



# 2023 Citi Climate Report

Our Approach to Climate  
Change and Net Zero

# About This Report

This report summarizes our progress made to date toward continuing to incorporate climate risk and opportunity identification and management into our business strategy and disclosures. It presents information on efforts Citi is taking toward implementing the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). This is our fifth climate report since we voluntarily began reporting using the framework in 2018.

Tools and methodologies to assess climate impacts — such as climate scenario analysis and quantification of greenhouse gas (GHG) emissions as well as the underlying climate data — continue to improve and evolve. Citi remains committed to contributing to these efforts and using such tools to update our own disclosures and progress toward achieving our net zero goals.

We have committed to achieving net zero emissions associated with our financing by 2050, and net zero emissions for our operations by 2030. This year’s report includes an update on the progress towards our 2030 targets for our Energy, Power, Auto Manufacturing, Commercial Real Estate, Steel and Thermal Coal Mining portfolios. We also include our progress on assessing and setting targets for most of the remaining sectors in our Net Zero Plan — Agriculture, Aluminum, Aviation and Shipping. Additionally, in this year’s report, we provide further detail on our climate initiatives, such as the development, roll out and advancements of our internal climate tools alongside our engagement in various transactions within the sustainable finance area.

Our climate risk and net zero work relate to and reinforce one another, relying on common data elements to help drive our understanding and progress in both. Our climate risk work focuses on the identification, measurement and management of key risks arising from climate

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change, while our net zero work focuses on Citi’s impacts on the climate, striving toward our net zero emissions reduction targets and supporting clients in the clean energy transition. This report reflects our commitment to achieving such goals alongside our continued progress toward integrating climate risk and opportunities into our governance, processes and strategies.

# Letter from the CEO

At Citi, we support our clients in navigating their biggest challenges and capturing opportunities for growth and progress. As the macroeconomic and geopolitical challenges continue to multiply and converge, we are seeing more governments and companies prioritize resiliency. This is especially true in our work on climate change and net zero, where we are working side by side with our clients to help them achieve their goals, whilst remaining highly mindful of near-term energy needs and related economic impacts.

From our work with clients in nearly 160 markets, we know that the journey toward net zero will occur at different speeds in every industry and country. We support our clients in financing their transition to low-carbon business models and innovating clean technologies, whilst also supporting clients who supply ample and affordable energy to meet the world's current and future needs. These activities are not mutually exclusive and must be addressed simultaneously.

None of this work is easy and sometimes we need to make difficult decisions. We often speak of the energy transition as if we could trade one technology for another, but what we are experiencing today is more of an energy evolution — a shift over time toward a low-emission energy mix. This shift will not be linear and will include a series of cumulative leaps and tipping points over the next few decades. Our global success will depend on maintaining energy security, increasing resiliency and sustaining economic opportunity around the world.

The evolution of our energy system hinges on many dimensions, including thoughtful public policy that incentivizes investment in clean energy technologies and critical upgrades to our electric grids, transmission systems and permitting processes to catalyze deployment of more projects. Access to stronger and more reliable data remains an ongoing challenge, and obtaining such data allows us to analyze climate risk impacts, measure results and identify transition opportunities. Given these needs, every aspect of society — governments, corporations, nonprofits and communities — will be part of achieving progress on this journey.

At Citi, this energy evolution is an important area of opportunity for our business and our clients. Energy is a capital-intensive part of our global infrastructure and we expect to see significant finance and advisory work across all critical economic sectors as they adapt.

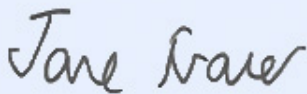
In our 2023 Citi Climate Report, we provide an update on the progress we are making toward our net zero commitment, how we are managing environmental risk, and detail the impact of our climate strategy over the past year. This work includes:

- Lending our expertise and balance sheet to support some of the largest renewables IPOs of the year, the largest-ever global hydrogen IPO and Europe's first battery recycling gigafactory



- Ranking as the #1 U.S. lead underwriter in 2023 for global green, social, sustainability and sustainability-linked bonds
- Participating in the development of the Sustainable Aluminum Finance Framework to help lenders measure emissions and decarbonization of a hard-to-abate sector
- Supporting innovation in sustainable finance, including a solar securitization program to broaden access to clean energy in Kenya for our client Sun King, and the World Bank's emissions-reduction linked bond, which taps the voluntary carbon markets to help reduce emissions and finance school water purifiers in Vietnam

Amidst the challenges of addressing climate change, opportunities for growth and progress abound. By supporting an orderly and inclusive shift to a low-carbon economy, we can confront one of the most complex challenges of our time while delivering value for all our stakeholders.

A handwritten signature in cursive script that reads "Jane Fraser".

**Jane Fraser**  
Chief Executive Officer, Citi

# Introduction

## Introductory Statements

As the world transitions toward a low-carbon economy, we, at Citi, continue to leverage our experience over the past two decades assessing and managing environmental- and social-related risks and opportunities. This year, we have continued to monitor and track progress for the six sectoral loan portfolios analyzed so far, and are in various stages of analyzing the remaining sectors to be included in our Net Zero Plan. As part of this plan, we have also completed the preliminary assessment of our Energy and Power loan portfolio clients' transition plans with material emissions relative to each sector's baseline emission profiles. Our assessment, management and overall knowledge of climate-related risks and opportunities continues to evolve, and we remain focused on following the developing methodologies and metrics available to track and disclose progress and evaluating how our own process can improve. Mindful of that evolution, we recognize that progress against our targets will not be linear and how we measure progress today will likely look very different from the second half of the decade.

Global energy insecurity, the need for an orderly transition and the demands of economic development and growth remain a priority. Access to energy is crucial and it is important to minimize global disruption while moving toward clean energy production and distribution. At the same time, failure to limit global average temperature rise to 1.5°C will mean increasing physical risks and rising costs of adaptation. We are mindful of the inequities of the transition among developing economies and support the acceleration of capital flows to the Global South. However, this needs to be supported by multilateral development bank (MDB) reform to effectively address challenges, such as the scaling of private-sector investments that have returns commensurate with their risk/reward profile, bottlenecks in supply and other factors.

[COP28's Global Stocktake](#) demonstrated that it is important to focus on areas where banks can have the most tangible impact, especially while taking into account our business model, constraints and risks, and how they differ from our peers in other regions of the world. We continue to look for opportunities to support the transition and work with clients, policymakers, governments and other stakeholders to address the aforementioned challenges. However, it is essential to have thoughtful climate policies — especially policies coherent beyond national or regional boundaries — that enable banks to support the energy transition. Our work is influenced by the rapidly evolving policy and regulatory landscape and as a global bank, we have to incorporate the variations in policies across different regions.

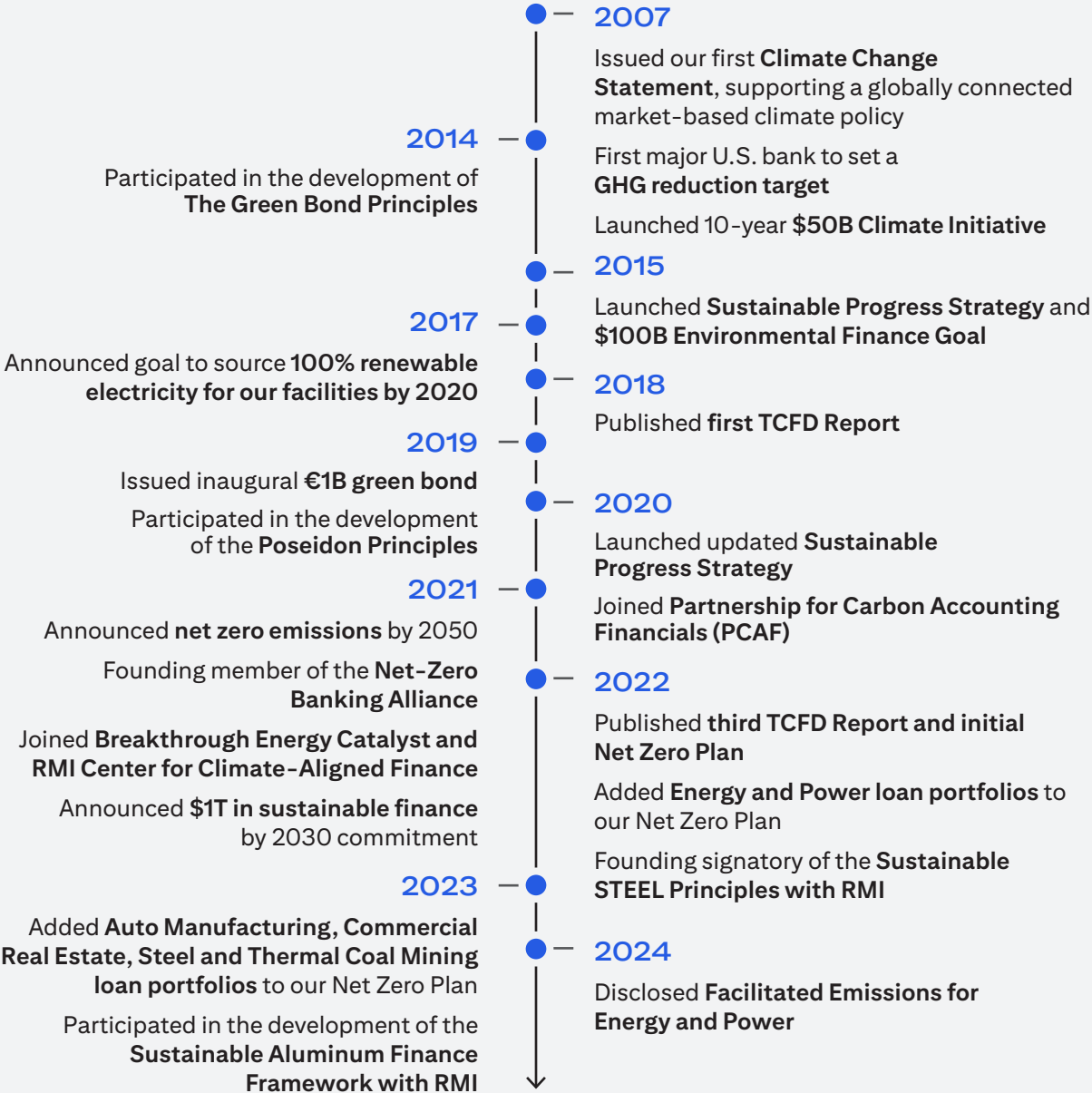
Citi also remains dedicated to maintaining transparency and disclosing our efforts, initiatives and progress in this space. Numerous disclosure regimes concerning climate change have been proposed or enacted around the world in the countries where we operate and Citi strives to maintain open, clear and accurate communication with our various stakeholders. Our progress on disclosure and ultimately our targets hinges on clients improving their disclosure and being able to meet their targets — comprehensive and credible climate disclosure from clients is at the core of effectively implementing our net zero strategy and we are working to reduce our reliance on estimated data.

While guidance on emissions accounting and disclosure is getting more robust, disclosure pertaining to transition finance is still in very early stages due to the nascency of frameworks that define eligible

transition finance activity. We are closely monitoring the development of such frameworks and providing our insight where helpful.

In this report, Citi continues to incorporate the recommendations of the TCFD. We have also drawn from the Glasgow Financial Alliance for Net Zero’s (GFANZ’s) guidance within their [Financial Institutions Net-Zero Transition Plans](#) framework in developing our approach, but note that there may be some areas where we deviate if a particular recommendation does not make sense for Citi given our businesses and geographic footprint. The index set forth in Appendix A of this report indicates where readers can find information informed by the GFANZ guidance.

### Timeline of Climate Action



## A Brief Note on Materiality

At Citi, we recognize that assessing materiality requires thoughtful consideration not only of any applicable materiality standard, but also of why we are assessing materiality and how we are communicating this to our stakeholders. We use the definition of materiality established under U.S. federal securities laws for the purposes of complying with the disclosure rules and regulations promulgated by the U.S. Securities and Exchange Commission (SEC) and applicable stock exchange listing standards. However, some of our environmental, social and governance (ESG) disclosures, including our voluntary ESG disclosures, may consider different and broader views of materiality based on other frameworks and reporting guidelines that take into consideration a wider range of factors, including the views of stakeholders, our ambition to play a leading role in financing the energy transition and the concept of “double materiality,” which takes into account how Citi’s business is affected by sustainability issues, as well as Citi’s impact on society, the environment and climate. Our public disclosures, including our voluntary ESG and climate-related disclosures, include a range of topics that we believe are relevant to our businesses and that are of interest to investors and other stakeholders.

For the purposes of discussing climate risks and opportunities in this Climate Report, we use an approach to materiality that is consistent with the TCFD recommendations. In general, our disclosure of information in this report is not an indication that it is material under U.S. federal securities laws or for any other purposes. Consistent with the TCFD recommendations, this report considers climate change from multiple perspectives — looking at both the climate’s impact on our company and our company’s impact on climate — and, for example, uses longer time frames to assess potential impacts than those time frames customarily used in our required disclosures, including those mandated by SEC rules and regulations. This layered approach means that this Climate Report and our other voluntary disclosures capture details on ESG issues, including climate-related risks and opportunities, that may not be and are not required to be, included in our disclosures made pursuant to U.S. federal securities laws and other domestic and international reporting requirements. Our approach to materiality in this Climate Report and other voluntary ESG disclosures also means that statements made in this report and in our other voluntary ESG disclosures may use a greater number of assumptions and estimates than many of our required disclosures. These assumptions and estimates are likely to change over time and when coupled with the longer time frames used in these climate-related disclosures, make any assessment of materiality inherently uncertain. In addition, our climate risk management efforts and net zero strategy remain under development, and the data underlying our climate risk management efforts and strategy are expected to evolve over time, particularly given ongoing challenges related to the quality, accuracy and quantity of climate data. As a result, we anticipate that certain disclosures made in this report and our other ESG disclosures, including our voluntary ESG disclosures, may be amended, updated or restated in the future as the quality and completeness of our data and methodologies continue to improve.

