technologies and shifts in consumer preferences. Transition risks may also be influenced by changes in the physical climate.

Transition and physical risks are interconnected, and transition risks could be further accelerated by changes in the physical climate. For more information please refer to our JPMC Climate Risk Report.

Exhibit XI. Climate-related risks and opportunities from a low-carbon transition

Impact channel	Risk examples	Opportunity examples
Type – Transition		
Policy and legal	Expected impact of carbon pricing could result in high fixed operating costs and could result in decreased profits for companies with high emissions	Governments may provide incentives and subsidies to encourage a certain transition path
	Increased climate-related disclosures are expected, resulting in increased operating costs	
	Companies with historically high emissions or poor climate performance may be more exposed to future litigation, as well as fines, due to increased climate related regulation	
Reputation	Negative media or stakeholder perceptions or climate-related controversies could result in a loss of reputation, impact future financial performance and loss of future earnings	Being an early mover on climate issues may improve reputation, resulting in improved financial performance
Market and consumer preferences	Companies may be exposed to potentially declining demand for their products of services as consumers increasingly consider environmental impacts, resulting in loss of revenue	Companies offering low-emissions/ low-carbon products may benefit from increased revenues in response to changing consumer preferences

Impact channel	Risk examples	Opportunity examples
Type – Transition		
Technology and energy transformation	Costs associated with the transformation of existing technology may be high	Companies offering low-carbon/zero-carbon energy are expected to benefit from increased revenues and profits due to the global energy transformation
	Breakthroughs in new technology, such as renewables or battery storage, may drive a transition away from carbon intensive goods and services and/or persistent changes in fossil fuel prices	Companies involved in breakthroughs in new technology, such as renewables or battery storage, may benefit from increased revenues as demand for these products increases and/or costs decrease
	Stranded assets	
Type – Physical		
Acute	Significant interruptions to business operations, including supply chain disruption	
	Declines in asset values, including due to the destruction or degradation of property	
Chronic	Reduced availability of insurance	
	Systemic changes to geographies, regional economies and sectors, and any resulting population migration or unemployment	

Within a given sector and region, the importance of different climate-related risks and opportunities can vary significantly. Therefore, we believe considering the materiality of these impacts is a key element of company-specific analysis.

Taking the Oil and Gas sector as an example, most oil companies will likely suffer in any transition to a lower carbon economy for the simple reason that fossil fuel extraction, along with oil consumption, is a significant cause of CO_2 emissions. Thus, companies in this sector along with others in the Utilities, Energy and Materials sectors may be exposed to stranded asset risk. However, companies that are better positioned than their peers, for example those with relatively low emissions intensity, may still see significant opportunities that are not reflected in current asset prices.

We may still choose to invest in companies, where appropriate, that are in sectors which tend to be exposed to high transition risk, but which we have identified as having lower risks and/or greater opportunities than their peers or higher expected risk adjusted returns.

Improving our insights on climate data

We continue to work towards enhancing our processes for identifying, assessing and managing climate-related risks. As a first step, we are developing the capabilities to deliver climate insights by onboarding relevant climate-related datasets and providing training to teams on these metrics. The core metrics that are already available include company emissions, total financed emissions, carbon footprint and emissions intensity, as defined in the Metrics and Targets section.

Additionally, we have onboarded Climate Value-at-Risk (CVAR), and Implied Temperature Rise (ITR) metrics that are required in the United Kingdom (UK) for reporting purposes for financial products that are in-scope as per the UK's Financial Conduct Authority's Environmental, Social and Governance Sourcebook regarding disclosures of climate-related financial information consistent with TCFD Recommendations and Recommended Disclosures.[8]

However, over time, we aim to add additional data and capabilities to enhance our ability to identify, assess and manage climate risks and opportunities. We envisage that these climate insights will be combined with ESG quantitative analysis and our qualitative assessment tool, to help portfolio managers understand the holistic nature of climate-related risks and opportunities.

Climate scenario analysis capabilities on portfolios we manage[9]

We have started to develop our climate scenario analysis capabilities by conducting a critical assessment of the metrics and methodologies provided by a variety of vendors. The purpose of this first phase was to understand the different use cases and limitations for each metric. Through this assessment it became clear that climate scenario analysis is still an emerging space and that metrics are still in their infancy, with new approaches and methodologies regularly being developed. This has resulted in a meaningful variation in the interpretation, use cases and limitations of different metrics across different providers.

Despite the data limitations of use cases our climate scenario analysis metric assessment moved into a second phase focused on vendor selection. In this phase, we outlined a set of core criteria that would allow us to meet applicable regulatory requirements and provide the most useful information for our clients.

These include requirements for sufficient coverage, the provision of Climate Value-at-Risk and Implied Temperature Rise metrics and for the Climate Value-at-Risk metric to provide a break-down of the drivers of modelled changes. We found that only a few providers were able to meet our basic criteria.

As noted previously, we currently use quantitative scenario analyses only for reporting purposes in the UK and not as an input for our portfolio and/or risk management processes.

Expertise from our dedicated climate researchers in the Sustainable Investing team and our

200+

fundamental researchers analysts

8 CVaR and ITR metrics are initially being used for reporting purposes only and are currently not part of the investment and decision making process.

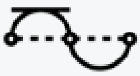
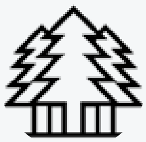
9 A number of data and methodological limitations remain when considering the development of climate scenario analysis. These include the need to rely on estimated data to fill gaps due to the lack of available data or incomplete data and a lack of consensus on best practice methodologies for all climate related metrics. As we develop our scenario analysis capabilities, we recognize where these limitations exist, and acknowledge that our approach will continue to evolve as the data and methodologies allow.

Our sustainable product suite

Our broad product capabilities and global research allow us to partner with clients to meet their needs across a spectrum of solutions.

We have developed a range of dedicated sustainable investment solutions which go beyond ESG integration, typically by screening or tilting portfolios based on sustainability-related criteria that may or may not be financially material.

Exhibit XII. Our sustainable product classification

Positive Tilt	Best-in-Class	Thematic	Impact
An investment style that seeks to meet its objective by maintaining a portfolio that has a measurable tilt towards companies / issuers with positive ESG characteristics vs universe.	Strategy which invests in a defined percentage of companies / issuers that lead in their peer groups in respect of sustainability performance.	Strategy invested in well-defined themes or assets specifically related to sustainability. Often seeking an environmental or social outcome.	Targeted investments aimed at solving social or environmental problems as well as generating financial return.
			

Exclusions on companies

With regards to exclusions of specific securities and/or issuers due to ESG-related criteria, we consider the needs of specific clients and/or compliance with laws and regulations, including the European Union's Sustainable Finance Disclosure Regulation, and/or expectations set out in sustainable investing-related fund-labeling regimes.

Sustainable investing represents a broad set of approaches, and we have recognized that clients have specific ways they need us to implement their sustainability objectives. This includes having their own customized exclusion list of companies. With that in mind, we seek to meet client needs providing support to implement clients' tailored exclusion lists.

Investing in potential solutions to address Climate Change

Environmental issues are an ever-increasing part of the investment landscape due to the impact they can have on investment returns and cash flows. At J.P. Morgan Asset Management, our global scale means we are well placed to help our clients manage various risks and opportunities as a result of climate change. As long-term investors, we seek to understand both physical risks and transition risks and opportunities to our client portfolios as part of our decision making processes.

Climate change presents important risks and opportunities to investors. We partner with our clients to offer an array of investment solutions to meet their financial goals and non-financial objectives. Where requested to do so, this can involve partnering with asset owners to achieve their decarbonization goals.

