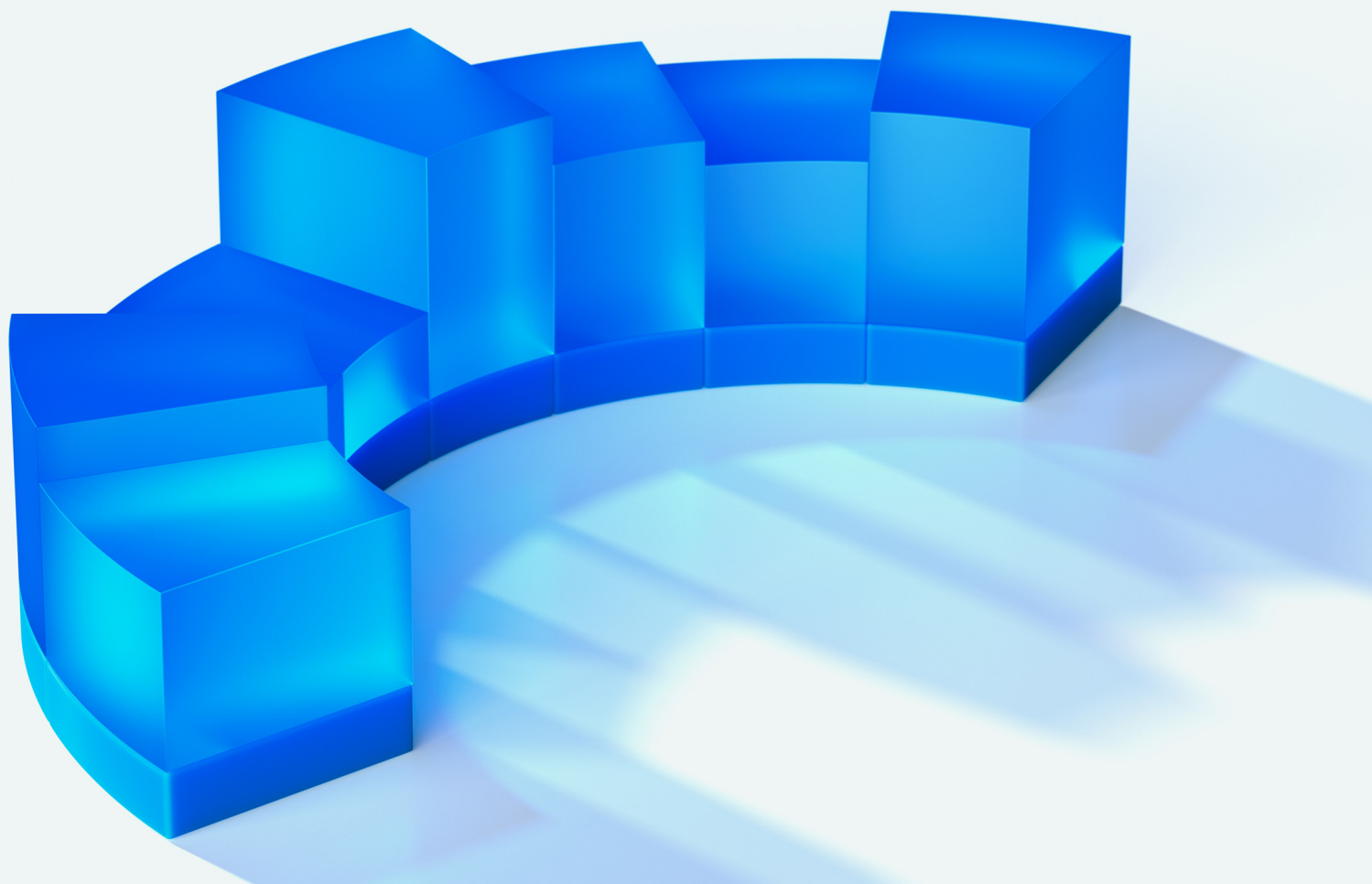




Task Force on Climate-Related Financial Disclosure

J.P. Morgan Asset Management 2025 Global Climate Report

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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") with respect to its client accounts. Please note that while there is broad alignment across the J.P. Morgan group regarding climate risks and opportunities, JPMAM's approach to managing climate-related risks and opportunities in client accounts is separate from JPMorgan Chase & Co.'s (the "Firm", "JPMorganChase", "Firmwide") firmwide management of climate-related risks, and is considered with a fiduciary lens, which may differ for a variety of reasons from the approach taken by JPMorganChase.

All data in this Report is as of December 31, 2024 with a reporting period of January 1, 2024 – December 31, 2024.

Who we are

JPMAM 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. JPMAM oversees more than USD 3.4 trillion in client assets under management globally as of December 31, 2024.

J.P. Morgan Asset & Wealth Management ("AWM") is a global leader in asset and wealth management services. The AWM line of business serves institutional, ultra- high net worth, high net worth and individual clients.

JPMorganChase is a leading financial services firm based in the United States of America ("U.S."), with operations worldwide. JPMorganChase had \$4.0 trillion in assets and \$344.8 billion in stockholders' equity as of December 31, 2024. 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 J.P. Morgan and Chase brands, the Firm serves millions of customers, predominantly in the U.S., and many of the world's most prominent corporate, institutional and government clients globally.

JPMAM is the marketing name for the investment management businesses of JPMorganChase.

This report describes JPMAM's approach to climate-related risks and opportunities, as an asset manager. For information on how JPMorganChase is addressing climate related risks and opportunities please refer to the JPMorganChase [website](#). Unless otherwise noted, the focus of this report throughout is on JPMAM.



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.

Approaches to Sustainable Investing, ESG and Climate

JPMAM acts 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 with a few strategies and products that additionally seek to meet client objectives for sustainable outcomes and/or climate goals. As we strive to meet these objectives, managing financially material Environmental, Social and Governance ("ESG")¹ risks, including climate-related risks and opportunities, is an important part of our investment processes. We believe that understanding financially material ESG factors plays an important role in delivering long term value creation for our clients.

Over the past decade, climate risks have emerged and we expect them to 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 including, ESG integration, identifying climate-related risks and opportunities across time horizons, offering strategies for clients with specific climate goals, engaging with portfolio companies and adopting our Climate Risk Framework.

Transitioning to Enhanced Climate Disclosure Standards

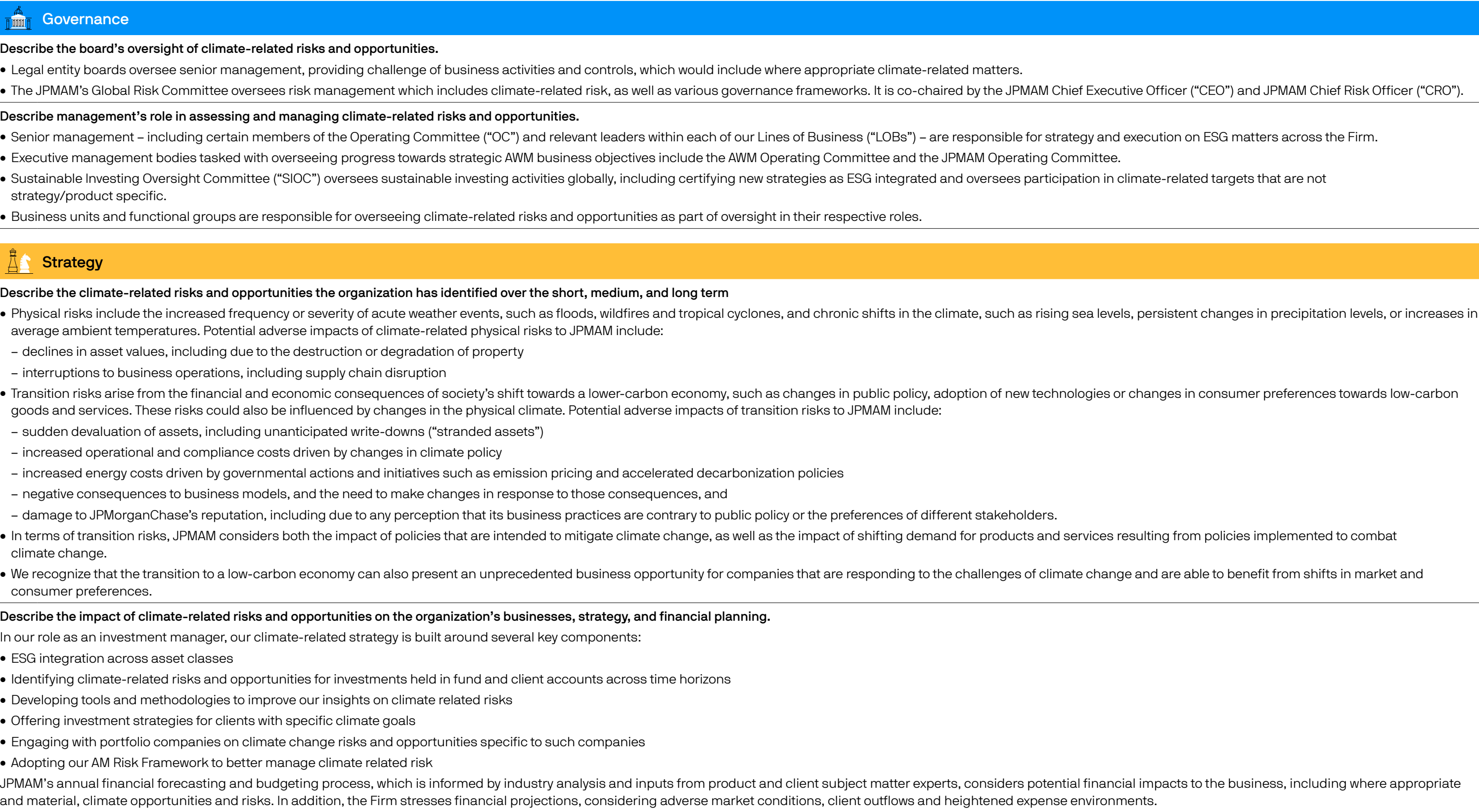
The Task Force on Climate-related Financial Disclosures ("TCFD") recommendations, introduced in 2017, aim to promote uniform and comparable reporting on climate-related risks and opportunities by firms to their stakeholders. These recommendations are organized into four key pillars: (i) Governance; (ii) Strategy; (iii) Risk Management; and (iv) Metrics and Targets, accompanied by eleven specific recommendations to facilitate effective disclosure within each pillar, supplemented by sector-specific guidance, including those for asset managers. In this report, JPMAM has endeavored to address all four pillars and the eleven recommendations.