## Governance

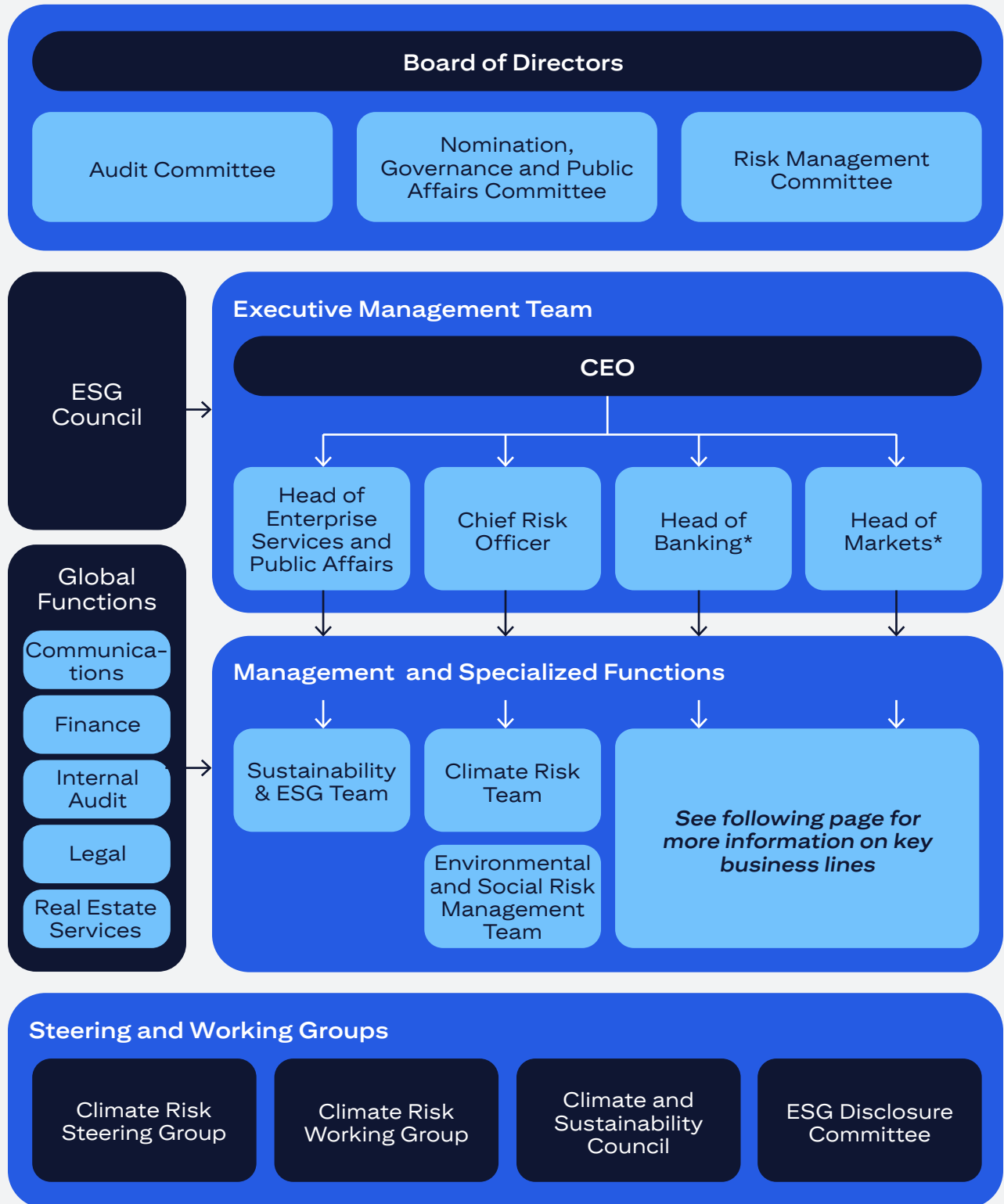
Citi's climate governance structure continues to evolve as we advance our understanding of Citi's climate-related risks and progress under our Net Zero Plan. Below is an updated diagram illustrating our climate governance structure:

- With the restructuring of Citi's organization model in 2023 to align with our new business strategy, the diagram has been updated to reflect the engagement of our [five interconnected businesses](#), International and Client Teams.
- Citi has a global, enterprise-level Climate Risk Working Group (CRWG) and continues to set up CRWGs for certain businesses and jurisdictions. For example, in 2023, a CRWG was formed under the U.S. Personal Banking and Wealth businesses to focus on the identification, assessment and management of climate risk impacts specific to our retail banking and wealth management businesses.

For additional details on the remit and composition of other steering and working groups, please see our [2022 TCFD Report](#).



# Climate Governance at Citi



\*Whereas businesses such as Services, Wealth, and U.S. Personal Banking offer ESG- and sustainability-related products and services, the groups under Banking and Markets represent areas where we currently have the most influence and impact with regard to climate change.

The table below illustrates some of the ways we have integrated support for our clients in achieving their low-carbon transition efforts across our organization.

Business	Team	Description
<b>Banking</b>	Industrials	Sector teams under the Industrials group, including Auto Manufacturing and Steel, communicate with clients on their transition goals and potential emissions reduction strategies, sharing their expertise as clients work through sector-specific challenges.
	Natural Resources	The Natural Resources team has ongoing dialogue with clients in the Energy, Power, Chemicals and Clean Energy Transition sectors. This team of corporate and investment bankers applies deep knowledge of these sectors and the challenges they face to help realize the transformative opportunities open to clients.
	Sustainability and Corporate Transitions (SCT)	The SCT team delivers advisory, corporate finance and banking solutions to clients across all sectors, to support their efforts to transition their businesses to a more sustainable, net zero and nature-positive future. The team engages with mature and early-stage companies and investors that are developing and/or investing in new technologies, innovations and sustainable business models. The team also provides climate risk and net zero capital management expertise as part of client transition engagement. The SCT team works closely with applicable sector teams bringing specialized knowledge/skills to transition and climate challenges.
	Sustainable Debt Capital Markets (DCM) & Loans	Sustainable DCM & Loans has technical expertise on green, social and sustainability use-of-proceeds debt financing, as well as sustainability-linked bonds (SLBs) & sustainability-linked loans (SLLs). The team works with DCM & loans origination teams as well as industry bankers to originate sustainable issuances and structure sustainable debt frameworks on behalf of clients around the world. The Sustainable DCM & Loans team also advises Citi Treasury on our own sustainable debt programs.
<b>Markets</b>	Global Markets ESG	The Markets ESG team supports our clients and colleagues in identification, execution and scaling of sustainability-related opportunities across products, clients and asset classes. The team also provides cross-sector expertise to help accelerate the integration of sustainability considerations into business-as-usual activity and to serve our clients more effectively when it comes to their sustainability objectives.
	Carbon Offsets Trading	The Citi Carbon Credit Trading team under Citi Commodities has been expanding Citi's carbon offering by creating a global carbon credits business. This allows Citi to work with project developers, financing partners and governments around the world to unlock funding necessary to support projects that seek to reduce or capture GHG emissions. Offerings include both regulatory and voluntary carbon credits.

## Board Oversight

Citi's Board of Directors (Board) has ultimate oversight of Citi's approach to considering, evaluating and integrating climate-related risks and opportunities throughout the organization, including oversight of our Net Zero Plan and progress toward Citi's climate-related goals (as detailed on page 6 of our [2022 TCFD Report](#)). The Board and certain Board committees receive regular reports from key personnel, such as Citi's Chief Sustainability Officer and the Head of Climate Risk, regarding climate-related matters.

Three Board-level committees have oversight responsibility for climate-related activities: the Nomination, Governance and Public Affairs Committee (NGPAC), the Risk Management Committee (RMC) and the Audit Committee (AC).

The NGPAC oversees many of Citi's ESG activities, including receiving reports from management on climate-related matters. The NGPAC also receives reports on Citi's strategy for engagement with external stakeholders, including reviews of management's proposed responses to shareholder proposals. The NGPAC also reviews Citi's disclosure approach for sustainability and climate change issues. The NGPAC receives reports from Citi's Chief Sustainability Officer on at least an annual basis. During 2023, the NGPAC received a report on Citi's climate strategy as well as biodiversity and human rights considerations and how they intersect with climate. For more information on the roles and responsibilities of the NGPAC, please see our [NGPAC Charter](#).

The RMC provides oversight of Citi's risk management framework and reviews Citi's key risk policies and practices, including those focused on climate-related risks. The RMC also receives updates, as necessary and appropriate, from management on climate-related risk. During 2023, the RMC received updates on climate risk including information on regulatory engagements, progress on Citi's Net Zero Plan implementation and results of climate scenario analyses from the Head of Climate Risk. For more information on the roles and responsibilities of the RMC, please see our [RMC Charter](#).

The AC assists the Board in fulfilling its oversight responsibilities relating to, among other things, the effectiveness of Citi's control environment and our internal disclosure controls and procedures. The AC reviews and discusses controls and procedures related to Citi's group-level ESG and climate-related reporting, including both voluntary and required disclosures. For more information on the roles and responsibilities of the AC, please see our [AC Charter](#).

## Management Responsibility

The role of assessing and managing climate-related risks and opportunities is a responsibility that is shared across our organization. Senior managers from across Citi, including Banking, Risk Management, Enterprise Services and Public Affairs, and Finance teams collaborate and work simultaneously to manage climate risk and implement Citi's Net Zero Plan, with other teams contributing as needed. Additional details regarding the management structure of our climate governance are described in our [2022 TCFD Report](#) and key changes made and actions taken in 2023 are highlighted below.

Citi undertook organizational simplification initiatives in 2023 to better align our management structure with our business strategy and streamline the bank. This included elevating the leaders of Citi's five businesses, eliminating the Personal Banking & Wealth Management and Institutional Clients Group management layers, and consolidating the regional structure, creating one international group, while centralizing client capabilities and streamlining its global staff functions. These changes are intended to speed up decision making, drive increased accountability and strengthen the focus on

clients. As such, these changes and the expanded role of business heads in ESG oversight is reflected in the climate change governance diagram on page 9.

In 2023, the ESG Council, which consists of senior members of management and certain subject matter experts who provide review and guidance of our ESG activities and goals, met periodically to discuss a variety of ESG-related topics including sustainable finance progress, client transition plan assessments, regulation around climate-related disclosure and progress toward our net zero commitment.

## Capacity Building & Expertise

At Citi, we know that achieving our climate goals and implementing our Net Zero Plan may require members of our governance teams to further develop climate-related knowledge and capabilities. It is our belief that the Board should be composed of individuals who are cross-functionally skilled, with the ability to advise on a wide array of potential risks, and thereby contribute more broadly to the oversight of the company. We therefore continue to educate our Board and senior management to build our climate-related expertise and capabilities. Our Board, as discussed above, receives routine reporting regarding our climate-related matters and our Net Zero Plan and is educated on climate-related matters through periodic discussions and presentations with relevant management personnel, including the Chief Sustainability Officer. Members of our senior management are also continuing to expand their climate knowledge and capabilities to evaluate and manage climate risk and implement our Net Zero Plan through workshops to review and assess client transition plans and dedicated meetings to review updated financed emissions results and net zero methodology developments, for example related to facilitated emissions.

We understand that achieving our climate goals and implementing our Net Zero Plan also requires a skilled workforce with relevant climate knowledge and skills. Citi is continuing to evaluate and develop our employee training program on climate change. For more information, please see the “Climate Training” section.

## Remuneration

Sustainability and climate-related goals are incorporated into several executive scorecards, which are key elements of performance management tied to the determination of incentive compensation for these executives. Scorecards for multiple members of the Executive Management team and senior management include progress on our Net Zero Plan and target setting, our \$1 Trillion Sustainable Finance Goal by 2030 and climate risk management. Certain positions have specific scorecard elements, for example:

- **CEO** – Driving the delivery of environmental and social finance under our \$1 Trillion Sustainable Finance Goal; and
- **Chief Risk Officer, Head of Enterprise Services and Public Affairs, and Head of Banking** – Supporting the development and operationalization of Citi’s Net Zero Plan and applicable 2030 targets and driving the delivery of environmental and social finance under the \$1 Trillion Sustainable Finance Goal.

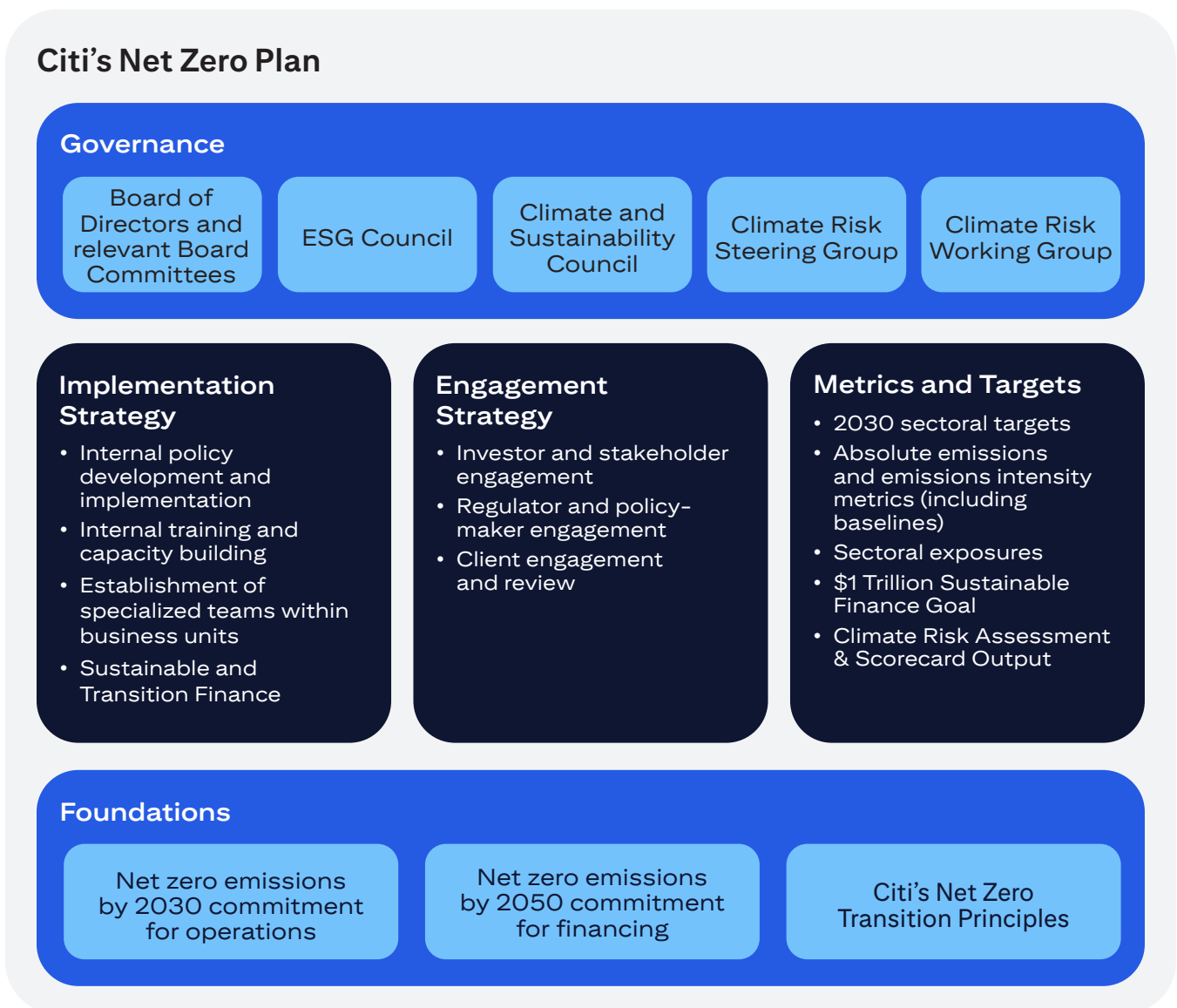
For further detail on our \$1 Trillion Sustainable Finance Goal, please see our [ESG Reports](#) as well as the “Metrics & Targets” section of this report.

Moreover, climate change strategy and risk management performance goals are incorporated into annual goals and performance review processes for a number of our senior executives and their teams that are responsible for developing and executing our strategies around climate change.

