2024

Climate Report

JPMorgan Chase & Co.

Notes

A NOTE ON OUR BUSINESS

JPMorgan Chase & Co. provides financial services for individuals and industries across geographies — regardless of political, social or religious viewpoints. We deal in facts and don't describe our policies, procedures or progress differently based on who's asking. Our ambition is to work with shareholders, clients, customers and communities around the world to fulfill banking's essential purpose of helping people, businesses of all sizes and vital institutions — like schools, hospitals and governments — achieve their goals.

We make independent business decisions for the Firm.

We make business decisions to advance the long-term interests of the Firm and its shareholders, including serving our clients, supporting our employees and helping our communities. We work with a broad array of organizations that advance those interests, even if we don't support every position taken. Firm decisions are always made independently and based on business principles.

We don't "boycott."

We support clients around the globe and in every state in the U.S., across industries, religions and political affiliations. We proudly serve more than 82 million consumer customers in the U.S., 6.4 million small businesses and hundreds of thousands of companies in critical economic sectors. We do not make decisions based on political or social agendas.

We manage risk.

Managing risk is critical to the long-term success of our business and required by our regulators. We make risk-based assessments, including legal, credit, market, reputational and regulatory, to drive decisions and advance the interests of our constituencies.

We want to compete.

Our ability to compete, in both established and new markets, is critical to the long-term success of our business. We decide where and how we choose to compete by assessing risk and opportunity, not to further political or social agendas.

We believe in free enterprise.

Markets and economies of all sizes benefit when free and fair enterprise thrives — creating innovation, competition and maximizing value for shareholders, clients, customers and communities. Government intervention of free market principles, or attempting to use businesses to advance a political or social agenda, sets a dangerous precedent.

We value engagement.

We believe the best answers reside in engagement and discourse. When policymakers seek input to tackle challenges, we want to help. We know that our success requires working closely with government and stakeholders on sound public policy that grows the economy and lifts up communities. Throughout our history, we have engaged with officials from all parties to address the world's most pressing needs, and we look forward to continuing to do so.

A NOTE ON OUR TARGETS

We set targets to do our part in seeking a sustainable and inclusive future using our own independent assessment of what we determine is reasonable, achievable and will serve the best interest of our business and our clients. We note that our targets are subject to other prerequisites and critical considerations, both within and outside our control, that may affect our ability to meet them. These include the necessity of technological advancements; data quality and availability; the evolution of consumer behavior and demand; the business decisions of our clients, who are responsive to their own stakeholders; the need for thoughtful public policies; the potential impact of legal and regulatory obligations; market conditions; climate science; commercial considerations; and the challenge of balancing short-term targets with the need to facilitate an orderly transition and energy security and affordability. We plan to continue to evaluate our targets and our approach to them and may make any adjustments we deem necessary in light of the aforementioned considerations.

DISCLAIMERS

The information provided in this report reflects JPMorgan Chase & Co.'s approach to environmental-, climate- and governance-related matters as at the date of this report and is subject to change without notice. We do not undertake to update any of such information in this report. Any references to "sustainable investing", "sustainable investments", "ESG" or similar terms in this report are intended as references to the internally defined criteria of JPMorgan Chase or our businesses only, as applicable, and not to any jurisdiction-specific regulatory definition.

Our approach to inclusion of disclosures in this report is informed by the Task Force on Climate-related Financial Disclosures ("TCFD") recommendations and is different from disclosures included in mandatory regulatory reporting, including under Securities and Exchange Commission ("SEC") regulations. While this report describes events, including potential future events, that may be significant, any significance does not necessarily equate to the level of materiality of disclosures required under law, including U.S. federal securities law. This report is not intended to, nor can it be relied on, to create legal relations, rights or obligations.

This report is intended to highlight some of the work of JPMorgan Chase in environmental — including climate — and governance-related areas; it is not comprehensive or necessarily representative of all of our activities in those areas. As outlined in our public reporting, JPMorgan Chase continues to work with and has exposure to clients and organizations across industries, including Oil & Gas, Utilities, Metals & Mining, Transportation and Chemicals & Plastics.

This report contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These statements relate to, among other things, our goals, targets, aspirations, approaches and objectives, and are based on the current beliefs and expectations of JPMorgan Chase's management and are subject to significant risks and uncertainties, many of which are beyond JPMorgan Chase's control. Expected results or actions may differ from, and JPMorgan Chase makes no guarantee that it will meet or follow, the anticipated goals, targets and approaches set forth in the forward-looking statements. Factors that could cause JPMorgan Chase's actual results to differ materially from those described in the forward-looking statements include the necessity of technological advancements; data quality and availability; the evolution of consumer behavior and demand; the business decisions of our clients, who are responsive to their own stakeholders; the need for thoughtful public policies; the potential impact of legal and regulatory obligations; market conditions; and the challenge of balancing short-term targets with the need to facilitate an orderly transition and energy security and affordability. Additional factors can be found in JPMorgan Chase's Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K filed with the SEC. Those reports are available on JPMorgan Chase's website (https://jpmorganchaseco.gcs-web.com/ir/sec-other-filings/overview) and on the Securities and Exchange Commission's website (https://www.sec.gov/). JPMorgan Chase does not undertake to update any forward-looking statements.

This report does not include all applicable terms or issues and is not intended as an offer or solicitation for the purchase or sale of any financial instrument or as an official confirmation of any transaction or a recommendation for any investment product or strategy. Any and all transactions (including potential transactions) presented herein are for illustration purposes only. This material does not and should not be deemed to constitute an advertisement or marketing of the Firm's products and/or services or an advertisement to the public.

No reports, documents or websites that are cited or referred to in this report shall be deemed to form part of this report. Information contained in this report that has been obtained from third-party sources, including those publicly available, is believed to be reliable, but no representation or warranty is made by JPMorgan Chase as to the quality, completeness, accuracy, fitness for a particular purpose or non-infringement of such information. Sources of third-party information referred to herein retain all rights with respect to such data and use of such data by JPMorgan Chase herein shall not be deemed to grant a license to any third party. The use of any third-party trademarks or brand names is for informational purposes only and does not imply an endorsement by JPMorgan Chase or that such trademark owner has authorized JPMorgan Chase to promote its products or services.

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Introduction

Message from Our Chairman & CEO

At JPMorgan Chase, our financing helps power the global economy, supporting energy security and the ongoing transition to a low-carbon economy. As one of the world's largest financiers of both low-carbon and traditional energy, we understand that economic growth, energy security and affordability, and sustainability are interconnected. We seek to enable inclusive, sustainable economic growth because it's good for business; when our clients, customers and communities do well, we do too.

As society seeks to avoid the worst impacts of climate change, it also requires affordable and secure energy to thrive. Scaling zero-carbon energy is a critical path forward, but it will take time and it critically must include technological innovation and public policy done well — in addition to financial support — to make it possible to meet the growing energy demand.

This energy transition presents an enormous commercial opportunity. It's estimated that over $5 trillion is needed each year to scale low- and zero-carbon technologies, and we want to be the bank of choice for companies seeking advice and financing for those investments.

Following extensive engagement with our shareholders, we are one of the first U.S. banks to publish an Energy Supply Financing Ratio, which provides additional insight on our energy financing, specifically our financing of low-carbon energy supply relative to high-carbon energy supply. Our investors are interested in more insight into finance we are providing to support client demand for real economy investment in both low-carbon and high-carbon energy supply and how that relative share of investment is shifting over time.

We developed a data-driven and investment-focused methodology for calculating this ratio, to provide a forward-looking view on how our energy financing supports real economy investments in energy supply.

As we continue to iterate this metric, we will engage investors, industry participants and other stakeholders about our approach.

This Climate Report highlights our work with clients to support their goals and the global transition to a low-carbon-economy, and details how we are working to address emissions from our financing and facilitation activities. This includes reporting on our climate-related metrics, such as our goal to finance and facilitate $1 trillion to support the development and scaling of climate initiatives by 2030; our nine net zero-aligned targets for key sectors of our portfolio; and our absolute financed and facilitated emissions. While we're proud of the progress we've made deploying our capital, data and expertise to support our clients, we also make our own decisions, use our judgment, make adjustments as needed and speak with our own voice. This includes continuing to evaluate our targets and our approach to them, considering the latest science and technology, macroeconomic trends, commercial impacts and our clients' business needs.

We continue to strengthen our efforts across our businesses to support the climate- and sustainability-related banking and investment needs of clients and individuals, and to contribute to the growth of the sustainable and green financing markets. We believe supporting our clients, through capital and advice, in their low-carbon transition objectives creates positive environmental benefits and generates long-term financial returns for our shareholders.

Technology, data quality, consumer behavior, clients' business decisions and market conditions remain crucial prerequisites to making progress. Constructive government leadership and policy is also necessary, particularly on taxes, permitting, energy grids, infrastructure and technological innovation. We will continue to do our part.

Jamie Dimon
Chairman & CEO, JPMorgan Chase & Co.

QUICK LINKS

ESFR methodology

Our approach to setting net zero-aligned targets (Carbon Compass® methodology) and progress as of December 31, 2023

Our absolute financed and facilitated emissions

Our operational GHG emissions

Our 2023 ESG Report

Our Annual Sustainable Bond Report

Company at a Glance

JPMorgan Chase & Co. ("JPMorgan Chase", the "Firm" or "we") is a financial services company based in the United States of America ("U.S."), with U.S. branches in 48 states and Washington D.C., 309,926 employees in 65 countries worldwide and $3.9 trillion in assets as of December 31, 2023. 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.

Effective in the second quarter of 2024, the Firm reorganized its reportable business segments by combining the former Corporate & Investment Bank and Commercial Banking business segments to form one reportable segment, the Commercial & Investment Bank ("CIB"). As a result of the reorganization, the Firm now has three reportable business segments, as well as a Corporate segment. The Firm's consumer business is the Consumer & Community Banking ("CCB") segment. The Firm's wholesale businesses are the CIB and Asset & Wealth Management ("AWM") segments. For further information, refer to the Business Segment Results of our Form 10-Q for the six month period ending on June 30, 2024.

Executive Overview

In this report, we provide details on our approach to climate-related efforts including:

- How our corporate governance practices are designed to support the identification and management of climate-related risks and opportunities;
- How our business is responding to climate risks and opportunities, including our evolving approach for supporting our clients' climate goals and the global transition to a low-carbon economy;
- How we are measuring our performance and how we are making progress toward our climate targets, including our actions to align key sectors of our lending and underwriting portfolio with net zero emissions; and
- How we identify, assess and manage climate risks within our risk management framework.

We may adjust our efforts over time.

This report has been informed by the Task Force on Climate-related Financial Disclosures ("TCFD") recommendations. Our Climate Report Data Tables include a TCFD Index that maps our disclosures to the TCFD recommendations.

All data in this report is as of December 31, 2023, unless otherwise noted.

Energy Supply Financing Ratio

We have developed our own methodology to calculate our Energy Supply Financing Ratio ("ESFR"). The ESFR metric compares the amount of financing supporting low-carbon intensive and zero-carbon (referred to as "Low-Carbon") energy supply versus that supporting high-carbon intensive and unabated fossil-based (referred to as "High-Carbon") energy supply. While this disclosure metric can provide more insight into the capital that we are providing, we are not aligning our financing to meet a specific target for this ratio. The decision to disclose this ratio was made following engagement with our shareholders including the New York City Comptroller, which serves as the Trustee for each of the New York City Public Pension Funds.

For the year ended December 31, 2023, our ESFR of 1.29x shows that for each dollar supporting High-Carbon energy supply, 1.29 dollars supported Low-Carbon energy supply.

For more information on our approach, details on our methodology and resulting metric, refer to page 22 and our ESFR methodology.

Our Net Zero-Aligned Targets

We continue our efforts to align key sectors of our financing portfolio[1] with net zero emissions outcomes. To date, we have set nine net zero-aligned targets for eight sectors — Oil & Gas, Electric Power, Auto Manufacturing, Aviation, Shipping, Iron & Steel, Cement and Aluminum — aligned with the International Energy Agency's Net Zero by 2050 scenario.

We developed our Carbon Assessment Framework ("CAF") to help assess our clients' decarbonization plans. CAF creates an opportunity for us to engage with our clients, understand their views, plans and constraints, as well as their capital needs. We use CAF as one element of our decision-making; for each new proposed in-scope transaction, our CAF provides decision-makers at the Firm with insights into how the transaction may impact a portfolio's carbon intensity.

At this time, we are not setting targets for additional sectors of our portfolio due to factors including data limitations, lack of available decarbonization pathways and commercial considerations. Our focus remains on helping our clients' decarbonization efforts, understanding their regional and business characteristics, and supporting today's energy needs while creating long-term value for our business and shareholders. We plan to continue playing our part in the energy transition by providing strategic advice to our clients, leveraging our balance sheet and connecting capital seekers with providers. We also plan to continue engaging with the public sector, governments, regulators and policymakers on climate-related matters and to continue to report on details of our approach and progress.

To learn more about our net zero-aligned targets and our CAF, please refer to pages 9–11.

[1] Our financing portfolio is defined to include all lending, tax-oriented investments and capital markets activity with in-scope clients.

The below table summarizes our performance against our net zero aligned targets, as of December 31, 2023. While we have made progress toward some of our targets, our progress on others remains relatively flat as compared to their respective baselines, and we recognize that year-on-year fluctuations will occur. Further detail on our performance is provided in pages 17–20.

SECTOR	UNIT OF MEASUREMENT	PORTFOLIO CARBON INTENSITY BASELINE	2030 NET ZERO-ALIGNED TARGETS	JPMORGAN CHASE PROGRESS	
				Portfolio Carbon Intensity as of December 31, 2023	Change in Portfolio Carbon Intensity from Baseline
Energy Mix	gCO_2 / MJ	45.9	**29.5** -36% from baseline	34.8	-24.1%
Oil & Gas Operational	gCO_2e / MJ	4.9	**-45%** from baseline	4.7	-4.0%
Electric Power	$kgCO_2$ / MWh	342.6	**105.3** -69% from baseline	268.8	-21.5%
Auto Manufacturing	gCO_2e / km	164.8	**86.1** -48% from baseline	126.4	-23.3%
Aviation	gCO_2 / RTK	972.6	**625.0** -36% from baseline	808.0	-16.9%
Shipping	gCO_2 / t-nm	11.4	**8.4** -26% from baseline	11.9	4.9%
Iron & Steel	tCO_2e / t crude steel	1.412	**0.981** -30% from baseline	1.390	-1.5%
Cement	$kgCO_2e$ / t cementitious product	639.3	**460.0** -28% from baseline	634.6	-0.7%
Aluminum	tCO_2 / t aluminum	8.6	**6.5** -24% from baseline	8.8	2.2%

Helping Grow the Market for Green and Sustainable Finance

We use our capital and expertise to support our clients and customers, as well as the growth of the green and sustainable markets, with the aim of helping accelerate the global transition to a low-carbon economy while also contributing to socioeconomic development and inclusive growth.

Our $1 trillion Green objective — which we set in April 2021 as part of our broader $2.5 trillion Sustainable Development Target ("SDT") — is intended to support the development and scaling of climate initiatives and sustainable resource management. Collectively, since setting our target in 2021 through December 31, 2023, we have financed and facilitated $242 billion toward our $1 trillion Green objective (refer to page 6). While we pursue our SDT, including the Green objective, we note that it is subject to other prerequisites and critical considerations, both within and outside our control.

We continue to strengthen our efforts across our lines of business ("LOBs") to support the climate- and sustainability-related banking and investment needs of clients and individuals. Refer to page 7 for more information on our efforts.

Our Own Operations and Supply Chain

We strive to manage the environmental impact of our own operations and supply chain. Our approach includes managing our energy and carbon footprint, constructing and operating more sustainable buildings and implementing leading practices in sustainable sourcing and resource management. Our strategy for energy and carbon footprint management is guided by the concept of the greenhouse gas ("GHG") mitigation hierarchy, designed to prioritize actions with the largest potential impact on emissions reduction (refer to pages 12–13). We also aim to engage with suppliers who are working to improve their environmental sustainability (refer to page 15).