We will continue to manage existing accounts in accordance with client objectives, guidelines and strategies. JPMAM's goal, as fiduciary to our clients, is to collaborate with clients to develop solutions and products to help them transition to a low-carbon world and seek appropriate pathways to net zero, if this is their objective. We are committed to providing insights, products and capabilities to help them navigate the climate transition. We have sought to make significant investments in our climate-related investment capabilities and enhanced our efforts to help clients consider the material implications of climate change within their portfolios.

We believe we can provide sustainable solutions for clients with climate objectives through consideration of material climate-related risk where it aligns with the client objectives and guidelines. We also actively engage with our investee companies to understand the climate risks they face. We discuss setting net-zero commitments and pursuing emission reduction pathways as part of their management of transition risks. This creates opportunities for investors where it forms part of the investment objective. In addition, where investment objectives permit, we can also invest in companies that are well positioned to benefit from the transition to a low-carbon economy. As part of identifying opportunities for our clients, we can invest in solution providers and enablers for the transition to a low-carbon world and identify assets that enable direct removal of GHG emissions from the atmosphere.

Sustainable strategies consider a range of relevant metrics, depending on their objective. Using appropriate metrics allows us to evaluate the alignment of an investment to specific sustainable themes and intended outcomes of the strategy.

Metrics available for use in some of our Sustainable products include:

Broad ESG:

E: GHG Emissions

S: Human rights policy

G: % Independent board directors

Climate change mitigation

Weighted Average Carbon Intensity (WACI)

Implied Temperature Rise (ITR)

Social Advancement

Human Capital Development Score

Data Privacy & Security Policy score

For clients with climate objectives, we deploy three types of investment strategies.

1. **Decarbonize portfolios**: To invest in issuers with reduced carbon intensity, carbon emissions, and/or those that are better prepared for the transition to a lower carbon economy
2. **Funding Climate solutions**: To invest in issuers with products, services, and/or specific assets that aim to reduce real world emissions and/or improve natural resource use
3. **Enable negative emissions**: To invest in issuers / assets that enable or directly remove GHG emissions from the atmosphere

Exhibit XIII. Our climate investing strategy

1. Decarbonize portfolios	
What it means	To invest in issuers with **reduced carbon intensity, carbon emissions, and/or those that are better prepared** for the transition to a low-carbon economy
Measurement of success	Achieving **a target reduction** in absolute carbon emissions / intensity or a reduction relative to the benchmark
How its done	• **Selecting or tilting toward issuers** that better manage climate change risks / opportunities – including carbon emissions – in their business strategy and are better prepared for the low carbon transition • Passive funds can **track the EU Paris-Aligned or Climate Transition benchmarks**, while active funds may deviate in a risk-controlled manner
2. Funding climate solutions	
What it means	To invest in issuers with **products, services, and/or specific assets that enable or reduce real world emissions** and/or improve natural resource use
Measurement of success	• Demonstrating asset and/or portfolio level **contribution to climate change mitigation and/or adaptation activities**
How its done	• Investing in issuers that have significant **revenue derived from products and services** that contribute to or facilitate the low carbon transition, clean energy transition, etc. • Investing into debt instruments such as **green bonds** that finance projects facilitating the transition to a low carbon economy
3. Enable negative emissions	
What it means	To invest in issuers / assets that enable or directly **remove GHG emissions** from the atmosphere
Measurement of success	Reporting total **GHG emissions removed or credits created** that can be used as an offset (e.g. carbon credits)
How its done	• Investing into mechanical carbon removal technologies (e.g. carbon capture and storage) • Investing into **nature-based solutions (e.g. forestry**, mangroves, and soils) that naturally sequester carbon • Participating in **carbon credit** markets

Carbon Transition Portfolios

Our low-carbon transition framework

For strategies that are designed to achieve a meaningful reduction in GHG emissions, we have a proprietary framework for investing in the low-carbon transition, developed by the Sustainable Investing Team in partnership with our Quantitative Solutions team. The framework aims to identify companies that are better prepared for a transition to a lower carbon economy. This is achieved by incorporating a range of climate-related metrics that consider both the risks and opportunities that could arise due to a low carbon transition. As such, it is designed to identify the leaders in a low-carbon transition (i.e. companies that are already aligned) to a lower carbon economy as well as those that are in the process of becoming aligned, and the laggards (i.e. companies that are taking less action than their peers towards managing a low-carbon transition).

The low-carbon transition framework can be used in conjunction with other metrics, such as a Weighted Average Carbon Intensity, to create portfolios that seek to achieve a meaningful reduction in GHG emissions. This can be done without relying on pure exclusions or sector deviations – and also take advantage of the opportunities presented by the transition.

Our quantitative framework is built around three pillars that reflect the range of challenges companies face and the interconnection between emissions and other environmental issues: Managing Emissions, Managing Resources and Managing Climate-Related Risks. We leverage data reported by companies, insights from third parties and alternative data sources from J.P. Morgan Asset Management's proprietary natural language processing tool, which can capture a range of innovative signals. The tool looks through public documentation such as regulatory filings, broker reports, news reports or company profiles and identifies companies with textual relevance to a specific theme or signals such as a company's green capital expenditure.

The approach can be applied across asset classes, allowing investors to adjust a variety of inputs and parameters in line with their individual objectives, including the benchmark, tracking error and carbon-reduction targets. For example, the framework's ratings can be used to determine which companies are emphasized, through underweight and overweight positions, without taking sector bets.

The low-carbon transition framework is used to construct products across a range of markets for equity and fixed income funds. Examples include the J.P. Morgan Asset Management Carbon Transition Global Equity Index and J.P. Morgan Asset Management Carbon Transition US Equity index, which are also both aligned with the European Union's Climate Transition Benchmark standards. As part of our rules-based approach investment strategies, we have products that track these indices.

Exhibit XIV. Three key ways companies can prepare for the transition to lower carbon economy

Managing Emissions

Site Emissions

Reduce direct emissions and shift towards greener forms of energy

Consumer Emissions & Opportunities

Benefit from a shift in consumer demands towards low carbon alternatives

Managing Resources

Electricity Management

Reduce indirect GHG emissions from the usage of electricity

Water Management

Improve the sustainability of water flow management

Waste Management

Reduce waste materials, both hazardous and non-hazardous

Managing Climate-Related Risks

Physical Risk

Mitigate impact of physical risks from extreme weather conditions

Reputational Risk

Improve climate stewardship

Carbon Transition Strategy - Case Study

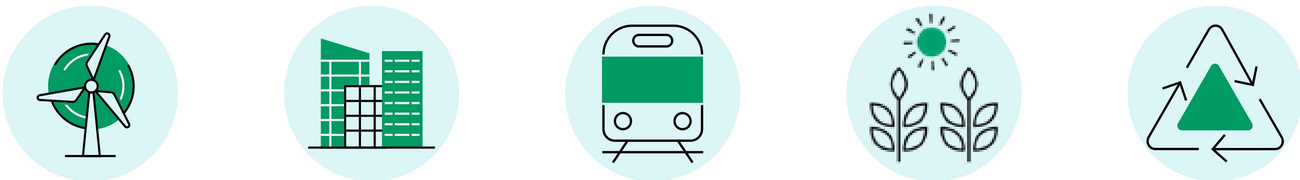
Our Carbon Transition Strategy provides a core global equity exposure that seeks to offer a meaningful reduction in greenhouse gas emissions helping investors position their portfolios for the transition to a low carbon world. The approach considers both risks and opportunities with a significant reduction in emissions. By using the framework outlined above, this Strategy targets at least 30% less carbon intensity[10] than the MSCI World index and a 7% decarbonization target year-on-year, while also providing a core, global equity exposure with lower tracking error.