# Strategy

## Citi's Net Zero Plan

Our [Net Zero Transition Principles](#) and our Net Zero Plan provide the foundation for us to implement our goal of achieving net zero operational emissions by 2030 and for our financing by 2050. Our sector-specific interim targets for each of the in-scope lending portfolios include Auto Manufacturing, Commercial Real Estate, Energy, Power, Steel and Thermal Coal Mining. Our Net Zero Plan is summarized in the graphic below. Please click on the links on the diagram for further details on each element of our Net Zero Plan.



We continue to be guided by our [Net Zero Transition Principles](#) as we identify climate-related risks and opportunities and assess how we can manage these in line with our risk management framework. The transition to a low-carbon economy is constantly evolving; thus our progress and strategy are neither linear nor static and require an adaptive and iterative approach. To that end, we have developed two frameworks to aid our client assessment, including our Net Zero Review Template (described further on page 25) and Climate Risk Assessment & Scorecard (CRAS) (described further on page 41), and have continued to broaden the conversation with the public sector, to include governments, regulators and policymakers. We are also continually enhancing our data collection, data management and data governance processes.

## Just Transition

The term “just transition” may be described in a variety of ways, but generally refers to the concept of minimizing the negative social impacts of the move toward a low-carbon economy and, if possible, providing positive benefits as well. The energy transition is expected to create jobs, but new jobs that are in different locations and that may require upskilling, necessitating support for workers so that they can benefit from these new opportunities. The GFANZ [Financial Institution Net-Zero Transition Plans Final Report \(Supplemental Information\)](#), released in November 2022, further explains that a just transition “is a nuanced and critical topic that centers on some of our world’s most vulnerable populations and requires context-specific guidance for different communities, regions, and financing relationships.” We believe that a just transition is a critical factor in achieving a low-carbon transition; if communities and workers are not empowered, it is unlikely that there will be sufficient societal support to transition. As we engage with our clients, we have learned that each has different priorities that should be accounted for in the pursuit of a just transition. We have considered energy security and the needs of emerging markets in our initial net zero assessments and intend to continue building upon these efforts as our Net Zero Plan develops and we work toward our 2030 targets.

## Methodology for New Sectors

We are committed to achieving net zero GHG emissions for our financing by 2050. In 2021, we set interim targets for our most GHG-intensive sectors, Energy and Power. In 2022, we set interim targets for four additional GHG-intensive sectors: Auto Manufacturing, Thermal Coal Mining, Steel and Commercial Real Estate. In 2023, we began target assessment for four more sectors — Agriculture, Aluminum, Aviation and Shipping — which we detail further below. This included calculating and disclosing absolute financed emissions for Aluminum and Shipping.

### Agriculture

Unlike other sectors we have covered under our Net Zero Plan, the Agriculture sector is not inherently tied to energy systems and transition. Moreover, the Agriculture sector can be viewed as a number of subsectors, including areas such as fertilizers and agricultural chemicals; agriculture, forestry and fishing; wood and paper products; food production, beverages and tobacco; and farm-related vehicles. Therefore, assessing the emissions and setting targets for the Agriculture sector are difficult



due to the complexity of the agriculture value chain and the variety of GHG producing activities that contribute to the sectors' overall footprint.

In our analysis of the Agriculture sector, we considered the complexity of the sector and also the importance of food security. A recent [Citi Global Perspectives and Solutions report](#) estimated that 30% of the world's population is either moderately or severely food insecure.

For our Agriculture portfolio, our initial analysis focused on the full agricultural value chain, including agriculture inputs and farm activity (the “pre-farm gate” segment), and downstream distribution and processing (the “post-farm gate” segment). This analysis enabled us to better understand our clients' practices across the value chain and also to identify current best practices, including deforestation and water commitments made by some of our largest clients in the food and beverage and agricultural commodities industries. Given the complexities of the Agricultural sector and the wide array of decarbonization levers, combined with concerns related to unintended food security impacts, we do not plan to set emissions reduction targets for this sector. We have, however, for informational purposes calculated the emissions associated with pre-farm gate activities in our portfolio; our estimated pre-farm gate financed emissions footprint (calculated on a committed exposure basis) totaled 4.2 M mt CO<sub>2</sub>e, primarily based on sector-averages (with a [PCAF data quality score](#) of 3.35). We are continuing to assess and track progress in this sector and identify ways we can help improve emissions data quality and support the sector in decarbonization and their other sustainability objectives.

## Aluminum

The Rocky Mountain Institute (RMI) launched the Sustainable Aluminum Finance Framework in 2023. Citi participated in the working group to develop the framework, which provides a means for measuring and disclosing the alignment of aluminum portfolios with 1.5°C climate scenarios. We have leveraged this framework to aid in determining the scope and boundaries of the absolute metrics, and plan to leverage it for the target setting of our Aluminum sector within our Net Zero Plan.

The framework calculates the CO<sub>2</sub> intensity and 1.5°C alignment of aluminum lending portfolios. For the primary and recycling boundaries, the framework follows a “fixed boundary” approach where reporting parties collect and report emissions data for all activities within the boundary irrespective of the activities within their financial or operational control. Semi-fabrication of aluminum production or activities including extrusion, rolling, casting or coating (i.e., products that can be used outright or used as inputs for further processing) can be calculated on an optional basis. Given semi-fabrication transforms primary and recycled aluminum to produce different products, the framework follows a company based variable reporting boundary, where reporting parties report only on the activities that are both in scope and within their financial or operational control.

We intend to use the Mission Possible Partnership (MPP) and the International Aluminum Institute (IAI) decarbonization pathways to benchmark primary production, recycling and optionally, semi-fabrication emissions as indicated by the framework, and plan to set emissions intensity climate alignment score targets for the sector to accommodate these different production pathways.

We have calculated our absolute financed emissions for disclosure and are utilizing company data from S&P Global Sustainable<sup>1</sup>. As the absolute emissions rely on corporate emissions footprints for companies that meet Aluminum production criteria, but may be diversified, our Aluminum footprint is reflective of the full corporate operations of these diversified companies and therefore more than Aluminum-related emissions.

## Aviation

Citi has been working with the Rocky Mountain Institute (RMI) to help inform a methodology for measuring emissions and disclosing the alignment of our Aviation loan portfolio with a 1.5°C climate roadmap. During 2024, we plan to continue to assess an appropriate target setting methodology for our Aviation loan portfolio, and will also continue to engage with our clients to understand their net zero and decarbonization commitments and key dependencies.

Throughout this process, we have learned about Aviation sectoral decarbonization, the important role of Sustainable Aviation Fuel (SAF) in meeting global decarbonization needs and the continued challenges that our clients face in securing the volumes of SAF required. We have assessed the MPP's Prudent ("PRU") scenario to better understand a potential decarbonization pathway. The MPP PRU describes a trajectory to net zero by 2050 that relies on a diversified mix of technologies that are either currently available or are expected to become available in the coming decades. The decarbonization trajectory of the sector remains relatively flat through 2030 under the MPP PRU scenario, with the emergence of new technologies and increased scaling up and uptake of SAF, driving reductions from 2035 onward. Although SAF is still in the early stages of development and integration within the industry, numerous government mandates (e.g., ReFuelEU, the U.K.'s Jet Zero strategy), continued public policy incentives (e.g., tax credits available under the Inflation Reduction Act) and various commitments from SAF blenders and producers point to continued and increasing proliferation of SAF in the aviation sector providing a feasible pathway forward for decarbonization that builds upon preexisting fuel infrastructure. The MPP PRU scenario, and other scenarios that we have reviewed, highlight that the aviation industry's ability to decarbonize is largely dependent on developments over which the aviation sector has limited control.

### Case Study: Project Roadrunner

Sustainable aviation fuel (SAF) is an important technology for decarbonizing the aviation sector. In November of 2023, Infinium and Breakthrough Energy Catalyst announced a \$75 million project equity investment commitment to support Infinium's Project Roadrunner. This is a first-of-its-kind commercial-scale Power-to-Liquids eFuels (derived from waste CO<sub>2</sub> and renewable power) facility which will convert waste carbon dioxide and renewable power into SAF and other low-carbon fuels. The project, located in West Texas, will produce a fully integrated eFuels facility that will then deliver products into the U.S. and international markets.

Breakthrough Energy Catalyst was built up to accelerate development of emerging climate technologies. In tandem with Breakthrough Energy Catalyst's investment in Infinium, American Airlines and Infinium entered into a firm, long-term offtake agreement for Infinium eSAF. This agreement is seen as a critical enabler of further investment in Project Roadrunner and future eFuels projects. In support of that agreement, Citi and American Airlines separately agreed to transfer some of the associated anticipated emissions reductions to Citi. We hope that these approaches will help demonstrate demand from end-users and serve as a model for how to help scale up future solutions for decarbonization of air travel.



Our next steps include calculating the absolute financed emissions and emissions intensity metrics for our Aviation portfolio and setting a 2030 emissions reduction target.

## Shipping

### *Poseidon Principles – Climate Alignment Score*

Citi is a founding signatory of the Poseidon Principles — a global framework designed to promote the decarbonization of the international shipping sector. Since the launch of the framework in 2019, we have disclosed our climate alignment score. Now, as part of our efforts to set an interim target for our Shipping portfolio, we plan to use the Poseidon Principles methodology to help derive our target alignment score for this sector.

As previously disclosed through the Poseidon Principles disclosure in December of 2023, based on 2022 emissions, our portfolio climate alignment score is +2.5%, which is an improvement to the previous year's +12.2% alignment score (a score of 0% indicates that the portfolio is aligned to the relevant trajectory level, and a score below 0% indicates that the decarbonization rate outpaces the pathway for that given point in time). This score is based on the 2018 International Maritime Organization (IMO) GHG Strategy trajectory level.

In 2023, the IMO, the global standard-setting authority for the safety, security and environmental performance of international shipping, revised its strategy to incorporate the 2023 IMO GHG Strategy, which aims for net zero emissions from international shipping “by or around” 2050. In order to align the Poseidon Principles goals with the new IMO strategy, the signatories elected to fully adopt the IMO's revised GHG strategy into the Poseidon Principles methodology, through the development of a new striving trajectory. These revisions are summarized in the pages 18 to 21 of Poseidon Principles Secretariat [2023 Annual Disclosure Report](#).

With the revised methodology benchmarking against the GHG Strategy striving trajectory, our 2022 portfolio climate alignment score is +38%. This was composed of an alignment score +27% for cargo vessels and +76% for passenger vessels. As the IMO releases more formal guidance on GHG intensity in different sectors and on alternative fuels, we will assess and adapt accordingly in future disclosure reports.

### *Financed Emissions for the Shipping Portfolio*

We have calculated our absolute financed emissions for our Shipping sector utilizing data from S&P Global Sustainable<sup>1</sup>. For the purpose of setting Shipping sector targets we are working to adapt and apply the Poseidon Principles methodology more broadly to our net zero target setting process. This will mean adding unsecured financing in the Shipping portfolio to the preexisting secured financing methodology within the Poseidon Principles framework.

Targets will be based on the new striving trajectory of the Poseidon Principles, summarized in the 2023 Annual Disclosure Report, and will be revised in any event in 2029. The importance of the role of the IMO cannot be understated. 80% of global trade is carried at sea and thus the related Scope 3 emissions of the owners of that cargo are determined by the emissions regulations of the maritime fuels set by the IMO. The full well-to-wake fuel emissions factors for Shipping are expected to be finalized by the IMO during 2024. For these reasons, we anticipate the evolving Poseidon Principles methodology to remain the primary driver of how we set and revise targets and measure performance in the context of our net zero commitments.

## 2022 Facilitated Emissions Summary

In December 2023, PCAF finalized its standard for facilitated emissions, or emissions attributed to activities related to debt and equity capital markets facilitation. Following this release, Citi calculated the absolute facilitated emissions for the 2022 transaction volumes for the Energy and Power portfolios, using the published standard (which uses 33% weighting of league table volume), and is disclosed in the “Metrics & Targets” section. Addressing emissions from capital markets activities will require additional analysis prior to integrating these metrics to our sectoral targets, and we plan to continue this work in 2024. We will continue to refine our methodology and work to improve data quality for these metrics.

In this preliminary analysis, we have identified key areas for continued study, particularly how to address the inherently episodic nature of capital markets financing in the paradigm of near- and long-term emissions target setting. Additionally, there are areas where we will need to understand potential double counting between financed emissions and facilitated emissions. For example, in syndicated lending, Citi might serve as a facilitator and also hold a position on our balance sheet, playing multiple roles in the same transaction. These are all areas we plan to analyze further as we look to consider integration of these products into our emissions reductions targets later this year.

Finally, it is important to note that within the preliminary analysis of Energy and Power facilitated emissions, the client population is closely aligned to that which falls into scope for financed emissions. Therefore, the work Citi has commenced on understanding clients’ transition plans, and the overall strategy to support clients as these industries continue to evolve and transition, and any related decarbonization from those efforts, will translate to the metrics of additional products under consideration.

## Next Steps

In 2024, we will continue to assess target setting for the four remaining priority sectors: Aluminum, Aviation, Cement and Shipping. This involves identifying the scope of coverage and metrics for each sector by determining which emissions are appropriate for inclusion in each sector before moving to the establishment of a baseline. From there, we identify the possible decarbonization pathways available in 1.5°C-aligned scenarios to move from our baseline to our 2050 net zero target, and we select one to establish interim 2030 targets. As we expand our sectoral coverage, we are learning about sector-specific nuances and challenges to target setting, and the technological feasibility to reach net zero by 2050. The next step is to assess clients material to our baseline with respect to transition alignment and then develop the strategies for achieving the targeted emissions reductions, establish an implementation plan for reductions in each sector and then report on our progress and seek to verify this information. For more information on our net zero methodology, please see page 17 of our [2022 TCFD Report](#).

# Auto Manufacturing, Commercial Real Estate, Energy, Power, Steel and Thermal Coal Mining (Update)

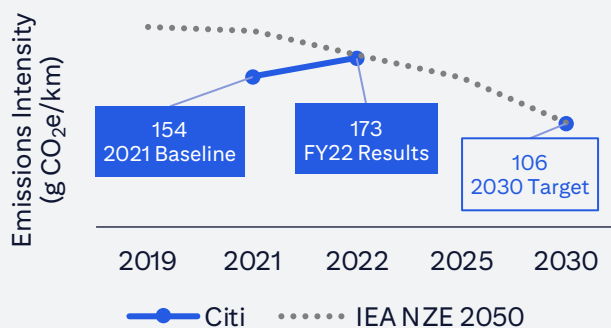
In 2023, we calculated the third year of metrics for Energy and Power, and the second year for Auto Manufacturing, Commercial Real Estate, Steel and Thermal Coal Mining. The FY2022 financed emissions metrics leverage FY2022 financial data (exposure, EVIC or debt + equity) and calendar year (CY) 2021 emissions and production data. Therefore, any fluctuations for these metrics are partially driven by this reporting year mismatch, and the respective market trends and conditions occurring over those timeframes that may impact these datapoints.

Detailed metrics for each sector can be found in the “Metrics & Targets” section.