Managing Climate Risks

We aim to manage our business, and the associated risks, in service of the interests of our clients, customers and investors and to protect the safety and soundness of the Firm. Our 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. To assess the range of potential climate-driven paths and outcomes, we apply an array of scenarios to our internal risk processes, as appropriate. Refer to pages 25–31 for additional information on how we are managing physical and transition risks through our existing risk types.

Governance

Our corporate governance practices are designed to help us serve the diverse interests of our stakeholders, including customers, clients, employees, shareholders and communities in which we operate. We believe that our continued success is rooted in our steadfast adherence to our Business Principles, which are centered around strengthening, safeguarding and growing our company over the long term. We assess and refine our governance structures, processes and controls, as appropriate.

The illustration on the following page outlines how environmental sustainability and climate-related matters are overseen by the Board of Directors ("the Board") and senior management within the Firm's LOBs.

Board of Directors

The Board is responsible for oversight of the business and affairs of the Firm on behalf of shareholders. Oversight of ESG matters, including those related to environmental sustainability and climate, is an important part of the Board's work. In 2023, some of the topics discussed during Board and Committee meetings included climate risk, climate and ESG-related disclosures, and laws and regulations regarding access to financial services.

In addition, the principal standing Board committees — Public Responsibility Committee, Compensation & Management Development Committee, Risk Committee, Audit Committee and Corporate Governance & Nominating Committee — operate pursuant to written charters and oversee ESG-related matters within their scope of responsibility. These charters and the Firm's Corporate Governance Principles guide the Board's governance and oversight functions. Our annual Proxy Statement includes additional information about the membership and responsibilities of each committee.

Climate- and ESG-related matters are part of our director education program. In 2023, directors participated in programs on a number of subjects, including sustainability updates, the Firm's climate risk management framework and climate- and ESG-related disclosures.

Senior Management

Our management structure is designed to encourage leadership that is consistent with our corporate standards. With respect to climate-related matters, senior management's responsibilities include consideration of climate-related risks in the Firm's strategy and operations, implementation of strategic climate-related business initiatives and review of progress against climate-related public targets.

The Firm's most senior management body is the Operating Committee ("OC"), which is composed of our Chief Executive Officer ("CEO"), Chief Risk Officer ("CRO"), Chief Financial Officer ("CFO"), General Counsel, CEOs of each of the LOBs and other senior executives, such as our Global Head of Corporate Responsibility. The OC and Board of Directors receive updates from the CRO, the Global Head of Sustainability, the Global Head of the Corporate Advisory[2], LOB CEOs and other senior leaders on climate-related initiatives, as appropriate. For more information on the Corporate Advisory team, refer to page 7.

Leveraging the Firm's emerging expertise on environmental topics, various climate-related initiatives across LOBs are periodically managed through LOB-led business reviews. The Firmwide Environmental Committee ("FEC") provides senior oversight and decision-making on the Firm's strategy, definitions, methodologies, standards and practices related to environmental (including climate) initiatives, products, targets and public messaging. Co-chaired by the CRO and the Global Head of Sustainability, the FEC's membership includes senior leaders from across the Firm and the firmwide Climate, Nature and Social Risk Executive, among others. The co-chairs of the FEC are responsible for escalating information to the Board of Directors and its committees, as appropriate.

[2] In 2024, we renamed the Corporate Advisory & Sustainable Solutions ("CASS") to Corporate Advisory.

Organizational Illustration

BOARD OF DIRECTORS

RELEVANT OPERATING COMMITTEE MEMBERS

Responsible for developing and implementing corporate strategy and managing operations, including ESG and climate-related matters

FIRMWIDE ENVIRONMENTAL COMMITTEE

Provides senior oversight and decision making on the Firm's strategy, definitions, methodologies, standards and practices related to environmental (including climate) initiatives, products, targets and public messaging

FIRMWIDE SENIOR SUSTAINABILITY LEADERS

Responsible for strategy and execution on ESG and climate-related matters

- Head of Climate, Nature & Social Risk
- Global Head of Sustainability
- Chief Administrative Officer
- Head of ESG Investor Relations
- Global Head of Corporate Advisory
- Head of Green Economy Banking
- Head of Global Markets Sustainability Center
- Head of Business Practices for Consumer Banking
- J.P. Morgan Asset Management Global Head of Sustainable Investing and Stewardship
- J.P. Morgan Global Private Bank Head of Sustainable Investing

BUSINESS AND FUNCTIONAL TEAMS

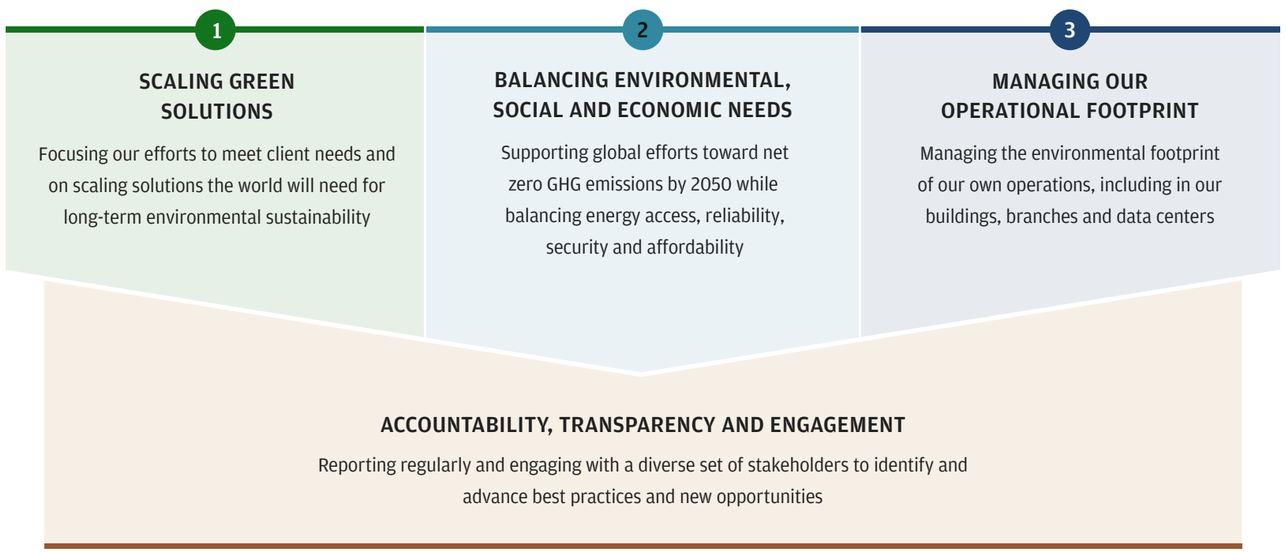
e.g., J.P. Morgan Asset Management Sustainable Investing and Stewardship, Center for Carbon Transition, Green Economy Banking and Operational Sustainability

Strategy

Our Environmental Sustainability Strategy

We aim to help our clients navigate the challenges and realize the economic opportunities of the transition to a low-carbon economy. We believe supporting our clients, through capital and advice, in their low-carbon transition objectives creates positive environmental benefits and generates long-term financial returns for our shareholders. We also strive to manage our own carbon footprint and the impact our corporate offices, bank branches and data centers have on the environment.

These efforts are guided by the three pillars of our environmental sustainability strategy — scaling green solutions; balancing environmental, social and economic needs; and managing our operational footprint — all of which is underpinned by our ongoing focus on accountability, transparency and engagement.



1 Scaling Green Solutions

To meet energy demand and global long-term climate and sustainability goals, the world will need to develop and deploy a host of clean technologies, business models and other solutions. As a global financial institution, we believe we can support these goals by providing financing and strategic advice to clients and by helping investors put their capital to work.

Mobilizing Capital to Support Climate and Sustainable Solutions

Developing and implementing solutions to advance the transition to a sustainable, low-carbon economy will require significant capital, including capital to deploy and scale clean energy solutions to meet the world's growing energy needs. At JPMorgan Chase, we aim to support the transition by putting our capital and expertise to work.

For example, our $1 trillion Green objective — which we set in April 2021 as part of our broader $2.5 trillion Sustainable Development Target ("SDT") — is intended to support the development and scaling of climate initiatives and sustainable resource management. Refer to page 16 for details of our progress toward our $1 trillion Green objective. While we pursue our SDT, including the Green objective, we note that it is subject to other prerequisites and critical considerations, both within and outside our control. We plan to continue to evaluate the SDT and make our own decisions on our approach to it. We may make any adjustments to our targets that we deem necessary in light of considerations including the latest climate science and technology, macroeconomic trends, commercial impacts and our clients' business needs. To learn more on our SDT, including the activities it is designed to support and amplify across our business, refer to pages 9–13 of our 2023 ESG Report.

We aim to support the green and sustainable markets through our own sustainable bond issuances. In 2023, the Firm issued one Green Bond (one benchmark issuance) for an aggregate total notional of $2 billion. For more information on our Sustainable Bond issuances, refer to our 2023 Annual Sustainable Bond Report and Sustainable Bond Framework.

We also believe we can play a part in helping support a more robust and effective voluntary carbon market. Our Carbon Market Principles outlines our perspective on the role that the voluntary carbon market plays; current market challenges; and how we are working to support the integrity and functioning of the voluntary carbon market, including by purchasing high-quality carbon credits to address our residual operational GHG emissions (refer to page 23) and engaging with clients on carbon credit-related transactions.

Supporting Our Clients and Providing Climate-Related Solutions to Consumers and Investors

We aim to provide clients with diverse and innovative solutions to support their business and climate goals, while helping to grow the market for green and sustainable financing. As such, we continue to strengthen our efforts across our LOBs to support the climate- and sustainability-related banking and investment needs of clients and individuals.

COMMERCIAL & INVESTMENT BANK

At JPMorgan Chase, we are focused on helping our clients meet their climate goals. We aim to do this by providing our clients with strategic advice, by deploying our capital and expertise to help them in their efforts to reduce their operational emissions and, where appropriate, by advising them in their efforts in transitioning their business model toward a low-carbon future.

Our Corporate Advisory team helps clients achieve their long-term strategic goals through the delivery of holistic advice along with leading merger and acquisitions ("M&A") and capital markets solutions. Comprised of six verticals — Corporate Finance Advisory, M&A Structuring, Ratings Advisory, Infrastructure Finance Advisory, the Center for Carbon Transition ("CCT") and Sustainable Solutions — the Corporate Advisory team partners with coverage and product teams across the CIB, as well as Corporate Sustainability, to deliver differentiated climate-focused solutions to our global client base. The team also works to develop and implement the Firm's strategy to align, over time, our financing portfolio with net zero emissions and oversees the implementation of our Carbon Assessment Framework ("CAF"). For more information on our targets and the CAF, refer to pages 8–11 and pages 17–20.

Within CIB Markets, the Global Markets Sustainability Center works with product teams and aims to accelerate the development of tailored sustainability and climate solutions across asset classes by incorporating investors' preferences and sustainability criteria into investment strategies. These efforts focus on helping clients gain exposure to distinct risk and reward profiles, while also helping to transition their portfolios to a low-carbon economy based on investors interests.

Our Green Economy Banking team ("GEB") provides subject matter expertise, banking solutions and specialized credit underwriting to companies primarily focused on decarbonization technologies, products and services. GEB serves businesses in North America and the Europe, Middle East and Africa regions across three coverage areas — renewable energy, sustainable finance and climate tech.

Our sustainable finance capital markets teams continue to expand our capabilities in the sustainability-themed debt and debt-like markets to support our clients' sustainability-related activities. With over $36.7 billion in green, social, sustainable and sustainability-linked bonds underwritten in 2023,[3] we are one of the leaders in the market for sustainability-themed debt issuances.

ASSET & WEALTH MANAGEMENT

Our global and diversified franchise allows us to offer climate-conscious financial options to interested clients, including a growing range of climate- and sustainability-related products and services through our AWM businesses. We aim to give individuals, families and institutions the tools they need to meet their goals.

Our Global Sustainable Investing and Stewardship team at J.P. Morgan Asset Management ("JPMAM") provides cross-asset research and insights on thematic ESG issues, including climate risk; works with clients to build and implement sustainable investing solutions; and helps lead JPMAM investment stewardship activities, including proxy voting and investee company engagement. To learn more about these efforts, refer to the JPMAM 2024 Global TCFD Report and the JPMAM 2023 Investment Stewardship Report.

Through J.P. Morgan Global Private Bank, which provides high-net-worth clients, endowments and foundations with access to a breadth of strategies across equities, fixed income, alternatives and multi-asset portfolios, we continue to expand our Sustainable Investing offerings. To help clients achieve their sustainable investing goals, we have expanded our platform to include strategies focused on topics such as clean energy transition, sustainable transportation and circular economy. In 2023, we introduced new values-based investment offerings through OpenInvest. These give clients the enhanced ability to personalize their investment strategies based on their values, including on topics such as deforestation, sustainable agriculture, greenhouse gas emissions and ocean-harming.

CONSUMER AND COMMUNITY BANK

We continue to support our customers' transition to electric vehicles ("EVs") by helping them access financing to support their purchases. We provide financing for electric and hybrid vehicles, which consumers can find on our online auto marketplace and through our private label relationships with EV manufacturers. We also offer an online EV Education Center, which helps consumers learn about, find and purchase electric and hybrid vehicles.

CASE STUDY

SB ENERGY: HELPING BUILD A RENEWABLE ENERGY FUTURE

We are providing financing to support SB Energy ("SBE"), a utility-scale solar, energy storage and technology platform. SBE operates across the U.S., with more than 25 GW of solar and storage projects in its pipeline. In 2024, JPMorgan Chase closed a $75 million[4] participation in a $700 million corporate credit facility to support SBE's expansion. In addition to this financing, we also provide services to SBE through our tax-oriented investments and investment banking teams.

CASE STUDY

ELECTRIC HYDROGEN: SUPPORTING DECARBONIZATION THROUGH FINANCING GREEN HYDROGEN INNOVATION

Green hydrogen is expected to serve as an alternative fuel in the energy transition, helping to decarbonize hard-to-abate industries including steel, fertilizer, shipping and aviation. With a gigafactory in Massachusetts and two operating plants in California, Electric Hydrogen manufactures, delivers and commissions electrolyzer plants that produce low-cost green hydrogen at scale. We are providing financing to help support the growth of Electric Hydrogen. In 2024, JPMorgan Chase participated in a $100 million[5] credit facility to support Electric Hydrogen's growth and operations. In addition, we continue to provide the company with treasury and investment banking solutions.

[3] Dealogic Sustainable Finance Review, Syndicated Bonds, Loans and Equity — Full Year 2023. Note that third-party estimates of green, social, sustainable and sustainability-linked ("GSSS") bond underwriting may be different from JPMC-produced data for GSSS bond underwriting in our Sustainable Development Target ("SDT").

[4] This transaction is eligible to count toward our SDT. Per our SDT methodology, only JPMorgan Chase's apportioned share of the transaction is counted toward our SDT progress.

[5] Reflects total credit facility value. This transaction is eligible to count toward our SDT. Per our SDT methodology, only JPMorgan Chase's apportioned share of the transaction is counted toward our SDT progress.

2 Balancing Environmental, Social and Economic Needs

Achieving long-term inclusive and sustainable growth globally requires balancing environmental needs, societal advancement and economic stability. While the world needs to work toward environmental goals such as achieving net zero GHG emissions by 2050, it needs to do so in a way that supports the world's growing energy demand and fosters equitable energy access, reliability, security and affordability. For us, recognizing the balance needed to achieve long-term sustainability informs our approach to environmental initiatives. Our initiatives are rooted in how we do business: this means serving our customers, clients and communities while running a healthy and vibrant company.

Examples of this work include using our capital and expertise to support clients in advancing their low-carbon transition goals, and in turn, advancing progress toward our own net zero-aligned targets (refer to pages 8–11 and 17–20); deploying our philanthropic capital to support initiatives that help vulnerable communities globally advance their resilience to climate change (refer to page 52 in our 2023 ESG Report); and evaluating and managing potential risks — such as nature and social risks — within our business (refer to page 31).