Funding Climate Solutions

Our Climate Change Solutions strategy is an active thematic strategy that combines expertise in AI and data science with fundamental and sector-specific human insight to identify companies that we believe are developing innovative solutions to address the global challenge of climate change. The strategy leverages our machine learning capabilities that enable the investment team to assess more than 13,000 companies globally on exposure to a specific theme. Based on these results, the investment team conducts active fundamental research and engages with certain companies to gain a fuller picture, drawing on the insight of our experienced in-house research analysts and the stewardship expertise of the Sustainable Investing team. The process results in unconstrained, high-conviction thematic portfolios of companies sized based on alignment to the theme and related sub-themes.

Exhibit XV. Case study of sustainable investment approach focusing on climate change

The strategy invests in companies across five main sub-themes:



Renewables & electrification	Sustainable construction	Sustainable transport	Sustainable food & water	Recycling & re-use
Companies developing clean energy such as wind, solar, or hydro across the full production chain, and enabling electrification across the economy	Companies develop-ing less carbon-in-tense forms of con-struction, including energy efficiency of buildings	Companies investing in sustainable forms of transportation across automobiles, trains and planes	Companies investing in less carbon-intense forms of agriculture, sustainable food, or clean water	Companies developing technologies to reduce waste, including equipment and materials recycling

The portfolio managers assess the investment candidates based on their relevance to a specific theme and evaluate and monitor this relevance over time.

Enabling negative emissions – A spotlight on one real assets business

Campbell Global, a J.P. Morgan company following an acquisition in 2021, is a recognized leader in global timberland investment and natural resource management, with forests in 15 U.S. states, New Zealand, Australia and Chile.

[10] Greenhouse Gas intensity is defined by the EU Climate Benchmark regulation as tCO_2/million Euros EVIC: **https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32020R1818**

Exhibit XVI. Campbell Global's footprint and experience on investing in sustainable forests

40
Years of Experience
Investing and in sustainable forest management globally.

1.5 Million Acres / **0.6** Million Hectares
Under management[1]

Committed
Approximately **150** dedicated professionals in 15 U.S. states, New Zealand, and Latin America.

Third-party Forest Certification on 1.5 million acres
All properties are certified under the most applicable certification standard for the region.
We seek certification from third parties to verify that our philosophies and practices comply with internationally recognized and locally accepted standards for the sustainable and socially responsible management of timberland assets.

USD **5.5** billion AUM
CG managed worldwide on behalf of our clients[1]

Footnote: Campbell Global, LLC is part of J.P. Morgan Asset Management. Approximate Campbell Global, LLC ("Campbell Global," "Campbell," or "CG") asset value and acreage are based on the most recent independent appraisal or internal valuation data as of December 31, 2022.

Campbell Global ("CG") also has an extensive history with forestry carbon projects and was the first Timberland Investment Management Organization to list a forest carbon offset with the Climate Action Reserve in California dating back to 2009. Working forests play a critical role in storing CO_2 at a global scale and are essential to transitioning to a lower carbon economy.

Exhibit XVII. Benefits of Investing in Forestry

Carbon Negative Footprint
- Actively managed working forests serve as natural carbon sinks
- Many forests generate a net negative carbon footprint

Verified Carbon Assets (VCAs)
- Forest carbon storage can be enhanced through alternative management practices
- Additional carbon storage can be quantified and monetized

Renewable Material with Carbon Storage
- Forest harvest produces renewable materials
- Carbon storage in long-lived wood products increases climate benefits of forests

Environmental Co-Benefits
- Forests provide multiple environmental co-benefits, including biodiversity
- Verified Carbon Assets with environmental co-benefits may realize a price premium

Generate discrete benefits for landowners and investors

Footnote: Campbell Global, LLC is part of J.P. Morgan Asset Management. Approximate Campbell Global, LLC ("Campbell Global," "Campbell," or "CG") asset value and acreage are based on the most recent independent appraisal or internal valuation data as of December 31, 2022.

While there are many ways to generate carbon offsets, nature-based VCAs that remove carbon from the atmosphere, such as those generated by afforestation, may be perceived as higher quality and can achieve premium pricing on carbon markets as a result. CG focuses primarily these higher-quality offsets.

Considering climate in our investment stewardship

Engaging with investee companies on climate change risk

As discussed in our 2022 Investment Stewardship report,[11] engaging investee companies in dialogue and encouraging sound environmental, social and governance practices is an important component of how we deliver value to our clients. Our engagement with investee companies is based on our in-depth investment research on companies, alongside our assessment of macroeconomic drivers, sector-specific factors and financially material ESG issues including climate change risk.

This research insight enables us to act proactively and encourage investee companies to acknowledge risks and improve practices before risks are realized and opportunities are missed. We believe this is likely to preserve and enhance asset value.

Climate change is one of our JPMAM investment stewardship priorities.[12] In 2022, we engaged with 539 public and private investee companies[13] on topics related to climate change. These engagements included encouraging companies facing climate risks to provide details of their own decarbonization planning and improve climate change risk disclosures, and those planning to capitalize on opportunities to demonstrate their competitive advantage. Our engagements are led by the investment research analysts responsible for primary coverage of the company in equity and corporate bonds and are supported by members of the Investment Stewardship team with sector experience and climate-related issues. Our approach to engagement on climate change is to focus on sectors and companies where, in our view, climate risks and opportunities are most financially material to our clients' investments.

For more information about how we engage with companies on climate-related topics, please see our 2022 Climate Change Engagement & Voting Report.

Investment Stewardship in Alternative Markets

The level of influence over our investments in Alternatives differs based on our ownership structure, enabling differing levers for our stewardship of these assets. Stewardship across these assets may take a different form to our listed equity and debt strategies, given that our assets may be directly owned by our portfolios, and they may exercise significant influence. For example, in our commercial forestry investments where we directly control assets, stewardship involves driving higher sustainability standards as part of responsible forestry management and afforestation practices. Similarly, where we tend to hold majority stakes in infrastructure assets, we will hold a board seat and exercise responsible ownership by holding the board accountable to sustainability performance and encouraging the adoption of higher standards to address financial risks and opportunities. We may partner with property managers in our real estate properties to ensure buildings meet the high efficiency standards for resource use including energy, water and waste. Nevertheless, one principle which remains the same across JPMAM which is our commitment to the responsible allocation, management, and oversight of capital to maximize the value of our investments for our clients and beneficiaries.

Collaborative Engagement

Collaborative engagement is supported by and encouraged by regulators, in certain markets, on certain issues. For example, in the UK, climate change industry collaboration is seen as important and expected. While adhering to applicable rules and regulations, such as antitrust and competition laws, we believe that collaborative engagements can allow for effective communication of investor concerns to companies.

With recent media attention on collaborative engagements, it is important that clients understand what "collaborative engagement" means and what it does not mean. For example, while collaborative engagements involve multiple investors (such as other asset managers) with common concerns around risks and opportunities facing individual companies, each investor makes its own investment and proxy voting decisions. JPMAM does not share competitively sensitive information concerning its client accounts or its investment decisions with other investors. It does not work in concert with other investors on investment matters and makes its own independent decisions concerning investee companies including how to vote proxies and whether to change its allocations, invest in or divest from an investee company. Investee companies make their own strategic decisions based on their own assessment of the balance of views from various parties.

[11] https://am.jpmorgan.com/content/dam/jpm-am-aem/global/en/sustainable-investing/investment-stewardship-report.pdf
[12] https://am.jpmorgan.com/content/dam/jpm-am-aem/global/en/insights/investment-stewardship-priorities-report.pdf
[13] ESG related dialogue with sovereign bond issuers (as well as state-owned/controlled enterprises) are still at a nascent stage in the industry compared with corporate issuers. We plan to work on engagement with sovereign bond issuers further in 2023.