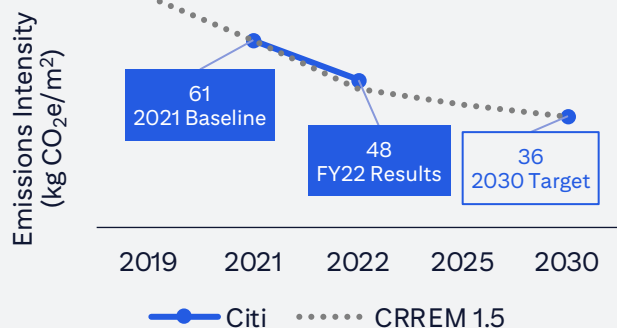
## FY2022 Results | Financed Emissions Reduction Targets & Progress

The graphs below illustrate Citi’s FY2022 progress toward its 2030 targets and the relevant pathway\* for the six sectors disclosed for FY2021.

### Auto Manufacturing



### Commercial Real Estate (CRE)



- The Auto Manufacturing portfolio saw an increased data quality score, indicating more emissions disclosures among clients (particularly Scope 3, Use of Product emissions). However, the emissions disclosed were often larger than the estimates we used in prior years’ metrics.
- The auto industry saw a decrease in production in 2021, due to supply chain issues.
- Given the updated emissions disclosures as well as the prior-year production decrease in this sector, the intensity metric trended upwards for FY2022.
- As indicated previously, decarbonization of this sector is reliant on Electric Vehicle (EV) and hybrid uptake, as well as supply chain decarbonization.

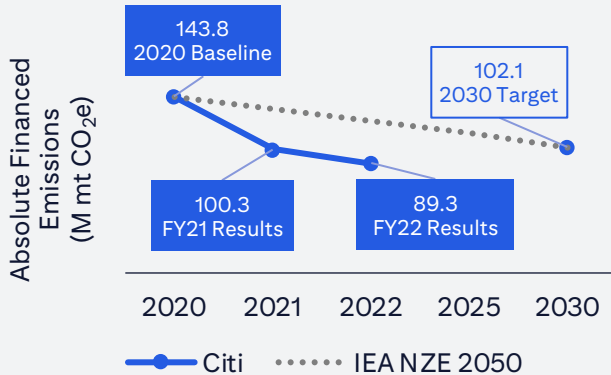
- The reduced emissions intensity of the CRE portfolio is reflective of emissions factor updates, which Carbon Risk Real Estate Monitor (CRREM) updated this past year. These updates include greater use of more localized data from CRREM’s data partners and the exclusions of electricity transmission and distribution losses.

*continued on next page*

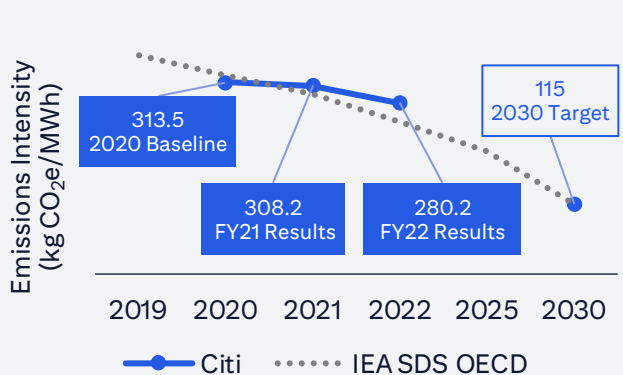
## FY2022 Results | Financed Emissions Reduction Targets & Progress (continued)

The graphs below illustrates Citi's FY2022 progress toward its 2030 targets and the relevant pathway\* for the six sectors disclosed for FY2021.

### Energy



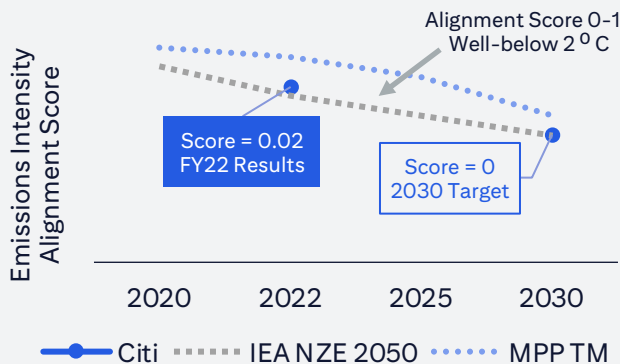
### Power



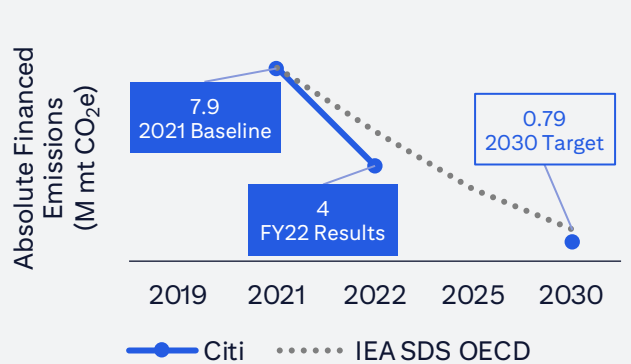
- The drivers of absolute financed emissions reduction in the Energy portfolio were primarily due to the general increase of market valuation and EVIC for the portfolio as well as fluctuations in year-end exposure.

- The Power portfolio intensity saw reductions due to shifts in portfolio weighting and the [addition of tax equity financing](#).

### Steel



### Thermal Coal Mining



- Citi's inaugural Sustainable Steel Principles (SSP) score indicates that the Steel portfolio is nearly aligned with the IEA NZE pathway for 2022.
- Reporting on this metric in more detail can be found in the [2023 SSP Annual Report](#).

- While the net zero population\*\* is broader than the relationships under the ESRM policy, due to the reduction of exposure under the ESRM policy, the net zero absolute financed emissions have decreased as well.

\* Pathways in graphs are illustrative and not reflective of the exact movement to 2030. Pathways for each scenario are based on latest available data at time of target-setting, and not necessarily the most current pathways under these scenarios.

\*\* The net zero boundary for our baseline and target includes companies deriving at least 5% of their revenue from thermal coal mining activities, a broader boundary than that of our Environmental and Social Risk Management (ESRM) Policy.

# Achieving 2030 Targets

Below, we provide an update to our timeline indicating the steps we are taking to achieve our 2030 targets and net zero commitment.

Completed steps  
 Ongoing/upcoming steps



\* Note that the sectors analyzed from a climate risk perspective may differ somewhat from the sectors included in our net zero plan.

\*\* Clean technologies include: Renewable Energy, Battery Storage, Green Aluminum, Hydrogen and Direct Air Capture.

## Climate Opportunities

### Sustainable Finance

In 2021, Citi established its goal to finance and facilitate \$1 trillion in sustainable finance by 2030, to further the transition to a sustainable and inclusive low-carbon economy that supports society's environmental, social and economic needs. The goal's environmental criteria are intended to support innovation through the financing and facilitation of a wide array of climate solutions, such as renewable energy, clean technology, water conservation and sustainable transportation. The goal also helps advance transition finance by supporting affordable and clean energy through investment in industries, companies and technologies that will ensure the transition to a low-carbon economy. The goal's social criteria are directed toward financing activity supporting needs such as affordable housing, economic inclusion, food security and healthcare.

We continue to progress toward meeting our \$1 Trillion Sustainable Finance Goal with a wide range of products and services. These include sustainable debt issuances such as thematic bonds and loans tied to ESG performance; sustainable supply chain finance; sustainability-focused investments; mergers and acquisitions; and financing and advisory services to help companies make progress toward their own net zero strategies.

Delivering on our sustainable finance goal is an integrated effort across our organization. Several Citi business units' activities contribute to this goal including those referenced in the Governance section of this report. For further detail on our \$1 Trillion Sustainable Finance Goal, including the progress we have made to date toward reaching our goal, please see our annual [ESG reports](#).

### **Sustainable Finance Case Studies**

#### World Bank Emission Reduction-Linked Bond

In early 2023, Citi supported the World Bank in the [issuance of a first-of-its-kind emission reduction-linked bond](#). The \$50 million USD bond channeled up-front financing from investors with the aim of supporting low-carbon development projects, providing those investors with a return linked to the issuance of Verified Carbon Units (carbon credits registered on the Verra registry that represent the reduction or removal of one ton of CO<sub>2</sub>e achieved by a project) by a water purifier project in Vietnam. The underlying project aims to provide funding for the manufacture and distribution of water purifiers to thousands of schools across Vietnam, with the goal of reducing the traditional use of fossil fuels or biomass to boil and purify the water.

#### Sun King Securitization

In a transaction designed to expedite clean and reliable energy access for Kenyan families and businesses, in May of 2023, Citi and Sun King, an off-grid solar energy company, closed on a first-of-its-kind bank-led and entirely Kenyan-shilling-denominated securitization deal. The four-year deal, arranged and structured by Citi and supported by development finance institutions and commercial lenders, paves the way for future clean energy securitization deals in Africa.

The scalable transaction, both arranged and structured by Citi, injects \$130 million USD into Kenya's off-grid solar energy sector. The four-year deal builds upon Sun King's new

Sustainable Financing Framework and is structured around credit that the company extends to its customers to pay for solar products in affordable installments. The scalable loan expands Kenyans' access to finance, while also expediting the growth of clean and reliable energy in the economy.

## Clean Energy Transition

Citi offers a suite of corporate and investment banking products and services to companies engaged in the energy transition to help them execute on their business plans and achieve scale. Citi is focused on offering these to a broad range of clients beyond the Energy and Power sector. For example, over the past year, we have worked with several industrial and energy clients regarding clean energy technologies to help these companies with their decarbonization efforts, as described in the call out box below.

The rapid ramp up of clean energy technology is essential to improving, and then maintaining, energy security — as well as increasing access to energy — while decreasing emissions. Although there has been an expansion of clean energy technology to meet this need, much more development is required to meet transition goals. Significantly, the role of clean energy technology is not just limited to GHG emissions-intensive sectors; we have found that clients in other sectors are also looking to drive down emissions through the use of clean energy technology.

Citi continues to work with our clients across a range of sectors, finding opportunities to engage in pursuing the development and growth of clean energy technologies. For instance, we deploy capital in this space as well as offer advisory and implementation services to a range of sectors and we strive to find opportunities to engage in pursuing the development and growth of clean energy technologies.

## **Clean Energy Transition Case Studies**

### Thyssenkrupp Nucera Initial Public Offering

Citi acted as one of the two joint global coordinators that led the initial public offering (IPO) of Thyssenkrupp Nucera, a former joint venture between Thyssenkrupp AG and Industrie De Nora SpA. First listed on the Frankfurt Stock Exchange (Prime Standard) in July, the IPO produced gross primary proceeds of about €526 million (~\$574 million USD). Thyssenkrupp Nucera is a supplier of high-efficiency electrolysis plants for the production of green hydrogen from renewable energy sources such as solar and wind. Green hydrogen can be a potential route to transition for hard-to-abate sectors. Proceeds from the offering are expected to be invested in global growth of Thyssenkrupp Nucera's hydrogen business, including automation and serial fabrication, strengthening and widening of the supply chain, the technology development and organizational growth.

### EVgo Underwritten Public Offering

In May of 2023, EVgo Inc. (EVgo) announced an underwritten public offering of shares of its Class A common stock, with Citi acting as a book-running manager in connection with the transaction. EVgo intends to use the proceeds of the offering for general corporate purposes.

The company is one of the largest public fast charging networks for electric vehicles in the U.S.,



owning and operating a charging network with approximately 950 fast charging locations in 35+ states.

### ACES Delta Acquisition

In September 2023, Citi served as the financial advisor to Chevron's New Energies division on its acquisition of a majority stake in ACES Delta, LLC (ACES Delta), a company actively involved in the development of a hydrogen production and storage project situated in Delta, Utah. This project plans to convert renewable energy into hydrogen through electrolysis, and will use salt caverns for dispatchable, seasonal energy storage. Hydrogen is a core focus of Chevron's energy transition strategy, and the acquisition of ACES Delta highlights the benefits of pairing commercial-scale green hydrogen production with significant storage capacity. Hydrogen projects with embedded storage potential, such as salt caverns, enable the creation of a long-duration source of renewable energy supply.

### Nextracker Initial Public Offering

Citi acted as a joint lead underwriter in the IPO of Nextracker Inc. (Nextracker), which launched in February of 2023 and raised approximately \$638 million USD. Nextracker is the leading provider of intelligent, integrated solar tracker and software solutions, which are used in utility-scale and distributed generation solar projects around the world. Nextracker's products enable solar panels to follow the sun's movement across the sky, thereby optimizing plant performance. Nextracker was a subsidiary of Flex Ltd. at the time of the IPO and subsequently completed a spin-off of its shares to Flex shareholders in January 2024.

### GIC and Gentari Invest in AM Green's Green Ammonia Project

The sovereign wealth fund of Singapore, GIC Pte (GIC) and Gentari, the clean energy division of Malaysia's Petronas, signed a definitive agreement in October of 2023 to invest in the development of one of the world's largest green ammonia projects. The project is being developed by AM Green, a company set up by the founders of Indian clean energy company, Greenko Group, and Citi acted as financial advisor to AM Green in connection with the deal. The project aims to produce 5 million tons of green ammonia by 2030 across multiple locations in India. The project is expected to accelerate the progress toward achieving net zero targets in India and internationally.



## Market Conditions and Trends

In 2023, we saw total energy transition investment increase faster than investment in fossil fuels supply, with geopolitical events associated with the accelerating momentum behind the deployment of clean energy technologies. While the annual increase was greater for clean energy, overall total investment in traditional energy was still larger. We saw significant investment in renewable energy.\*

The global bond market faced strong headwinds with high global interest rates yet, the green, social, sustainability and sustainability-linked bond (GSSSB) markets proved to be resilient and also saw an increase in stakeholders — investors, regulators and issuers. GSSSB issuance volumes in 2023 came to ~\$845 billion, representing ~6.3% of the overall bond market (up from 5.6% and 6.1% in 2021 and 2022 respectively). Europe has led the way in GSSSB issuances, representing around half of all such issuances in 2023 and comprising approximately 15% of total bond issuances in the region. APAC has been a high growth region for GSSSB issuance in recent years, with ~\$250 billion issued in 2023 (+8% YoY), representing 8.5% of the total volumes for the region (compared to 7.3% in 2022 and 5.4% in 2021). There is an increase in regulatory focus in the sustainable finance markets globally, and this may prove to be an opportunity for issuers and investors to enhance the quality of their sustainable finance offerings by referencing established taxonomies. However, more regulation may also dampen supply due to the introduction of more stringent hurdles.\*\*

\* BloombergNEF, Energy Transition Investment Trends 2024.

\*\* Per YE2023 Dealogic data.

## Engagement

Citi works with clients across sectors and across varying decarbonization stages to understand climate-related risks and realize climate-related opportunities, and we have been especially focused on clients across the energy value chain to understand their climate strategy and emissions reduction plans. We describe assessments that help facilitate these engagements in the section below.

### Net Zero Review Template

In 2022, Citi began rolling out an initial version of the Net Zero Review Template, which is intended to allow us to better understand and assess clients that are material to our net zero boundaries, their respective GHG profiles and their decarbonization and transition prospects. The goal of the Template, inclusive of input from the Climate Risk Assessment Scorecard (see page 41 for further details), is to aggregate information (where available) and perspectives to help understand client transition profiles. We have continued to develop and refine the Template since the initial rollout for clients in the Energy and Power sectors and had set a roughly two-year timeframe in which to engage with our clients in these sectors.