Addressing Our Financed and Facilitated Emissions Through Our Net Zero-Aligned Targets

We are focused on doing our part to support the transition by helping our clients achieve their net zero objectives. Leveraging our expertise and balance sheet, we aim to provide strategic advice and financing solutions to help our clients achieve their decarbonization goals.

We continue our efforts to align key sectors of our financing portfolio[6] with net zero emissions outcomes. To date, we have set nine net zero-aligned targets for eight sectors — Oil & Gas, Electric Power, Auto Manufacturing, Aviation, Shipping, Iron & Steel, Cement and Aluminum — aligned with the International Energy Agency's Net Zero by 2050 scenario.

As a bank, we rely on global advancements in decarbonization technologies and strategies across various sectors to create opportunities to support our clients' transition efforts. Without significant progress by both our clients and the wider economy, our ability to support the transition, and in turn progress toward our targets, is constrained. Specifically, our progress toward our targets is reliant on the diversification of energy supply and increased adoption of cleaner sources of energy by demand-side sectors.

Furthermore, the necessary shift in global energy supply and demand requires a multi-faceted approach that includes not only capital deployment but also policy incentives, broader societal behavior changes, and rapid advancement of low- and zero-carbon technologies to support energy security and affordability. As policy incentives and societal demand for climate and industrial solutions grow, more capital will begin to flow into these solutions.

Since setting our first portfolio-level decarbonization targets in 2021, we have continued assessing additional carbon-intensive sectors of our portfolio for potential target setting, as well as enhanced our existing targets to reflect the changing world around us. At this time, we are not setting targets for additional sectors of our portfolio due to factors including data limitations, lack of available decarbonization pathways and commercial considerations. Instead, we believe we can more effectively contribute by continuing to engage with our clients, offering tailored, sector-specific advice that reflects their unique needs and decarbonization goals. As market dynamics, climate science and technology, and public policy evolve, we may revise our approach.

We remain focused on supporting our clients' decarbonization objectives and driving progress toward our nine net zero-aligned targets. We plan to continue to evaluate our targets and make our own decisions on our approach to them. We may make any adjustments to our targets that we deem necessary in light of considerations including the latest climate science and technology, macroeconomic trends, commercial impacts and our clients' business needs. On the following page, we summarize key elements of our approach and our strategy for progressing toward our targets, while in pages 17–20 we provide baselines and performance to date toward our net zero-aligned targets. We also include disclosure of our financed and facilitated absolute emissions for selected sectors of our portfolio, refer to page 21.

For more information on our approach to setting our net zero-aligned targets and calculating our absolute financed and facilitated emissions, refer to our Carbon Compass® methodology.

We are also disclosing our own Energy Supply Financing Ratio, for additional detail see our ESFR methodology and page 22.

[6] Our financing portfolio is defined to include all lending, tax-oriented investments and capital markets activity with in-scope clients.

Our Carbon Assessment Framework

We developed our Carbon Assessment Framework ("CAF") with the aim of providing a consistent, comprehensive and data-driven approach to assess our clients' emissions and decarbonization plans. For each new proposed in-scope transaction, our CAF provides decision-makers at the Firm with insights into how the transaction may impact a portfolio's carbon intensity.

The framework relies on two key scores that are assessed for each client: a quantitative score and a qualitative score (collectively known as the CAF scores).

The quantitative score for each client comprises three pillars:

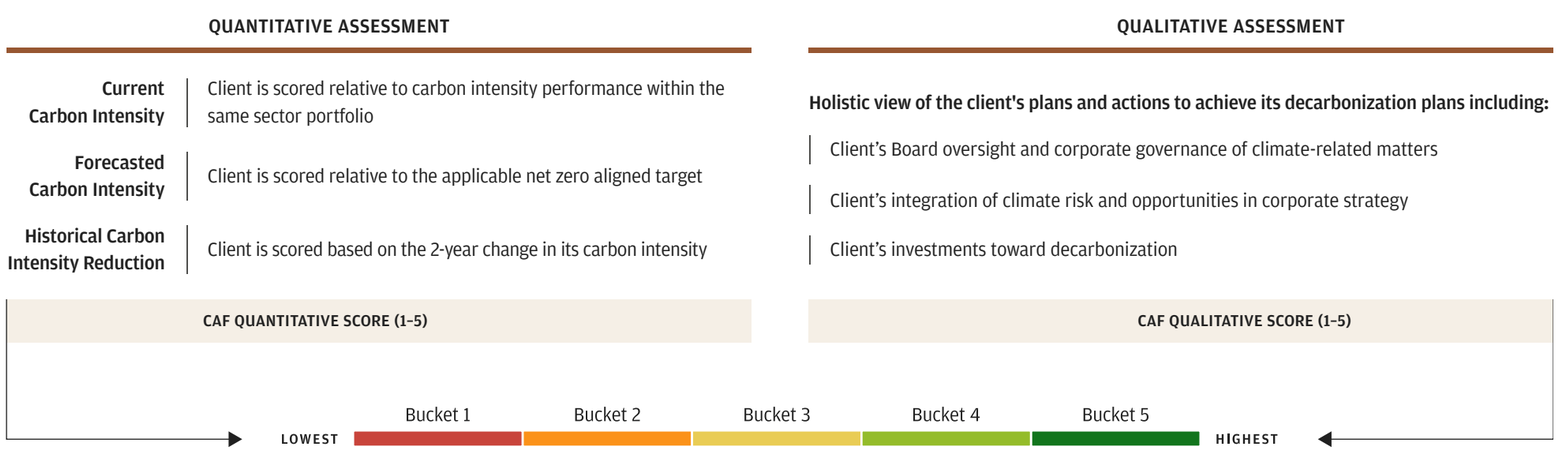
i. **Current Carbon Intensity:** we compare each client's most recently available carbon intensity to that of other clients within the same sector, which allows us to benchmark their performance within each respective sector portfolio.

ii. **Forecasted Carbon Intensity:** we use our clients' decarbonization targets to forecast their carbon intensity for our target year (2030). This gives us insight into each client's decarbonization goals and pathway.

iii. **Historical Carbon Intensity Reduction:** we measure the change in each client's carbon intensity to gauge their progress and continued focus on reducing carbon intensity over time.

The qualitative score, which considers a variety of factors, enables us to take a holistic view — beyond just carbon intensity — of how each client plans to advance their decarbonization strategy. Some of the factors we consider include governance and oversight of climate matters, climate risk integration into corporate strategy, investments (e.g., mergers and acquisitions, joint ventures, venture funding) to support transition and climate objectives, and supplier sustainability programs. Where applicable, we also consider specific factors; for example, in the Oil & Gas sector, we evaluate client's flaring and fugitive methane emissions management plans.

Key Aspects of Our Carbon Assessment Framework



HOW WE ARE USING CAF

We aim to align our capabilities and efforts to make progress toward our net zero-aligned targets. Our goal is to develop our knowledge and understanding of the complexities of navigating the low-carbon transition to support our clients in thinking through and acting on their decarbonization plans, while also aiming to achieve emissions reductions across our financing portfolio.

Decision-making and Portfolio Management: We consider the CAF as one element of our decision-making for new in-scope transactions in our targeted sectors. The CAF process, and corresponding governance, have been integrated into the various deal execution processes for each sector across credit and capital markets financing for all in-scope transactions. While all transactions are assessed on an individual basis with a holistic view of many factors, the CAF allows us to assess how each new transaction may impact our portfolio carbon intensity. Our CAF facilitates visibility and monitoring of progress toward targets by senior leaders of relevant banking teams at regional- and sector-specific levels.

Client Engagement: Assessing our clients' decarbonization plans through our CAF creates an opportunity for us to engage with our clients, understand their views, plans and constraints, as well as their capital needs. The CCT, together with other banking teams, works closely with clients to offer financial solutions to advance clients' decarbonization initiatives and goals.

We recognize that different factors beyond both our and our clients' control — such as technology development and scalability — will pose challenges in the low-carbon journey. The table on the following page gives a few examples of areas where we are engaging with our clients to provide additional support by delivering strategic advice, as well as providing capital and structured financing solutions to help them in achieving their decarbonization goals. We see these as levers that may help advance decarbonization of the different sectors where our clients operate and contribute to our progress toward our net zero-aligned targets.

Risk Management: We also consider CAF scores in our risk assessments. The quantitative and qualitative CAF scores are used in our Wholesale Credit Risk stress framework along with other climate-related factors, such as transition scenario outputs, to estimate the impact of different transition pathways on client financials and credit ratings. For more information on how we use CAF in our risk assessments, please refer to page 29.

Examples of decarbonization levers across sectors

SECTOR	EXAMPLE OF DECARBONIZATION LEVER	
Oil & Gas	• Methane abatement projects (e.g., venting and flaring) – refer to page 11 for more information on how we engage with our clients on methane emissions management • Use of alternative fuels and renewable energy in operations • Carbon capture, utilization, and storage ("CCUS") for both operational and consumer carbon emissions	• Production of alternative fuels (e.g., biofuels, synthetic fuels, etc.) • Production of hydrogen, especially green hydrogen • Production of renewable energy
Electric Power	• Renewable energy (solar, onshore / offshore wind farms geothermal, etc.) • Nuclear	• Hydrogen, especially green hydrogen • CCUS
Auto Manufacturing	• Battery electric vehicles • Plug-in hybrid electric vehicles	• Hydrogen fuel cell vehicles • Efficiency improvements in internal combustion engines
Iron & Steel	• Electric arc furnaces • Hydrogen for direct reduced iron production • Use of renewable electricity	• Scrap recycling and direct re-use (without re-melting) • CCUS • Extended lifetime of steel output
Cement	• CCUS • Decreasing clinker-to-cement ratio of sold cementitious products • Producing clinker replacements	• Use of alternative fuels (non-renewable waste, biomass, renewable waste) • Electrification of equipment
Aviation	• Sustainable Aviation Fuels ("SAF") - learn more about our work in advancing SAF development on page 7 of our 2023 Climate Report • Alternative propulsion systems (electric, hydrogen) • Fleet replacement	• Engine efficiency improvements and retrofits • Load factor / demand management • Flight control and ground operations efficiency
Shipping	• Alternative fuels (biofuels, ammonia, hydrogen, methanol) • Fleet replacement • Electrification	• Engine efficiency improvements and retrofits • Load factor / demand management
Aluminum	• Use of renewable electricity • Electrification of refining	• Recycling of aluminum • Use of inert anodes

UPDATES TO OUR CAF METHODOLOGY

Since launching CAF in 2021, we have broadened its scope to encompass new sectors. We have also refined our CAF methodology with the aim of implementing it across all in-scope transactions and generating a sector-specific assessment of a company's decarbonization plans. We aim to continue enhancing and maturing the CAF methodology over time, including in line with additions and/or changes to our net zero-aligned targets. In 2023, we introduced key updates to our CAF methodologies, including:

- Launching and implementing CAF for in scope-transactions for sector targets set in 2023 — Shipping and Aluminum, and
- Updating our CAF methodologies for assessing clients in relevant sectors to reflect changes to our Energy Mix, Oil & Gas Operational, Electric Power and Auto Manufacturing sector targets.

INTEGRATING CAF ACROSS OUR BUSINESS PROCESSES

We continue to dedicate resources toward enabling a technology-based integration of our CAF throughout our relevant business processes. For example, we have integrated our CAF into our deal origination process — completing a carbon assessment using CAF is now a requirement that is automatically triggered for new in-scope transactions. This integration makes CAF a standard component of the information submitted to decision-making committees. It also provides our banking teams with tools to guide them in completing CAF at a transaction-level and to understand the impact of the proposed transaction to the relevant portfolio's carbon intensity. Furthermore, it enables senior leaders across sector and product teams globally to have better visibility, through a dashboard, of various portfolio-level analytics.

As part of our efforts to streamline our business process for calculating CAF scores, we are developing a proprietary ESG data management product. This product is currently used by multiple teams across the Firm and is designed to curate and host a wide range of internal and external ESG data sources. We are allocating resources toward further development and maturation of the product. This reference data can be used for calculating CAF scores and conducting climate risk scenario analysis and stress testing, among other things.

Supporting Methane Emissions Reduction

As discussed in our 2023 white paper '<u>The Methane Emissions Opportunity</u>', reducing methane emissions and flaring in the Oil & Gas sector can produce positive outcomes for businesses, the climate and energy security and affordability. By curbing methane emissions and flaring today, the Oil & Gas industry can make near-term contributions toward achieving global climate targets and, in certain cases, their own corporate-level emissions reduction targets.

An area of focus with our clients in the Oil & Gas sector is supporting their efforts to adopt direct methane emissions measurement technologies and robust accounting protocols. Historically, methane emissions have been difficult to address in part due to a lack of reliable, real-world data. Most Oil & Gas companies use factor-based computer modeling to generate estimates of their methane emissions, which may substantially underestimate real-world methane emissions. Therefore, harnessing technology for methane measurement is an important step toward improving the accuracy and transparency of methane emissions data, which, in turn, can help to mobilize targeted methane emissions reduction efforts globally.

For the purposes of our own portfolio-level Oil & Gas Operational carbon intensity target, we are engaging with and assessing data providers that are focused on tackling methane emissions, particularly with those who are integrating a variety of measurement-based emissions into their data products. By supporting the industry in improving the availability and accuracy of methane emissions data, we hope to gain a more realistic picture of a client's carbon intensity, improve the quality of CAF scores for Oil & Gas clients and have better insights into the makeup of our financed emissions, while also informing our engagement efforts with clients.

We also work to support our clients in identifying and implementing strategies that can have the greatest impact in their emissions reduction efforts. We use our learnings to engage with our clients and provide advice and strategic capital to help support their decarbonization. For example, we support our Oil & Gas clients in participating in initiatives that aim to enhance measurement-based methane emissions reporting frameworks for the sector, when appropriate. We are also equipping our bankers with tools to guide their conversations with our clients on their methane reduction efforts. Refer to page 15 for more information on the climate-related resources and capacity building we are providing to our workforce.

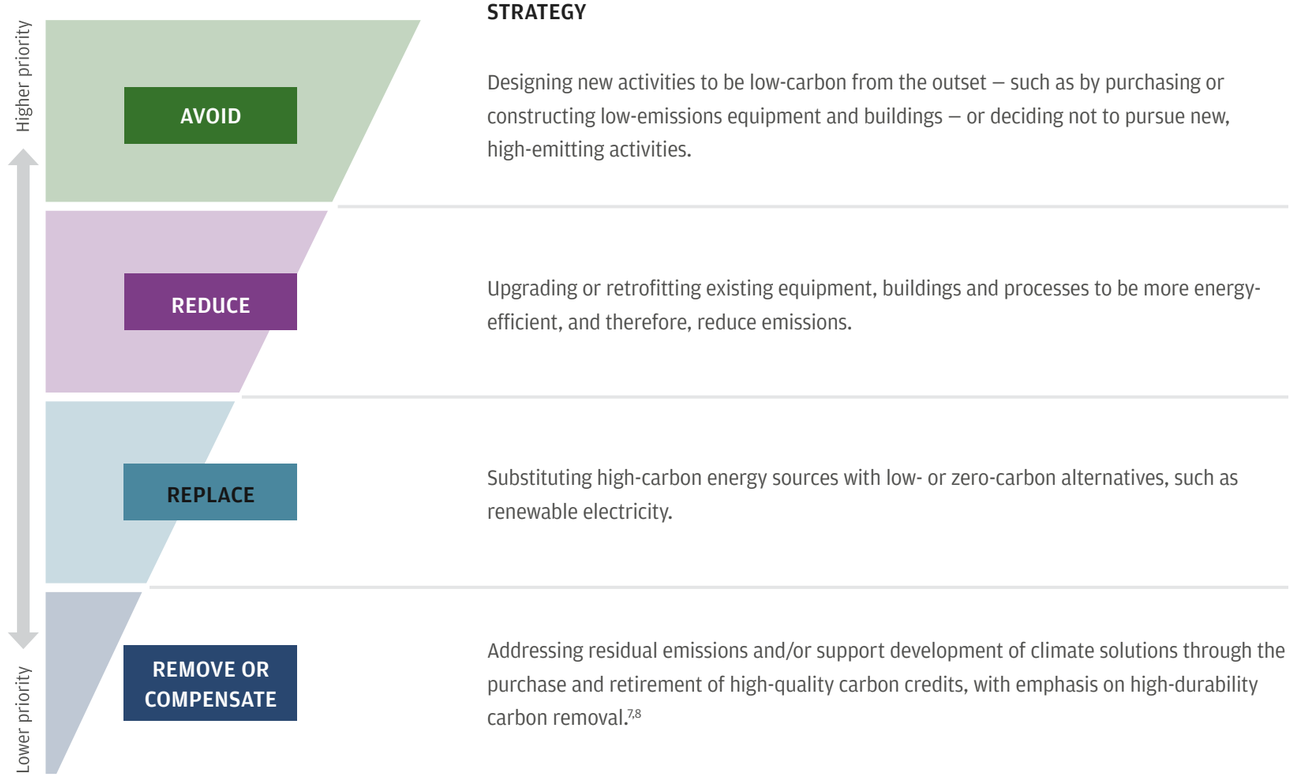
3 Managing Our Operational Footprint

In addition to helping meet the sustainability objectives of customers and clients through our business, we strive to manage the environmental impact of our own operations — including our real estate and supply chain. Our reported operational footprint is driven primarily by the energy and resources we use to run our global network of more than 5,500 corporate offices, bank branches and data centers, as well as regular activities such as business travel. Our approach includes managing our energy and carbon footprint, constructing and operating more sustainable buildings and implementing leading practices in sustainable sourcing and resource management. For details on our operational GHG emissions data and renewable electricity use, refer to pages 23–24.