In light of the International Sustainability Standards Board's (ISSB) introduction of its first disclosures standards in June 2023, the Financial Stability Board (FSB) announced the termination of the TCFD in October 2023. This move highlights the ISSB's climate disclosure standard (IFRS S2 Climate-related Disclosure, "S2"), which has incorporated the TCFD's four pillars and eleven recommendations. While JPMAM adheres to the TCFD recommendations for its 2024 climate-related disclosures, it will continue to assess this approach, taking into account the additional S2 disclosure requirements not covered by the TCFD recommendations, to guide its future climate-related disclosures.

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 **Figure 1**.

¹ Environmental issues are defined as issues related to the quality and function of the natural environment and natural systems. Some examples include greenhouse gas emissions, climate change resilience, pollution (air, water, noise, and light), biodiversity/habitat protection and waste management. Social issues are defined as issues related to the rights, wellbeing and interests of people and communities. Some examples include workplace safety, cybersecurity and data privacy, human rights, local stakeholder relationships, and discrimination prevention. Governance issues are issues related to the way companies are managed and overseen. Some examples include independence of chair/board, fiduciary duty, board diversity, executive compensation and bribery and corruption.

Figure 1: Summary of disclosures aligned to TCFD guidance for all sectors and supplemental guidance for asset managers*



* 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)

 Strategy continued

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 and deploy as appropriate 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 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 tools and methodologies 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 review and challenge the integration of climate-related risks as a part of the existing risk management process.
- JPMAM Risk Management team review and challenge material climate-related risks in investment portfolios as a part of the existing risk management process in JPMAM.

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 ESG checklist that sets a baseline fundamental assessment for over 2,500 companies globally.
- The JPMAM’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 JPMAM’s risk management process, Investment Directors monitor and assess how investment teams are incorporating financially material sustainability risks into their investment strategies as part of their ESG integration approach. The Firms’s 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 to the relevant management committee. Our Risk Management are part of the second line of defense and our Audit function is part of our third line of defense. (see **Figure 18.** for J.P. Morgan Asset Management’s Climate Governance Structure).

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.
- JPMAM leverages the Firmwide Climate Risk Framework and seeks 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).
- The JPMAM independent Risk Management team is responsible for challenging and monitoring climate risks.

* 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)

 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 Greenhouse Gas (“GHG”) emissions for their AUM and Weighted Average Carbon Intensity (“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 decision-making.*

- We use carbon footprint and weighted average carbon intensity data from a third-party data vendor 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.

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.

As an asset manager, JPMAM understands its primary duties as a fiduciary, managing assets on behalf of clients. We also understand that our clients have diverse investment preferences that are designed to meet their own long-term financial objectives. We support our clients in meeting their objectives, recognizing that some may also have long-term climate related goals. For those clients who do have long-term climate related financial goals, we use our data-driven research and leverage the expertise of our dedicated Sustainable Investing Research Team to support these clients in achieving their goals.

* 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)

Governance





Governance

Board and Committee oversight

Responsibility for oversight and management of Climate related activity is defined at multiple levels within JPMAM and the wider Firm.

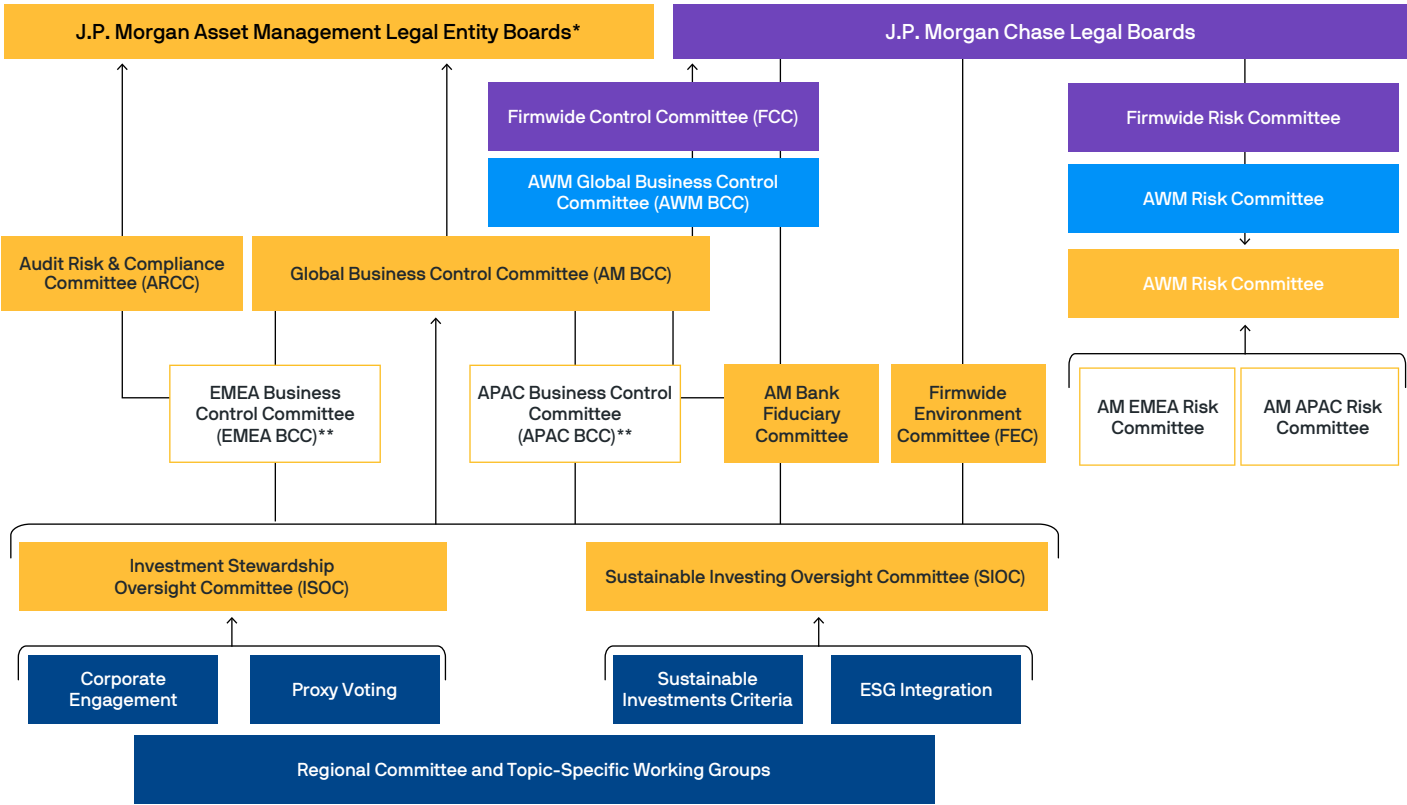
Under the oversight of our boards and the leadership of our senior management, we aim to foster an effective and efficient risk and control environment. Matters related to our long-term business success, including management of climate-related risk, form an important component of our business strategy.

The Firm's Board of Directors is responsible for oversight of the business and affairs of the Firm on behalf of shareholders. It is also responsible for setting the cultural "tone at the top". Its core areas of oversight include strategy, executive performance, talent management and succession planning, financial performance and condition, risk management and internal control framework and ESG matters.

Within JPMAM, the legal entity ("LE") 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 also challenge business activities and controls. For the funds and client accounts that are managed or sponsored by JPMAM entities in the Asia Pacific (APAC) and Europe, Middle East and Africa ("EMEA") regions, the escalations on sustainability-related matters, including climate risk strategy, are expected to follow the path to relevant local legal entity boards as outlined in **Figure 2** below.

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

Figure 2: J.P. Morgan Asset Management Climate 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.

Figure 3: Description of global governance bodies/committees

Governance body/committee name	Responsibility for climate-related risks and opportunities	2024 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.	
Asset Management Business Controls Committee (“AM BCC”) (Global)	- Provides oversight of the risk and control environment for the Asset Management business, inclusive of Operational Risk, Compliance, and Conduct Risks, for proper identification, management and monitoring of existing and emerging risks, control issues, errors, remediation actions, and trends. - Includes decision-making members comprising of Chief Investment Officers (CIOs) across all asset classes/product groups (i.e. Liquidity, Fixed Income, Equities), heads of all major business areas (i.e. Operations, HR, Marketing) and independent risk management members (i.e. Compliance, Risk) - The AM BCC will escalate to the respective Legal Entity Board committees and the AWM Business Control Committee as appropriate. Co-Chairs: AM Chief Executive Officer and Business Control Manager	10
Sustainable Investing Oversight Committee ("SIOC") (Global)	- Single point of ongoing strategic oversight, effective decision making, review, and assurance across the key components of Sustainable Investing. This includes corporate engagement, proxy voting, sustainable investments criteria, and ESG integration which are led by SI specialists in partnership across AM. - Reviews any regulatory driven changes to policies, disclosures and approaches for Sustainable Investing, including the annual Global Climate Report disclosure. - The SIOC escalates to the AM BCC and regional BCC’s and the AM Bank Fiduciary Committee, where appropriate. Chair: Global Head of Sustainable Investing and Stewardship	8
Investment Stewardship Oversight Committee ("ISOC") (Global)	- Single point of ongoing strategic oversight, effective decision making, review, and assurance across the key components of Investment Stewardship. This includes corporate engagement and proxy voting. - Reviews any regulatory driven changes to policies, disclosures and approaches for Investment Stewardship, including the annual Investment Stewardship Report. - The ISOC escalates to the AM BCC and regional BCC’s and the AM Bank Fiduciary Committee, where appropriate. Chair: Global Head of Sustainable Investing and Stewardship	This Committee met for the first time in March 2025.
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 ("ARCC") (EMEA)	- Assists the EMEA Legal Entity Boards in meeting their responsibilities related to the oversight of the risk function and risk management framework, the integrity of financial reporting and controls, the Control Management function, the Compliance function applicable Client Assets Sourcebook regulatory requirements, the Internal Audit function and the External Auditors. - The ARCC comprises three Members all of which are Independent Non-Executive Directors. Chair: Independent Non-Executive Director.	5

* 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).