Use of the Template began with training on the Template for our banking teams, who access various data and information to form a perspective on the clients' transition strengths and weaknesses. The completion of initial assessments of applicable clients in the Energy and Power sectors concluded in early 2023. Thereafter, a cross-functional team engaged in a review and challenge process with

respect to results and banker conclusions. Based on the conclusions of that internal engagement, the clients reviewed were then placed into one of four categories that are best reflective of where each was with respect to transition. The development and implementation of the Template, in conjunction with evaluating the results thereof, has been an iterative process.

### Net Zero Review Template

Example Inputs and Considerations	
<b>Company Decarbonization Plan</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Decarbonization plan targeting material emissions scopes</li> <li><input type="checkbox"/> Targets applicable to sector, target years and coverage (Scope 1, 2 and 3)</li> <li><input type="checkbox"/> Governance, including Board and C-Suite oversight</li> <li><input type="checkbox"/> Assessment of strengths and weaknesses of transition plan</li> </ul>
<b>Emissions Data</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Scope 1, 2 and 3 absolute emissions and emissions intensity*</li> <li><input type="checkbox"/> PCAF data quality score (indicating the extent to which emissions are disclosed or need to be estimated)</li> <li><input type="checkbox"/> Emissions assurance status</li> </ul>
<b>Output from Climate Risk Assessment &amp; Scorecard</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Overall score and score breakdown across categories along with summary comments</li> </ul>
<b>Capital Expenditures</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Share or portion of capex dedicated to transition-related activities</li> </ul>
<b>Other Considerations</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Emerging market presence</li> <li><input type="checkbox"/> State-owned enterprise</li> <li><input type="checkbox"/> Energy security considerations</li> <li><input type="checkbox"/> Insights from external benchmarks</li> </ul>
<b>Citi Net Zero Metrics (Sector-Specific)</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Attributed absolute emissions, emissions intensity and climate alignment for relevant sectors</li> </ul>

\* If Scope 3 emissions are lacking, we assess to see if company makes an indication to disclose in the future/continue disclosing annually.

# Net Zero Transition Alignment – Preliminary Results\*

Client population based on FY2020 financed emissions results

## Energy\*\* (Scopes 1-2)

% of assessed clients	Transition Plan Alignment			
	Low	Medium-Low	Medium-Strong	Strong
	10%	15%	37%	37%

## Energy (Scopes 1-3)

% of assessed clients	Transition Plan Alignment			
	Low	Medium-Low	Medium-Strong	Strong
	42%	29%	20%	8%

## Power (Scope 1)

% of assessed clients	Transition Plan Alignment			
	Low	Medium-Low	Medium-Strong	Strong
	7%	10%	24%	59%

### Category Definitions - Energy

<b>Low</b>	Absence of a substantive transition plan and/or disclosure on Scope 3
<b>Medium-Low</b>	High-level transition plan present, but unclear ability to execute
<b>Medium-Strong</b>	Core elements of a transition plan targeting Scopes 1-3 emissions are present, and taking measures to decarbonize
<b>Strong</b>	Comprehensive and ambitious transition plan targeting Scopes 1-3 emissions reductions and demonstrated ability to execute

### Category Definitions - Power

<b>Low</b>	Absence of a substantive low-carbon generation plan and/or any emissions disclosure
<b>Medium-Low</b>	High-level transition plan present, but unclear ability to execute
<b>Medium-Strong</b>	Core elements of a transition plan targeting Scope 1 emissions are present and taking measures to decarbonize
<b>Strong</b>	Comprehensive and ambitious transition plan targeting Scope 1 emissions reductions and low-carbon generation, demonstrated ability to execute

### Note:

- This information is based on the results from the initial execution of the Net Zero Review Template and a corresponding review process. As we refine our methodology, continue to build internal capacity, incorporate useful considerations from emerging transition plan frameworks, and obtain access to higher quality data, we anticipate that the preliminary categorization of clients will change.
- Results are intended to be contextual to industry developments and do not necessarily reflect a specific alignment to a 1.5°C pathway.
- These categorizations are estimates based on available information as of the time our analysis was completed. Transition plan assessments will be updated on a determined cadence; therefore, there may not be material changes in the assessment results for each sector year over year.

\* Figures may not sum to 100% due to rounding.

\*\* In developing an initial assessment framework by sector, we focused on clients where we have committed corporate lending facilities, and where the emissions footprint was material to each sector's baseline and boundary. For Energy clients, we assessed alignment both with respect to Scopes 1 & 2 (their own operations), as well as Scopes 1 through 3 inclusive as tied to Citi's target boundary. For clients in the Power sector, the assessment focus was Scope 1 emissions.

## *Future Considerations and Next Steps*

Following the initial rollout of the Template, we continue to refine the tool, considering additional inputs as parameters for assessing our client profiles. As mentioned in the “Just Transition” callout (see page 14), Citi strives to incorporate just transition concepts in our own work as well as our work with clients with a focus on issues such as emerging markets presence and energy security among others.

We anticipate that public policy in the energy transition, such as more robust disclosure requirements both nationally and internationally, will continue to play a key role in the speed of the transition. For instance, policy changes may lead to increased availability of data which Citi can use to assist our clients in their transition to low-carbon business models as well as for our own transition. Please see the “Climate Policy & Regulatory Engagement” section on page 29 for further details on Citi’s engagement in public policy discussions in this space.

In the next stage of engagement with respect to our clients in the Energy and Power sectors, we will continue facilitating solutions to support their transition planning and where relevant, use findings from the assessment to identify additional ways to further their efforts.

We continue to hold conversations with clients to help them improve their disclosures so both they, and we, can better understand not just their emissions profiles but also the transition opportunities that they may be able to capitalize on. We encourage these clients to begin disclosure efforts across a variety of areas as soon as they are able.

## **Climate-Related Data**

The challenges of data availability and data quality continue to present significant limitations in the development and implementation of credible net zero plans and climate-related initiatives. For example, a lack of data availability and quality have resulted in the frequent use of estimates for the assessments made pursuant to our Net Zero Review Template. Additionally, the variability in levels of disclosure from clients creates difficulty in conducting peer-to-peer or year-over-year assessments.

### Climate Data Hub

In late 2022, Citi Global Data Insights (CGDI) launched the Climate Data Hub, which supports various data needs of teams across Citi. The Climate Data Hub’s aim is to increase availability of and access to the climate-related data our teams need for reporting or modeling.

The Climate Data Hub serves as a useful platform and allows our internal teams to extract the data they need. We understand that there are inevitable challenges in data collection, accuracy and comparability and, to that end, we maintain regular contact with our vendors in order to provide feedback on data quality with a view to continuously improve coverage and accuracy.

Over the past year, we have seen an uptick in the number of our corporate clients working to quantitatively assess and evaluate their climate transitions and an increasing willingness to disclose this information, as well as an increased demand from our corporate clients’ own stakeholders.

### Initiatives

Throughout 2023 Citi has focused on the documentation of our Physical Risk Data Operating Model, which outlines the scope of our physical risk data use case and delineates documents our

data requirements, authoritative sources, and quality routines that we hope will help enhance our assessment of climate physical risks improve our geospatial capabilities and refine our catastrophe modeling. The Physical Risk Data Operating Model will continue to evolve over the coming years.

## Nature-Related Impacts and Biodiversity

Since the inception of our Environmental and Social Risk Management (ESRM) policy in 2003, we have closely reviewed potential biodiversity risks and impacts, both at the project-related financing level and for certain sectors. We understand the importance of nature, as both a driver of climate change and a critical mitigant for climate change, and we are further developing our knowledge of potential risks, dependencies and opportunities. Nature and the climate are inextricably linked and it is critical that we understand this dynamic interplay.

Significant challenges remain, however, as the availability and quality of nature-related data is limited at best. The drivers of nature and biodiversity loss are complex and interrelated, and there is no unifying metrics as there is with tons of CO<sub>2</sub>e produced to quantify climate-related risks. Nature-related impacts also vary significantly depending on the location of operations, often across and within countries or regions. Moreover, businesses are often not reporting the type of data needed to identify and measure impacts and dependencies on nature. Our CGDI team continues to grapple with these issues and explore the quality of biodiversity data available, integrating such data into our Climate Data Hub where appropriate.

In September of 2023, the Taskforce for Nature-related Financial Disclosures (TNFD) released its fourth and final set of recommendations for organizations to report on evolving nature-related dependencies, impacts, risks and opportunities after several years of development. During this time Citi was a member of the TNFD Forum and our CGDI team continues to be part of the TNFD Nature-related Data Catalyst Programme, which aims to stimulate innovation and improve market access to nature-related data. Citi recognizes the interconnectedness of climate change and biodiversity as well as the need to understand the applicable risks and opportunities. We are particularly interested in efforts to mitigate climate change in a way that provides important nature and biodiversity co-benefits, such as nature-based carbon removal projects.

## Climate Policy & Regulatory Engagement

Part of our Net Zero Plan is to continue to engage with regulators and policymakers on climate-related issues. Constructive engagement is one of our Net Zero Transition Principles and, as a global bank with a presence in over 90 countries, our engagements occur around the world on an international, national and local scale.

At Citi, we recognize the need for consistent public policy on climate-related matters which will be critical in driving the transition to a low-carbon global economy. We are a member of a number of trade and business associations for various business reasons that, at times, may lobby or engage with policymakers on different issues, including issues and policies that could have impacts on GHG emissions or climate change broadly. The positions adopted by these trade and business associations do not necessarily represent our position on any given issue. Below is a summary of certain trade and business associations that Citi is a member of and our engagement with them on climate-related issues. The table does not show all the trade and business associations we are a part of globally but reflects those we think are most relevant for this report.

## Climate-Related Engagement with Trade Associations

Trade Association	About	Climate Change Position	Citi's Role
<b>Bank Policy Institute (BPI)</b>	A nonpartisan public policy, research and advocacy group representing the nation's leading banks. Members include universal banks, regional banks and major foreign banks doing business in the U.S. BPI aims to shape policy to allow the nation's leading banks to best serve their customers and fulfill their vital economic role while holding sufficient capital and liquidity to ensure that the risks they take are borne by their shareholders and creditors, not the taxpayer.	Where appropriate, participates in the development of multisectoral regulatory responses to identify and manage the possible manifestations of risks of climate change on banks' businesses and operations.	Citi is a member of BPI's Climate Working Groups and has engaged on BPI's position on various proposed climate disclosure rules, principles for climate-related financial risk management, climate-related financial risk and climate scenario analysis.
<b>Business Roundtable (BRT)</b>	A non-profit association, members of which are the CEOs of major U.S. companies working to promote a thriving economy in the U.S. and expanding opportunity for all Americans through public policy.	Promotes policies to ensure sustainable, reliable and affordable energy while addressing climate change and maintaining a healthy environment. BRT believes that to avoid the worst impacts of climate change, the world must work together to limit global temperature rise this century to well below 2°C above preindustrial levels, consistent with the Paris Agreement. In the U.S., the BRT supports a comprehensive, coordinated and market-based approach including, as appropriate, tax incentives for low-carbon technologies and/or a price on carbon to reduce emissions.	Citi's CEO is a member of BRT's Board of Directors. In addition, Citi is a member of BRT's Energy and Environment Coordinating Committee and has engaged on its Addressing Climate Change position statement and its climate policy and regulatory positioning.

## Climate-Related Engagement with Trade Associations (cont'd)

Trade Association	About	Climate Change Position	Citi's Role
<b>California Bankers Association (CBA)</b>	<p>Established in 1891, the California Bankers Association is one of the largest state banking trade associations in the country. CBA leads the way in developing relevant legislative and educational solutions to some of California's more pressing financial and banking issues, including financial empowerment, identity theft, financial privacy and financial elder abuse. CBA's membership includes California's commercial, industrial and community banks and savings associations.</p>	<p>As the leading voice for financial services in California, the California Bankers Association believes that banks play a vital role in financing the development of innovative solutions while maintaining sound compliance with regulators. It is the role of California's financial institutions to provide lawful businesses with access to financial services and the California Bankers Association is supportive of science-based reductions to harmful greenhouse gas emissions.</p>	<p>Citi is a member of the CBA Legal Affairs Committee, State Government Affairs Committee and the Climate Disclosure Working Group.</p>
<b>California Chamber of Commerce</b>	<p>The California Chamber of Commerce is the largest broad-based business advocate to government in California, working at the state and federal levels for policies to strengthen California.</p>	<p>Help legislators develop policies to bring new businesses to California and help employers reduce greenhouse gas emissions in the most cost-effective, technologically feasible manner.</p> <p>Encourage Greenhouse Gas Reduction Fund (GGRF) and cap-and-trade expenditures to provide funding for projects that result in meaningful and demonstrable reductions in greenhouse gas emissions or air pollution, create jobs, and stimulate the economy. Encourage expenditures that are technology neutral, cost-effective, and aid compliance with air quality improvement programs and greenhouse gas emissions reduction.</p> <p>Advocate for legislative and regulatory proposals that support and encourage the development of new and existing technology to reduce, store, or otherwise encapsulate excess greenhouse gas emissions.</p>	<p>Citi is a member of CalChamber's Public Affairs Committee and the Climate Change Working Group.</p>



## Climate-Related Engagement with Trade Associations (cont'd)

Trade Association	About	Climate Change Position	Citi's Role
<b>Financial Services Forum</b>	<p>An economic policy and advocacy organization whose members are the CEOs of the eight largest and most diversified financial institutions headquartered in the U.S. The Financial Services Forum promotes policies that support savings and investment, financial inclusion, deep and liquid capital markets, a competitive global marketplace and a sound financial system.</p>	<p>Forum members recognize that climate change poses risks to the global economy and advocate for appropriate policies and international cooperation to ensure that climate-related policies and regulations related to the financial industry are based on science, risk and sound methodologies.</p>	<p>Citi is a member of the Climate Risk Working Group and provided input for the Working Group's position on climate disclosure regulation.</p>
<b>Global Financial Markets Association (GFMA) and affiliates AFME, ASIFMA and SIFMA</b>	<p>The GFMA brings together three of the world's leading capital markets trade associations, AFME, ASIFMA and SIFMA, to provide a forum for the largest globally active financial and capital market participants to develop standards to improve the coherence and interaction of cross-border financial regulation. GFMA aims to improve functioning of global capital markets to support global economic growth and advocates for policies that promote efficient cross-border capital flows to end-users. AFME advocates for deep and integrated European capital markets which serve the needs of companies and investors, supporting economic growth and benefiting society. ASIFMA advocates for stable, competitive and efficient Asian capital markets that are necessary to support the region's economic growth. SIFMA advocates for legislation, regulation and business policy affecting retail and institutional investors, equity and fixed income markets and related products and services.</p>	<p>Related to their climate finance position, GFMA and each of the regional bodies have published research and engaged with policymakers and the regulatory community to advocate for sustainable finance policies and solutions that support the financial services industry's role in the transition to a low-carbon economy.</p>	<p>Citi currently holds the Chair of the GFMA. Citi participates in sustainable finance working groups related to regional and global regulatory developments on topics including global taxonomy developments, climate finance, voluntary carbon markets and climate risk management.</p>