Energy and Carbon Footprint Management

Our 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. We work to avoid or minimize emissions as close as possible to their source, both to maximize efficiency of our operations and reduce our contributions to atmospheric GHG concentrations. Our approach also considers our current operational decarbonization targets, including reducing Scope 1 and Scope 2 (location-based) GHG emissions by 40% by 2030 vs. a 2017 baseline, sourcing renewable electricity for 100% of our global electric power needs annually, and satisfying at least 70% of our renewable electricity with on-site generation and long-term renewable electricity contracts by the end of 2025. We continue to evaluate our energy and carbon footprint management strategy, including our targets, and we may adjust our approach taking into consideration market conditions, availability of technology and the broader business interests of the Firm, among other factors.

JPMorgan Chase's GHG Mitigation Hierarchy



[7] To learn more about the criteria we prioritize when evaluating the quality and credibility of carbon credits, please refer to Carbon Market Principles and page 37 of our 2023 ESG Report.

[8] Durability is defined as amount of time for which CO_2 can be stored in a stable and safe manner. In this context, high-durability is defined as 1,000+ years of anticipated CO_2 storage.

The following outlines some of the initiatives we are currently pursuing in line with our strategy for energy and carbon footprint management. To learn more about other strategies to enhance the environmental sustainability of our operations and supply chain, refer to pages 33–40 of our 2023 ESG Report.

IMPROVING EFFICIENCY AND ACCELERATING ELECTRIFICATION

Enhancing energy efficiency and pursuing opportunities for electrification are important elements of our strategy. To this end, in 2023, we:

- continued to streamline and consolidate our data centers, migrating toward more efficient facilities, and to expand deployment of advanced hardware and software to support ongoing improvements in energy and operational efficiency.
- improved the energy efficiency of technology used by our employees by implementing a program to reduce standard brightness settings for newly deployed monitors, resulting in decreased energy use and associated emissions.
- reduced energy use and GHG emissions associated with the amenities provided in our offices, by rolling out more sustainable drinking water taps across our sites in Europe, the Middle East and Africa that provide up to 60% energy savings when in standby mode.

SOURCING RENEWABLES

In addition to minimizing total energy consumption, we are working to reduce operational GHG emissions by generating and sourcing renewable electricity for 100% of our global electric power needs annually. This includes aiming to increase our use of on-site solar energy systems, as well as negotiating long-term electricity contracts and purchasing energy attribute certificates ("EACs").

- **On-site solar:** we completed construction of two additional solar installations totaling over 12.3 MW capacity in our corporate office buildings, bringing us closer to a planned total of more than 90 MW of capacity by the end of 2025.
- **Long-term energy contracts:** for our electricity needs that cannot be met with on-site renewables, we aim to procure additional renewable electricity via long-term power purchase agreements ("PPAs"), virtual power purchase agreements and renewable supply contracts.
- **EAC Procurement:** to continue to meet our target to source renewable electricity for 100% of our global electric power needs, we purchase applicable EACs, e.g., Renewable Energy Certificates ("RECs") and International-RECs. We believe these instruments are an important lever in the commercialization of renewable electricity, helping to foster market growth and sustainability of the electric power generation sector.

PURCHASING HIGH-QUALITY CARBON CREDITS[9]

To complement our ongoing emission reduction efforts, we also seek to address our remaining unabated emissions by purchasing and retiring high-quality carbon credits throughout the year. To learn more about core principles that we reference when evaluating carbon credits, please refer to our Carbon Principles Paper.

- In 2023, our portfolio included credits from nature-based, hybrid and engineered removal projects, including improved forest management ("IFM"), afforestation, blue carbon, biochar and bio-oil sequestration. By supporting different kinds of carbon removal projects, we aim to help develop the broader market and scale emerging solutions. Over time, we will consider increasing procurement of long-term or permanent carbon dioxide removals ("CDR") with the goal of helping to accelerate and scale the development of related technologies.
- Also in 2023, the Firm signed long-term agreements to purchase over $200 million in high-quality, durable CDR. The CDR from these agreements is intended to remove and store approximately 800,000 $mtCO_2e$ from the atmosphere and to enable us to match every ton of our unabated Scope 1 direct operational GHG emissions with durable carbon removal by 2030.

[9] Carbon credits and the market for them are evolving rapidly. Although we endeavor to source high-quality carbon credits verified by independent third parties, the ability to use carbon credits to fully and permanently address unabated emissions relies on certain assumptions and is subject to debate among experts.

Accountability, Transparency and Engagement

We have taken steps to respond to climate-related risks and opportunities in our business, but we are aware that there is more work we can do, and we will continue to learn — including through the feedback we receive from our stakeholders. Our environmental sustainability strategy is supported and strengthened by our ongoing efforts to enhance accountability, transparency and engagement.

Accountability

We strive to leverage the Firm's robust management structures to foster sound management and a culture of accountability on ESG matters. This includes defining oversight and management of climate-related initiatives within and across our LOBs (refer to page 4 for more information). We aim for transparency by reporting progress against key climate and ESG-related targets annually — including processes and controls for data disclosure and verification.

Public Reporting

We recognize stakeholders' interest in timely information concerning our climate-related strategies and activities. We communicate information about our ESG practices and performance, including climate, through a number of channels that may include our Annual Report, Climate reporting, regulatory filings, website, press releases, direct conversations with stakeholders, and various other reports and presentations. We maintain a dedicated ESG information page on our website to facilitate access to information that we publish on these topics. We are also closely monitoring and responding to regulatory developments related to mandatory climate reporting requirements in many jurisdictions around the world.

Policy and Industry Engagement

We recognize the need for thoughtful public policy on climate- and energy-related matters. Such public policy can help accelerate the Firm's progress on sustainability-related efforts and contribute to sustainable economic growth. It is among the prerequisites for achievement of our and others' climate targets. We engage with external stakeholders and trade associations on policies that we believe can help make net zero goals achievable and further the availability of affordable and secure energy while continuing to make our own independent decisions.

We believe that no one company or sector can solve the challenges and complexities of climate change; rather, engagement between public and private actors — and across industries — can help lead the development and implementation of solutions that address diverse stakeholder needs.

The Firm also belongs to a number of trade associations that advocate on major public policy issues of importance to the Firm and the communities we serve. The Firm's participation in these associations comes with the understanding that we may not always align with all their positions or those of its other members. We make independent decisions as a Firm, and we may provide feedback on these associations' efforts. A list of the Firm's principal trade associations is disclosed in our Political Engagement Report.

Similarly, we may engage with industry groups focused on complex global challenges, including climate change. We participate with these groups as long as they align with our objectives, enhance our ability to meet those objectives and have appropriate governance. When participating with these groups, we continue to exercise our own business judgment based on the best interest of the Firm and serving our clients. We also participate in a variety of initiatives focused on advancing sustainability, such as the following in the Oil & Gas sector:

- In 2024, select banking leaders of JPMorgan Chase took part in the Methane Abatement Taskforce's Financial Working Group, a COP28 initiated effort coordinated by the Climate Bonds Initiative, which aimed to produce voluntary guidelines for investments that result in a reduction of methane emissions aligned with the IEA NZE.
- In 2024, we engaged the energy industry and financial communities at events across the U.S., from Texas Christian University's Global Energy Symposium to the New York City Transition-IQ Forum to the Aspen Institute's Aspen ESG Summit.
- JPMorgan Chase sponsored the United States Hispanic Chamber of Commerce's Energy Summit in June 2024, where we spoke about opportunities to enhance both decarbonization and energy security through methane abatement and carbon capture and storage technology, and ways that Hispanic-owned business can participate in associated supply chains.
- In 2024, at New York Climate Week, we hosted an event with the Oil and Gas Climate Initiative, bridging together the public and private sectors, including representatives from energy and financial firms. The event focused on emissions reduction efforts, data and disclosure enhancements, and cross-sector opportunities.

Stakeholder Engagement

Our stakeholders include customers and clients, shareholders, employees, communities, regulators and policymakers, research analysts and suppliers. We engage with stakeholders throughout the year to obtain insight into their needs and perspectives, as well as to gather feedback on our strategy and performance, including as they relate to climate change.

EDUCATING OUR WORKFORCE ON CLIMATE

We are enhancing our ability to support our clients in navigating their low-carbon transition journeys, achieving their climate goals and executing on value creation strategies. One way we do this is providing our banking teams across LOBs with climate-related resources covering a wide range of topics, such as methane abatement and measuring technologies; climate-related regulatory updates; key technologies, financing options and investment opportunities of the energy transition; and sector-specific decarbonization pathways. Our Global ESG Research team also hosts an intranet site providing ESG & Sustainability Education research, training and resources that employees can access.

Additionally, we offer a Climate Risk training course to our employees. This course includes training modules on a variety of topics, such as climate science, managing and quantifying climate risk at JPMorgan Chase and climate risk stress testing. We also offer a variety of training opportunities to our employees across ESG topics, such as on biodiversity loss, green and social bonds, and inclusive leadership.

STRENGTHENING OUR SUSTAINABILITY INITIATIVES THROUGH EMPLOYEE ENGAGEMENT

We encourage our employees to think about how they can live more sustainably and how they can reduce their environmental impact both at work and at home. Through our Global Sustainability Series events, employees are invited to participate in discussions featuring external sustainability experts and the Firm's sustainability leaders to learn about opportunities to take effective action. In addition, our GoGreen program, a global network of nearly 60 employee-led volunteer teams, works to foster a community of informed, engaged and inspired employees who contribute to our sustainability culture. The mission of the GoGreen teams is to increase employee awareness of sustainability initiatives at the Firm — including our operational sustainability targets and what we are doing to meet them — as well as offer employees opportunities to learn about and engage in sustainable activities at work, at home and in their communities. To learn more, refer to page 39 of our 2023 ESG Report.

REALIZING ENVIRONMENTAL BENEFITS THROUGH ENGAGEMENT WITH OUR SUPPLIERS

We recognize that the environmental impact of our operations extends to our suppliers' practices. As such, we aim to engage with suppliers who are working to improve their environmental sustainability. For example, in 2023, the Firm collaborated with World Wide Technology — a global technology solutions provider — to help optimize the use of transit cases to transport hardware to our data centers. By replacing pallets with transit cases and minimizing equipment packaging and other components, such as power cords and user manuals, we have reduced truck shipments and generated waste, resulting in an estimated 4,333 $mtCO_2$[10] avoided during 2023.

Our Supplier Environmental Sustainability Guidelines — established in 2023 — further highlight our efforts to engage with our suppliers on environmental issues. They are intended to establish a framework to further incorporate environmental considerations into our procurement process, as appropriate, and to encourage our suppliers to integrate positive environmental practices within their own organizations.

ELECTRIC TRUCK INNOVATION IN KANSAS

In August 2024, our Chairman and CEO, Jamie Dimon, toured the recently opened Kansas City, Kansas headquarters and factory of Orange EV — a company that builds electric terminal trucks for use in warehouses, ports and rail yards. The company manufactures all of its trucks in the U.S., employing workers in Kansas City and around the country. Orange EV's electrification of trucks in the transportation sector is an example of the innovation taking place in the Heartland region of the U.S. Deployment of EV trucks in supply chains and at transportation hubs can reduce GHG emissions and result in cleaner air and public health benefits for communities, while saving customers money over time through reduced fuel and maintenance costs.

[10] Scope 3 GHG emissions, other than Category 6 - business travel, fall outside of the scope of our reported operational GHG emissions (see page 23 for more information on our operational GHG emissions).

Metrics & Targets

Measuring Our Progress

We intend to measure and report our progress over time on climate-related matters, both to provide information to our stakeholders and to inform how we manage and implement our environmental sustainability strategy. We plan to continue to evaluate our targets and make our own decisions on our approach to them. We may make any adjustments to our targets that we deem necessary in light of considerations including the latest climate science and technology, macroeconomic trends, commercial impacts and our clients' business needs. In this section, we provide details of the metrics and targets we are currently using in conjunction with each of the three pillars of our environmental sustainability strategy.

Progress toward our climate and ESG-related targets is subject to a number of conditions and prerequisites, including market conditions, technological innovation and public policy changes; as such, we do not expect our progress to be linear.

1

SCALING GREEN SOLUTIONS

Including progress toward our goal of financing and facilitating $1 trillion to support climate solutions, clean energy and sustainable resource management by the end of 2030.

2

BALANCING ENVIRONMENTAL, SOCIAL AND ECONOMIC NEEDS

Including progress toward our net zero-aligned targets and disclosing absolute financed and facilitated emissions for key sectors of our financing portfolio.

3

MANAGING OUR OPERATIONAL FOOTPRINT

Including our Scope 1, Scope 2 and Scope 3 Category 6 - business travel GHG emissions and progress toward our operational decarbonization targets.

1 Scaling Green Solutions

$1 Trillion for Green

In 2023, we financed and facilitated approximately $66 billion in support of our $1 trillion Green objective of our Sustainable Development Target ("SDT"), particularly through green bond underwriting and financing for renewable and clean energy, as shown in the table below. Collectively, since setting our target in 2021 through December 31, 2023, we have financed and facilitated $242 billion toward our $1 trillion Green objective. While we pursue our SDT, including the Green objective, we note that it is subject to other prerequisites and critical considerations, both within and outside our control.

To learn more about our progress toward our SDT and the activities it is designed to support and amplify across our business, refer to pages 9-13 of our 2023 ESG Report. Refer to Our Approach to Our Sustainable Development Target for more information on our criteria for determining which business activity is eligible to count toward our SDT and how we account for the value of transactions.

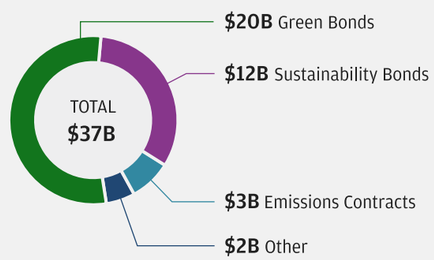
Cumulative Green Progress by Eligibility Criteria

	2022 $B	2023 $B	CUMULATIVE TOTAL[i] $B
Renewables and Clean Energy	$20	$15	$50
Clean Technology	$4	$4	$9
Sustainable Transportation	$2	$6	$30
Green Buildings	$4	$1	$7
Water Management	$2	$2	$10
Circular Economy and Waste Management	$1	$0	$1
Multiple Criteria	$37	$37	$134
Total	**$70**	**$66**	**$242**

Note: Totals may not sum due to rounding.

i. Total as cumulative progress from 2021 to 2023.

2023 PROGRESS IN MULTIPLE CRITERIA



Note: Total may not sum due to rounding.