Climate-related topics are prepared for the aforementioned governance bodies and committees by various working groups across JPMAM.

Firmwide Climate Risk Framework

The firmwide climate risk framework outlines the capabilities we employ to identify, assess, manage and quantify the potential impacts of physical and transition risk, which we view as drivers of each of our four risk types (see **Figure 16**).

The Firm maintains a framework and strategy for identifying, monitoring and managing climate risk which is integrated into the Firm's risk governance process. This framework allows for the escalation of significant climate risk-related issues to LOB Risk Committees. The Board Risk Committee also receives information on significant climate risks and climate-related initiatives, as appropriate.

Management oversight

Senior management – including certain members of the JPMorganChase Operating Committee (“OC”) and relevant leaders within each of the Firm's 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 AWM.

Subsidiary level executive management bodies tasked with overseeing progress towards strategic AWM business objectives include the AWM Operating Committee and the AM Operating Committee.

Figure 4: Management Committees that have oversight on climate-related topics.

Management Committee	Responsibilities
JPMorgan Chase & Co. Operating Committee	• The most senior Firm-wide management body, responsible for developing and implementing corporate strategy and managing operations. • The OC is comprised of the Firm's CEO, CRO, Chief Financial Officer (“CFO”), General Counsel, CEOs of each of the LOBs and other senior executives. • The AWM CEO is a member of the Firm's OC. • The CRO and/or senior management provide the full Board and/or the Board Risk Committee with more updates on climate-related initiatives, as appropriate.
J.P. Morgan Asset & Wealth Management Operating Committee	• Senior management body overseeing business segment operations and strategy across JPMAM and J.P. Morgan Wealth Management businesses. • The committee is run by the CEO AWM. • JPMAM CEO is a member of the AWM Operating Committee.
J.P. Morgan Asset Management Operating Committee	• Led by the CEO of JPMAM 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. • 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 JPMAM's strategy for developing climate analytical tools, climate-related research projects and climate-aware investment solutions.

Integration of climate expertise within Asset Management

At JPMAM, consideration of financially materially sustainability risks including climate risks is led by specialist groups such as our Sustainable Investing and Stewardship (“SI&S”) team as well as incorporated in existing responsibilities of broader functions, including investment groups² and AM Risk.

JPMAM’s dedicated global SI&S team includes specialists with climate-related expertise. This includes research analysts focusing on climate change investment research and professionals with climate change-related thematic 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 involves close collaboration with technology teams across JPMAM for the integration of climate-related metrics into our Spectrum portfolio management and research platform.

Investment groups will operate within the JPMAM 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 imposing jurisdictional regulation (among others).

² We define investment groups as investment teams which share a common investment process and ESG integration approach and have common investment strategies

Figure 5: Role of Functional Groups that have oversight on climate-related topics

Team	Responsibilities/Description	Reporting line
Sustainable Investing and Stewardship Team		
J.P. Morgan Asset Management Global Sustainable Investing and Stewardship Team	• The team is co-led by Global Head of Sustainable Investing and Stewardship and lead efforts across sustainability-focused investment research, solutions development and investment stewardship. • Provides sustainable investing expertise including information on climate-related risks and opportunities that can be applied across asset classes and may assist in the development of investment solutions for clients. • The team is structured into three specialist areas: The Research team develops proprietary ESG, Climate, and Sustainable outcomes driven research by partnering with data scientists, research analysts and portfolio managers. The research enhances our investment capabilities and product innovation. • Our Sustainable Investing Specialists partner with our investment and distribution teams to provide sustainable investing expertise to develop bespoke ESG and Climate solutions to help meet our clients' financial and non-financial objectives. They also engage with our clients on top-of-mind sustainable and climate related issues and help them address these in portfolios. Finally, they play a role in designing internal and external training to help educate stakeholders on sustainability and climate related topics. • The Investment Stewardship team provides investment-led, expert-driven stewardship approach, engaging with companies and voting proxies on behalf of our clients. Company and industry level engagements are underpinned by our six global stewardship priorities, including encouraging disclosure from investee companies on material climate risks and opportunities.	• The Global Head of Sustainable Investing and Stewardship is a member of the Asset Management Operating Committee. • The Global Head of Sustainable Investing and Stewardship reports into the Asset Management Investment Committee which is co-chaired by the Global Head of Equities and Head of the Global Fixed Income, Currency & Commodities, and leads the JPMAM's strategic efforts in sustainable investing and stewardship.
Broader Functional Groups embedding climate considerations		
Investment Groups ³	• 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 for strategies with investment processes that are considered ESG integrated under our governance processes.	• Chief Investment Officers of respective asset classes are members of the Asset Management Investment Committee and the Asset Management Operating Committee.
JPMAM Risk team	• Responsible for providing independent challenge, monitoring and review of the investment process. • Responsible for risk assessing the regulatory and business driven frameworks that include assessing materiality frameworks for Sustainability Risk, including how climate related risk may impact the financial materiality of an asset or portfolio. • The team may independently challenging as appropriate and develop 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, Investment Stewardship Oversight Committee, and Asset Management Business Controls Committee. and Asset Management Business Controls Committee.

³ We define investment groups as investment teams which share a common investment process and ESG integration approach and common investment strategies

Sustainable Investing and Stewardship Governance

The Global Head of Sustainable Investing and Stewardship has the remit of directly overseeing stewardship and sustainable investing activities. This oversight is exercised through the Sustainable Investing Oversight Committee (SIOC) and Investment Stewardship Oversight Committee (ISOC). The ISOC was formed in March 2025 to provide a central, specialized group for oversight of stewardship and proxy voting activities. Prior to March 2025 the SIOC was responsible for oversight of proxy voting and engagement.

The SIOC provides ongoing strategic oversight, effective decision making, review, and assurance across the key components of sustainable investing. This includes engagement, sustainable investment criteria, and oversight of ESG integration, as well as regulatory developments. Related policies, programs, targets and performance are overseen by this group.

SIOC and ISOC membership consists of voting, Independent Risk Management and non-voting attendees. Voting attendees include Heads of Investment teams and CIOs, the Global Head of Sustainable Investing and Stewardship. Non-voting Independent Risk Management Members include the Asset Management CRO and the Global Head of Asset Management Compliance. Other non-voting members include Investment Directors across asset classes, the Global Head of Sustainable Investing Research, the Global Head of Investment Stewardship, J.P. Morgan AWM's General Counsel, the Head of Guideline Management Control and heads of control functions such as Risk and Controls. The Global Head and regional heads of Investment Stewardship are members of the ISOC. Additional attendees are added to meetings as necessary.

Where and when required from a controls and risk oversight perspective, formal escalation from SIOC is to the 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.

The SIOC met eight times in 2024 as part of its continuing oversight of key areas of sustainable investing governance, including climate risk and plans to meet at least once per quarter in 2025. As part of governance and continuous improvement in 2025, members of SIOC will receive ongoing information on new trends as well as regulatory and industry developments in sustainable investing and climate-related 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. For investment processes that use ESG integration as part of an actively managed investment strategy, we consider financially material ESG risks and opportunities including risks and opportunities arising from the transition to a lower carbon economy.

In addition, where aligned with our clients' investment objectives, we offer strategies designed to address climate-related risks and act on opportunities, such as through setting carbon emissions reduction targets on such portfolios or excluding certain high emitting industries, as well as investing in companies which are on a path to reduce carbon emissions. This also includes growing our climate solutions product suite across both public and private markets and actively engaging with our investee companies on climate-related topics as well as using our voting power as active owners to encourage companies to take their own steps to manage climate related risk.

Our climate-related strategy is multi-faceted

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

	ESG integration across asset classes
	Identifying climate-related risks and opportunities for investments held in fund and client accounts across time horizons
	Developing tools and methodologies to improve our insights on climate-related risks
	Offering investment strategies for clients with specific climate goals
	Engaging with portfolio companies on climate change risks and opportunities specific to such companies
	Adopting our AM Risk Framework to better manage climate-related risk

Our approach to ESG Integration

JPMAM defines ESG integration as the systematic inclusion of financially material ESG factors (alongside other relevant factors) in investment analysis and investment decisions.

Certain actively managed strategies deemed by JPMAM to be ESG integrated under our governance process, systematically assess financially material ESG factors including climate-related risks and other relevant factors, in our investment decisions with the goals of managing risk and improving long-term returns.

Securities of companies or issuers may be purchased and retained that may be negatively impacted by such factors while the adviser may divest or not invest in securities of issuers that may be positively impacted by such factors.

Except for certain strategies that use ESG integration as part of their investment process, in addition to other sustainable investing strategies, ESG integration does not by itself change a strategy’s investment objective, exclude specific types of companies or constrain a strategy’s investable universe.

ESG factors encompass a wide range of issues including, but not limited to climate risk, natural resource use, human capital management, business conduct, governance practices, shareholder rights, and executive remuneration. Whilst not all ESG factors are relevant to a particular investment, we believe that climate-related risks and opportunities are important for many different sectors.

ESG Factors that we consider



Environmental	Social	Governance
● Air pollution ● Wastewater management ● Biodiversity impacts ● Greenhouse Gas (GHG) emissions	● Product safety ● Diversity and inclusion ● Local community impacts	● 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.

Limitations: ESG integration is dependent on the availability of sufficient ESG information relevant to the applicable investment universe. The portion of investments for which JPMAM considers financially material ESG factors is therefore dependent on the investment universe of the strategy. ESG factors may be considered only for certain investments and may not be considered for each and every investment decision and may not be conclusive.