## Climate-Related Engagement with Trade Associations (cont'd)

Trade Association	About	Climate Change Position	Citi's Role
<b>Institute of International Finance (IIF)</b>	<p>A global financial industry association with over 400 members from more than 60 countries with the mission to support the industry through risk management, development of sound industry practices and advocacy for regulatory financial and economic policies in the interests of its members, global financial stability and sustainable economic growth. A key focus for the IIF is public-private sector dialogue.</p>	<p>Actively supports the financial industry as it plays a crucial role in the transition to a low- carbon and ultimately net zero economy. Engages with policymakers and the regulatory community — as well as initiatives, such as GFANZ — to advocate for sustainable and transition finance policies and solutions that are principles-based, well-aligned internationally and prioritize prudent risk management, global financial stability and economic growth.</p>	<p>Citi's Chair is on IIF's Board of Directors. Citi is also a member of the Sustainable Finance Working Group Steering Committee, focusing on regional and global policy and regulatory developments, and the harmonization of policies and regulations to avoid a patchwork of approaches across different jurisdictions, which can be challenging for global institutions like Citi. Citi is also engaged on IIF sovereign debt policy workstreams that support sustainable growth and capital flows — key to mobilizing private capital for climate finance.</p>
<b>U.K. Finance (UKF)</b>	<p>Represents 300 firms across the banking and finance industry to promote safety, transparency and innovation within the industry. Offers research, policy expertise, thought leadership and advocacy in support of their work.</p>	<p>In 2022, the UKF Board agreed that “Transitioning to Net Zero” would be one of the organization’s five priority workstreams. UKF’s activities under this workstream seek to support members in delivering their net zero commitments, where they have them and enabling net zero-aligned action for all members. This includes advocating for clear decarbonization policies from policymakers and regulators.</p>	<p>Citi is a member of the UKF Sustainability Committee — a high-level strategic body constituted of over 20 senior ESG, climate or sustainability professionals, selected to represent the breadth of UKF’s membership.</p>

## Climate-Related Engagement with Trade Associations (cont'd)

Trade Association	About	Climate Change Position	Citi's Role
U.S. Chamber of Commerce	The largest lobbying group in the U.S., with members ranging from small businesses and chambers of commerce across the country to leading industry associations and global corporations. Advocates for policies that help businesses create jobs and grow the U.S. economy.	<p>The Chamber updated its Climate Change Position in 2021, asserting that the climate is changing, humans are contributing to these changes and inaction is not an option. The Chamber supports market-based solutions to reduce emissions and support U.S. competitiveness, national security and American workers, and also supported the Biden administration's decision to rejoin the Paris Climate Agreement.</p> <p>The Chamber has led GreenTech Business Delegations to Egypt, UAE, and Brazil, and led the largest-ever U.S. business delegation to the COP28 UN Climate Change Conference.</p>	Citi participates in the Energy, Environment, Climate & Sustainability Committee and Center for Capital Markets Competitiveness.

### Evolving and Increasing Climate Disclosure Requirements

The climate-related disclosure landscape continues to evolve. We recognize that standard-setters have put considerable effort into alignment, but we anticipate that the landscape will continue to be fragmented in the medium term. Adoption of reporting requirements on a country-by-country basis presents a challenge for international companies. A few examples of key regulatory framework are provided below.

- The EU Corporate Sustainability Reporting Directive (CSRD)
- The International Sustainability Standards Board (ISSB): Sustainability Reporting Standards
- The SEC Climate-Related Disclosure Rule
- The Climate Corporate Data Accountability Act
- The California Climate-Related Financial Risk Act
- The California Voluntary Carbon Market Disclosures Act

We continue to monitor developments in this space and appreciate the general trend toward transparent, comparable and reliable climate disclosures. We also believe it is important that jurisdictions seek to coordinate their respective disclosure requirements to avoid the outcome of overlapping and potentially conflicting reporting obligations. For large multinationals, we

believe reporting at the parent rather than subsidiary level would be the most efficient way to share this information. An uncoordinated approach could lead to difficult and inconsistent reporting approaches for companies, including Citi, that are subject to regulation in multiple jurisdictions. Citi is still in the early stages of assessing the impact of these frameworks and reporting obligations.

## Challenges Faced

As we advance our climate strategy and Net Zero Plan, we continue to face the challenges discussed in last year's report — the availability and quality of data, the translation of targets into actions and regional considerations. These challenges are discussed in greater detail on pages 37 to 38 of our [2022 TCFD Report](#). In 2023, we identified the following challenges:

- The evolutionary nature of disclosures resulting in difficulties of comparison among our clients → With respect to our Net Zero Review Template (see page 25), comparing disclosures and targets among clients proved to be a challenge in some cases given the varying levels of transparency and focus areas of each company. This was particularly evident when comparing targets given the variation in scope, boundaries, methodologies and the benchmarks used.

Another issue we face is the constantly evolving nature of client disclosure. We have found that a client's disclosure could materially change over a short period of time (for example, six months) in response to, for example, increasing stakeholder pressure and/or attempts to comply with various regulatory and voluntary disclosure regimes. While keeping track of these changes presents a challenge, the provision of updated figures also allows us to better monitor clients' progress.

The utilization of benchmarks can, to some extent, mitigate these challenges — examples include reporting pursuant to standardized and known frameworks (e.g., ISSB) or employing certain scenario analyses or decarbonization trajectories (e.g., those described in the IEA World Energy Outlook). Additionally, accounting for time horizons can sometimes prove helpful; tracking the developments over longer periods (such as looking toward meeting interim 2030 goals) rather than data over shorter periods (e.g., year-over-year) can facilitate a broader overview of a company's position to avoid the minutiae of more regular changes.

- The expansion of disclosure frameworks → With the proliferation of regulatory disclosure regimes across the world (for example, CSRD in Europe, the Climate Corporate Data Accountability Act, ISSB and the Climate-Related Financial Risk Act in California) comes the complexity of reporting against differing frameworks. This may include differences in reporting scopes, materiality approaches and thresholds, the ability to use emissions factors information or estimates and jurisdictional nexuses. We will continue to monitor this landscape and advance and grow the data we have available and its quality to ensure compliance. We will also continue to leverage opportunities for interoperability among the different frameworks.
- The continued reliance on new technologies as a part of climate strategies → Some of the new, clean energy technologies are expected to be available much more rapidly than first envisioned, which is a positive step. However, a number of corporate climate ambitions particularly among industrial clients are quite reliant on these new technologies being developed and scaled

effectively. It is difficult to determine the credibility of our clients' transition plans and strategies when they are reliant on emerging technologies and may not have developed contingency plans should the rollout of these technologies be delayed or fail to materialize. If certain technologies do not scale quickly enough, our clients may miss their own targets, which would result in Citi missing some of its own targets.

- The failure to reach global emissions reductions goals → Despite many important developments in public policies, such as the U.S. Inflation Reduction Act and the European Union Green Deal, it is a material challenge for many countries to meet their emissions reduction targets. To combat this progress deficit, we expect additional policies are likely to emerge — examples include further incentives to invest in and develop renewable energy projects, the encouragement of switching to electric vehicles and phasing out internal combustion engines as well as more support from multilateral development banks (MDBs) for developing countries and in scaling blended finance. Global transition efforts require supportive regimes and regulations across global markets. We anticipate further public policy developments aimed to foster this coherency at a macro-level.
- The inequities of the transition on developing countries → The move toward a low-carbon economy will be experienced differently across the world, with many developing countries facing the most severe impacts. Developing countries often pay more for electricity and are locked in, or dependent upon fossil fuels with higher carbon intensities, making the move to low-carbon energy that much more difficult. It is also often the case that developing countries often do not have the financial ability to mitigate the adverse impacts of climate change, including the devastation of crops, property and health caused by extreme weather events and rising sea levels. Transitioning to clean energy requires access to capital, investments and governmental support. While additional support from developed countries will mitigate these challenges to an extent, MDBs have an important role to play in providing financial support and technical guidance to these countries. However, reform is required with respect to MDBs to sufficiently address the climate-related challenges developing countries face; for example, better calibration of capital requirements where MDB-related risk mitigation measures are deployed. Moreover, collaboration between MDBs and financial institutions, such as Citi, should continue and be promoted, capitalizing on respective strengths and sharing expertise to help address the inequities of the transition.

## Multilateral Development Bank Reform

It is widely recognized that central banks and ministries of finance in both developed and developing economies cannot provide the scale of financing needed to address the challenges posed by climate change. Governments are turning to the development finance sector for assistance, demanding that MDBs reform to improve capital efficiency and expand support to deal with the crisis.

While improving capital efficiency and expanding the support of MDBs is critical to tackling climate change, even MDBs with expanded capital bases doing business in traditional ways will not be enough to meet the financing demands of a just energy transition. Given the large funding gap, the need for private sector financing is clear, but below-market-rate return profiles make mobilizing this capital without de-risking and blended finance difficult. Therefore, the private sector and MDBs must work together to address capital constraints and redesign governance,

products and incentive structures. To this end, Citi sees opportunities to enable MDBs to increase private capital mobilization over the short term while preserving their credit ratings and as the MDBs work through medium-term processes to expand private capital mobilization.

These short-term reforms/actions can be categorized into four buckets:

### Product Reforms

MDBs can adapt their risk posture and/or assume incremental risk in their product offerings to take on aspects of risk that are difficult for private sector debt capital to bear (such as currency, convertibility and construction risk).

### Program Expansion

MDBs can expand their toolkits. For example, they could build a portfolio of own-account securitizable assets to be packaged for sale and/or increase their use of blended finance. They could help drive the development of voluntary carbon markets and/or develop equity and equity-linked products to scale proven technologies critical to the energy transition.

### Shareholder and Regulator-driven Reforms

There are several easy wins which can be driven by MDB shareholders and regulators in developed markets. For example, MDB shareholders could encourage their institutions to build on their commitment to share information from the Global Emerging Markets (GEMs) risk database by working with private sector users on developing analyses that accurately quantify the level of risk in underlying projects and countries. Regulators could consider harmonization of capital relief across the G7 for banks and investors when using MDB risk mitigation tools. Additionally, MDB shareholders could provide more donor/grant funding to MDBs to allow them to expand project preparation resources and scale blended finance. Given debt challenges in many developing economies, more MDB support for development and climate finance will need to come in the form of grants.

### Staff Incentives for Private Capital Mobilization

Adjusting incentives can help mobilize capital. MDBs and Development Finance Institutions should replace their Key Performance Indicators (KPIs) based on own-account lending volumes with KPIs that focus on total capital raised and incorporate private capital mobilization.

## Risk Management

Citi is continuing to develop risk identification, assessment and measurement capabilities to support our efforts with respect to climate risk management. To this end, we continue to integrate climate-related matters into our overarching risk management framework.

### Climate Risk Management Framework (CRMF)

Our Climate Risk Management Framework (CRMF), developed in 2022, details the governance, roles and responsibilities, and principles that support the identification, measurement, monitoring, controlling and reporting of climate risks. The CRMF was designed to promote a consistent approach to the management of climate risk across Citi.

During 2023, we have continued to progress with the implementation of the CRMF. This work involves integrating climate risk into relevant business-as-usual risk management processes across risk programs and categories. One example of this is the incorporation of climate risk assessments as part of annual credit reviews for certain relationships and for sectors with greater exposure to transition and physical risks. In those cases, climate assessment reviews are conducted in conjunction with other traditional due diligence requirements for credit analysis.

The implementation of the CRMF delivers foundational risk management capabilities which will evolve over time as new processes, industry standards and best practices in climate risk management are developed.

### Refining Climate Risk Identification

Through Citi's internal risk identification process, climate risk continues to be designated as a cross-cutting risk that can manifest through existing risks. Climate risk drivers can impact each of the risk categories in our risk taxonomy; for example, strategic, reputation and credit. As we described in last year's report, climate risks can be categorized as the following:

- Transition Risks, which arise from the process of adjusting toward a low-carbon economy and encompass policy, technological changes and shifting consumer/market sentiment and societal preferences; and
- Physical Risks, which arise through "acute" weather-related events such as heatwaves, floods, wildfires and storms as well as "chronic" or long-term shifts in climate patterns, such as rising sea levels, precipitation change, increasing mean temperature and extreme weather variability.

The table below shows the impacts that climate risk drivers can have on several of our key risk categories. Such risks can manifest themselves differently across our risk categories in the short, medium and long term and may be either physical or transition-related climate impacts.

Risk Category	Definition	Climate Drivers	
		Transition Risk	Physical Risk
<b>Credit</b>	Risk of loss resulting from the decline in credit quality or failure of a borrower, counterparty, third party or issuer to honor its financial or contractual obligations.	Transition risk can arise from changes in regulatory expectations, technology and stakeholder preferences impacting income for individuals and corporates.	Chronic and acute physical risks can lead to disruptions in operations and supply chain, deteriorating working conditions and damage to property causing a decrease in income and revenue and asset value.
<b>Market</b>	Risk of loss arising from changes in the value of Citi's assets and liabilities or reduced net interest revenues resulting from changes in market variables, such as interest rates, exchange rates, equity and commodity prices or credit spreads.	Transition risk such as changes in regulatory expectations and technology can result in market volatility and over-pricing of assets.	Chronic and acute physical risks can affect the viability and shareholder value of entire industries and companies in certain geographies and impact the output of key export industries causing changes in FX, equities, commodities, credit and securitized products.
<b>Liquidity</b>	Risk that the firm will not be able to efficiently meet both expected and unexpected current and future cash flow and collateral needs without adversely affecting either daily operations or financial conditions of the firm.	Climate drivers can trigger unexpected demand for funds by counterparties/ customers to fund their obligations, a reduction in the value of assets owned by the bank or limitations on the bank's ability to roll its debt, affecting the bank's ability to meet both expected and unexpected current and future cash flow and collateral needs.	Chronic and acute physical risks can increase client demand for emergency loans, customers reaching credit limits and demand for funds.
<b>Strategic</b>	Risks to current or anticipated earnings, capital or franchise or enterprise value arising from poor business decisions (in compliance with regulations, policies and procedures), an inability to adapt to changes in the operating environment (e.g., economic, regulatory, legislative or competitive) or other external factors that may impair the ability to carry out a business strategy.	Transition risk can arise from changes in regulation and legislation and technology advances.	Chronic and acute physical risks can deteriorate economic conditions such as unemployment and disposable income causing a shift in strategy.



Risk Category	Definition	Climate Drivers	
		Transition Risk	Physical Risk
<b>Operational</b>	Risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events.	Climate drivers can exacerbate several subcategories of operational risk, such as risk oversight errors (e.g., due to insufficient understanding of the impact of climate change), reporting risk (e.g., due to new voluntary or mandatory reporting requirements), data management risk (e.g., due to fragmented data and solution providers) or model risk (e.g., challenges in validation of complex and non-traditional climate models).	Chronic and acute physical risks can lead to physical damage to property and impact health and safety causing disruptions in normal operations.
<b>Compliance</b>	Risk to current or projected financial condition and resilience arising from violations of laws, rules or regulations, or from non-conformance with prescribed practices, internal policies and procedures or ethical standards.	Climate drivers can lead to increased regulatory requirements which increase the potential of non-compliance.	
<b>Reputation</b>	Risk to current or projected financial condition and resilience arising from negative public opinion associated with climate change.	Climate drivers can increase reputational risk if Citi is perceived not to be sufficiently progressing or providing sufficient transparency on its climate-related commitments and actions.	