2 Balancing Environmental, Social and Economic Needs

Our Net Zero-Aligned Targets

Our net zero-aligned targets are currently constructed for 2030 as portfolio-level targets by sector, using output-based emissions intensity reduction metrics and aligned to the IEA NZE scenario. We set targets using our own independent assessment of what we determine is reasonable, achievable and science-based, and what will serve the best interests of our business and clients. In this section, we provide performance to date toward our net zero-aligned targets and disclose our financed and facilitated emissions on an absolute basis for key sectors of our portfolio.

PROGRESS TOWARD OUR TARGETS

While we have made progress toward some of our targets, we have not made progress on others to date as compared to their respective baselines, and we recognize that year-on-year fluctuations will occur. Our focus is on continuing to help our clients on their decarbonization efforts, addressing their financing and banking needs, while seeking opportunities to create long-term value for our shareholders.

While we believe the actions we are taking today will facilitate our continued progress in the years ahead, our progress toward and ability to achieve our targets is dependent on the pace of global decarbonization and other factors outside our control along with commercial considerations. The world will need time to implement effective decarbonization solutions while maintaining the availability of affordable and secure energy to meet economic and societal needs. Global policy action that drives the adoption of clean energy, promotes the development of clean technology supply chains and attracts private sector investment, coupled with market and consumer behavioral changes, are prerequisites for our progress.

To learn more about how we work to support our clients in their decarbonization efforts and in turn progress toward our net zero-aligned targets, please refer to pages 8–11.

The table on the right summarizes our progress toward our net zero-aligned targets as of December 31, 2023. Additional detail on our progress in each of our targets follows on pages 18–20, including macroeconomic trends that may impact our ability to meet our targets consistent with business needs.

PROGRESS ON NET ZERO-ALIGNED TARGETS[11]

SECTOR	DETAILS		BASELINE[i]		2030 TARGET	JPMORGAN CHASE PROGRESS	
	Scope(s) Included	Unit of Measurement	Baseline Year	Portfolio Carbon Intensity Baseline		Portfolio Carbon Intensity as of December 31, 2023	Change in Portfolio Carbon Intensity from Baseline[iv]
Energy Mix	Scope 3 (end use)	gCO_2 / MJ	2019	45.9	**29.5** -36% from baseline	34.8	-24.1%
Oil & Gas Operational	Scopes 1 and 2	gCO_2e / MJ	2019	4.9	**-45%** from baseline	4.7	-4.0%
Electric Power	Scope 1	$kgCO_2$ / MWh	2019	342.6	**105.3** -69% from baseline	268.8	-21.5%
Auto Manufacturing	Scopes 1, 2 and 3 (tank-to-wheel)	gCO_2e / km	2019	164.8	**86.1** -48% from baseline	126.4	-23.3%
Aviation	Scope 1 (tank-to-wake)	gCO_2 / RTK	2021	972.6	**625.0** -36% from baseline	808.0	-16.9%
Shipping	Scope 1 (tank-to-wake)	gCO_2 / t-nm	2021	11.4 (revised[ii])	**8.4** -26% from baseline (revised)	11.9	4.9%
Iron & Steel	Scopes 1 and 2	tCO_2e / t crude steel	2020	1.412	**0.981** -30% from baseline	1.390	-1.5%
Cement	Scopes 1 and 2	$kgCO_2e$ / t cementitious product	2020	639.3	**460.0** -28% from baseline	634.6	-0.7%
Aluminum	Scopes 1 and 2	tCO_2 / t aluminum	2021	8.6 (revised[iii])	**6.5** -24% from baseline (revised)	8.8	2.2%

i. To calculate portfolio baseline carbon intensities, we use client carbon intensity data for the baseline year and exposure data from the following year, except for the Aviation sector, where the baseline year and exposure year are the same (2021).
ii. Revised 2021 portfolio baseline for Shipping to 11.4 g CO_2 / t-nm from previously disclosed 12.5 g CO_2 / t-nm.
iii. Revised 2021 portfolio baseline for Aluminum to 8.6 g CO_2 / t aluminum from previously disclosed 8.7 g CO_2 / t aluminum.
iv. Percentage change may not calculate as shown due to rounding.

[11] Our targets are based on data and scenario projections available as of September 2023. Future updates to the IEA NZE scenario and/or other inputs — for example, changes in global emissions, available technologies or economic conditions — may result in changes to the projected emissions trajectories, and we may therefore update our targets. We monitor these changes, as well as improved visibility, quality or availability of data, and assess the need to revise our baselines and targets as appropriate. We revised baselines for the Shipping and Aluminum sectors this year.

ENERGY MIX (SCOPE 3 EMISSIONS)

As of December 31, 2023, the carbon intensity of our Energy Mix portfolio has decreased by 24.1%, compared to the 2019 baseline. Our progress is mainly attributable to our increased financing of zero-carbon power generation coupled with a reduction in our exposure to the Oil & Gas sector as the industry's external financing needs have reduced in recent years. Although the substitution of oil and natural gas supply with zero-carbon power generation in our financing portfolio has outpaced global trends between 2019 and 2022[12], additional effort will be needed to maintain our progress toward meeting our portfolio-level target. These efforts will involve us continuing to finance zero-carbon investments, our clients adopting and expanding zero-carbon solutions, and policymakers' implementation of policies and incentives to support the transition. Given that the carbon intensity of our Energy Mix portfolio reflects the distribution of the financing we provide to each energy type, changes in macroeconomic factors – such as market demand and energy prices – can negatively impact the rate of progress toward our target. We remain focused on using our capital to support the decarbonization of the overall energy supply while continuing to support our clients in both expanding clean energy sources and maintaining an affordable and reliable energy supply.

OIL & GAS OPERATIONAL

As of December 31, 2023, the carbon intensity of our Oil & Gas Operational portfolio has decreased by 4.0%, compared to the 2019 baseline. This decrease is mainly driven by clients in our portfolio making progress toward their decarbonization goals as the industry continues to focus on key operational areas like methane emissions, in part due to current public policy and legislation. When compared to the global decarbonization of Oil & Gas Operational sector, our portfolio reflects a relatively similar rate of carbon intensity reduction[13]. For more detail on how we support our Oil & Gas clients in reducing their operational emissions through targeted efforts toward methane emissions reduction, refer to page 11.

ELECTRIC POWER

As of December 31, 2023, the carbon intensity of our Electric Power portfolio has decreased by 21.5%, compared to the 2019 baseline. This decrease is driven by a combination of our clients transitioning their generation mix to lower emissions sources and the Firm increasing financing to companies and projects with zero-carbon power generation. Our continued focus on supporting the rapid build out of renewables has resulted in our portfolio's progress outpacing the carbon intensity reduction trend observed in the OECD region between 2019 and 2022[14]. Our continued focus on helping accelerate capital deployment, especially through tax-oriented investments, and providing our clients with differentiated solutions has helped move our portfolio closer to our target. At the same time, global demand for reliable and affordable electricity continues to rise, which may impact our and our clients' ability to meet decarbonization targets. We plan to continue to support our clients with advice and innovative financing solutions.

[12] Global progress estimated using energy supply and emissions data for 2019 sourced from World Energy Outlook 2021 published in October 2021 (Table A.1d: World energy supply and Table A.4d: World CO_2 emissions, respectively); and energy supply and emissions data for 2022 sourced from World Energy Outlook 2023 (Table A.1c: World energy supply and Table A.4c: World CO_2 emissions, respectively) published in October 2023.

[13] Global progress estimated using energy supply and emissions data for 2019 sourced from World Energy Outlook 2021 published in October 2021 (Table A.1d: World energy supply and Table A.4d: World CO_2 emissions, respectively); and energy supply and emissions data for 2022 sourced from World Energy Outlook 2023 (Table A.1c: World energy supply and Table A.4c: World CO_2 emissions, respectively) published in October 2023.

[14] Global progress estimated using generation and emissions data for 2019 sourced from World Energy Outlook 2021 published in October 2021 (Table A.3d: World electricity sector and Table A.4d: World CO_2 emissions, respectively); and for 2022 sourced from World Energy Outlook 2023 published in October 2023 (Table A.3c: World electricity sector and Table A.4c: World CO_2 emissions, respectively).

AUTO MANUFACTURING

As of December 31, 2023, the carbon intensity of our Auto Manufacturing portfolio has decreased by 23.3%, compared to the 2019 baseline. This decrease is driven mainly by banking new and emerging pure-play EV manufacturers and the growing portfolio of EV offerings by legacy auto manufacturers that produce traditional internal combustion engines ("ICE"), hybrid and alternative drivetrain vehicles. The sector's overall effort to transition to an all-EV future, as well as the policy, legislative and market behavior changes that are catalyzing the shift, are prerequisites in allowing us to continue to make progress toward our target. Additionally, improvements in fuel efficiency and the introduction of more hybrid engine product offerings continue to reduce the carbon intensity of ICE vehicles being sold. Our portfolio's rate of decarbonization outpaces the progress being made by the sector at a global-level[15]. However, challenges in the pace of EV adoption suggests a need for more efforts globally by the public and private sectors to deploy and scale solutions across the value chain – especially in areas such as battery manufacturing and EV charging – to support the sector's decarbonization. We will continue to engage with our clients and seek to provide them with financing opportunities to support the transition of the sector.

AVIATION

As of December 31, 2023, the carbon intensity of our Aviation portfolio has decreased by 16.9%, compared to the 2021 baseline. Client carbon intensity improvements and changes in our exposure to the sector — including increased financing to new and existing clients as well as decreased exposure to certain high-carbon intensity clients — contributed to our progress. When compared to the global decarbonization trend of the sector[16], our portfolio reflects a relatively similar rate of carbon intensity reduction. We will continue to engage with our clients to seek to provide them with financing opportunities to support the transition of the sector. We anticipate that drivers for achieving significant decarbonization of the sector will include changes in consumer behavior and operational efficiencies such as maximizing flight occupancy. Another driver is scaling the availability of SAF by accelerating the buildout of the SAF value chain and airlines successfully securing SAF offtakes. We are helping advance the development of SAF as founding members of the Sustainable Aviation Buyers Alliance and as investors in the United Airlines Venture Sustainable Flight Fund. To learn more about these efforts, refer to page 7 of our 2023 Climate Report.

SHIPPING

We have revised our 2021 baseline for our Shipping portfolio to 11.4 gCO_2 / t-nm to account for data quality improvements. As of December 31, 2023, the carbon intensity of our Shipping portfolio has increased by 4.9%, compared to the revised 2021 baseline. This increase is mainly due to changes in our exposure to the sector toward clients with higher carbon intensity. The Shipping sector globally experienced a modest improvement in aggregate carbon intensity between 2021 and 2022[17], however, our portfolio has not benefited from this trend given the small and highly concentrated nature of our financing to the sector, which may also impact our ability to meet our sector target. After announcing our sector target in 2023, we began implementation of our CAF across the portfolio, starting with the largest portions of exposure and gradually extending it to additional segments. During this initial phase, fluctuations in the portfolio's carbon intensity are expected as we implement our CAF across in-scope transactions. We anticipate that we will continue to refine our CAF methodology as we continue to engage with our clients and learn more about the sector's decarbonization strategies and constraints. We will continue to engage with our clients on areas such as operational efficiency and alternative fuels to support them on their decarbonization journeys. We also recognize that decarbonization efforts within the shipping industry are largely driven by international regulatory bodies, which set the trends and targets for our shipping portfolio clients.

[15] Global progress estimated using sector activity and emissions data for 2019 sourced from Net Zero Roadmap: A Global Pathway to Keep the 1.5 °C Goal in Reach (Table A.5: Economic and Activity Indicators) published in September 2023 and World Energy Outlook 2021 (Table A.4d: World CO_2 emissions) published in October 2021, respectively; sector activity and emissions data for 2022 sourced from World Energy Outlook 2023 (Table A.5c: World economic and activity indicators and Table A.4c: World CO_2 emissions, respectively) published in October 2023.

[16] Global progress estimated using sector activity and emissions data for 2021 and 2022 sourced from World Energy Outlook 2023 (Table A.5c: World economic and activity indicators and Table A.4c: World CO_2 emissions, respectively) published in October 2023.

[17] Global progress estimated using sector activity and emissions data for 2021 and 2022 sourced from World Energy Outlook 2023 (Table A.5c: World economic and activity indicators and Table A.4c: World CO_2 emissions, respectively) published in October 2023.

IRON & STEEL

As of December 31, 2023, the carbon intensity of our Iron & Steel portfolio has decreased by 1.5%, compared to the 2020 baseline. This decrease primarily results from changes in our exposure to the sector, which, relative to the distribution of our baseline portfolio, now tilts slightly toward clients with lower carbon intensity. Although the sector has made progress in emissions reduction through energy efficiency improvements and increased use of scrap material, the carbon intensity of the global Iron & Steel sector has remained relatively flat from 2020 to 2022[18]. Significant, long-term reduction in the carbon intensity of the sector relies partly on the deployment and scale of decarbonization technologies, such as hydrogen-based production and CCUS. Our portfolio carbon intensity remains lower than the global average, as it was at the time of our portfolio baseline. This is due to our financing to the sector being concentrated in North America, where electric arc furnace penetration is higher than the global average. We will continue to engage with our clients and seek to provide them with financing opportunities to support the transition of the sector.

CEMENT

As of December 31, 2023, the carbon intensity of our Cement portfolio has decreased by 0.7%, compared to the 2020 baseline. This decrease is mainly due to an increase in financing provided to clients with lower carbon intensity. When compared to the global decarbonization trend of the sector[19], our portfolio reflects a slightly slower rate of carbon intensity reduction. The Cement sector is unique in its reliance on technological advancements – namely CCUS – to enable broad scale decarbonization. While some of our clients have started to reduce their carbon intensity, the impact of their actions on our overall portfolio carbon intensity has been small relative to that of exposure changes. We will continue to use our capital and to engage with our clients to support their decarbonization efforts and the development of CCUS technologies and their value chains.

ALUMINUM

We have revised our 2021 baseline for our Aluminum portfolio to 8.6 tCO_2 / t aluminum as a result of data quality improvements and an increase in data coverage from our data vendors. As of December 31, 2023, the carbon intensity of our Aluminum portfolio has increased by 2.2%, compared to the revised 2021 baseline. This increase is mainly driven by changes in our exposure to the sector, which now skews lightly toward clients with higher intensity. As with the Shipping sector target, our progress reflects the initial phase of implementing our CAF to assess in-scope transactions within the Aluminum portfolio. We expect we will continue to refine our CAF methodology as we continue to engage with our clients and learn more about the sector's decarbonization strategies and constraints. Globally, the sector saw a moderate improvement in its carbon intensity between 2021 to 2022[20]. Our portfolio did not benefit from this trend, however, given the small and highly concentrated nature of our financing to the sector, which may also impact our ability to meet our sector target. In addition, clients in our Aluminum portfolio have dispersed carbon intensities due to the sector's reliance on grid power and the varying rates of decarbonization in the Power sector between developed and emerging market countries. Acknowledging the importance of our continued support to clients in emerging markets, we expect our portfolio intensity to continue to fluctuate in the coming years as the world decarbonizes power grids. We will also continue to engage with our clients and support the industry's efforts to decarbonize, such as increasing the share of secondary (recycled) aluminum produced.

[18] Global progress estimated using sector activity data for 2020 sourced from Global steel production in the Net Zero Scenario, 2010-2030, last updated 2 Nov 2021, and emissions data for 2020 sourced from World Energy Outlook 2021 published in October 2021 (Table A.4d: World CO_2 emissions), and sector activity and emissions data for 2022 sourced from World Energy Outlook 2023 published in October 2023 (Table A.5c: World economic and activity indicators and Table A.4c: World CO_2 emissions, respectively).

[19] Global progress estimated using sector activity data for 2020 and 2022 sourced from Global cement production in the Net Zero Scenario, 2010-2030, IEA (2023), last updated in June 2023; and emissions data for 2020 sourced from World Energy Outlook 2021 published in October 2021 (Table A.4d: World CO_2 emissions) and 2022 sourced from World Energy Outlook 2023 (Table A.4c: World CO_2 emissions) published in October 2023.