ESG factors include issues such as:

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

ESG Integration in Investment Strategies

The following describes JPMAM's process for determining whether an investment strategy has integrated ESG into its investment processes.

1. **Demonstration:** Investment groups present their ESG integration approach against the 'multi-factor framework' for the strategy
2. **Review:** SIOC assesses the integration approach based on a multi-factor framework and scores the investment group. Unsuccessful teams incorporate feedback from the SIOC and can re-apply under the review process.
3. **Approval:** SIOC approves or rejects ESG integration status
4. **Implementation**
 - a. Investment group applies ESG integration according to their own approved method for the strategy
 - b. Regular monitoring by their respective Investment Director or equivalent teams

Our process for determining which investment groups are ESG integrated has continued to evolve and improve with the development of the multi-factor framework.⁴

Approach for our Alternatives Business

JPMAM's Global Alternatives platform provides investment solutions in private equity, private credit, real assets, real estate, liquid alternative solutions and hedge funds.

Global Alternatives is aligned within the broader JPMAM ESG governance framework including the SIOC review and approval process.

Within Global Alternatives there is ongoing monitoring and review of ESG integration including within formal Oversight Committees (or equivalent) which will typically include qualitative and where applicable quantitative ESG data. 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.

⁴ Our investment groups assess the financial materiality of certain 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.

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 ESG checklist that sets a baseline fundamental assessment for approximate 2,500 companies under coverage, globally. The assessment may help inform 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.

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?

Quantitative Assessment of ESG Factors

Improvement in the breadth and quality of ESG-related data has enabled us to conduct more in-depth quantitative assessments on the extent to which certain companies face and manage financially material ESG risks and opportunities. One example of this is JPMAM’s Quantitative ESG score (“QESG”),⁵ a proprietary ESG score used by some investment groups in their active investment processes. This in-house score can enhance our investment decision making and provide a consistent view around material ESG themes including climate. The score draws on granular, outcomes-focused data, making use of the increase in ESG disclosures by companies and available data over recent years. It 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.⁶

The ESG approach includes materiality assessments to identify the sectors or investment strategies for which these are most relevant, including climate-related risks that are most likely to have a material negative financial impact on an investee company were they to be mismanaged, or conversely, a financially material positive impact in the case of good management.⁷

Figure 6: Select climate metrics used in quantitative assessments

GHG Emissions	Business Model Resilience	Product Design and Lifecycle
• Scope 1 and Scope 2 GHG emissions intensity	• Products relating to climate change opportunities	• Scope 3 sales intensity

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 can be used by over 300 research analysts across asset classes that are situated globally and organized by sector.

⁵ The QESG score is used exclusively for internal purposes by JPMAM as part of its investment process. Any presentation regarding internal scores may be for illustration purposes only.
⁶ Such information may not have been audited and no assurance can be made with respect to the accuracy or completeness of such information.
⁷ ESG factors may not be able to be analyzed for every company and are dependent on the availability of sufficient ESG information relevant to the applicable investment universe.

Identifying climate-related risks and opportunities across time horizons

As part of our fiduciary duty, we seek to understand how climate change may influence the risks managed across our client portfolios including evaluating how they 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, JPMAM's fundamental active portfolios typically look to hold investments for five years or more, which is why we consider climate change to be an important topic in our investment analysis.

The time horizons associated with climate-related risks can be 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 **Figure 8**, are particularly important in the near term (3 to 10 years), whereas physical risks, as defined in **Figure 7**, 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 5 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 research and investment stewardship activities.

Figure 7: Time Horizons

Short-term	Medium-term	Long-term
Less than 5 years; aligned with the Firm's loss and capital adequacy assessments	5-10 years; aligns with the Firm's credit risk assessments.	More than 10 years; aligns with the Firm's strategic risk assessments.

Physical and Transition risks and opportunities



Figure 8: Physical and Transition Risks

Climate risk refers to the potential threats posed by climate change to JPMAM. Climate change is viewed as a driver of risk that may impact existing types of risks managed by JPMAM. Climate risk is categorized into physical risk and transition risk.

Physical risks include the increased frequency or severity of acute weather events, such as floods, wildfires and tropical cyclones, and chronic shifts in the climate, such as rising sea levels, persistent changes in precipitation levels, or increases in average ambient temperatures. Potential adverse impacts of climate-related physical risks to JPMAM include:

- declines in asset values, including due to the destruction or degradation of property
- interruptions to business operations, including supply chain disruption

Transition risks arise from the financial and economic consequences of society's shift towards a lower-carbon economy, such as changes in public policy, adoption of new technologies or changes in consumer preferences towards low-carbon goods and services. These risks could also be influenced by changes in the physical climate. Potential adverse impacts of transition risks to JPMAM, include:

- sudden devaluation of assets, including unanticipated write-downs ("stranded assets")
- increased operational and compliance costs driven by changes in climate policy
- increased energy costs driven by governmental actions and initiatives such as emission pricing and accelerated decarbonization policies
- negative consequences to business models, and the need to make changes in response to those consequences, and
- damage to JPMAM's reputation, including due to any perception that its business practices are contrary to public policy or the preferences of different stakeholders.

Physical risks

We are continuing to improve our understanding of physical risks and resilience across relevant sectors and asset classes. As part of this, we regularly appraise physical climate data and metrics vendors, based on the needs of different teams within JPMAM. For example this year, we assessed a range of providers on their ability to examine the impact of extreme weather events on the valuation of municipal bonds.

Certain asset classes have implemented frameworks for certain product strategies to consider physical risks. Within real estate, physical risk assessments are embedded in the investment process at acquisition, and regular intervals thereafter. Where high risks from extreme weather events such as wildfire and flood, are identified, this will be highlighted to the investment committee. Property specific resilience will be factored into the overall assessment, and the teams may make recommendations for further resilience building or risk management in order to reduce the potential impact of extreme events.

For infrastructure, analysts assess the impact of both near and long-term risks on physical assets for the following core components: Portfolio company and asset locations, stranded asset risk, commercial life vs physical life and long-term strategic planning, budgeting and insurance policies.

Transition Risks

In terms of transition risks, JPMAM 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, national or regional commitments, such as the Paris Agreement and the European Union (EU) Green Deal, as well as the natural shift of supply and demand landscape within industries.

We recognize that the transition to a low-carbon economy can also present a 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 **Figure 9**.

Figure 9: Climate-related risks and opportunities from a low-carbon transition

Impact channel	Risk examples	Opportunity examples
 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 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	Governments may provide incentives and subsidies to encourage a certain transition path
 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 its products or 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
 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	

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 an important 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 CO₂ 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 a low carbon transition, for example those with relatively low emissions intensity, may still see significant opportunities that are not reflected in current asset prices.



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

300+
research analysts

Developing tools and methodologies to improve our insights on climate related risks

We continue to work towards enhancing our processes for identifying, assessing and managing climate-related risks. Central to this effort is the integration of relevant climate-related datasets and the provision of training to our teams on these metrics. Through a continued partnership between the Sustainable Investing and Stewardship team and the Technology team, we are developing the capabilities to deliver climate insights through Spectrum, our in-house tool for portfolio management and research. This will enable the assessment of key climate related data for company analyses, investment decision making and client reporting. 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 chapter. In time these will be accompanied by metrics and data related to company decarbonization targets, such as those validated by the Science Based Targets initiative (SBTi), company transition plans and expected future emissions.

Additionally, we utilize climate scenario analysis tools 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.

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.

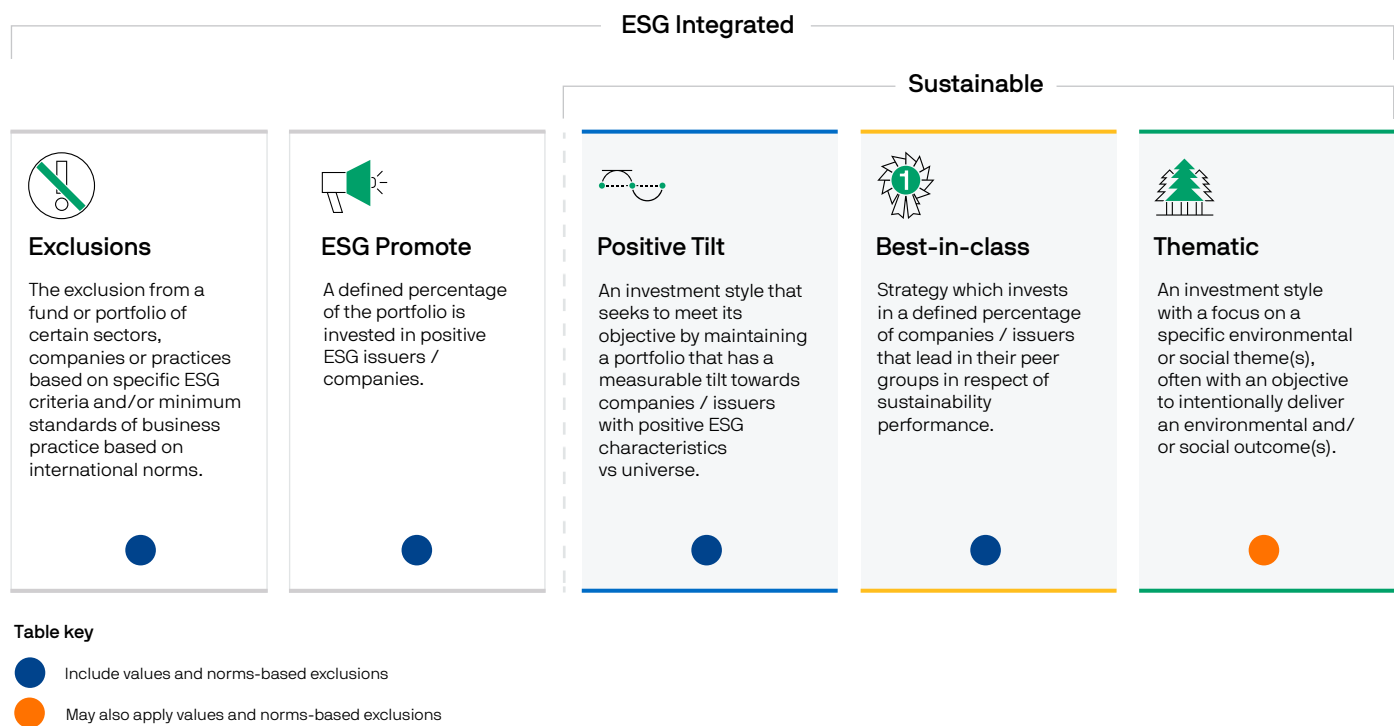
Our sustainable product suite⁸

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

We have developed and continue to expand a range of dedicated sustainable investment solutions which go beyond ESG integration, typically by screening or tilting portfolios based on sustainability-related criteria or by focusing on specific Environmental or Social themes.