## Risk Exposure

Our heatmap framework provides a structure that enables us to further understand particular sectors or areas of Citi’s business that are most sensitive to climate risks (both physical and transition). We supplement our learnings through specific client assessments and scenario-analysis exercises.

Since our last report, we have further enhanced our heatmap methodology for corporates. The improvements to our climate-risk heatmap help to facilitate more granular risk identification and support our assessment and measurement efforts. A summary of our corporate climate-risk heatmap can be found on page 47.

Citi’s climate vulnerability heatmaps were first developed in 2021 to support the organization in understanding its climate risk profile and prioritise climate risk capabilities development across the firm. The methodology was enhanced during 2023 to reflect the increase in climate-related



institutional knowledge acquired during climate assessment and scenario analysis exercises. The heatmaps express the vulnerability of corporate sectors to climate risk physical drivers and transmission channels and the scale of 1 to 4 remains unchanged. The analysis is underpinned by the following considerations:

- Vulnerability to transition drivers and transmission channels includes an assessment of the impact of decarbonization efforts on the long-term demand profile of the sector end-product and an assessment of the underlying drivers to date.
- Vulnerability to physical risk drivers and transmission channels includes an assessment of the dependency of the sector's business model on its fixed assets base, the geographic concentration of fixed assets and/or its supply chain.

Corporate heatmaps continue to support risk identification and are increasingly being used to inform climate scenario design and conduct scenario analysis-based risk measurement, inform climate risk metrics and key risk indicators and are being used in internal reporting.

As we reported last year, we have also applied a heatmap framework to cover country exposures and Citi's own facilities.

## Risk Assessments

In the sections below, we detail Citi's approach to addressing climate risks and impacts among specific risks within our taxonomy.

### Wholesale Credit Risk

As we noted in last year's report, to help us understand the climate-related risk profiles of our individual corporate clients in certain sectors, Citi created a tool called the Climate Risk Assessment & Scorecard (CRAS).

The CRAS was designed to identify our clients' material climate-related risks and their plans to adapt and/or mitigate those risks, using both quantitative and qualitative inputs. The tool assesses clients' vulnerability to climate-related risk, the feasibility of their plans to transition to a low-carbon environment and the quality of their governance and disclosure. It relies on information disclosed by clients, either publicly or privately, as well as output from third-party tools, Citi's sector heatmaps and certain climate-related risk metrics.

In 2023, the CRAS was formally implemented in client-level credit review processes in a phased manner across a number of vulnerable sectors. The CRAS also informs Citi's net zero assessments. A summary of the components that are considered can be found in the table below.

During 2023, we also began to develop a climate risk assessment methodology for our Commercial Real Estate portfolio. This approach will evolve over time with increasing resolution for physical risk and more accurate building emissions data.

## Climate Risk Assessment & Scorecard (CRAS) Components

Components	
Emissions Data	Scope 1-3 absolute emissions and emissions intensity data, including industry averages as applicable
Scenario-Based Inputs	Climate scenario-based inputs and emissions performance comparisons relative to industry
Transition Risk Drivers	Client's vulnerability to applicable transition risk drivers, including legal and regulatory risks and financial capacity
Physical Risk Drivers	Vulnerability to physical risk drivers, both acute and chronic
Transition Risk Mitigants	Decarbonization targets, net zero commitments and transition plans
Physical Risk Mitigants	Client's adaptation measures for physical risk impacts
Capital Expenditures	Capital expenditures allocated to transition
Government Support	Available grants, subsidies and regulatory mechanisms to support transition
Governance	Senior-level, climate-related oversight and ties to remuneration
Transparency	Disclosures aligned with TCFD or other recognized frameworks
Output	<b>Overall climate score with individual scores for the following categories</b> <ul style="list-style-type: none"> <li>• Climate Vulnerabilities</li> <li>• Mitigation and Adaptation</li> <li>• Governance and Transparency</li> </ul>

### Retail Credit Risk

Given the potential impact on real estate assets, we've also expanded our focus on our residential mortgage portfolio. Namely, we have conducted assessments on our residential real estate mortgage portfolio in select regions of our global portfolio.

As part of our ongoing monitoring of risk in this sector, we are tracking additional metrics including exposure flood zones, insurance coverage by specific perils and insurance claims for real estate under repair following damage sustained as a result of climate-related physical events.

### Reputation Risk

Reputation Risk is defined as the risk to current or projected financial condition and resilience resulting from negative opinions held by key stakeholders. This risk may impair Citi's competitiveness by affecting its ability to establish new relationships or services or continue servicing existing relationships.

Climate drivers can increase reputation risk if Citi is perceived to be progressing too quickly or perceived not to be progressing and providing sufficient transparency on its climate-related goals. Citi monitors climate-related reputation risks under its reputation risk management framework.

Citi's Environmental and Social Risk Management Policy, described below, sets out the framework for

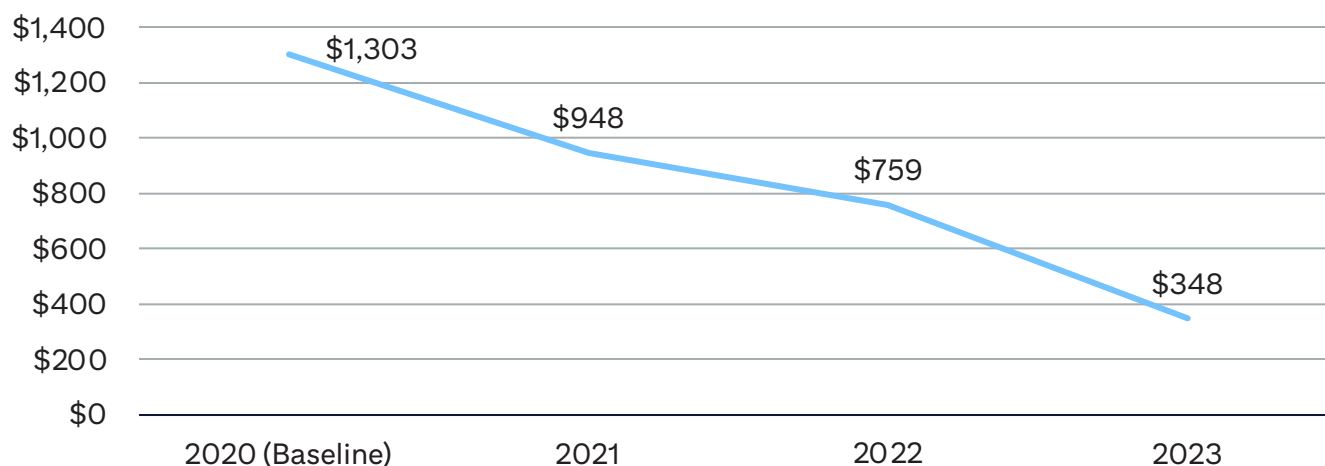
managing risks related to environmental (inclusive of climate) and social impacts of clients active in carbon intensive sectors such as Oil & Gas and Coal-Fired Power.

### *Environmental and Social Risk Management*

Our Environmental and Social Risk Management (ESRM) Policy helps us manage climate-related risks throughout Citi, addressing various risks as they pertain to specific sectors and project related transactions. This policy is informed by key international environmental and social standards, such as the United Nations Guiding Principles on Business and Human Rights (“UN Guiding Principles”), the Equator Principles and IFC Performance Standards. In last year’s report, we provided an update on our ESRM Policy on Coal covering our (i) coal-fired power generation financing and (ii) thermal coal mining reduction commitments. Below, we present our progress toward our commitment to reduce exposure to the Thermal Coal Mining sector, and have exceeded our target to reduce our credit exposure to such companies by at least 50% from a 2020 baseline.

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#### **Thermal Coal Mining Exposure\* (in Millions USD)**



\* The exposure figures include any company deriving  $\geq 25\%$  of its revenue from thermal coal mining or concentrated in thermal coal production ( $\geq 25\%$  of revenue). Figures for 2020-2022 have been updated as part of a review that resulted in including additional relationships that were excluded from the reported exposure in the 2022 TCFD Report.

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In 2023, we updated our ESRM Policy agribusiness sector requirements to better mitigate the risk of deforestation and conversion of natural habitats, which helps protect carbon sinks. We continue to implement our longstanding commitment not to engage with companies in violation of forestry and logging laws, while seeking to ensure that all forestry clients operational in tropical jurisdictions or critical habitats are Forest Stewardship Council certified. Our longstanding palm oil sector requirements have been expanded to include companies involved in downstream refining and trading of palm oil, and we incorporated additional agribusiness sector requirements for clients involved in soy and beef production in, or with supply chains sourcing from sensitive ecoregions of Latin America. As part of this policy expansion, we now review whether these in-scope soy clients are members of the [Roundtable on Responsible Soy](#) — a nonprofit organization that promotes the growth, production and trade of responsible soy throughout the soy value chain — or have equivalent management systems

that ensure deforestation and conversion-free production and supply chains. For our in-scope beef clients, we review policies and management plans to evaluate alignment with the [Accountability Framework Initiative](#), a toolkit based on industry best practice for companies to prevent deforestation driven by the production of agricultural commodities, including livestock, in their operations and supply chains.

## Operational Risk

We continue to refine our approach to the identification and management of climate-related operational risks. Last year for Citi's operational footprint, we evaluated primary Citi locations through Intergovernmental Panel on Climate Change (IPCC)-aligned scenarios. This allowed us to better assess and evaluate the potential climate-related physical risks to our operations. By completing this work, Citi has improved its understanding of the potential inherent risk of business disruption due to climate risk. Such insights consider the number of Citi staff allocated toward supporting critical processes as well as the forecasting of potential physical climate risks. In 2024, we will continue to build upon this by integrating our business recovery strategies to develop a residual risk view. Climate risk has also been integrated into processes such as third-party concentration oversight review and the Business Resiliency Assessments.

## Market Risk

In our Markets business, climate-related risks are currently integrated as business-as-usual (BAU) market risk management. We think about climate-related risks as a risk driver as opposed to a new risk stripe, and any associated price volatility is managed as part of BAU activity in each business. We continue to assess the potential climate-related risks, integrating our markets risk identification and scenario analysis work into our processes. We continue to progress our understanding of how physical and transition risk could re-price assets, create market volatility, impact credit quality and liquidity, among other factors. Each trading business within Markets considers the factors which are relevant: a dynamic process leveraging existing market risk metrics and market risk monitoring tools to identify, quantify, manage and control exposures sensitive to price moves in response to climate risk induced risk drivers (physical or transition risks).

## Scenario Analysis

Scenario analysis continues to be an important tool for assessing the potential impact of different climate scenarios, and we continue to execute these exercises at both the group level and for certain legal entities. While we have conducted a number of scenario analyses to date (as detailed in our [prior climate reports](#)), we continue to build upon our internal capabilities, particularly as they pertain to risk identification, scenario design, data access and quality, modeling, reporting, use of results and overall governance.

In 2023, we participated in the Federal Reserve Board's (FRB) Pilot Climate Scenario Analysis (CSA) exercise — an exploratory U.S. regulatory climate-related exercise inclusive of multiple transition and physical risk scenarios across different time horizons. The FRB's objectives included comparing climate risk management practices across large banking institutions and enhancing the ability to identify, measure, monitor and manage these risks across the financial industry.

Citi undertook the following as part of the CSA exercise:

- **Transition Risk:** We used two FRB-prescribed scenarios based on Network for Greening the

Financial System (NGFS) scenarios: *Current Policies and Net Zero 2050*. Participation in the CSA exercise reinforced previous insights into the differentiated impacts upon certain higher-vulnerability carbon intensive sectors and clients.

- **Physical Risk:** We assessed a common hazard prescribed by the FRB and an idiosyncratic hazard that is selected by each participant.

The CSA exercise provided useful insights on potential vulnerabilities with our Commercial & Industrial, Commercial Real Estate and Residential Real Estate loan portfolios. Citi plans to account for these insights to inform client due diligence and active portfolio management from a climate risk perspective. As these exercises become more pervasive and become integrated into mainstream stress testing, we continue to enhance our data and analytical capabilities.

## Climate Training

Achieving our climate goals, including implementing our Net Zero Plan and managing climate risk, requires a workforce knowledgeable in sustainability and climate-related concepts and the low-carbon transition. We are providing training for employees on these key topics. We have offered a foundational Climate Risk Training module firmwide describing the integration of climate risk considerations into our risk management processes and launched two climate-focused training pilot workshops for a cross-business cohort of bankers and risk officers including a “deep dive” in assessing transition plans and client engagement, specifically for our Energy and Power portfolios.

In spring 2023, we expanded our resources in climate and sustainability training with the launch of the Citi Sustainability Learning Center, a new platform available to all our employees, providing access to introductory and advanced courses to learn about a wide range of topics. Recognizing that training needs vary by business function, employees are guided through accessible learning channels to build their knowledge and capacity across subjects including climate risk, energy, sustainable finance, and environmental and social risk management. Content is regularly updated to keep abreast of market developments, industry trends and best practices.

Our climate training approach in 2023 has also included the integration and utilization of the Net Zero Review Template. Applicable bankers have engaged in live modules and were provided with background resources related to sector-specific climate transition planning, as well as specific training on the Net Zero Review Template and the Climate Risk Assessment & Scorecard. These bespoke trainings have been tailored to help our bankers develop subject matter expertise.

## Metrics & Targets

Citi's climate strategy and performance are informed and driven by quantitative information, to include climate-related metrics and targets. Below, we summarize the various operational and financial data we use to guide our progress toward our climate-related goals.

### Risk Exposure

Last year's report provided an update to our climate risk heat mapping which reflected changes made in 2021; namely, the development of a more detailed methodology to aid determination of the vulnerability scores to assign to each sector. Our climate risk heat mapping is an iterative tool and throughout 2023 we have been working on further updates to our methodology to reflect advancement in institutional knowledge and subject matter.

The climate risk heat mapping categorizes sectors under one of four vulnerability scores, ranging from "low" to "high."

The analysis is underpinned by the following considerations:

- Vulnerability to transition drivers assesses the impact of decarbonization efforts on the long-term demand profile of the sector end-product. This includes whether a sector is expected to experience demand destruction, demand substitution or to have limited impact on demand, and an assessment of the underlying drivers to date from a technology, policy and stakeholder perspective.
- Vulnerability to physical risk drivers and transmission channels includes an assessment of the dependency of the sector's business model on its fixed assets base, the geographic concentration of fixed assets and/or its supply chain. Physical risk vulnerability assessment is performed at a macro level and is not reflective of the vulnerability of individual client or collateral geospatial footprint.

Below is a table of our credit exposures for various identified sectors, further broken down into subsectors. For each subsector, the level of transition and physical climate risk is mapped. Importantly, the table below reflects an assessment of a long-term horizon (> 5 years) and should not be interpreted as imminent risks to existing exposures. Rather, the table reflects those exposures in sectors that we are proactively identifying to focus our assessment and measurement efforts of climate risk. This focus is aided by mapping at the subsector level, so we can further distinguish the various levels of risk evident within each identified sector.