Exhibit XVIII. J.P. Morgan Asset Management 2022 Engagements with investee companies on climate risk

Engaging companies on climate change

539
Number of companies engaged on climate change

42
Number of countries engaged on climate change

26
Number of sectors engaged on climate change

Engaging on climate change risks

Through our climate change engagement framework, we encourage companies with whom we engage to follow and understand the latest climate developments, develop robust strategies with intermediate milestones, and disclose consistently and transparently on progress.

Our climate change engagement framework encourages companies to:

- Establish their own climate transition strategy which is embedded into the corporate strategy and ensure it is overseen at the highest levels of the organization.
  - *Managing climate risks will require dedicated senior capacity which understands and can develop the appropriate strategic responses.*
- Implement action on climate which aligns with business model environmental materiality.
  - *Actions taken must address the main drivers of companies' current and future environmental risks, not incidental aspects.*
- Set a strategy, including targets and pathways, which is grounded in the science underlying the Paris agreement.
  - *Investee companies that set and act on credible science-based net zero targets can help manage risk and build and sustain shareholder value over time to the benefit of client accounts. JPMAM will engage with investee companies on these and have refreshed our climate change engagement framework to include an enhanced focus on the scientific credibility of company targets and plans*
- Report transparently on the implementation of their transition strategy
  - *As long-term investors, we understand climate risk will continue to influence investee companies' strategies well beyond the tenures of companies' current management and boards. Thus, creating an approach to encourage and facilitate long term reporting is important.*

Engaging around climate opportunities

We believe that companies that are providing the necessary technologies and infrastructure will stand to benefit as markets transition. Energy storage, grid resilience, low-carbon transportation, energy efficiency enhancements and carbon capture and sequestration will enable the transition.

Given the scale of the opportunity facing companies within this space, it is important for us to understand whether a company's proposed solutions are likely to effectively deliver its promised outcomes and a competitive advantage.

As disclosure standards are lacking for many of these emerging technologies and are uneven across jurisdictions, we seek to understand how their products and services contribute to resolving the challenges of climate change and encourage companies to evidence their claims regarding the energy transition. Companies that meaningfully contribute to increasing energy efficiency, provide novel decarbonization solutions or enable increased availability of renewable energy are more likely to be successful in the transition to a lower carbon economy.

Therefore, engaging climate change solution providers focuses on better measurement of results, as well as an understanding of the extent to which such companies have a sustained commitment to delivering positive outcomes.

Collaborating to address climate change investment risk

J.P. Morgan Asset Management is a member of Climate Action 100+, an investor-led initiative working to address material climate risk facing investee companies and secure ongoing long-term returns for their beneficiaries. In 2022, we co-led and participated in a number of company engagements through that initiative. For more information, please refer to the POSCO and PEMEX case studies in our 2022 Investment Stewardship Report.

Engagement Case Study

Hapag Lloyd AG | Germany | Bonds

Issue

The International Maritime Organization (IMO) estimates the shipping sector currently comprises 2.9% of global emissions. As other industries decrease their emissions more quickly than shipping, which is growing in trade volume, the risks to shipping companies may increase as their share of global emissions is expected to rise to as much as 10% by 2050. In 2021 we participated in the Asset Manager & Asset Owner Task Force sub-group of the Sustainable Markets Initiative (SMI) – previously referred to as the Prince of Wales' Sustainable Markets Initiative.

Through this work, we contributed to the development of a statement outlining Investor Expectations for Shipping Transition to Net Zero Emissions, which lays out considerations investors can take into account when engaging the sector on financial risks that shipping companies may face as the result of climate transition.

Action

We engaged with Hapag Lloyd in September 2021 with respect to sustainability linked bonds (SLBs) held in certain of our High Yield portfolios. While these bonds do not carry proxy voting rights, as capital providers we still value a direct line of communication to management to discuss financially material issues such as climate risk and sustainability performance targets (SPTs) linked to the bonds. At that time, we shared a draft of the paper being developed by participants of the SMI with the company. They provided feedback on the paper and we discussed the status of their decarbonization commitments, which at the time were limited to 2030 targets and did not include emissions from their leased fleet. We raised concerns that their targets did not take into account investments needed for the transition to a lower carbon economy in order to ensure the longevity of the business.

We then followed up in May 2022 to understand progress since our last engagement. The company shared its new decarbonization targets to reduce CO_2 intensity of the entire fleet including its leased fleet by 30% by 2030, and to be climate neutral by 2045.

We discussed the company's decarbonization strategy to understand how they intended to reach the targets set. In the short to medium term, old inefficient vessels will be phased out and efficiency measures deployed to existing ships. They will also buy new fuel efficient vessels and new dual-fuel vessels. From 2030 decarbonization will be driven by low emissions fuels, as ships are transitioned from fossil fuels to biofuels and other low emissions fuels such as methane and ammonia. The company explained that the use of green fuels today is very limited due to limitations on supply of biofuels in particular.

We asked about the potential risks associated with the company's strategy which could expose it to continued transition risks. These, included the need to increase the supply of green electricity required to power the development of green fuels, as well as the infrastructure needed to transport and store these fuels. The company shared a number of partnerships it is involved in to further innovation in this area.

Outcome and next steps

We welcome the enhanced decarbonization targets set by the company since our last engagement and early disclosures around the decarbonization strategy. We encouraged the company to provide greater quantification and information on capital planning as the strategy is developed in the months to follow.

Proxy voting

Our voting policies are designed and are inextricably linked to promote the best long-term interests of our accounts. While our proxy guidelines specify how JPMAM will vote for certain proxies, the guidelines contemplate case-by-case determinations in many instances and for these proxies we take into account a variety of considerations in determining how to vote in light of the specifics of the particular proxy proposal and what we believe is in the best interests of our clients. As such, we will consider, among other things, climate risk when voting in director elections, executive compensation or other management resolutions where we are not satisfied with the steps taken by the company to address the financially material risks it faces because of climate change, the quality of the engagement discussion or its progress. We note that climate risks to companies may be highly dependent and increase significantly for companies in certain jurisdictions as governments and investors have expectations with respect to the company addressing transition risks.

Voting on climate change shareholder proposals is another important way of expressing our views where we think management could better manage climate-related financial risk.

In 2022, we saw a significant increase in climate related shareholder proposals, particularly in the USA. We have also seen an investor coalition led shareholder proposal on climate issued for the first time in Japan. For details and examples of our climate related voting activity please see our 2022 Investment Stewardship Report.

Participation in climate-related industry associations

We believe that engagement with companies on how they are managing climate change, including the credibility of any net zero targets they set, is part of managing risks and contributing to long-term shareholder value. What has not always been clear is how to most effectively conduct stewardship in a way over time which can meaningfully drive improvements in corporate climate-related practices. We seek to play a leading role on this issue and so, we have served as the co-chair of Institutional Investors Group on Climate Change's (IIGCC) Net Zero Stewardship Working Group. This is a group of approximately 70 investors who also share a common interest in more robust stewardship practice with relation to the transition to the net zero economy.

In 2022, the group contributed to the discussions which led to the development of and provided feedback to the publication of the IIGCC Net Zero Stewardship Toolkit. This document is aimed at providing investors with helpful ideas sourced from across the industry on a series of voluntary good practices to enhance their stewardship practices when such investors identify risks and opportunities in the portfolios they manage. The toolkit helps investors formulate and articulate their own objectives for engagement and improve interactions with their clients so that such clients' needs are well understood.