⁸ JPMAM 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. Given 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, there is likely to be a degree of divergence as to the regulatory meaning of such terms. 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.

Figure 10: Our sustainable product classification



Exclusions on companies

Where JPMAM applies exclusion screens, it seeks to exclude certain sectors, companies / corporate issuers, or practices based on specific norms or values-based screening policies. These policies set limits or full exclusions on certain industries and companies based on specific Environmental, Social and/or Governance (ESG) criteria and/ or minimum standards of business practice based on international norms. Third-party data, and in some cases internal research, is used to inform the screening process. JPMAM reviews its approach to norms and values-based exclusions at least annually with the goal seeking to remain aligned with industry standards and regulatory requirements. For certain funds, additional exclusions may apply. For more information, please refer to the JPMAM Approach to Exclusions for In-Scope EMEA Domiciled Funds as well as respective fund exclusion policies available on the JPMAM website.

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. At JPMAM, our global scale means we are well placed to help our clients manage various risks and opportunities including those that result from climate change. As long-term investors, we seek to understand both potential physical and transition risks as well as climate opportunities for 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. We will continue to manage existing accounts in accordance with client objectives, guidelines and strategies.

Where requested to do so, this can involve partnering with our clients to achieve their decarbonization goals: this may include developing solutions and products to help them transition to a low-carbon world.

We provide our clients with 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 our sustainable strategies can help clients with specific climate objectives and we seek to help develop an investment strategy or approach that is designed to pursue the client's climate objectives in accordance with proposed investment guidelines. We also engage with certain investee companies to understand the climate risks they face and discuss the decarbonization commitments and pursuit of emission reduction pathways that such companies have set as part of their management of transition risks and creation of opportunities for investors. In addition, where investment objectives permit, we can seek to identify and 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 negative⁹ or offset emissions:** To invest in issuers / assets that enable or directly remove GHG emissions from the atmosphere.

Figure 11: 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

⁹ Enabling negative emissions refers to the process of removing more carbon dioxide (CO₂) and other greenhouse gases from the atmosphere than are being emitted.

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 methodology for investing in the low-carbon transition, developed by the Sustainable Investing and Stewardship Team in partnership with our Quantitative Solutions team. The methodology takes a quantitative approach and aims to identify companies that we believe 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 the 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).

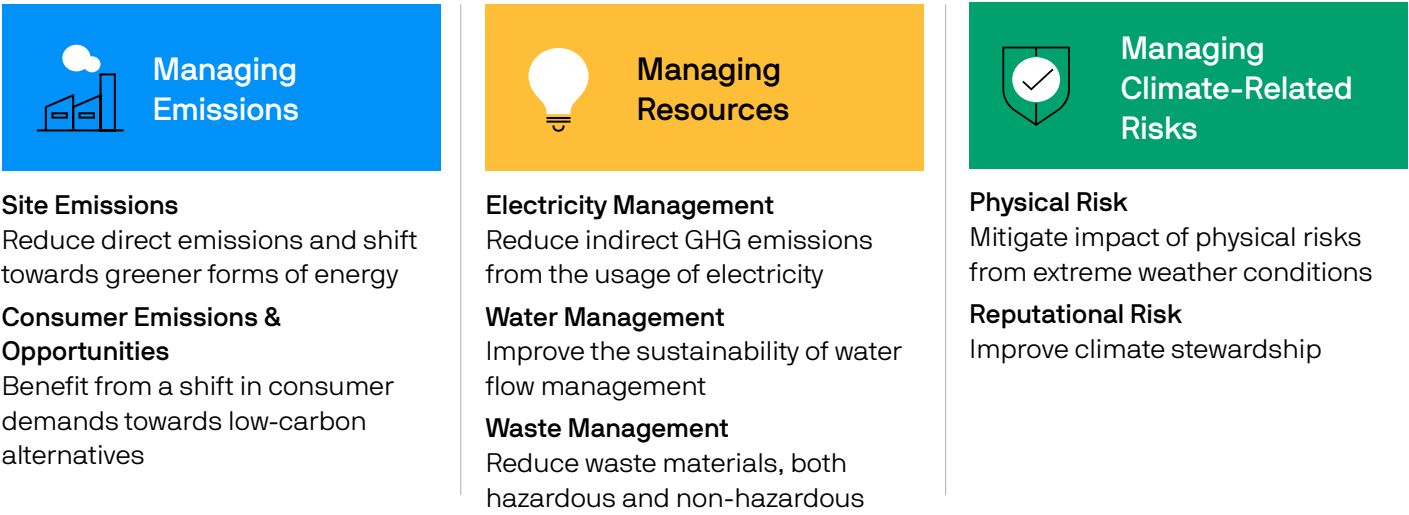
We believe that beneficiaries of a transition to a low carbon economy extend beyond companies with lower carbon footprints, but also includes those that manage resources effectively - such as water, waste, electricity - and contribute to the technologies that will help propel the global transition. We therefore look beyond emissions data to capture a broader understanding of what it means to be a successful leader in a low-carbon transition. Our scoring methodology is therefore 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 both

backward-looking data (i.e. emissions data) and forward-looking data (i.e. science-based targets, green patent applications etc.) reported by companies, insights from third parties and alternative data sources from JPMAM’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. By integrating these varied data sources, we can form a more comprehensive view of a company’s overall ability to benefit from a transition to a low carbon economy.

The approach has the potential to 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. The scores could be used to determine which companies within sectors are emphasized, through underweight and overweight positions.

For example, our Carbon Transition Strategy uses the low-carbon transition methodology in conjunction with Weighted Average Carbon Intensity, to create a portfolio that seeks to provide a core global equity exposure, achieve a meaningful reduction in GHG emissions, without relying on pure exclusions or sector deviations, and also takes advantage of the opportunities presented by the transition. By using the methodology outlined above, this strategy targets at least 30% carbon intensity reduction compared to a traditional index and a 7% decarbonization target year-on-year, while also providing a core, global equity exposure with lower tracking error.

Figure 12. Three key ways companies can prepare for the transition to a lower carbon economy



Funding Climate Solutions

Our Climate Change Solutions strategy is an active thematic strategy that combines expertise in Artificial Intelligence (“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 14,000 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 an unconstrained, high-conviction portfolios of companies that are weighted based on alignment to the theme and related sub-themes.

Figure 13: 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 developing less carbon-intensive forms of construction, including energy efficiency of buildings	Companies investing in sustainable forms of transportation across automobiles, trains and planes	Companies investing in less carbon-intensive 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 emissions¹⁰

Campbell Global (“CG”), acquired by JP Morgan in 2021, is a recognized leader in global timberland investment managing ~1.4 million acres (0.6 million hectares) of forests across 12 U.S. states, New Zealand, Australia and Chile as of 31 December 2024.

CG acts in its clients’ best interests, which is intrinsically linked to the vitality and resiliency of the forests CG manages. A major consideration when it comes to identifying and managing climate risks is fire, particularly in regions across the globe where fire is more likely to occur and/or where tree species have longer rotation cycles, and thus investment horizons. CG conducts a fire risk assessment to both define its strategic investable universe and analyze the physical risk during acquisition due diligence. CG consider factors such as the presence of fire suppression resources in the vicinity of the property and ownership of neighboring properties. The latter is related as proximity to publicly managed forests may pose a higher physical risk as the fire protection and suppression measures are generally less enforced. Operationally, once a property is acquired, CG utilizes management practices to increase the resiliency and resistance of its forests to fires.

¹⁰ Enabling negative emissions refers to the process of removing more carbon dioxide (CO₂) and other greenhouse gases from the atmosphere than are being emitted.

CG also considers the effects of destructive storms, primarily hurricanes, and overlays property boundaries with higher risk areas during acquisition due diligence, taking into consideration the potential for hurricanes to become more intense and frequent under certain climate change scenarios.

Climate change also has the potential to alter tree species distribution and/or growth rates, so CG leverages the resources of internal climate risk analysis teams and the National Council for Air and Stream Improvement (NCASI) Climate Projection Analysis Tool to model climate change scenarios and overlay those results with potential acquisition properties to inform investment decisions as well.

Considering climate in our investment stewardship

As discussed in our [Investment Stewardship report](#),¹¹ engaging investee companies in dialogue and encouraging sound corporate practices (including around managing financially material ESG issues) is an important component of how we deliver our investment stewardship strategy. 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.

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. In 2024, we engaged with 343 companies 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. Increasingly, our ESG focused 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 Investment Stewardship team with ESG sector experience and climate-related expertise. 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 2024 Climate Change Engagement & Voting Report, available [here](#).

Engaging with companies on climate change



343
Number of companies engaged on climate change



40
Number of markets engaged on climate change

¹¹ The JPMAM Investment Stewardship Report can be accessed [here](#).

Engaging on climate 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, among other things:

1. provide clear disclosure of climate-related risks and opportunities facing the company in line with the TCFD recommendations; and
2. where necessary to mitigate material risks, that such companies to set their own scientifically credible emissions reductions targets and transition plans, which outline how targets will be met, the investments required and the financial implications for investors.

We acknowledge that for a number of sectors, significant hurdles exist for companies seeking to decarbonize today, ranging from a lack of proven technologies to help reduce emissions to an unhelpful policy environment. Companies should clearly disclose these challenges and the actions being taken to address them, such as partnerships with academic institutions and government entities or investments in research and development.

