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.

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:

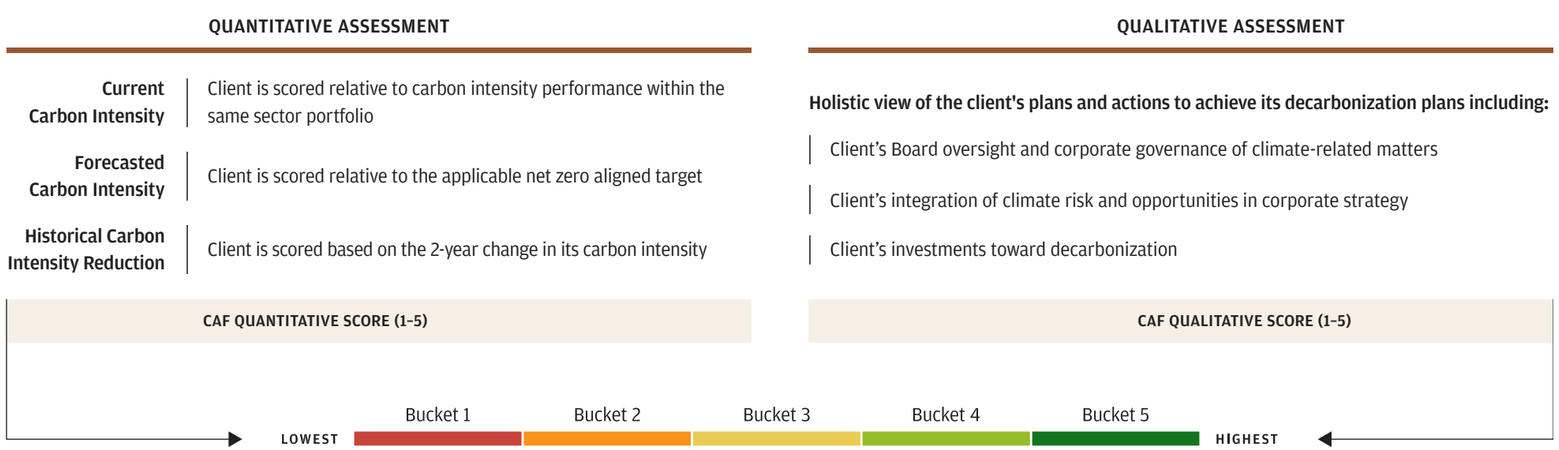
i. **Current Carbon Intensity:** we compare each client's most recently available carbon intensity to that of other clients within the same sector, which allows us to benchmark their performance within each respective sector portfolio.

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.

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.

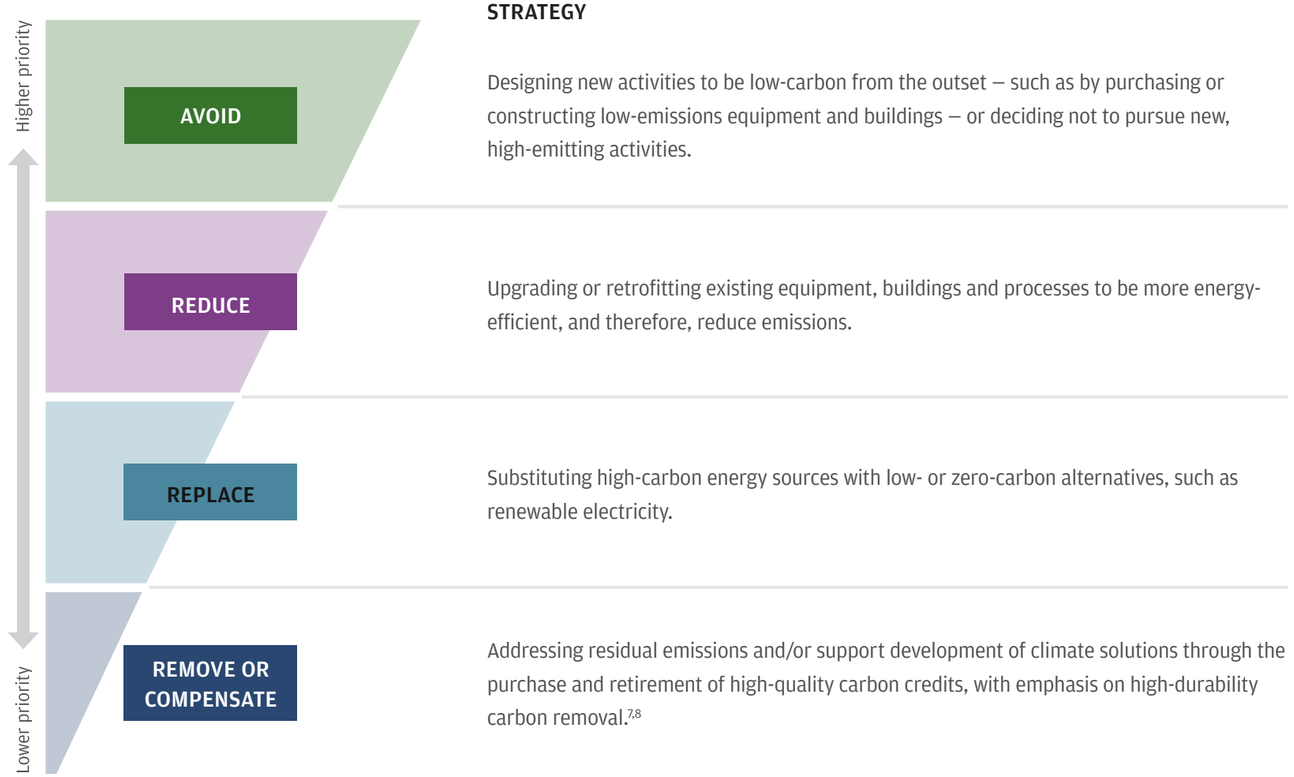
3 Managing Our Operational Footprint

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.

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.

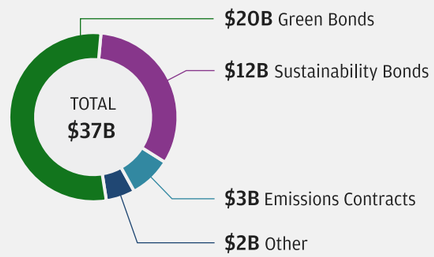
Cumulative Green Progress by Eligibility Criteria

	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.

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.

	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.

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

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.