For more information on how we engage with industry bodies, please see our 2022 Investment Stewardship Report.

How climate risk impacts our business strategy and financial planning

J.P. Morgan Asset Management's annual financial forecasting and budgeting process, which is informed by industry analysis and inputs from product and client subject matter experts, considers potential financial impacts to the business, including where appropriate and material, climate opportunities and risks. In addition, the Firm stresses financial projections, considering adverse market conditions, client outflows and heightened expense environments. Across our EMEA legal entities[14] we measure and assess the impact of transition risk on seed capital, mandatory investment plans and hedge exposures through a climate risk stress scenario, based on the NGFS Divergent Net Zero scenario.

While the climate risks we have identified above may pose meaningful challenges, our diversified client base and product offering, our robust capital position, and flexibility in the ongoing provision of investment solutions, are expected to safeguard the Company's ability to withstand the anticipated impacts of climate change.

[14] JPMorgan Asset Management International Limited ("JPMAMIL"), completes an annual ICARA (Internal Capital Adequacy and Risk Assessment) in which it measures and assesses the impact of transition risk on seed capital, mandatory investment plan and hedges exposures through a climate risk stress scenario. JPMAMIL also considers a natural disaster scenario driven by environmental factors as part of its operational risk scenarios.

Risk Management

Risk Management

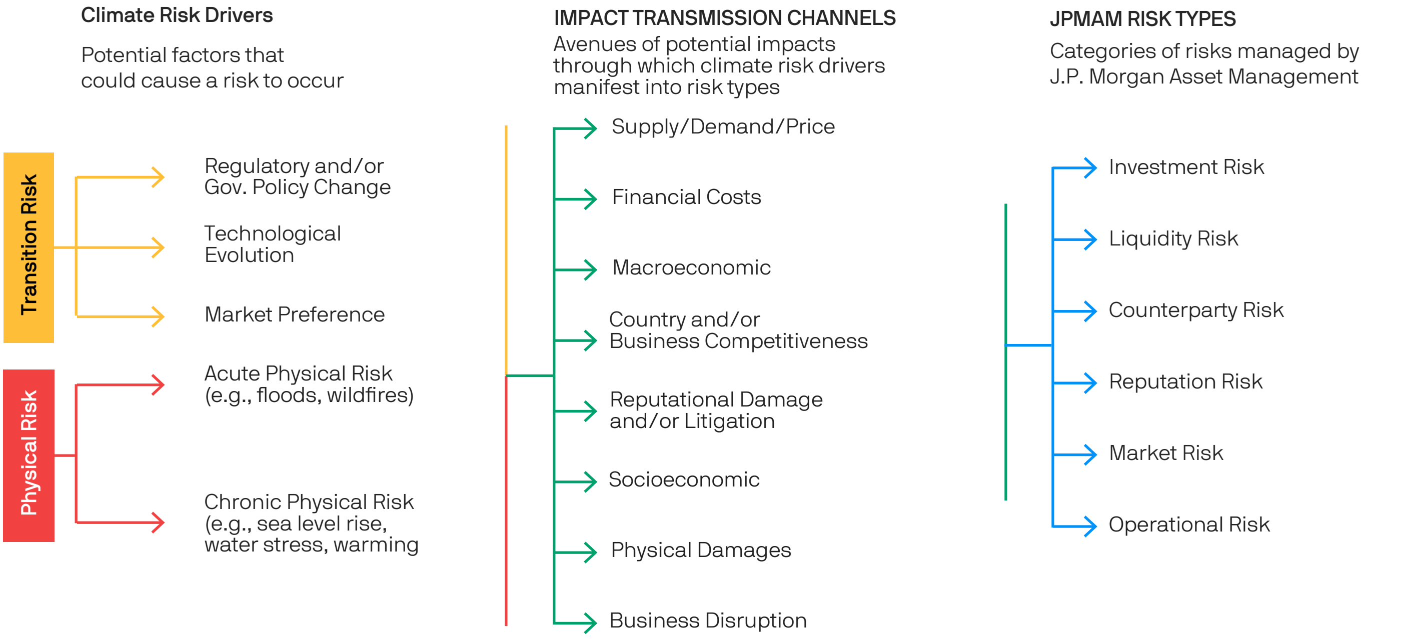
Our target framework for managing Risk

Climate Risk Framework

At J.P. Morgan Asset Management, we recognize the importance of effective identification, monitoring, and management of climate-related risks and opportunities across our global business.

J.P. Morgan Asset Management leverages the Firmwide (JPMC) Climate Risk Framework and continues to enhance the processes to capture the transmission channels through which transition and physical risk drivers impact existing risk types, such as investment, liquidity, counterparty, reputation, market and operational risk. The key principle underpinning this Framework is that climate risk is a risk driver that is being integrated into the risk types and is not being treated as a standalone risk type. This framework is comprised of six core risk capabilities central to enabling assessment, quantification and management of the climate risks that may manifest across our diverse global footprint. In this section, we discuss the Risk Identification and Risk Management capabilities of this framework.

Exhibit XIX. Translating Climate Risk Drivers into Potential Risks to the Firm



At J.P. Morgan Asset Management, the independent Risk Management team is responsible for monitoring and challenging the management of climate risks. The following describes the six pillars of the Climate Risk Framework.

Exhibit XX. Climate Risk Framework

Risk Identification	The AM Risk team will review and challenge climate-related risks in the AM risk inventory. First line of business is responsible for climate-related risk identification.
Risk Management	The AM Risk team helps to create climate-enhanced risk capabilities to track and measure the impact of climate risk and leverages Firmwide Climate Risk for identifying methodologies applicable.
Risk Reporting & Disclosures	The AM Risk team is responsible for reporting of climate risk metrics that enables risk oversight and monitoring.
Risk Governance	Risk oversight and escalation of material climate risks should adhere to governance structure describe in the Governance Section.
Data Management	Climate-related data including internally and externally sourced climate risk data, must use approved distribution methods and comply with internal policy.
Scenario Analysis	Scenario analysis is evolving. AM Risk is developing a price-impact approach to integrate climate-related factors into existing scenario analysis as the modelling metrics continue to develop over time.

How we identify and assess climate-related risks

With the aim to identify climate-related risks in our investments on behalf of clients, we are continuing to develop portfolio and risk management tools and research focused on assessing companies' climate-risk exposure and resilience.

At J.P. Morgan Asset Management, the first line of defense (as defined below) is responsible for the identification, discussion and escalation of climate-related risks associated with investments, as appropriate. The Firmwide Climate Risk team will review and challenge the integration of climate-related risks as a part of the existing risk management process. AM Risk Management team will review and challenge the inventory as part of the Material Risk Inventory (MRI) process for quantification and management.

The types of Risk we manage

At J.P. Morgan Asset Management, we use our resources to better understand how transition and physical risks may manifest and their potential impacts on the existing 'business as usual (BAU)' risk types we manage. Our overall objective is to manage the business and its associated risks in a manner that balances serving the interests of our clients while protecting the organization's safety and soundness.

Transition and physical risks can manifest in a variety of ways. The infographic below provides examples of different types of transition and physical risks and how they could materialize across the six major risk types we manage on behalf of our clients and JPMAM.