Case study



Comisión Federal de Electricidad



Mexico



Sovereign Bonds

Issue

The Government of Mexico has committed to reduce GHG emissions by 35% by 2030. The General Climate Change Law and the Energy Transition Law also states that Mexico must generate 35% of its electricity from renewable sources by 2024. 100% state owned Comisión Federal de Electricidad (CFE), as the country's largest integrated utility, will have an important role to play in enabling Mexico to meet this commitment. As the Company did not disclose a comprehensive transition plan, we sought to engage with the Company to understand how they are managing potential transition risks arising from national level emissions reduction targets and related policies.

Action

We met with the Company in March 2024 and asked about the Company's transition plan which is not yet clearly included in disclosures. They explained that of CFE's power generation capacity in 2024, 32% is from clean technologies, 40% combined cycle gas generation and 8% from coal. The Company explained plans to increase total generation capacity to 100 GW by 2035, and to increase renewable energy capacity to 35% of the total by 2028. They also explained that they plan to close their coal power generation facilities by 2035. The Company shared information on the investments they are making in transmission and distribution over the next five years.

We asked if the Company has considered setting an emissions reduction target in line with that of the national government. The Company said they have a target to reduce emissions by similar levels but this was not disclosed in its public reporting to date. We welcomed the Company's plan to release its first non-financial report later in 2024 and encouraged reporting of KPIs and targets to help investors understand how the Company was managing risks. We also provided feedback that TCFD aligned reporting is helpful to investors assessing climate risks, as well as data on health and safety.

We met the Company again in September 2024 following national elections in Mexico. The Company explained that the new administration is supportive of the energy transition with large investments planned, and with specific national target revisions likely to follow later in the coming months. CFE indicated that it will present its 2025 business plan to the new federal government in December 2024.

Outcome

Prior to our meeting in September, CFE published its green bond allocation report which provided enhanced disclosure concerning the Company's new target to reduce CO₂ emissions intensity in electricity generation by 30% by 2028, compared to 2023 levels. The Company said it would consider our recommendation to disclose these and their other renewable capacity targets in the next annual iteration of its business plan to help investors understand how they are addressing the government's emissions expectations.

Engaging around climate opportunities

The transition to a low-carbon economy offers significant opportunities for companies that are actively developing innovative solutions to enable industrial decarbonization. As many companies move from target setting to implementation of decarbonization strategies, key decarbonization technology providers may be well-positioned to benefit.

As industries worldwide seek to reduce their operational emissions, the demand for technologies such as carbon capture, utilization, and storage (CCUS) is increasing, but questions remain over scalability and affordability. Companies that lead in providing cost-effective solutions may be best positioned for growth.

In this context, it is important to assess whether a company's products and services can effectively achieve their intended climate outcomes. In view of varying disclosure standards across emerging technologies and regions, understanding how these solutions deliver on their promises is essential for evaluating their potential impact, success and economic viability.

Case study



Air Liquide



France



Bonds and
Equities

Issue

Carbon Capture, Utilization, and Storage (CCUS) involves capturing CO₂ and, if not being used on-site, the CO₂ is compressed and transported for use in a range of applications or stored underground. CCUS is seen as vital for reducing CO₂ emissions in hard-to-abate sectors, but it faces high costs and questions about scalability and economic viability.¹²

Air Liquide, a leader in industrial and medical gases, leverages carbon capture technology for both customer solutions and its own decarbonization strategy. The Company reports on avoided greenhouse gas (GHG) emissions, which seek to measure the emission reductions for customers that use Air Liquide products.

Action

We engaged with Air Liquide to understand better the economic viability and materiality of CCUS to Air Liquide (the "Company"). The Company indicated that it believes to be strategically positioned to aid industrial decarbonization and it utilizes its Cryocap™ technology for CO₂ capture (first introduced in 2015). However, the Company indicated that storage challenges persist, necessitating economies of scale and policy support, such as subsidies and favourable carbon pricing. Air Liquide indicated that it had been successful in securing grants for CCUS projects, benefiting from initiatives like the EU Innovation Fund. Rising carbon prices are likely to encourage Air Liquide customers to seek to reduce their emissions, potentially increasing demand for Air Liquide products. The Company indicated that it targets cost-effective decarbonization in high-emitting sectors like cement, with new CCUS projects planned for Northern France and Rotterdam in the Netherlands by 2027/28, contingent on policy support. The Company also discussed its approach to measuring avoided GHG emissions with the aim of ensuring transparency and avoiding greenwashing. We encouraged further disclosure on methodology and adherence to emerging industry standards.

In terms of Air Liquide's decarbonization roadmap, the Company reports that approximately 25% of Air Liquide's own emission reductions by 2035 are expected to come from CCUS. While CCUS is subject to some of the factors and uncertainties described above, Air Liquide reports that its decarbonization progress is ahead of schedule in other areas of the decarbonization plan, such as management of their own assets and renewable electricity sourcing.

Outcome

Air Liquide's commitment to supporting customer decarbonization goals strengthens its competitive edge in the evolving regulatory landscape that may incentivize customers to invest in decarbonization technologies. We will continue to monitor the scalability of Air Liquide's CCUS portfolio, and implications for the Company's decarbonization strategy, considering the potential financial risks and opportunities.

¹² <https://www.iea.org/reports/ccus-in-clean-energy-transitions/a-new-era-for-ccus>

Proxy voting

Our voting policies are designed to promote the best long-term interests of our client accounts. As such, we may consider climate risk when voting in director elections, executive compensation or other management resolutions, where we are not satisfied with the steps taken by the investee company to address the material risks it faces because of climate change, the quality of the engagement discussion or its progress in oversight or management of financially material risks.

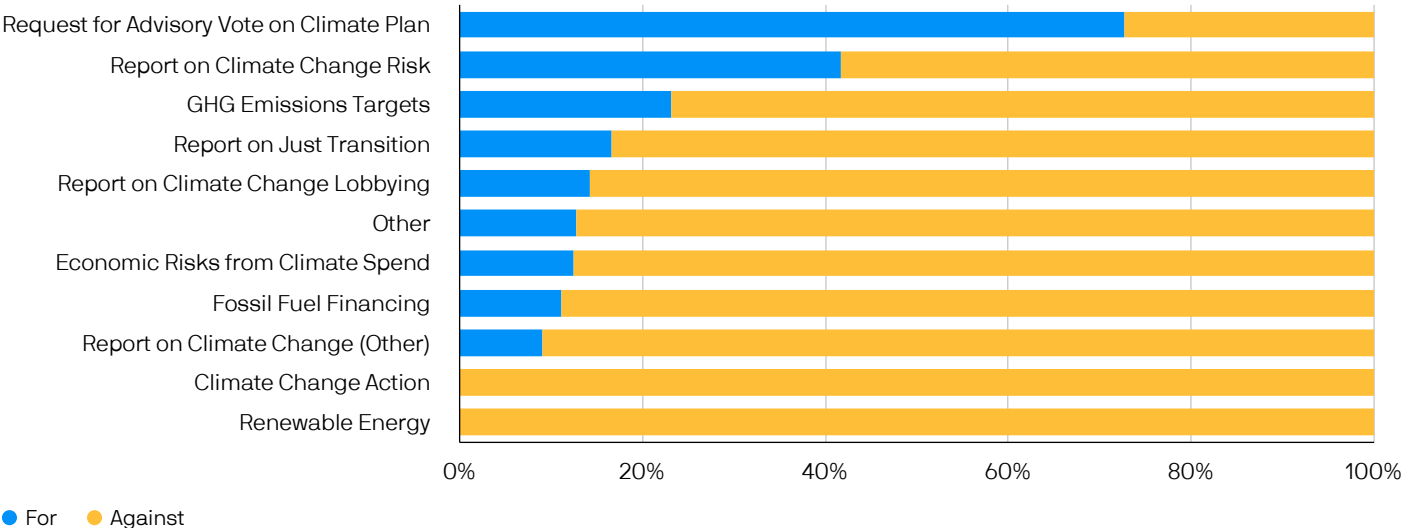
Our Global Proxy Voting guidelines¹³ make clear that we encourage disclosures of minimum climate-related indicators by companies in sectors particularly exposed to financially material climate risks. JPMAM may vote against the directors of relevant committees of companies where these are not available or meaningful.

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 2024, we saw a continued increase in the overall number of resolutions being filed as well as an increase in overly prescriptive shareholder proposals, dictating specific actions by the company and creating the potential for unintended consequences for long-term shareholders. We have

also seen many companies making improvements in disclosures, which has meant escalation of concerns via support of shareholder resolutions has not been necessary.

We noted that many shareholder proposals in previous years focused on enhanced reporting. We tended to support these proposals as we believed such reporting provided meaningful information to shareholders to enable them to evaluate risks and opportunities at a particular company. In 2024, we voted in favour of 28 climate-related shareholder resolutions, reflecting a decrease in overall % support for these resolutions. Our starting consideration is whether the resolution is focused on an issue that is material to the long-term financial interests of our clients. In many cases, successfully managing climate change risk is important for the future success of the company and resolutions around it merit our in-depth attention. We consider the most helpful resolutions to be those which are worded in a way that gives the company the ability to select the strategy it considers will most effectively achieve the resolution’s intended outcome and are tailored to the company’s specific risks. Increasingly, we see climate-related resolutions which are overly prescriptive, and/or not tailored to the company’s specific risks.

Figure 14: Climate-related proposals supported by JPMAM by category 2024¹⁴



Source: J.P. Morgan Asset Management.

¹³ <https://am.jpmorgan.com/content/dam/jpm-am-aem/global/en/institutional/communications/lux-communication/corporate-governance-principles-and-voting-guidelines.pdf>
¹⁴ In the context of this table climate change action relates to company specific resolutions calling for the company to strengthen their energy transition plans or become a leader of renewable energy

How climate risk impacts our business strategy and financial planning

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, JPMAM stresses financial projections, considering the potential impacts from scenarios such as adverse market conditions, material operational incidents, client outflows and heightened expense environments, all of which may be driven by climate risks. Across our EMEA legal entities,¹⁵ we also measure and assess the impact of climate risk on seed capital, mandatory investment plans and hedge exposures through a climate crisis 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.