[20] Global progress estimated using sector activity and emissions data for 2021 and 2022 sourced from Primary Aluminum Production, 2005 – 2023, International Aluminum Institute, issued August 2024; and Greenhouse Gas Emissions – Aluminum Sector, 2005 – 2023, International Aluminum Institute, issued in January 2023.

Measuring Our Absolute Financed and Facilitated Emissions

Measuring and reporting our financed and facilitated emissions on an absolute basis is a growing area of interest for our stakeholders and can be useful metrics in understanding the impact of our emission reduction efforts. As such, we have taken steps to quantify and disclose absolute financed and facilitated emissions for sectors of our financing portfolio for which we have set net zero-aligned targets.

OUR APPROACH TO CALCULATE OUR ABSOLUTE FINANCED AND FACILITATED EMISSIONS

Our methodology for calculating absolute financed and facilitated emissions builds on international standards and guidance while also aiming to align with the principles and methodology underlying our sector-specific net zero-aligned targets. We tailored our approach to focus on what we consider to be the most important sources of emissions for each sector, accounting for our financing exposure to each of our clients in those sectors. To address one of the most significant challenges of measuring absolute financed and facilitated emissions, we also seek to minimize the distortion that may result from the effect of short-term market volatility on client valuations. We believe our approach calculates absolute financed and facilitated emission figures that correlate with real-world emissions performance of clients in our applicable sector portfolios.

We plan to continue to monitor evolving best practices on absolute financed and facilitated emissions measurement to inform our methodology. While we believe that our approach correlates with real-world emissions performance, we also disclose a version of this metric aligned to PCAF within the appendix section of this report (refer to pages 32–33).

For more information on our approach, refer to the “Absolute Financed Emissions” section in our Carbon Compass® methodology.

ABSOLUTE FINANCED AND FACILITATED EMISSIONS AS OF DECEMBER 31, 2023

SECTOR	SCOPE(S) INCLUDED	ABSOLUTE FINANCED AND FACILITATED EMISSIONS (million tCO_2e)		ECONOMIC INTENSITY (per US$1 million of lending/capital markets)		DATA QUALITY SCORES (1-5)[i]
		For Committed Lending (Financed Emissions)	For Capital Markets (Facilitated Emissions)	For Committed Lending (Financed Emissions)	For Capital Markets (Facilitated Emissions)	
Energy Mix[ii]	Scope 3 (end use)	96.5	36.2	2,134.6	2,556.2	**3.1**
Oil & Gas Operational	Scopes 1 and 2	6.2	2.0	256.6	274.8	**3.2**
Electric Power	Scope 1	31.9	8.9	852.4	658.1	**3.1**
Auto Manufacturing	Scopes 1, 2 and 3 (tank-to-wheel)	2.0	1.1	460.8	420.1	**3.2**
Aviation	Scope 1 (tank-to-wake)	1.0	0.7	680.8	596.4	**3.0**
Shipping	Scope 1 (tank-to-wake)	0.2	0.1	506.2	259.4	**1.5**
Iron & Steel	Scopes 1 and 2	2.6	1.2	1,378.9	1,473.9	**1.4**
Cement	Scopes 1 and 2	1.9	1.0	1,405.0	1,626.1	**1.3**
Aluminum	Scopes 1 and 2	0.4	0.6	727.6	1,578.0	**3.0**

i. Data quality scores are assigned depending on the quality of data available for each client, with 1 representing highest quality and 5 representing lowest quality. We calculate and report a weighted average data quality score for each sector based on the financing provided to each client relative to our total financing to the sector. Refer to section 4.5 of our Carbon Compass® methodology to learn more.

ii. Due to the integrated nature of our Energy Mix target and its partial overlap with our existing Electric Power target, we will include our financing of zero-carbon power generation activities in both targets’ calculations.

Energy Supply Financing Ratio

We have developed our own methodology to calculate our Energy Supply Financing Ratio (“ESFR”). The ESFR metric compares the amount of financing supporting low-carbon intensive and zero-carbon (referred to as “Low-Carbon”) energy supply versus that supporting high-carbon intensive and unabated fossil-based (referred to as “High-Carbon”) energy supply. While this disclosure metric can provide more insight into the capital that we are providing, we are not aligning our financing to meet a specific target for this ratio. The decision to disclose this ratio was made following engagement with our shareholders including the New York City Comptroller, which serves as the Trustee for each of the New York City Public Pension Funds.

For the year ended December 31, 2023, our ESFR of 1.29x shows that for each dollar supporting High-Carbon energy supply, 1.29 dollars supported Low-Carbon energy supply.

The ESFR disclosure can provide insight into capital formation in the real economy, but it also has limitations. First, it is a disclosure metric, not a mechanism to drive energy transition. Banks operate in competitive markets and do not control the absolute or relative level of financing opportunities available for energy supply. Rather, the energy transition is driven by a range of factors largely outside of an individual bank’s control, including the implementation of policy mechanisms, technological advancements and changing consumer preferences. Second, while this metric can provide further insight into the financing we are providing, it is not a direct proxy for decarbonization activity happening in the economy, or for total energy supply investment dollars. Financing provided by banks only reflects a portion of the total capital deployed by companies engaged in the supply of energy to power the global economy. Capital provided through companies’ retained earnings, state and federal governments, venture capitalists and private equity firms also plays a key role in supporting the investments needs of energy supply sectors.

We aim to support the energy transition while recognizing the need to continue supporting traditional energy sectors to help their decarbonization efforts and promote global energy security, availability, affordability and accessibility. We are focused on helping our clients achieve their business objectives, including their efforts to responsibly reduce their emissions today, while diversifying their use of different energy sources over time.

For more information on our approach, details on our methodology and resulting metric, refer to our ESFR methodology.

Data Challenges

Improving the quality, timeliness and availability of data is important for properly measuring emissions and monitoring progress over time. This section summarizes the key points on data considerations and ongoing challenges that we face.

MEASUREMENT VS. ESTIMATION

There are well-known challenges with the quality and reliability of emissions data in many sectors. This means we sometimes rely on estimated versus directly measured emissions data. For example, in the Oil & Gas sector, there are inconsistencies in the measurement, management and reporting of data across companies, as well as lack of reliable and standardized techniques for measurement in certain areas, such as methane emissions. As a result, reported methane emissions rely on estimation methods that are less accurate than direct measurement methods. We are working with industry partners and NGOs to help make direct measurement technologies the preferred method of tracking and reporting methane emissions. More generally, emerging best practices, including companies reporting to organizations that provide data aggregation services and soliciting assurance for reported GHG emissions data, will help improve emission-related data quality and reliability. To know more about our efforts toward helping improve availability and accuracy of methane emissions data, refer to page 11.

DATA LAG

Another challenge we face is with the timely availability of data inputs to calculate carbon intensity. In the Auto Manufacturing sector, for example, availability of certain data from regulatory sources can be significantly delayed — sometimes up to two to three years. In such cases, we seek to address gaps using a defined data waterfall approach that may include company-disclosed figures, provided they are verified and prepared in line with recommended protocols. Failing that, we use proxy values. As climate- and sustainability-focused disclosure becomes more standardized, we expect lags — especially on company-reported data — to reduce gradually.

COMPARABLE METHODOLOGIES

While we seek to design and implement robust proxies that minimize the impact on our estimates when preferred data becomes available, there are cases where this may not be achievable. For example, in our Electric Power portfolio, a small proportion of companies for which no data is available receive a default carbon intensity based on a relatively conservative proxy. Unless the company’s North America Industry Classification System codes or project financing use of proceeds indicate it to be a zero-emitting power producer, in which case it is assigned a carbon intensity of zero, the company is assigned a fuel mix that is equal parts coal and natural gas. However, due to the large differences between the emissions intensities of the different fuel types, there could be significant differences between estimates and actual data. To mitigate this, we are continuing to work with our clients and other stakeholders to improve overall quality and availability of data. We review our data sourcing choices to assess whether better alternatives have become available.

LACK OF DATA ON EMERGING DECARBONIZATION TECHNOLOGIES

Emerging technologies such as hydrogen, biofuels, and carbon capture, use and storage — will play a key role in helping clients decarbonize. However, data availability in these areas remains a significant challenge. Innovative solutions continue to emerge but lack the scale today that is necessary to meaningfully impact our portfolio-level emissions intensity. We recognize that data in this space is evolving, and we plan to consider viable data solutions as they become available.

3 Managing Our Operational Footprint

We measure and report our Scope 1, Scope 2 and Scope 3 Category 6 - business travel emissions, as well as our progress toward our current operational decarbonization targets.

Operational GHG Emissions

JPMorgan Chase's reported 2023 operational GHG emissions were driven by two primary activities: powering our buildings (e.g., electricity, heating and cooling) and business travel. Scope 1 GHG emissions were driven by our building operations and company-owned aircraft and vehicles. Scope 2 emissions, from purchased electricity, remain the largest driver of our building-related emissions and overall operational GHG footprint. Our Scope 3 business travel-related emissions are largely from commercially operated air travel.

The table on the right summarizes our 2023 operational GHG emissions against our 2017 baseline.

As a result of continued improvements in data quality and availability, we updated our emissions calculation methodology to more accurately measure our operational GHG emissions. Enhancements include expanding our operational boundary definitions, using energy intensity and GHG emissions factors with broader geographical coverage, and improved data sources to more accurately reflect our business travel emissions[21]. Consequently, we have restated our 2017 baseline using this updated methodology — where possible — and have calculated our 2023 metrics using the same approach.

[21] Find our Management Assertion and the Report of Independent Accountants here.

	2023[i]	2017 (Baseline year)[ii]
GHG EMISSIONS ($mtCO_2e$)		
Scope 1 GHG Emissions	**115,294**[iii]	**84,463**
Natural gas	48,232	44,628
Propane	50	235
Fuel oil	420	1,387
Jet fuel	13,059	9,116
Fugitive emissions	48,658	27,130
Diesel	2,855	1,648
Fleet	1,892	51[iv]
Other energy use[v]	128	268
Scope 2 GHG Emissions (Location-Based)	**792,479**[iii]	**944,641**
Purchased electricity	788,837	937,012
Purchased steam, district heat and chilled water	3,642	7,629
Scope 1 GHG Emissions + Scope 2 GHG Emissions (Location-Based)	**907,773**	**1,029,104**
Percentage reduction in Scope 1 and Scope 2 (Location-Based) from 2017 baseline	-12%	—
GHG emissions intensity[vi]	5.7	10.3
Scope 2 GHG Emissions (Market-Based)	**3,642**[iii]	**858,769**
Purchased electricity	—	851,140
Purchased steam, district heat and chilled water	3,642	7,629
Scope 1 GHG Emissions + Scope 2 GHG Emissions (Market-Based)	**118,936**	**943,232**
Scope 3 GHG Emissions (Category 6 - business travel)[vii]	**255,481**[iii]	**187,713**
Scope 1 GHG Emissions + Scope 2 GHG Emissions (Market-Based) + Scope 3 GHG Emissions (Category 6)	**374,417**[iii]	**1,130,945**
Verified carbon offsets[viii]	374,417[iii]	175,155
Net emissions: Scope 1 GHG Emissions + Scope 2 GHG Emissions (Market-Based) + Scope 3 GHG Emissions (Category 6)	—	**955,790**

i. For 2023, we have updated the methodology we use to estimate our operational GHG emissions.
ii. Data for 2017 has not been subject to external verification and may be revised. Restatement of our 2017 baseline using our updated methodology resulted in a 1.2% increase in the combined total of our Scope 1, Scope 2 (Location-Based) and Scope 3 (Category 6 -business travel) GHG Emissions compared to the previously reported baseline.
iii. We engaged an external third-party to perform a limited assurance engagement over these metrics presented for 2023. Find our Management Assertion and the Report of Independent Accountants here.
iv. For 2017, emissions from fleet were not updated to the current methodology due to data limitations. Total emissions from fleet accounted for approximately 0.06% of the overall Scope 1 GHG emissions and 0.005% of the overall Scope 1 and Scope 2 (location-based) GHG emissions for 2017.
v. Includes heavy fuel oils, anthracite coal, biofuels and waste.
vi. Includes Scope 1 and Scope 2 (location-based) GHG emissions; $mtCO_2e$/million USD revenue.
vii. For 2023, Scope 3 GHG Emissions (Category 6 - business travel) includes: air and rail travel, car rental, ride share, expensed mileage and hotel stays. For 2017, Scope 3 GHG Emissions (Category 6 - business travel) includes only air travel data. Due to data limitations, and to align with our updated emissions methodology, we applied the percentage breakdown of haul distances and cabin classes from 2023 air travel data as a proxy to calculate 2017 air travel emissions.
viii. Carbon offsets, also referred to as "carbon credits" and the market for them are evolving rapidly. Although we endeavor to source high-quality carbon credits verified by independent third parties, the ability to use carbon credits to fully and permanently address unabated emissions relies on certain assumptions and is subject to debate among experts.

Electric Power

Since 2020, we have achieved our target of sourcing renewable electricity for 100% of our global electric power needs annually, which we have accomplished through a combination of on-site solar installations at JPMorgan Chase commercial and retail locations and the purchase of renewable electricity via both long-term power purchase agreements and applicable EACs.

The table on the right summarizes our renewable electricity use obtained via either on-site generation or contractual instruments.

	2023	2017
ELECTRIC POWER (MWh)		
Purchased electricity	2,016,262[i]	2,154,995
Electricity from long-term renewable contracts[ii]	704,633	N/A
Electricity production (on-site solar)	47,443	2,598
Percentage of electric power needs met with on-site generation and long-term renewable electricity contracts[ii]	36%	N/A
Purchased renewable electricity[iii]	2,016,262[i]	200,000
Percentage of electric power from renewable sources (production and instruments)	100%	9%

i. We engaged an external third-party to perform a limited assurance engagement over these metrics presented for 2023. Find our Management Assertion and the Report of Independent Accountants here.
ii. Tracking began in 2021.
iii. Purchased renewable electricity from unbundled energy attribute certificates, contractual instruments which included long-term power purchase agreements, virtual power purchase agreements and renewable supply contracts.

Risk Management

Our Climate Risk Framework

Climate risk refers to the potential threats posed by climate change to the Firm and/or our clients, customers, operations and business strategy. Climate change is viewed as a catalyst that can influence risks (credit and investment, market, operational and strategic) managed by the Firm. Climate risk is categorized into physical risk and transition risk.

Physical risk involves economic costs and financial losses due to a changing climate. Acute physical risk includes increased frequency or severity of climate and weather events, such as floods, wildfires and tropical cyclones. Chronic physical risk includes more gradual shifts in the climate, such as sea level rise, persistent changes in precipitation levels and increase in average ambient temperatures. Indirect physical risk includes the second-order effects of these acute and chronic risks, such as supply chain disruptions or changes to property valuations.

Transition risk involves the financial and economic consequences of society's shift toward a lower-carbon economy. Transition risk includes possible changes in public policy, adoption of new technologies and shifts in consumer preferences. Transition risks may also be influenced by changes in the physical climate.

Our 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. On the following pages, we have sections discussing the following components of our climate risk framework: Risk Governance, Scenario Analysis, Risk Identification and Risk Measurement. Data Management and Reporting and Disclosures capabilities are described throughout various sections of this chapter.

JPMorgan Chase continues to invest in talent, as well as data and technology resources to support the management of climate, nature and social risks.

The Firm's Climate Risk Framework

RISK GOVERNANCE

SCENARIO ANALYSIS

RISK IDENTIFICATION

RISK MEASUREMENT

DATA MANAGEMENT

REPORTING & DISCLOSURES

Risk Governance

We maintain a framework and strategy for identifying, monitoring and managing climate risk which is integrated into our 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.

Scenario Analysis

Scenario Analysis is a key component of our climate risk framework. To assess the range of potential climate-driven paths and outcomes, we apply an array of scenarios to our internal risk processes, as appropriate. We use internationally recognized scenarios from the Network for Greening the Financial System ("NGFS") and the Intergovernmental Panel on Climate Change ("IPCC") to inform our measurement of potential financial and economic impacts to the Firm from climate risks.

The NGFS and IPCC scenarios represent widely-accepted, plausible pathways for society's future GHG emissions and consider the complex interactions between global socioeconomic systems and natural Earth systems over time.