Exhibit XXI. Examples of Potential Climate Risk Impacts

JPMAM risk types		Potential climate risk impacts	
		Transition risk	**Physical risk**
Client	**Investment Risk** Risks of investments declining in value due to economic developments or other events impacting the entire market	Shifts in consumer preferences to low-carbon goods and services, changes in policy, or technological advances impact market valuations and yields (e.g., through lower revenues, higher costs, or stranded assets)	Temporary disruption in a business's operations, or those in its supply chains, due to severe weather events leads to potential loss
	Liquidity Risk Defined as the risk of a fund not meeting requests to redeem shares issued by the fund without significant dilution of remaining investors' interests in the fund	Shifts in investor/client sentiment on climate issues and changes in capital flow into investment products/ instruments that finance the climate transition	Capital outflow from most vulnerable regions impacted by extreme weather events
	Counterparty Risk Defined as the risk of the other party in an investment, credit or trading transaction not fulfilling its part of the deal and defaulting on its contractual obligations	Changes in regulations/laws could restrict or discourage counterparty's offerings related to climate- and other sustainability-related issues and counterparties can also be impacted by climate risks which increases the Counterparty /Credit Risk	The business disruption events to counterparties that are impacted by adverse climate events
	Market Risk (for JPMC only) Risk associated with the effect of changes in market factors on the value of assets and liabilities held for both the short and long term to JPMC balance sheet	Changes in demand for carbon-intensive products or services lead to price volatility	Local weather events cause variability in agricultural output and lead to commodity price volatility

JPMAM risk types		Potential climate risk impacts	
		Transition risk	**Physical risk**
JPMAM	**Reputation Risk** Risks that an action or inaction may negatively impact perception of the Company's integrity and reduce confidence in the Company's competence by various constituents, including clients, counterparties, regulators, employees or the broader public	Real or perceived lack of progress made toward climate-related commitments, as well as how we provide transparency around climate-related matters	Business operating in areas susceptible to climate-related events and lack of transparency around climate-related matters
JPMAM Operational	**Operational Risk** Risk of an adverse outcome resulting from inadequate or failed internal processes or systems; human factors; or external events impacting the Company's processes or systems	New legislation and/or regulatory requirements lead to significant changes in business process and costs	Extreme weather causes physical damage to buildings and decreases worker productivity

Managing climate risks across our lines of defense

Approach: Integrate TCFD-aligned climate-risk factors into existing investment oversight and escalation framework

Exhibit XXII. Overview of risk management processes

We have multiple lines of defense to manage risks in client portfolios, including climate-related risks. These lines work together but with distinct responsibilities to provide oversight over business activities, including climate-related risks, as outlined in the section below. This enables a sound control framework by minimizing gaps in risk and control coverage, creating separation of duties and an oversight framework.

Investment teams and business management are the first line of defense

Investment teams and business management are responsible for developing and maintaining effective internal controls and are the primary risk owners, or the first line of defense. Within the first line of defense, material climate-related risks are considered as part of ESG integration and managed within portfolios that are determined to be ESG integrated under our governance process.

For strategies not deemed ESG integrated under our internal processes, material climate-related risks would be considered if deemed a material investment risk as consistent with our fiduciary duty.

Portfolio managers have primary responsibility for the risk management and oversight of client investments. They operate within guidelines and risk parameters and make active investment decisions to generate long-term value to the portfolio. As part of the first line, portfolio managers also coordinate with embedded risk teams dedicated to helping execute risk and performance oversight of the portfolio including review and challenge of the investment process.

The Investment Director teams oversee performance and risk oversight of portfolio management to maintain discipline around investment objectives and process in the context of client objectives or fund guidelines, performance, risk position and ESG profile. The Investment Director teams monitor the relative ESG exposures of each strategy, looking at overarching trends and reviewing outliers as well as overseeing the level of integration from both a qualitative and quantitative angle. For more information, please see the section; Our approach to ESG Integration.

Investment teams are responsible for considering the risks facing their portfolios. Climate risk, alongside other financially material risks are important topics in our investment analysis. These risks are also considered in Investment Oversight Committees organized by asset class across the firm globally.

Sustainability risks are managed alongside the broader risk management processes (e.g. financial risks, operational risks, credit risks, etc.). J.P. Morgan Asset Management undertakes a monitoring process to ensure that investment teams (as part of their existing, regular investment review system), continue to incorporate sustainability risk within their strategies, as appropriate. Responsibility for the oversight of the monitoring process will sit with the respective Investment Directors who escalate sustainability risk issues to Chief Investment Officers.

AM Risk is the second line of defense

The JPMAM Risk is the second line of defense for managing climate-related risk. The JPMAM Risk function is responsible for providing independent oversight and effective challenge of the risk management process, including measuring, monitoring and managing risk thresholds to review investment, liquidity and counterparty risks.

Climate risk is not a standalone risk stripe and may impact or overlap with the existing types of risks managed by the JPMAM Risk. Climate risk is embedded into the JPMAM Risk's overall risk management process. The JPMAM Risk team performs deep dives focused on potential risks across portfolios, and presents those findings to the JPMAM Risk Committee. This includes Climate and Sustainable Investing analyses that are tailored to potential forward-looking risks as well as industry-wide topics of interest. The JPMAM Risk Committee is co-chaired by the J.P. Morgan Asset Management Chief Executive Officer (CEO) and Chief Risk Officer (CRO). Committee members from across the first line of defense have the ability to escalate items where deemed applicable by the JPMAM Risk Committee Charter.

In addition, we employ the Stressed Market Protocol (SMP) to address periods of high market volatility and market crises, which may include climate events. This enables us to focus on accounts that are under current stress, performance or flow concerns. The Asset Management Chief Risk Officer (AM CRO) and/ or the Asset Management Chief Executive Officer (AM CEO) can initiate the Stressed Market Protocol during periods of high market volatility and market crises. Once the protocol is enacted, JPMAM leadership holds regular meetings to focus on key risk-related topics including climate risks where applicable.

Climate-related risks are considered part of Sustainable Investing Risk Oversight. In 2022, we launched the Sustainable Investing Risk Oversight Framework which aims to monitor material ESG metrics and their consideration in the investment process of our strategies. In its initial stage, the framework has the objective to identify investment strategies with ESG factors and carbon metrics that are materially different versus its benchmark and understand the rationale for such differences.

This process aims to raise the transparency of specific exposures or strategies with ESG and climate indicators that may be inconsistent with the strategy's investment objective or disclosures. This process is not expected to limit an exposure identified as an outlier or trigger changes in positions that would negatively impact portfolio returns. On a quarterly basis, results are reviewed to determine material outliers to escalate to the JPMAM CRO, AM CIOs and JPMAM Global Head of Sustainable Investing and to the legal entity Boards as appropriate. This quarterly monitoring process is expected to evolve over time.

The JPMAM Risk function also serves as a voting member of SIOC, discussed in more details in the Governance section.

Compliance, Conduct and Operational risk (CCOR)

Compliance, Conduct and Operational risk (CCOR) is responsible for the independent governance and oversight of the first line of defense, including the timely escalation of identified issues. The CCOR management framework establishes J.P. Morgan Asset Management's approach or methodology to govern, identify, measure, monitor, test, manage, and report on compliance, conduct, and operational risks,

The Internal Audit Function is the third line of Defense

The Internal Audit function operates independently from other parts of the Company, providing testing and evaluation of processes and controls across the entire enterprise. The Internal Audit team assesses the effectiveness of our climate risk governance, risk management and internal controls as it relates to climate risk as well as evaluating our compliance with laws and regulations; and identifying opportunities for improvement.

Through this structure, we seek to subject business decisions and actions to rigorous consideration, testing and review for compliance with relevant laws and regulations, as well as consistency with our business principles.

Monitoring of ESG Integration

J.P. Morgan Asset Management undertakes ongoing monitoring to assess how investment teams are incorporating financially material sustainability risks within their strategies and to review the ESG integration work of investment groups. Specifically, this includes the application of sustainability risks and financially material ESG metrics within their ESG integrated strategies.