Investment Stewardship in Alternative Markets

JPMAM's Global Alternatives team includes investment solutions in private equity, private debt, real assets (such as infrastructure and transport), and hedge funds. 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 in these examples may take a different form to our listed equity and debt strategies. Nevertheless, one principle 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.

Within private markets, our assets may be directly owned by our portfolios, and they may exercise significant influence. 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 for sustainability performance where financially material and encouraging the adoption of higher standards to address financial risks and opportunities. In those assets where we hold a minority stake and may not manage the company day-to-day, we still exercise our influence by engaging with investee companies to facilitate positive outcomes for our clients. For instance, we may partner with property managers in our real estate properties to help buildings meet the high-efficiency standards for resource use including energy, water and waste.

¹⁵ 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 Climate Risk Framework

At JPMAM, we recognize the importance of effective identification, monitoring, and management of climate-related risks and opportunities across our global business.

We leverage the Firmwide Climate Risk Framework and continue to enhance the processes to capture the transmission channels through which transition and physical risk drivers impact existing risk types, such as investment, strategic, liquidity, counterparty, reputation, market and operational risk as it relates to our client portfolios. The key principle underpinning this framework is that climate change is viewed as a driver of risk that may impact existing types of risks.

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 chapter, we will discuss Risk Management capabilities of this framework.

Information on Risk Governance on climate risk is described in the Governance section and Data Management is outlined in the Metrics and Targets section. For Risk Reporting, AM Risk team is responsible for reporting of climate risk metrics that enables risk oversight and monitoring.

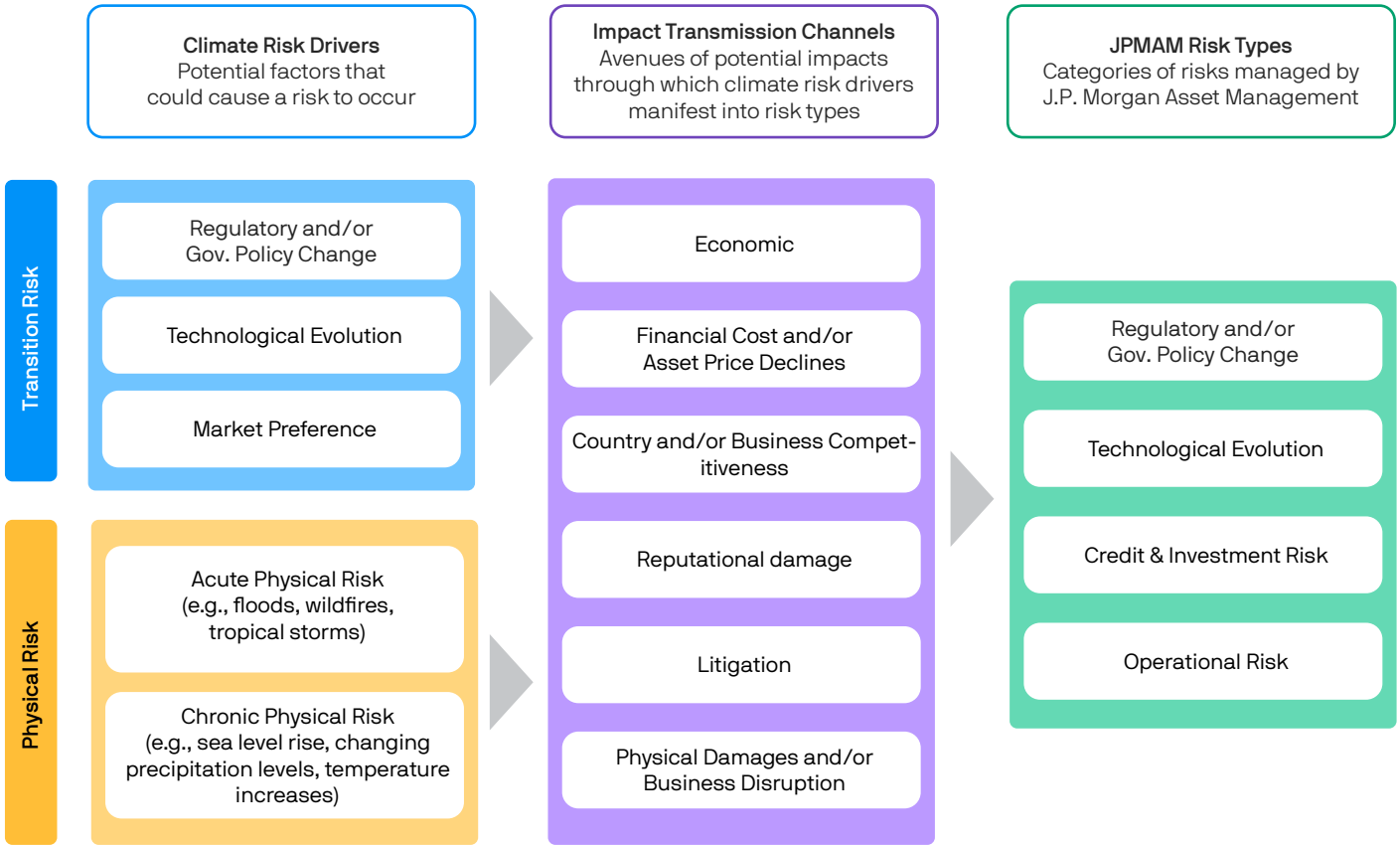
For Risk Identification, first line of defence is responsible for climate-related risk identification, discussion and escalation of climate-related risks associated with investments, as appropriate. The AM Risk team will review and challenge the identified climate-related risks. An example of climate risk identification is illustrated below, describing how climate risk drivers could translate into potential impacts to our clients and own operations. Acknowledging the evolution of this topic, we continue to develop the capture of climate risks.

Our approach to scenario analysis continues to evolve. To assess the range of potential climate-driven paths and outcomes, JPMAM Risk team is in the process of integrating climate-related factors into existing stress testing as the modelling metrics continue to develop over time.

Figure 15: Climate Risk Framework



Figure 16: Example of How Climate Risk Drivers Translating into Potential Risks to the Firm



Risk Management by Risk Type

At JPMAM, we are using our resources to better understand how physical and transition risks may manifest and their potential impacts on the existing ‘business as usual’ (BAU) risk such as investment risk and liquidity risk 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.

Physical and transition risk as defined in **Figure 8**, can manifest in a variety of ways. **Figure 17** below provides examples of different types of physical and transition risks and how they could materialize across the six major risk types we manage on behalf of our clients and JPMAM.

Figure 17: Examples of Potential Climate Risk Impacts

JPMAM risk types		Potential climate risk impacts	
		Physical risk	Transition risk
Client	Investment Risk Risks of investments declining in value due to economic developments or other events impacting the entire market	Temporary disruption in a business’s operations, or those in its supply chains, due to severe weather events leads to potential loss	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)
	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	Capital outflow from most vulnerable regions impacted by extreme weather events	Shifts in investor/client sentiment on climate issues and changes in capital flow into investment products/ instruments that finance the climate transition
	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	The business disruption events to counterparties that are impacted by adverse climate events	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
	Market Risk (for JPMorgan Chase 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 JPMorgan Chase balance sheet	Local weather events cause variability in agricultural output and lead to commodity price volatility	Changes in demand for carbon-intensive products or services lead to price volatility

JPMAM risk types		Potential climate risk impacts	
		Physical risk	Transition 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	Business operating in areas susceptible to climate-related events and lack of transparency around climate-related matters	Real or perceived lack of progress made toward climate-related commitments, as well as how we provide 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	Extreme weather causes physical damage to buildings and decreases worker productivity	New legislation and/or regulatory requirements lead to significant changes in business process and costs

Managing climate risks across three lines of defense

At JPMAM, we have a three lines of defense approach 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 approach is designed to support a sound control framework by minimizing gaps in risk and control coverage, creating separation of duties and an oversight framework. Our approach is to integrate financially material climate-related risk into existing investment oversight and escalation framework.

Figure 18: Overview of risk management processes



Investment teams and business management are the first line of defence

Investment teams are responsible for developing and maintaining effective internal controls and are the primary risk owners, or the first line of defence. Within the first line of defence, financially-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 actively managed strategies not deemed ESG integrated under our internal processes, financially 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 investments in client portfolios. 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 exposures to financially material ESG related risk of each strategy, looking at overarching trends and reviewing outliers as well as overseeing the qualitative and quantitative ESG integration factors for the strategy. For more information, please see our section; Monitoring of ESG Integration.

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

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

Compliance, Conduct and Operational risk (CCOR)

CCOR is responsible for the independent governance and oversight of the first line of defense, including the timely escalation of identified issues to the relevant management committee. The CCOR management framework establishes JPMAM's approach or methodology to govern, identify, measure, monitor, test, manage, and report on compliance, conduct, and operational risks,

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 stand-alone 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 JPMAM Chief Executive Officer (CEO) and Asset Management Chief Risk Officer ("AM 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")¹⁶ to address periods of high market volatility and market crises, which may include climate events, which enables us to focus on accounts that are under current stress, performance or flow concerns. The AM CRO and/or the JPMAM 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 Internal Audit Function is the third line of Defense

The third line of defense is Internal Audit, an independent function that provides objective assessment of the adequacy and effectiveness of Firmwide processes, controls, governance and risk management. The Internal Audit function is led by the General Auditor, who reports to the Audit Committee and administratively to the JPMC CEO.

¹⁶ Further details on Stressed Market Protocol (SMP) can refer to a case study in 2023 Investment Stewardship Report.

Monitoring of ESG Integration

JPMAM undertakes ongoing monitoring to review the ESG integration work of investment groups - specifically the consideration of financially material ESG factors within their active investment strategies deemed to be ESG integrated under our internal frameworks. Our Sustainability Risk Policy summarizes the integration of sustainability risks in the investment process. This forms part of the regular investment review system.