Scenario Analysis is not a prediction of the future, but rather a tool to understand potential future outcomes. It helps us identify potential vulnerabilities impacting our clients, customers, operations and business strategy across a range of plausible future states of the world.

Physical Risk Scenario Analysis

To evaluate the potential impacts of more frequent and severe weather events on our business operations, credit exposures and collateral locations, we use physical risk scenario inputs derived from the IPCC. We use both a "baseline" physical risk scenario and a "stress" physical risk scenario to understand possible outcomes.

BASELINE SCENARIO

The IPCC Representative Concentration Pathway ("RCP") 4.5 scenario represents a middle-of-the-road scenario where societal, economic and technological trends do not shift markedly from historical patterns: global and national institutions make slow progress toward sustainable development goals and the intensity of resource and energy use declines. The scenario assumes that global mean temperature reaches 2.7°C warming above pre-industrial levels by 2100.

STRESS SCENARIO

The IPCC RCP 8.5 scenario represents the highest emissions IPCC scenario. The scenario assumes that global mean temperature reaches 4.4°C warming above pre-industrial levels by 2100 due to the continued heavy use of fossil fuel resources and a continued rise in resource- and energy-intensive activities around the world. Under this scenario, there is no transition to a low-carbon economy and GHG emissions continue to rise throughout the 21st century.

Transition Risk Scenario Analysis

To gauge the potential impacts of transition risk to the Firm, we use macroeconomic and industry-specific factors, like Oil & Gas demand and steel production, from NGFS scenarios. Consistent with the physical risk approach, we use a "baseline" transition risk scenario and a "stress" transition risk scenario, both from the NGFS.

BASELINE SCENARIO

The NGFS Current Policies ("CP") scenario represents a low-transition risk scenario based on the current state of global climate policy. The scenario assumes that no additional emissions reduction policies are implemented by governments, leading to high physical risks. In this scenario, 3°C or more of warming could occur by 2100[22].

STRESS SCENARIO

In 2023, the NGFS discontinued the Divergent Net Zero ("DNZE") scenario. While the Firm continues to leverage the DNZE scenario as an extreme transition risk NGFS scenario, we are developing an internal, integrated climate scenario (discussed in more detail in the following paragraph). The DNZE scenario assumes that global net zero emissions are reached by 2050 through a rapid increase in carbon prices with an accelerated phase-out of fossil fuels, despite divergence in policies introduced by governments across the world. The scenario assumes that global warming is successfully limited to 1.5°C by 2100, which limits physical risk impacts.

Integrated Climate Scenario

We continue to examine alternative climate scenarios, including internally designed scenarios, with a goal of improving the integration of both physical and transition risks, taking into account their potential combined impacts on the broader economy, and considering the Firm's specific concentrations and exposures. These alternatives may also decrease our dependence on third-party scenarios. Taken together, these and other efforts are intended to enhance our ability to identify, measure, monitor and manage climate-related financial risks.

Time Horizons

Because of the varying pace and cumulative effects of climate change, we assess scenario outputs and manage climate risks across a range of time horizons. We categorize a timeframe of less than five years as short-term. This categorization aligns with our loss and capital adequacy assessments. It is also consistent with our risk identification framework and the short-term climate scenario assumptions we use.

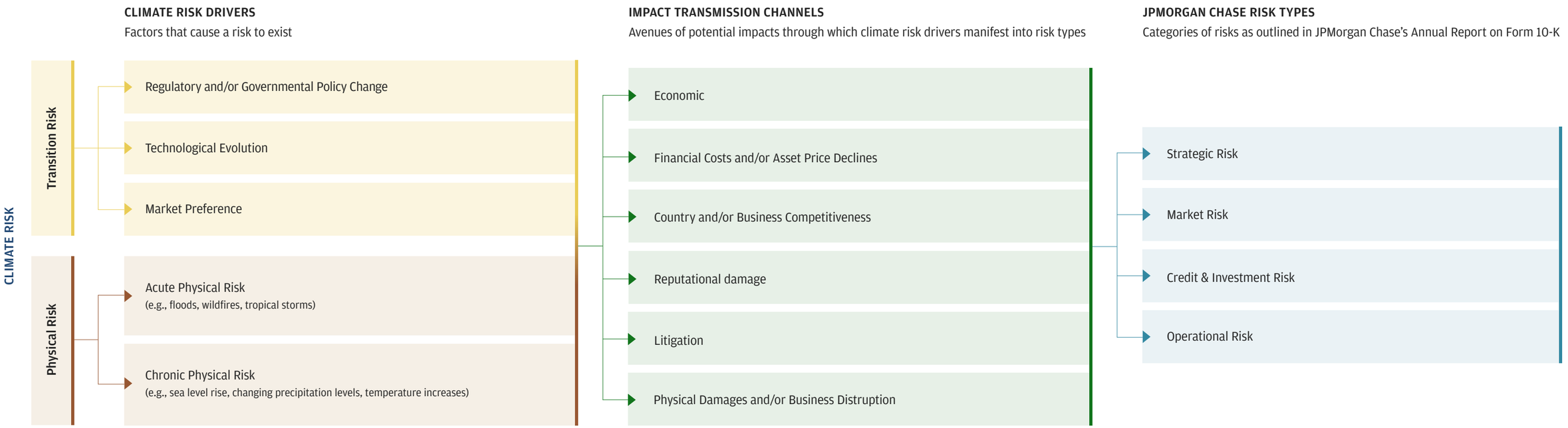
Furthermore, we classify a medium-term time horizon as 5 to 10 years and a long-term time horizon as 10+ years, understanding that the effects of climate change may unfold over longer time horizons. In this way, our strategic approach to climate risk management seeks to cover both potential current and future risks, immediate and far-sighted, seeking sustainability and resilience in the face of evolving climate scenarios.

[22] Temperature increases are relative to global mean temperatures at pre-industrial levels (1850–1900).

Risk Identification

We have integrated climate into the firmwide risk identification framework as a driver of existing credit and investment, market, operational and strategic risk types. Supporting this framework is a classification system, illustrated below, that describes how climate risk drivers could translate into potential impacts to our clients and our operations. We apply our scenario analysis tools to this framework to identify how climate change may impact the Firm's risk profile. Identified climate risks are incorporated into the Firm's risk inventory.

Translating Climate Risk Drivers into Potential Risks to the Firm[23]



Physical and Transition Risk

Physical and transition risk can manifest in a variety of ways. The table on the following page provides examples of these risks and how they could directly or indirectly affect the four major risk types we manage.

The term "first-order impacts" refers to impacts that directly affect an individual company, property or consumer. The term "second-order impacts" refers to secondary impacts to financial markets, local economies or other businesses. In some cases, the "first-order" impacts may build over time and trigger the "second-order" impacts – for example, repeated business disruption following severe weather events may lead to higher insurance costs in the local area.

[23] List is not exhaustive. We continue to refine our taxonomy based on an evolving understanding of how climate-related risk drivers may manifest as risks to the Firm.

Examples of Potential Climate Risk Impacts

RISK TYPE	PHYSICAL RISK		TRANSITION RISK	
	FIRST ORDER	SECOND ORDER	FIRST ORDER	SECOND ORDER
CREDIT AND INVESTMENT RISK Risk associated with the default or change in credit profile of a client, counterparty or customer; or loss of principal or a reduction in expected returns on investments, including consumer credit risk, wholesale credit risk and investment portfolio risk	Increasing frequency and severity of weather events leads to customer and/or client property damage and an increased likelihood of default	Over time, the higher amount of direct damage resulting from severe weather events leads to increased insurance costs, diminishing consumers' ability to pay	A shift in consumer preference away from certain carbon-intensive products leads to reduced profitability for clients slow to adapt to a low-carbon economy	A sustained low-profitability environment in local economies reliant on carbon intensive industries leads to lower local economic output, higher unemployment, and increased customer and client default risk
MARKET RISK Risk associated with the effect of changes in market factors, such as interest and foreign exchange rates, equity and commodity prices, credit spreads or implied volatilities, on the value of assets and liabilities held for both the short and long term	Heat and drought causes variability in agriculture output, or severe weather disrupts commodity supply chains, leading to price volatility	Increasing frequency and severity of weather events in a high physical risk region leads to a systemic change in the types of commodities produced in those regions and therefore affects prices in a sustained way	Increasing consumer demand for electric vehicles ("EVs") negatively impacts the equity value of slow-to-transition automotive manufacturers	Sustained EV demand combined with ongoing constraints in the EV supply chain leads to long-term price appreciation and volatility for certain commodities
OPERATIONAL RISK Risk of an adverse outcome resulting from inadequate or failed internal processes or systems; human factors; or external events impacting the Firm's processes or systems. Operational risk includes compliance, conduct, legal, and estimations and model risk	A severe weather event — such as a flood or tropical cyclone — causes damage to JPMorgan Chase building with temporary business disruption and repair costs	Increasingly frequent and destructive weather events in high physical risk regions leads to migration of businesses and residents away from these regions, creating hiring and employee retention challenges for local JPMorgan Chase offices	JPMorgan Chase's implementation of new climate-related models, reporting against climate related targets, and the emergence of various climate-related regulatory expectations globally leads to increased operational risk	Fast evolving and ambiguous regulatory and legal landscape on climate topics could lead to more regulatory scrutiny and litigation being brought against the financial sector, leading to increased legal and compliance costs
STRATEGIC RISK Risk to earnings, capital, liquidity or reputation associated with poorly designed or failed business plans or inadequate response to changes in the operating environment	The Firm continues to invest in properties that are increasingly susceptible to physical damages from severe weather events, leading to reduced profitability for the Firm	High physical risk in regions where JPMorgan Chase has made strategic investments (e.g., offices, branches, data centers) causes the Firm to abandon/restructure location strategies in these regions	The Firm fails to attract green business opportunities as society shifts towards a low-carbon economy	The Firm is no longer viewed as a leading banking partner for a large part of the global economy

Risk Types

We are using our resources to better understand how physical and transition risks may manifest and their potential impacts on the existing risk types the Firm manages.

Credit and Investment Risk

As an example, credit and investment risk is one of the four risk types we manage and is the risk associated with the default or change in the credit profile of a client, counterparty or customer; or loss of principal or a reduction in expected returns on investments including consumer credit risk, wholesale credit risk and investment portfolio risk.

We use our risk identification process and scenario analysis capabilities to measure the potential adverse impacts the baseline and stress climate risk scenarios may have on our credit portfolios, both today and in the future. We are analyzing the direct impacts of physical and transition risk — including property damage and financial loss due to severe weather events or the potential reduction in profitability of a client, counterparty or customer as a result of a societal transition from a high-carbon to a lower carbon-intensive footprint. We are also considering indirect and longer-term risk drivers, including the potential for reduced availability or increased cost of insurance for clients of JPMorgan Chase in a given geography, adoption of new technologies and shifts in consumer preferences.

CONSUMER CREDIT RISK

As of December 31, 2023, the Firm had $1.6 trillion of consumer credit exposure, including residential real estate, auto loans and credit cards. We use catastrophe models to estimate the potential impact of hypothetical severe weather events, including flooding and tropical cyclones, on our real estate portfolios. Catastrophe models provide estimates of event frequency and severity, as well as resultant property damage under different emissions scenarios. Such metrics contribute to analyses of potential future climate-related credit risk by informing estimates of risk drivers, such as insurance costs and asset values. However, such modelling has limitations, such as only considering current building codes and flood defenses and not future ones that may be built in response to storms. For example, retained residential real estate loans, predominantly in the U.S., made up $326 billion of the total consumer credit portfolio. Today, the risks of severe weather events for this portfolio are substantially mitigated through geographic diversification of the properties, the prevalence of hazard insurance and the effective average life of the underlying loans, among other factors. As a result, financial losses due to severe weather events have not been material to the Firm. As we evaluate the potential for future impacts, we are considering outcomes in which these mitigants are less effective — for example, if insurance costs become prohibitively expensive or availability of insurance is limited in geographic scope or coverage.

The cumulative effect of physical climate risk may impact our residential real estate portfolio in several ways, including the following:

- Greater physical damages: increased likelihood or severity of severe weather events may increase consumer credit losses.
- Higher insurance premiums: higher insurance premiums may increase living expenses and financial burden for consumers.
- Reduced coverage or availability of insurance: insurers may further limit types of damage they cover or withdraw coverage from specific geographies.
- House price impacts: cumulative effect of climate-driven events may adversely impact house prices and local economies in certain geographies, potentially disproportionately impacting lower-income households and communities.

We continue to examine how the transition to a low-carbon economy may create financial burden on consumers from potentially higher energy prices, pass-through of carbon taxes on goods and services, or result in declines in the value of other assets (e.g., gas-burning vehicles), which could impact consumers' ability to repay credit obligations and may result in additional credit losses to the Firm.

WHOLESALE CREDIT RISK

As of December 31, 2023, the Firm had $1.3 trillion of wholesale credit exposure. In its wholesale businesses, the Firm is exposed to credit risk primarily through its underwriting, lending, market-making, and hedging activities with and for clients and counterparties, as well as through various operating services (such as cash management and clearing activities), securities financing activities and cash placed with banks.

We have built a stress framework to estimate potential impacts from a range of climate transition pathways on client financials and credit ratings. Financial impacts from the transition to a low-carbon economy could manifest in a variety of ways, including weaker demand for carbon-intensive products, resulting in lower revenue or higher operating costs for carbon-emitting companies, if a carbon tax is implemented. Additionally, companies may need to increase their capital expenditures through investments that improve resilience to the low-carbon transition (e.g., power companies investing in renewables).

For clients operating in carbon-intensive sectors (e.g., Oil & Gas, Automotive Manufacturing, Power Generation, Aviation, Steel and Cement Manufacturing), we estimate the potential impact of a climate transition scenario on their credit rating by projecting detailed cashflows within the context of a transition scenario (refer to Scenario Analysis on page 26). This estimation takes into account the client-level CAF quantitative and qualitative scores, which, as described on pages 9–11, assess a client's historical emissions reductions, current and forecasted carbon intensity, as well as actions taken to advance their decarbonization.

To assess the impact of climate transition risk on sectors with relatively lower carbon intensity, we conduct a separate client-specific internal stress analysis[24]. The potential effect on a client's credit rating is estimated by stressing client financials consistent with industry projected performance in the transition scenario and factoring in the additional costs incurred due to a carbon tax on the company's emissions.

We have also developed risk measurement capabilities, including catastrophe modelling — which as noted in the Consumer Credit Risk section, has limitations such as only considering current building codes and flood defenses and not future ones that may be built in response to storms — to estimate the potential impact of severe weather events exacerbated by climate change on our Commercial Real Estate portfolio. Damages from hurricanes and floods could cause potential physical damage to the underlying properties, leading to expenses for repairs and disruptions in revenue, as well as changes in overall property values that could impact the credit quality of the portfolio. The impact of severe weather events on the Commercial Real Estate portfolio is currently estimated to be limited given relatively low exposure to areas most impacted by severe weather events.

[24] Climate transition stress analysis for clients in lower carbon intensity sectors is used for internal climate analysis and not used in client decisioning.

RISK MEASUREMENT IN FOCUS: HEATMAP OF WHOLESALE CREDIT EXPOSURES (AS OF DECEMBER 31, 2023)

Below is a heatmap of wholesale credit exposures using a five-point color scale to indicate revenue-based carbon intensity — to the extent that reliable data is available — and physical risk by sector. Revenue-based carbon intensity is sourced from third-party data aggregation services. The physical risk categorizations are based on an internal methodology that assesses sector-specific characteristics that may lead to physical risk vulnerabilities, such as reliance on outdoor labor and climate-vulnerable resources. Changes in carbon intensity ratings from 2022 were mostly driven by data quality enhancements and increased availability of GHG emissions data.