The Investment Director teams in Equity, Global Fixed Income, and Multi-Asset Solutions and the equivalent teams in Global Liquidity and Alternatives monitor ESG exposures of the relevant strategy quantitatively and qualitatively, as part of their quarterly review meetings, as appropriate.

Any material findings from the ongoing monitoring process will be escalated to the CIOs of the relevant asset class using the existing investment oversight/ escalation process as shown in the framework under **Exhibit XXII**. CIOs are then able to further escalate any issues, including material negative ESG exposures into their respective Investment Oversight Committees. We have similar regular monitoring processes in Global Liquidity and Alternatives, which are tailored to the nature of their asset class.

In addition, JPMAM Risk has the Sustainable Investing Risk Oversight framework to monitor the consideration of financially material ESG metrics in the investment process of our active strategies. This process has the objective of identifying investment strategies with ESG metrics scores that are materially different versus their benchmark and understanding the rationale for such differences. The analysis will be shared with JPMAM Risk and CIOs on a quarterly basis. This process aims to increase the transparency of specific exposures or strategies with ESG ratios that may be inconsistent with the strategy's name, investment objective or disclosures. This process is not expected to limit an exposure identified as an outlier or to trigger changes in positions that would negatively impact portfolio returns.

Regulatory requirements related to climate change

J.P. Morgan Asset Management actively considers global and industry requirements related to climate change as the developments are directly related to the firm, our investee companies and the interest of our clients.

Compliance with laws, rules, regulations, codes of conduct or standards issued by industry organizations or associations (or similar) remains the responsibility of each regulated legal entity within JPMAM, as well as the personal responsibility of each officer and employee.

J.P. Morgan Asset Management has established a business led regulatory and industry reform risk management framework ("R&IR RMF") designed to identify and mitigate the key risks associated with regulatory and industry reform that directly and indirectly applicable to the business globally.

This framework tracks significant regulatory and industry developments on climate and broader ESG topics, assesses their impact on our business and provides an overarching governance framework regarding the implementation of identified changes.

Metrics and Targets

Metrics and Targets

The climate analytics tools we are developing aim to provide a set of emissions-based and climate-related metrics at both a company and portfolio level to cater for different use cases in investment decision-making.

Currently our efforts are focused on developing tools for our listed equities and corporate bonds, although this may evolve over time to consider sovereign debt and alternative markets.

Carbon metrics

Beyond absolute Scope 1, 2 and 3[15] emissions, several other carbon metrics can be used to add insight and context to these figures. These metrics can be used for portfolio analytics and decision-making as they take into account the contribution of each company to the overall portfolio carbon footprint, and highlight companies that are performing better or worse relative to their peers in terms of emissions efficiency. A summary of core carbon metrics is shown in **Exhibit XXIII**. based on current best practices as outlined by the Partnership for Carbon Accounting Financials (PCAF Standard) and the TCFD recommendations. In 2021, we published a paper "Understanding Carbon Exposure Metrics" that outlines the evolution of carbon metric standards and current best practices. As part of our ongoing efforts to improve evaluation of climate related risk, we determine which of these industry standards to leverage in our tools, where appropriate.

[15] Scope 1: Direct emissions from company owned or controlled facilities, Scope 2: Indirect emissions from purchased electricity, heat and steam, Scope 3: Indirect emissions resulting from upstream and downstream activities of the company such as emissions from purchased products, product end use, business travel and investments. https://ghgprotocol.org/corporate-standard

Exhibit XXIII. Strengths, weaknesses and use cases for carbon exposure metrics

Metric	Strengths	Weaknesses	Potential use cases
Total financed emissions* (tonnes CO_2e)	Portfolio decomposition and attribution analysis Ultimate tracker of emissions	Cannot compare portfolios Trends are sensitive to EVIC** variations	To set baselines and track emission evolution
Carbon footprint* (tonnes CO_2e/million invested (USD))	Portfolio decomposition and attribution analysis Portfolio comparisons Intuitive link between ownership and responsibility	Size and carbon efficiency of companies not considered Trend sensitive to EVIC** variations	To compare portfolios and perform company attribution based on ownership
Carbon intensity (revenues)* (Weighted average carbon intensity (WACI)) (tonnes CO_2e/million revenues (USD))	Portfolio decomposition and attribution analysis Size and carbon efficiency of companies taken into account	Can be sensitive to short-term fluctuations in product pricing Sensitive to outliers	To evaluate exposure to carbon-intensive companies
Carbon intensity (physical) (tons CO_2e/unit production) Sector specific	Fundamental link to physical production Independent of pricing and market positioning Size and carbon efficiency of companies taken into account	Cannot perform portfolio decomposition and attribution analysis Normalization is sector-specific Only suitable for homogeneous sectors	To perform sector-specific deep-dive analyses

* Metrics used by J.P. Morgan Asset Management for reporting.

** EVIC: Enterprise Value Including Cash. Based on the recommendation of the EU Technical Expert Group, EVIC has been recommended by PCAF as the apportioning metric of choice, and the TCFD has also recommended its use for listed equities, corporate bonds and business loans in its latest guidance on carbon metrics

Currently we use carbon footprint and weighted average carbon intensity data from Trucost to measure the carbon exposure of investment portfolios across public equity and corporate bonds and from MSCI for sovereign debt. Metrics are made available primarily in regions such as the United Kingdom, Hong Kong and Singapore, where this is a regulatory requirement, but also for interested clients. In the climate analytics tools we are building, we plan to leverage the complementary nature of the insights that the different metrics outlined in **Exhibit XXIII** can provide.

Bridging emissions data gaps

The majority of companies do not currently report their Scope 1 and Scope 2 emissions data, and so we have followed a hierarchy approach to fill the gaps for non-reporting companies, following the approach recommended by PCAF.

Where companies do not report emissions, we use the Trucost emissions estimate model. Overall, Trucost provides Scope 1 and Scope 2 emissions data for over 14,000 companies, which covers around 99% of our AUM in listed equity and 91% of AUM in corporate bonds.

To fill additional gaps in coverage, we have devised a policy that adopts a consistent approach across sectors. We assume that industry or sub-industry emissions intensity can be used as a representative emissions factor for the companies with missing data, which increases coverage to ~100%. For cases where emissions information is not available from Trucost, but where we have company revenue data, a company's carbon metrics will be derived from the average carbon intensity (tons CO_2e/million USD in revenues) for the industry or sub-industry in which it operates. For companies with missing emissions and revenue data, the industry or sub-industry average carbon footprint is used instead. The sub-industry is used when the distribution of emissions intensities within the sub industry is significantly different from the parent industry, and the calculation is handled separately for Scope 1 and Scope 2 emissions.

Our approach results in a higher proportion of our AUM being included in our carbon exposure metrics compared to using only reported or Trucost estimated emissions, but results in values with varying data quality. However, we consider this method to strike a sensible balance between the need to provide a straightforward and transparent approach while providing granular enough inputs to differentiate companies across sectors.

Closing the data gap in Alternative Markets

It's important to recognize, within the Alternatives business, reporting has been difficult due to gaps in underlying data and methodological challenges. Such data gaps are due to (i) the lack of accuracy in the information currently available, (ii) the lack of climate data vendors and (iii) the absence of common industry views. As the industry develops and the impacts of data gaps decreases, we will seek to evaluate additional data to meet the regulatory requirements and industry standards. We are committed to providing greater transparency and disclosure to investors and will continue to test methodologies to improve the transparency and accuracy of data quality not only in Alternatives but all asset classes.