Investment Director teams in equity, global fixed income, currency & commodities and multi-asset solutions oversee performance and risk oversight of portfolio management. They do this to maintain discipline around investment objectives and processes in the context of client objectives or fund guidelines, performance, risk position and ESG profiles. The Investment Director teams monitor ESG metrics as part of their quarterly review meetings as part of confirming that a strategy's investment process continues to be ESG integrated in accordance with the strategy's disclosures and documentation. During these meetings, ESG characteristics of the strategy can be challenged and discussed. 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 **Figure 18**.

CIOs are then able to further escalate any issues, including material negative ESG exposures into their respective Investment Oversight Committees. We have regular monitoring processes in the global liquidity and alternatives solutions, 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 is 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

JPMAM actively considers global and industry requirements related to climate change where these developments are directly and indirectly related to JPMAM, our investee companies and the interest of our clients.

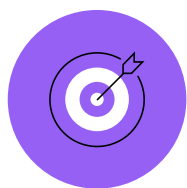
Compliance with applicable laws, rules, regulations, codes of conduct, guidelines or standards remains the responsibility of each regulated legal entity within JPMAM, as well as the personal responsibility of each officer and employee.

JPMAM has established a business led regulatory and industry reform risk management framework to ensure that business activities are conducted in a manner that complies with applicable regulatory and industry requirements and associated changes thereto; and to identify and mitigate the associated key risks that may directly and indirectly apply to the business globally.

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

The background features a dark blue grid of thin white lines. Overlaid on this grid are several large, white, rounded triangular shapes that point towards the center, creating a complex geometric pattern.

Metrics and Targets



Metrics and Targets

The climate analytics capabilities in our Spectrum platform (JPMAM portfolio management and research platform) are based on a set of carbon exposure and climate-related metrics. They allow a company and portfolio level analysis for different use cases in the investment decision making process.

Carbon metrics

Carbon metrics can be used for investment decision making, portfolio analytics and reporting. The starting point are absolute scope 1 & 2¹⁷ emissions. Several other carbon metrics can be used to add insight and context to these figures 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 **Figure 19** based on current best practices as outlined by the Partnership for Carbon Accounting Financials (PCAF Standard) and the TCFD recommendations. In our “Understanding Carbon Exposure Metrics” paper we outline the evolution of carbon metric standards and highlight our view of current best practices. As part of our ongoing efforts to improve evaluation of climate related risk, we determine which of these metrics to leverage in our tools, where appropriate.

We use carbon footprint and weighted average carbon intensity data from third party data vendors to measure the carbon exposure of investment portfolios across public equity and corporate bonds as well as for sovereign debt. Regional entity level Carbon metrics are made available through the publication of regional addendums to this report in United Kingdom, Hong Kong and Singapore, where this is a regulatory requirement, but also for interested clients.

¹⁷ 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>

Figure 19: Strengths, weaknesses and use cases for carbon exposure metrics

Metric	Strengths	Weaknesses	Potential use cases
Total financed emissions (tonnes CO ₂ e)	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 ₂ e/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 ₂ e/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 ₂ e/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

** 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.

Bridging emissions data gaps

We receive Scope 1 and Scope 2 emissions data for over 12,000 companies, which covers around 99% of our AUM in listed equity and 85% of AUM in corporate bonds. Where companies do not report emissions, we rely on the emissions estimate model of our data vendor.^{18, 19}

To fill additional gaps in coverage, we have devised a hierarchical 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 our data vendor, but where we have company revenue data, a company's carbon metrics will be derived from the average carbon intensity (tons CO₂e/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.

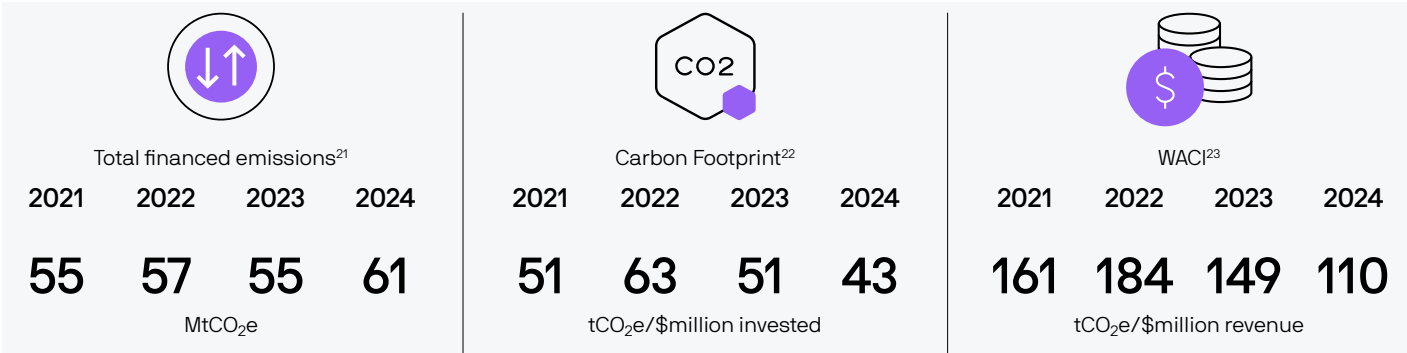
Our approach results in a higher proportion of our AUM being included in our carbon exposure metrics compared to using only reported or vendor estimated emissions, but results in values with varying data quality. However, we consider this method to strike a sensible balance between the need to provide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

¹⁸ While JPMAM looks to data inputs that it believes to be reliable, JPMAM cannot guarantee the accuracy, availability or completeness of its proprietary system or third-party data. Under certain of JPMAM's investment processes, data inputs may include information self-reported by companies and third-party providers that may be based on criteria that differ significantly from the criteria used by JPMAM, which often include forward-looking statements of intent and are not necessarily fact-based or objectively measurable. In addition, the criteria used by third-party providers can differ significantly, and data can vary across providers and within the same industry for the same provider. Such data gaps could result in the incorrect, incomplete or inconsistent assessment of an ESG practice and/or related risks and opportunities.

¹⁹ Company coverage data varies by data provider. The figures stated in this paragraph are based on data provided by MSCI.

GHG Emissions of our AUM

Figure 20: The carbon exposure metrics for our assets under management²⁰ are:



Targets

As an asset manager, JPMAM understands its primary duties as a fiduciary, managing assets on behalf of clients. We also understand that our clients have diverse investment preferences that are designed to meet their own long-term financial objectives. We support our clients in meeting their objectives, recognizing that some may also have long-term climate related goals. For those clients who do have long-term climate related financial goals, we use our data-driven research and leverage the expertise of our dedicated Sustainable Investing Research Team to support these clients in achieving their goals.

JPMAM is committed to helping our clients achieve their financial goals and offers a wide range of investment products, many of which do not have a carbon reduction focus. Clients are free to invest in any product which best suits their long-term financial goals. The existence of investment products which have a carbon reduction focus does not influence the portfolio strategy or constrain the investment universe of any other portfolios.

When choosing an asset manager clients may seek to understand the asset managers approach to carbon reduction in certain investment products. One of the metrics that an investor may use when making investment decisions for a portfolio with a carbon reduction focus is to understand whether a potential investee company has set a science-based target (SBT)

(Science-Based Target Initiative (SBTi) validated).

As of end of December 2024, approximately 36% of in-scope AUM was invested in companies which had a validated Science Based Target (in-scope AUM comprising of public equities and corporate bonds only), this figure is a point-in-time snapshot across JPMAM’s in-scope portfolios. It is recognized that preferences for disclosure may vary across regions and client bases. Our approach aims to respect these differences while providing comprehensive information that supports informed decision-making and aligns with our overarching commitment to managing climate-related risks responsibly.

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 firm-wide performance dimensions. The performance dimensions are evaluated annually based on several factors that drive investment outcomes and value, which may include ESG and climate factors that are aligned with client objectives.

²⁰ The metrics described in Figure 20 were calculated following the methodology outlined in “Understanding Carbon Exposure Metrics” paper. The 2024 data is based on holdings as of 31 December 2024 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 2024 MSCI dataset as of April 2025. Data from Trucost was used to calculate previous year values. Due to a change of data vendor, the 2024 data is not directly comparable with previous years.

²¹ This metric represents the total greenhouse gas emissions associated with the investments or loans provided by a financial institution. It includes the Scope 1 and Scope 2 emissions of investee companies.

²² This refers to the total greenhouse gas emissions (Scope 1 and Scope 2) associated with a portfolio, normalized by the total value of the portfolio.

²³ WACI measures the carbon intensity of a portfolio by calculating the average carbon emissions (Scope 1 and Scope 2) per unit of revenue for the companies in the portfolio, weighted by the proportion of each investment in the portfolio.

Managing the Firm's Operational Footprint

The Firm strives to manage the environmental impact of its own operations and supply chain. Its approach includes managing its energy and carbon footprint, constructing and operating more sustainable buildings and implementing leading practices in sustainable sourcing and resource management. The Firm's strategy for energy and carbon footprint management is guided by the concept of the GHG mitigation hierarchy, designed to prioritize actions with the largest potential impact on emissions reduction.

To view the Firm's initiatives globally, refer to the JPMorganChase [2024 Climate Report](#).

Firmwide Operational GHG Emissions Footprint

The Firm's reported operational GHG emissions are driven by two primary activities: powering its buildings (e.g., electricity, heating and cooling) and business travel. The Firm measures and reports the following operational emissions:

- a. **Scope 1.** Direct emissions from the combustion of fossil fuels in buildings and company-owned aircrafts and vehicles (i.e., natural gas, jet fuel, gasoline).
- b. **Scope 2.** Indirect emissions from purchased electricity, which accounts for the largest share of the Firm's overall footprint.
- c. **Scope 3 – Category 6 Business Travel.** Indirect emissions from commercial air and rail travel, car rental, ride share and hotel stays.

For more information on the Firm's reported operational emissions footprint, see the detailed environmental data tables available on its [website](#).

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