Key: Very Low | Low | Moderate | High | Very High | Not analyzed | ▲ Year-on-year increase in intensity | ▼ Year-on-year decrease in intensity

Sector	Total Credit Exposure (USD million)	Revenue-Based Carbon Intensity	Physical Risk
COMMERCIAL & INDUSTRIAL	501,353	High	Moderate
Consumer & Retail	127,086	Moderate	Low
Retail	36,376	Low	Low
Business & Consumer Services	35,214	Moderate ▼	Low
Food & Beverage	33,186	Moderate	Low
Consumer Hard Goods	13,366	High	Low
Leisure	8,944	Low	Moderate
Technology, Media & Telecommunications	77,296	Moderate ▲	Moderate
Industrials	75,092	Very High	Moderate
Machinery & Equipment	35,299	Very High	Moderate
Construction & Building Materials	16,509	High	Moderate
Agriculture, Forest Products & Textiles	15,026	High	High
Aerospace & Defense	8,258	Very High △	Moderate
Healthcare	65,025	Very low	Moderate
Oil & Gas	34,475	Very High	High
Exploration & Production ("E&P") and Oilfield Services	18,657	Very High	High
Other Oil & Gas	15,818	Very High	High
Automotive	33,977	Very High △	Moderate
Auto Dealers	16,588	Very High	Low
Auto Manufacturing	17,389	High	Moderate
Utilities	36,061	Very High	High
Electric	13,604	Very High	Very High
Gas	9,356	Very High	High
Integrated & Other Utilities	13,101	Very High	High
Chemicals/Plastics	20,773	High	Moderate
Chemicals	15,319	High	Moderate
Plastic & Rubber	5,454	High	Moderate

Sector	Total Credit Exposure (USD million)	Revenue-Based Carbon Intensity	Physical Risk
Metals/Mining	15,508	Very High	High
Steel	3,862	Very High	High
Aluminum	1,126	Very High	Very High
Coal	198	N/A	High
Other Metals & Mining	10,322	Very High	High
Transportation	16,060	High △	Moderate
FINANCIAL INSTITUTIONS	220,192	Moderate	N/A
Asset Managers	129,574	N/A	N/A
Banks & Finance Cos	57,177	Moderate ▼	N/A
Insurance	20,501	Very low	N/A
Financial Markets Infrastructure	4,251	Very low	N/A
Securities Firms	8,689	Low	N/A
REAL ESTATE	208,261	Low ▽	Low
Multifamily	121,967	N/A	Low
Office	16,494	Very low ▽	Low
Industrial	20,272	Low	Low
Retail	12,811	Moderate	Low
Lodging	4,748	Moderate ▼	Moderate
Other Income Producing Properties	15,750	Very low	Moderate
Services and Non Income Producing	16,219	Moderate ▼	Moderate
GOVERNMENT & AGENCIES	53,690	N/A	N/A
OTHER INDUSTRIES	280,626	N/A	N/A
Individuals and Individual Entities	145,849	N/A	N/A
Other	134,777	Moderate	N/A
TOTAL	1,264,122	High	Moderate
of which: exposure to high-intensity sectors	296,936		

Note: Data in the above table is as of December 31, 2023. The revenue-based carbon intensity heatmap color is based on the average sector total revenue-based carbon intensity (Scope 1+2+3) in tCO_2e/USD million, weighted by exposure to each counterparty in the sector. The physical risk rating is based on our internal methodology, which assesses characteristics of each global industry that could lead to physical risk vulnerability and focuses on the direct activities of companies. Our internal methodology for calculating physical risk was updated this year, leading to ratings changes for certain sectors. Revenue-based carbon intensity ratings, which consider supply chain as part of Scope 3 reporting, may change over time for various reasons including enhancement of emissions data quality and reliability in certain sectors. As more companies directly report Scope 3 emissions, we expect the directly-reported data to reduce our reliance on data aggregation services that provide Scope 3 emissions estimations. Grey cells indicate sectors and sub-sectors we have not yet scored and/or sectors with insufficient data. Total credit exposure includes retained loans, lending-related commitments and derivative receivables.

Other Risk Types

Market Risk

Market risk is the risk associated with the effect of changes in market factors, such as interest and foreign exchange rates, equity and commodity prices, credit spreads or implied volatilities, on the value of assets and liabilities held for both the short- and long-term. Climate risk drivers may lead to sharp volatility or persistent changes in the prices of commodities and financial assets; for example, companies in carbon intensive sectors without credible transition plans may have assets that are viewed as stranded, resulting in materially depressed equity prices. The Firm has established a stress framework to quantify the impact of the transition risk stress scenarios on vulnerable asset classes. We have also analyzed a series of physical drivers to estimate the potential impacts of various acute physical risk events to markets exposures.

Operational Risk

Operational risk is the risk of an adverse outcome resulting from inadequate or failed internal processes or systems, human factors or external events impacting the Firm's processes or systems. We have integrated climate risk drivers into our operational risk framework and associated firmwide resiliency processes. Increasingly volatile and severe weather events, including more severe storms, flooding, heat and related impacts, such as drought and wildfires, may impact the likelihood and severity of a variety of existing operational risks.

We evaluate potential climate driven impacts through ongoing assessments of operational risks to employees and customers, our facilities, property and service providers, and our business activities. Evaluations are documented and may also inform the firmwide risk identification framework, which centrally captures risks across all risk types. As an example, we use these risks to develop business disruption threat scenarios that inform business resiliency planning, testing and simulation exercises. This, in turn, allows us to assess the adequacy of our resiliency capabilities and identify potential vulnerabilities and opportunities for enhancement. These activities, along with other factors, help further our management and mitigation of climate-driven impacts.

We have also developed the global Climate Location Site Assessment ("CLSA") process, which considers the risks to, and resiliency of, the Firm's infrastructure to the impacts of climate change. This process is completed by metro area and is prioritized by key operational locations and the projected severity of impacts of physical climate change. The CLSAs provide resiliency-related information to support firmwide processes, including risk identification and business resiliency planning exercises.

Strategic Risk

Strategic risk is the risk to earnings, capital, liquidity or reputation associated with poorly designed or failed business plans or inadequate response to changes in the operating environment. In response to climate change, and in support of our clients transitioning to a lower-carbon economy, we may make changes to our business strategy, product offerings and risk profile.

REPUTATION RISK

Reputation risk is the risk that an action or inaction may negatively impact perception of the Firm's integrity and reduce confidence in the Firm's competence by various stakeholders, including clients, counterparties, customers, communities, investors, regulators, or employees. Reputational risk assessment is designed to take into account the commercial consequences of actions or inactions that may impact clients, customers, employees, capital providers and other stakeholders. In many cases we recognize that a position we take will be favored by some and disapproved of by others, and where all positions including neutrality can be controversial.

Companies remain under scrutiny for their approach to managing climate transition risks as well as environmental and social risks, which could lead to reputation risk from the real or perceived lack of progress and transparency. The Firm may face reputation risk relating to its climate risk framework and environmental sustainability strategy.

LIQUIDITY RISK

Liquidity risk is the risk that the Firm will be unable to meet its cash and collateral needs as they arise or that it will not have the appropriate amount, composition and tenor of funding and liquidity to support its assets and liabilities. The Firm's liquidity could be impaired by factors such as market-wide illiquidity or disruption, unanticipated outflows of cash or collateral and lack of market or customer confidence in JPMorgan Chase or financial institutions in general. We use a transition risk scenario to assess the potential impact of climate on the Firm's liquidity.

Climate-related Country Risk

The Firm may be exposed to country risk resulting from financial, economic, political or other significant developments, which adversely affect the value of the Firm's exposures related to a particular country or set of countries. Country risk may be a driver of risk or an aggregation of exposures that could give rise to multiple risk types such as credit or market risk. Negative impacts of climate change may affect a country's economic, fiscal, monetary or political frameworks in numerous ways, which, in turn, may adversely affect its sovereign credit ratings. We have incorporated climate risk considerations, as appropriate, into existing sovereign ratings. In addition, we developed a score to help us evaluate the potential sensitivity of sovereign ratings to climate risks beyond the standard rating horizon or specific stress scenarios.

Managing Nature and Social Risks

We have frameworks in place to identify certain client business models with high concentrations of particular nature and social ("N&S") risk that have the highest potential reputational impact to the Firm. These frameworks also include restricted activities related to the environment and human rights. For example, we will not provide financial services to clients deriving the majority of their revenues from the extraction of coal. For more information on our framework for managing N&S risks, including the Firm's other restricted activities and sensitive business activities and locations, please refer to pages 82 and 83 of our 2023 ESG Report.

Appendices

Absolute Financed and Facilitated Emissions: PCAF-aligned Metrics[25]

We recognize the benefit of comparable industry-specific methodologies for measurement and disclosure of absolute financed and facilitated emissions. Although the methodologies are still evolving, we are disclosing in the table to the right PCAF-aligned absolute financed and facilitated emissions.

We provide disclosure on absolute financed and facilitated emissions for eight sectors of our financing portfolio in the Metrics and Targets chapter (refer to page 21). We have calculated these metrics using our own methodology (Carbon Compass® methodology), which we believe calculates absolute financed and facilitated emission figures that correlate with real-world emissions performance of clients in our applicable sector portfolios. We continue to monitor evolving best practices for the financial sector to inform our own approach and to provide information of interest to our stakeholders.

PCAF-aligned Absolute Financed and Facilitated Emissions[26]

SECTOR[i]	SCOPE(S) INCLUDED[ii]	ABSOLUTE FINANCED AND FACILITATED EMISSIONS (million t CO_2e)[iii]		ECONOMIC INTENSITY (per US $1 million of lending)[viii]		DATA QUALITY SCORES (1–5)[ix]
		For Committed Lending (Financed Emissions)[iv, v]	For Capital Markets (Facilitated Emissions)[vi, vii]	For Committed Lending (Financed Emissions)	For Capital Markets (Facilitated Emissions)	
Energy Mix	Scope 3 (end use)	23.4	12.0	3,667.6	887.5	3.2
Oil & Gas Operational	Scopes 1 and 2	0.9	0.7	222.1	101.9	3.4
Electric Power	Scope 1	2.0	1.9	528.4	148.5	3.1
Auto Manufacturing	Scopes 1, 2 and 3 (tank-to-wheel)	0.2	0.2	575.6	87.7	3.3
Aviation	Scope 1 (tank-to-wake)	0.1	0.1	654.0	138.6	3.0
Shipping	Scope 1 (tank-to-wake)	0.01	0.05	252.8	163.7	1.5
Iron & Steel	Scopes 1 and 2	0.2	0.7	907.1	579.2	1.4
Cement	Scopes 1 and 2	0.6	0.1	1,523.9	610.2	1.3
Aluminum	Scopes 1 and 2	0.1	0.3	704.0	653.5	3.0

i. The sectors included in this table align with the sectors covered by our Carbon Compass® methodology for our net zero-aligned targets.

ii. The scopes included in this table align with the scopes included in our Carbon Compass® methodology and represent scopes for which appropriate emissions data is available.

iii. The absolute financed and facilitated emissions in this table utilized the proxy methodology described in our Carbon Compass® methodology when emissions data is not readily available. These proxy calculations are derived based on in-scope clients with committed exposure for lending, as well as capital markets exposure.

iv. "Absolute financed emissions" are defined as the total GHG emissions of an asset class or portfolio. For public companies, this is calculated as outstanding exposure divided by enterprise value including cash ("EVIC") multiplied by company emissions. For private companies, it is calculated as outstanding exposure divided by total equity plus debt times company emissions. If equity value is negative, it is treated as zero. Per the PCAF standard, outstanding exposure represents the amount of the loan the borrower has drawn as of the year-end date.

v. The absolute financed emissions in this table include wholesale credit (excluding overdrafts) to clients within the sectors listed.

vi. "Absolute facilitated emissions" are defined as the total GHG emissions associated with capital markets activity facilitated by a financial institution. For public companies, this is calculated as total amount raised in the capital market transaction multiplied by the volume attributed to the financial institution (based on its participation), divided by enterprise value including cash ("EVIC"). This figure is then multiplied by a weighing factor (33%) and by company emissions.

vii. The absolute facilitated emissions in this table include securitized products and green bonds and exclude syndicated loans within the sectors listed.

viii. Economic intensity is calculated as absolute financed or facilitated emissions in metric tons of carbon dioxide equivalents per million dollars loaned or facilitated.

ix. Data quality scores are assigned depending on the quality of data available for each client, with 1 representing highest quality and 5 representing lowest quality. We calculate and report a weighted average data quality score for each sector based on the financing provided to each client relative to our total financing to the sector. Refer to section 4.5 of our Carbon Compass® methodology to learn more.

[25] This section presents disclosure of absolute financed and facilitated emissions intended to align with PCAF, with the exception of the deviations as footnoted throughout the table.

[26] The figures in the table only consider the in-scope clients per our Carbon Compass® methodology.

The table below summarizes main deviations of our Carbon Compass® methodology from PCAF's methodology.

		CARBON COMPASS® METHODOLOGY	PCAF METHODOLOGY	REASONS FOR DEVIATION
LENDING		12-mo monthly average committed financing	Year-end outstanding balance	Using 12-month monthly average enables us to capture the impact of short-term obligations, such as bridge loans, which frequently have terms of less than one year.
TAX-ORIENTED INVESTMENTS		12-mo monthly average outstanding balance	Not covered	As one of the top investors in renewable energy tax-oriented investments in the U.S., we believe including tax-oriented investments best captures our financing impact.
CAPITAL MARKETS		100% of capital markets activity on a 3-year rolling average basis	33% of all capital market issuances in scope on a yearly basis	Including 100% of our share in capital markets activity allows us to provide a more complete picture of our financing activity and how we are supporting our clients through capital markets facilitation. In addition, we include all capital markets activity we participate in, regardless of bookrunner status, with the aim of providing a more comprehensive view of our overall exposure to facilitated emissions.
CAPITAL STRUCTURE	Public Companies	3-year average EVIC	End-of-period EVIC	Using a three-year average of capital structure helps us reduce distortion due to the effect of volatility on company valuations
	Private Companies	3-year average Debt + Equity	End-of-period Debt + Equity	

List of Acronyms

AWM	Asset & Wealth Management
CAF	Carbon Assessment Framework
CASS	Corporate Advisory and Sustainable Solutions
CCB	Consumer & Community Banking
CCT	Center for Carbon Transition
CCUS	Carbon capture, utilization, and storage
CDR	Carbon dioxide removal
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CIB	Commercial & Investment Bank
CLSA	Climate Location Site Assessment
CO_2	Carbon dioxide
CP	The NGFS Current Policies scenario
CRO	Chief Risk Officer
DNZE	The NGFS Divergent Net Zero scenario
E&P	Exploration & Production
N&S	Nature and Social
EACs	Energy Attribute Certificates
ESFR	Energy Supply Financing Ratio
ESG	Environmental, Social and Governance
EV	Electric vehicle
EVIC	Enterprise value including cash
FEC	Firmwide Environmental Committee
gCO_2	Grams of carbon dioxide
gCO_2e	Grams of carbon dioxide equivalent
GEB	Green Economy Banking
GHG	Greenhouse gas
GSSS	Green, Social, Sustainability and Sustainability-linked
ICE	Internal combustion engine
IEA	International Energy Agency
IEA NZE	International Energy Agency Net Zero Emissions by 2050 Scenario
IFM	Improved Forest Management
IPCC	Intergovernmental Panel on Climate Change
JPMAM	J.P. Morgan Asset Management
$kgCO_2$	Kilograms of carbon dioxide
km	Kilometer
LOBs	Lines of Business
M&A	Merger and Acquisitions
MJ	Megajoule
mt	Metric ton
$mtCO_2e$	Metric ton of carbon dioxide equivalent
MW	Megawatt
MWh	Megawatt hour
NGFS	Network for Greening the Financial System
OC	Operating Committee
PCAF	Partnership for Carbon Accounting Financials
PPAs	Power Purchase Agreements
RCP	Representative Concentration Pathway
RECs	Renewable Energy Certificates
RTK	Revenue tonne-kilometers
SAF	Sustainable aviation fuel
SBE	SB Energy
SDT	Sustainable Development Target
SEC	Securities and Exchange Commission
t	Metric ton
tCO_2	Metric ton of carbon dioxide
tCO_2e	Metric ton of carbon dioxide equivalent
TCFD	Task Force on Climate-Related Financial Disclosures
t-nm	Metric ton nautical mile
U.S.	United States