Climate-related metrics

How we are breaking down climate risk metrics and climate opportunity metrics

We complement carbon exposure metrics with a selection of additional climate metrics to provide a comprehensive analysis of climate- related risks and opportunities at the company and portfolio levels, taking into account both physical and transition issues.[16] Climate metrics can be split into two categories: those that consider a company's impact on climate change and those that consider the impact of a low-carbon transition or physical climate change on a company. Carbon exposure metrics all fall into the first category along with portfolio alignment metrics (such as implied temperature rise metrics), while climate scenario analysis metrics that consider the valuation impact on companies under different climate pathways fall into the second.

Climate-related metrics often require more detailed or nuanced data inputs than carbon exposure metrics and rely on complex modeling or methodologies. However, the key strength of these metrics is that they can provide insights and understanding beyond those that can be gained through carbon metrics alone.

While carbon exposure metrics can show which portfolios or companies have high emissions or emissions intensities, additional climate metrics could show how this risk may reduce in the future as a result of transition plans that are already underway to reduce these emissions. Similarly, a company with low emissions may not be identified by carbon exposure metrics as having high climate related risks, but climate scenario analysis metrics may show a potential loss in future revenue if it operates in a sector where there are expected shifts in consumer preferences. Climate metrics are therefore not only useful for reporting and analytics, but also for engagement, as they can provide a more quantitative analysis of a company's risks and opportunities.

As we develop our climate analytics capabilities, we will evaluate which climate related metrics are most appropriate and useful, taking into account data availability and quality. Depending on the outcome of such evaluations, we expect to use the carbon exposure metrics outlined in **Exhibit XXIII** and additional climate-related metrics to assess risks and opportunities in our investment strategies and products in due course and where appropriate and meaningful. As industry standards evolve and we enhance our climate metric capabilities, we acknowledge that the scope, methodologies and data sources that we use may change.

[16] The TCFD recommendations suggests using a number of cross-industry climate related metrics to provide a more holistic picture of an organization's climate related risks and opportunities. https://assets.bbhub.io/company/sites/60/2021/07/2021-Metrics_Targets_Guidance-1.pdf

Compensation Framework

The Compensation Framework for JPMAM's investment professionals is based on several factors that drive alignment with client objectives, the primary of which is investment performance, alongside of the firmwide performance dimensions. The performance dimensions are evaluated annually based on several factors that drive investment outcomes and value—aligned with client objectives—including, but not limited to adhering with the Firm's compliance, risk, regulatory and client fiduciary responsibilities, including, as applicable, adherence to the JPMAM Sustainability Risk Integration Policy, which contains relevant financially material Environmental, Social and Corporate Governance (ESG) factors that are intended to be assessed in investment decision-making, per investment objectives.

GHG Emissions of our AUM

Exhibit XXIV. The carbon exposure metrics for our assets under management[17] are[18]:

	Total financed emissions:		Carbon Footprint:		WACI:
2021	2022	2021	2022	2021	2022
55	57	51	63	162	184
$MtCO_2e$		tCO_2e/\$million invested		tCO_2e/\$million revenue	

Targets

Interim Net Zero Targets

As a global asset manager, JPMAM believes climate change and the transition to a low-carbon economy present significant risks and opportunities to clients' investment portfolios and to the assets that JPMAM manages on their behalf. As part of our business's strategy to help clients manage climate risks and opportunities, JPMAM became a signatory to The Net Zero Asset Managers initiative (NZAMi) in November 2021, in support of the goal to reach net zero greenhouse gas emissions by 2050 or sooner. JPMAM independently set interim targets for assets determined to be in scope for net zero pathways and is creating investment products aligned with net zero emissions by 2050. On November 9, 2022, JPMAM's interim net zero targets were published.

17 We use the metrics described in **Exhibit XXIII** which are calculated following the equations outlined in our paper "Understanding Carbon Exposure Metrics". The 2022 data is based on our holdings as of 31st December 2022 across publicly listed equity and corporate bonds. Other asset classes are currently out of scope due to data limitations and methodological challenges. Included in the calculation are Scope 1 and Scope 2 emissions and revenue based emissions intensities from the 2023 Trucost dataset as of April 2023 with a small percentage covered by a gap-filling methodology based on sector averages.

18 Our 2021 figures have been amended and restated in line with updates in our data and methodology given the evolving nature of data source, analytics and emerging practice on climate metrics.

JPMAM has included all of its AUM in listed equities and corporate bonds, as well as certain direct investments in forestry, in scope for its targets. Those assets make up 45% of its total assets under management ($2 trillion), as of December 31, 2022.

JPMAM will measure its progress towards its targets by the proportion of companies in which it invests that have set their own credible net zero targets. By 2030, JPMAM anticipates that the percentage of its AUM held in companies with science-based targets will increase from 20% to 55%.

Investee companies that set and act on credible science-based net zero targets can help manage risk and build and sustain shareholder value over time to the benefit of client accounts. JPMAM will engage with investee companies on these and have refreshed our climate change engagement framework to include an enhanced focus on the scientific credibility of company targets and plans.

As a fiduciary, JPMAM's is required to act solely in its clients' best interests and has not set specific targets for individual client accounts except for certain sustainable strategies. While JPMAM believe that taking into account financially material risks and opportunities (including financially material environmental risks such as climate risks) is an important part of the investment process, JPMAM's membership in NZAMi does not alter its fiduciary responsibility to clients or the objectives or strategies of client account. The ability to meet net zero targets is dependent on action by a variety of stakeholders including sustained and consistent government policy, accelerated technological breakthroughs, and substantial adaptation in corporate business models.

Pursuing firmwide operational sustainability

A key component of the firmwide approach to sustainability is managing the environmental impact from operations. The firm's operational environmental footprint is a result of activities and resources consumed across more than 6,000 corporate offices, bank branches and data centers around the world. To drive the Firm's progress on operational sustainability, JPMC has set a number of Firmwide commitments, including reducing Scope 1 and Scope 2 emissions by 40% by 2030, versus a 2017 baseline, sourcing renewable energy for 100% of global power needs, achieving carbon neutrality across operations annually and reducing water and office paper use.

JPMC Operational Sustainability Targets*

Targets Met, Annually Recurring

a. Maintain carbon-neutral operations[19]

b. Source renewable energy for 100% of our global power needs

c. Divert 100% of e-waste from landfills

d. Purchase 100% of our paper from certified sources

In-Progress Targets

a. Reduce Scope 1 and 2 GHG emissions by 40% by 2030 vs. a 2017 baseline

b. Satisfy at least 70% of our renewable energy goal with on-site renewable energy and off-site long-term renewable energy contracts by 2025

c. Reduce global water use by 20% by 2030 vs. a 2017 baseline

d. Reduce office paper use by 90% by 2025 vs. a 2017 baseline

* For more information on our progress toward our operational targets, visit our website.

For more information on the firms Operational Commitments and efforts to manage environmental impact, read the 2022 ESG Report and visit the website.

[19] Operational neutrality achieved using contractual instruments, including applicable Energy Attribute Certificates and carbon credits. Carbon credits and the market for them are evolving rapidly. Although we endeavor to source high-quality carbon credits verified by independent third parties, the ability to use carbon credits to fully and permanently "offset" emissions or achieve carbon "neutrality" relies on certain assumptions and is subject to debate among experts.

It is important to remember that the MSCI ESG metrics provided in this report may not fully reflect future economic reality. At J.P. Morgan Asset Management, our ESG specialists collaborate closely with our research analysts to understand when that may be the case, and where appropriate we engage with companies to improve disclosure and enhance policies. Where we think climate risk may be material, we review fossil fuel exposure, disclosed reduction targets going forward and other relevant information.

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