Low

1

2

3

4

High

## Climate Risk Heat Mapping and Credit Exposure

in Millions	2022				Climate Risk	
	Total \$ Exposure	% of Total Exposure	Funded	% of Funded Exposure	Transition Risk	Physical Risk
<b>Energy &amp; Commodities</b>						
<b>Energy</b>	<b>40,311</b>	<b>5.8%</b>	<b>10,404</b>	<b>3.7%</b>		
Oil & Gas Production	15,829	2.3%	4,020	1.4%	4	3
Energy Process Industries	14,720	2.1%	4,183	1.5%	4	3
Integrated Oil & Gas	9,465	1.4%	1,992	0.7%	3	3
Others	296	0.0%	208	0.1%		
<b>Commodity Traders</b>	<b>5,998</b>	<b>0.9%</b>	<b>2,665</b>	<b>0.9%</b>		
Energy Commodities	3,417	0.5%	1,685	0.6%	2	2
Agricultural Merchandisers & Processors	2,581	0.4%	979	0.3%	2	3
<b>Power</b>						
<b>Power</b>	<b>22,718</b>	<b>3.3%</b>	<b>4,827</b>	<b>1.7%</b>		
Multi-Utilities	9,058	1.3%	989	0.3%	3	3
Electric Utilities	6,055	0.9%	1,395	0.5%	3	3
Independent Power Producers	2,853	0.4%	655	0.2%	3	3
Alternative Energy	2,178	0.3%	951	0.3%	2	3
Other	2,573	0.4%	837	0.3%		
<b>Transportation</b>						
<b>Autos</b>	<b>47,482</b>	<b>6.9%</b>	<b>21,995</b>	<b>7.7%</b>		
Auto-Securitization	17,113	2.5%	10,299	3.6%	3	3
Automobile Manufacturers	16,120	2.3%	5,177	1.8%	3	3
Auto Parts & Equipment	9,742	1.4%	4,140	1.5%	3	3
Other	4,508	0.7%	2,379	0.8%		
<b>Aviation</b>	<b>8,943</b>	<b>1.3%</b>	<b>3,361</b>	<b>1.2%</b>		
Airlines	5,231	0.8%	1,779	0.6%	3	3
Others	3,712	0.5%	1,583	0.6%		
<b>Shipping &amp; Maritime Logistics</b>	<b>7,587</b>	<b>1.1%</b>	<b>4,174</b>	<b>1.5%</b>		
Shipping & Maritime Logistics excluding Offshore & Ports	6,264	0.9%	3,632	1.3%	3	3
Offshore	671	0.1%	165	0.1%	4	3



### Climate Risk Heat Mapping and Credit Exposure

in Millions	2022				Climate Risk	
	Total \$ Exposure	% of Total Exposure	Funded	% of Funded Exposure	Transition Risk	Physical Risk
Ports	652	0.1%	377	0.1%	2	4
<b>Logistics</b>	<b>8,313</b>	<b>1.2%</b>	<b>2,839</b>	<b>1.0%</b>		
Logistics Suppliers	5,265	0.8%	1,796	0.6%	3	3
Rail	1,200	0.2%	173	0.1%	2	3
Others	1,848	0.3%	870	0.3%		
<b>Industrials</b>						
<b>Building Products &amp; Related</b>	<b>7,833</b>	<b>1.1%</b>	<b>2,953</b>	<b>1.0%</b>	2	3
<b>Capital Goods</b>	<b>43,678</b>	<b>6.3%</b>	<b>15,162</b>	<b>5.3%</b>		
Machinery & Equipment	25,732	3.7%	7,937	2.8%	3	3
Industrial Conglomerates	9,526	1.4%	3,753	1.3%	2	2
Construction & Engineering	3,649	0.5%	1,244	0.4%	3	3
Aerospace & Defense	2,819	0.4%	811	0.3%	3	3
Others	1,953	0.3%	1,416	0.5%		
<b>Paper Forest Products &amp; Packaging</b>	<b>6,564</b>	<b>1.0%</b>	<b>3,309</b>	<b>1.2%</b>	3	3
<b>Professional Services</b>	<b>8,825</b>	<b>1.3%</b>	<b>3,478</b>	<b>1.2%</b>	2	2
<b>Metals &amp; Mining</b>						
<b>Metals &amp; Mining</b>	<b>13,539</b>	<b>2.0%</b>	<b>5,734</b>	<b>2.0%</b>		
Diversified Metals & Mining	3,719	0.5%	1,373	0.5%	2	3
Steel	3,227	0.5%	1,755	0.6%	3	3
Aluminum	1,152	0.2%	643	0.2%	3	3
Coal*	467	0.1%	64	0.0%	4	3
Others	4,974	0.7%	1,898	0.7%		
<b>Chemicals</b>	<b>23,147</b>	<b>3.4%</b>	<b>7,765</b>	<b>2.7%</b>	3	3
<b>Consumer Retail &amp; Health</b>						
<b>Food, Beverage &amp; Tobacco</b>	<b>33,970</b>	<b>4.9%</b>	<b>17,130</b>	<b>6.0%</b>		
Agricultural Products	4,688	0.7%	3,479	1.2%	3	3
Others	29,282	4.2%	13,651	4.8%	2	3
<b>Health Care Equipment &amp; Services</b>	<b>41,836</b>	<b>6.1%</b>	<b>8,771</b>	<b>3.1%</b>	2	2
<b>Household &amp; Personal Products</b>	<b>7,461</b>	<b>1.1%</b>	<b>2,773</b>	<b>1.0%</b>	2	2

Low

1

2

3

4

High

## Climate Risk Heat Mapping and Credit Exposure

in Millions	2022				Climate Risk	
	Total \$ Exposure	% of Total Exposure	Funded	% of Funded Exposure	Transition Risk	Physical Risk
<b>Retailing &amp; Services</b>	24,766	3.6%	7,622	2.7%		
Hotels Restaurants & Leisure	2,594	0.4%	926	0.3%	2	3
Food & Staples, Specialty Retail and Others	22,172	3.2%	6,696	2.4%	2	2
<b>Consumer Durables &amp; Apparel</b>	12,058	1.7%	5,163	1.8%	2	2
<b>Real Estate</b>						
Commercial Real Estate	54,139	7.8%	34,112	12.0%	3	3
Residential Real Estate	16,538	2.4%	14,427	5.1%	2	3
<b>Financial Institutions</b>						
Financial Institutions	111,810	16.2%	56,066	19.7%		
<b>Insurance</b>	29,932	4.3%	4,417	1.6%		
Non Life Insurance	8,708	1.3%	2,566	0.9%	2	2
Life Insurance	6,807	1.0%	1,099	0.4%	2	2
Reinsurance	6,332	0.9%	212	0.1%	2	3
Others	8,085	1.2%	540	0.2%		
<b>Public Sector</b>	23,705	3.4%	11,736	4.1%		
<b>Technology, Media &amp; Telecom</b>						
Media & Entertainment	9,703	1.4%	2,432	0.9%	1	2
<b>Technology</b>	50,694	7.3%	17,248	6.1%		
Semiconductors & Equipment	9,493	1.4%	2,126	0.7%	2	4
Hardware, Software, Services and Others	41,202	6.0%	15,122	5.3%	2	2
<b>Telecom</b>	20,814	3.0%	9,250	3.3%	2	2
<b>Other Industries</b>	7,374	1.1%	4,217	1.5%		
<b>Grand Total**</b>	<b>689,737</b>	<b>100.0%</b>	<b>284,028</b>	<b>100.0%</b>		

\* Based on Citi's Risk Industry Classification, which differs from how Citi defines thermal coal mining companies under its ESRM Policy and the net zero boundary. For reporting on our thermal coal mining exposure, see page 43.

\*\* Sums may not match FY2022 10-K due to rounding from increased granularity in industry breakdowns.

## Net Zero Financed Emissions Data and Targets

Our efforts to calculate absolute financed emissions for our Aluminum, Auto Manufacturing, Aviation, Commercial Real Estate, Shipping, Steel and Thermal Coal Mining portfolios progressed throughout 2023. We have continued to calculate these figures according to the Partnership for Carbon Accounting Financials (PCAF) methodology (using drawn exposure, for financed emissions, and a 33% weighting for facilitated emissions) as detailed in Appendix B and in alignment with our net zero target boundaries (using total committed exposure for financed emissions), as shown in the table below.

### 2022 Financed and Facilitated Emissions Summary

#### 2022 Financed Emissions - Drawn Exposure

Sector	Financed Emissions - Drawn Exposure Scopes 1-2 (M mt CO <sub>2</sub> e)	Financed Emissions - Drawn Scope 3 (M mt CO <sub>2</sub> e)	PCAF Data Quality Score Scope 1-2	Quality Score Scope 3
Aluminum	2.36	N/A	1.6	N/A
Auto Manufacturing	0.14	5.53	1.4	1.25
Commercial Real Estate*	0.31	N/A	4.5	N/A
Energy	8.0	29.49	2.7	3.2
Power**	5.0	N/A	2.7	N/A
Shipping	1.27	N/A	2.8	N/A
Steel	2.25	0.60	2.2	2.2
Thermal Coal Mining	0.08	1.56	3.1	3.0

\* Absolute emissions figures include Citi Community Capital.

\*\* Absolute figures include Scopes 1-2 and are reflective of full value chain population (generation, transmission and distribution) and project finance is Scope 1 generation only.

#### 2022 Facilitated Emissions

Sector	Facilitated Emissions Scope 1-2 (M mt CO <sub>2</sub> e)	Facilitated Emissions Scope 3 (M mt CO <sub>2</sub> e)	PCAF Data Quality Score (Scope 1-2)	PCAF Data Quality Score (Scope 3)
Energy	2.9	15.5	2.8	3.0
Power	3.5	N/A	1.8	N/A

## 2022 Financed Emissions - Committed Exposure and Additional Metrics

Sector	Absolute Financed Emissions - Committed Exposure (M mt CO <sub>2</sub> e)	Physical Intensity	Lending Intensity (Per \$M Committed)	Committed Exposure (\$B) <sup>1</sup>
Auto Manufacturing	16.91	173 g CO <sub>2</sub> e/km	1,291	13.1
Commercial Real Estate <sup>2</sup>	0.33	48 kg CO <sub>2</sub> e/m <sup>2</sup>	17	20.0
Energy	89.33 <sup>3</sup>	81.4 g CO <sub>2</sub> e/MJ	2,408	37.1
Power <sup>4</sup>	13.44	280.2 kg CO <sub>2</sub> e/MWh	577	23.3
Steel	5.78	SSP Climate Alignment Score = 0.02	2,513	2.3
Thermal Coal Mining	4.00	2.7 M mt CO <sub>2</sub> e / short ton of coal sales	13,333	0.3

<sup>1</sup> Based on obligor level, which differs from relationship level data featured in the Climate Risk Heat Map.

<sup>2</sup> Absolute emissions figures include Citi Community Capital, which is not included in the target boundary and intensity.

<sup>3</sup> Adjusting for Enterprise Value Including Cash (EVIC) fluctuations, the normalized result is 95.7 M mt CO<sub>2</sub>e.

<sup>4</sup> Absolute figures include Scopes 1-2 and are reflective of full value chain population (generation, transmission and distribution) and project finance is Scope 1 generation only.

Financed emissions are subject to fluctuations year-to-year due to a number of contributing factors, for example, company value and credit exposure. Some of the numbers in the table above have changed over the past year, reflective of variation in the company value of our clients (Enterprise Value Including Cash (EVIC) for public clients, Debt and Equity for private clients). Credit exposures also changed in 2023, further contributing to the fluctuations evident in the data.

### [Key Design Decisions and 2030 Targets and Progress](#)

We provide an updated table below on Citi's 2030 emissions reduction targets. See pages 19 to 20 for graphical representation of our progress against our 2030 targets.

### 2030 Emissions Reduction Targets and Progress

Sector	Emissions Scopes	Scenario	Unit	Baseline Year	Baseline	2030 Target	FY2022 Progress	% change from baseline
Auto Manufacturing	Scopes 1-3	IEA NZE 2050	g CO <sub>2</sub> e/km	2021	154	106	173	+12%
Commercial Real Estate	Scopes 1-2	CRREM 1.5	kg CO <sub>2</sub> e/m <sup>2</sup>	2021	61	36	48	-21%
Energy	Scopes 1-3	IEA NZE 2050	M mt CO <sub>2</sub> e	2020	143.8	102.1	89.3	-38%
Power	Scope 1	IEA SDS OECD	kg CO <sub>2</sub> e/MWh	2020	313.5	115	280.2	-11%
Steel	Scopes 1-3	IEA NZE 2050	SSP Climate Alignment Score	2022	0.02	0	0.02	N/A
Thermal Coal Mining	Scopes 1-3	IEA SDS OECD	M mt CO <sub>2</sub> e	2021	7.9	0.79	4	-49%

## Our \$1 Trillion Sustainable Finance Goal

Our 2030 \$1 Trillion Sustainable Finance Goal spans our business offerings and helps to illustrate how our Net Zero Plan is integrated across Citi. As the most global bank, we recognize the role we can play in supporting our clients' transitions toward a more just and sustainable low-carbon economy. Activity counted toward the goal is comprised of transactions that help support society's environmental, social and economic needs. The environmental and social goal criteria and progress toward the goal may be found in our annual [ESG reports](#).

## Operations

Citi has committed to achieving net zero operational emissions by 2030. Operational emissions are largely attributable to electricity use in our real estate operations (offices, branches and data centers) and to a lesser extent, combustion of fuels in real estate operations, corporate aviation and our corporate vehicle fleet. Our 2025 operational footprint goals for our real estate operations serve as the interim targets for our net zero commitment. As a result of fewer people using Citi's buildings during the COVID-19 pandemic, we exceeded some of our operational footprint goals. However, as we anticipated in last year's report, we began to see a reversal in 2022 following a continued uptick in the number of employees utilizing Citi's buildings and expect to see an uptick for 2023. As the number of employees returning to our office stabilizes, our expectation is that we will be able to demonstrate progress against these targets once more.

### 2025 Operational Footprint Goals

(Measured against a 2010 baseline)

Millions of Metric tons CO <sub>2</sub> e (M mt CO <sub>2</sub> e)	Goal Progress through 2022
<b>GHG Emissions</b>	
45% reduction in location-based GHG emissions	48%
<b>Energy</b>	
40% reduction in energy consumption	36%
Maintain 100% renewable electricity sourcing*	100%
<b>Water</b>	
30% reduction in total water consumption	37%
25% of water consumed to come from reclaimed/reused sources	7%
<b>Sustainable Buildings</b>	
40% of floor area to be LEED-, WELL- or equivalent certified	41%
<b>Waste</b>	
50% reduction in total waste	50%
50% of waste diverted from landfill	32%

\*96% within market boundary; 4% sourced from regionally aligned markets.

Efficient use of our real estate combined with electrification and use of renewable electricity are the key drivers in reaching our net zero commitment. Citi continues to purchase renewable electricity where feasible and has maintained 100% renewable electricity sourcing since 2020. Electrifying or replacing conventional fuels with low-carbon alternative fuels is the priority pathway to reduce our direct Scope 1 GHG emissions. To that end, we are evaluating the ability to use, directly or indirectly through contractual instruments, low-carbon fuels such as Sustainable Aviation Fuel (SAF) for corporate aviation and hydrotreated vegetable oil (HVO) as diesel replacement in backup generators. In calendar year 2022, we began purchasing voluntary third-party verified carbon credits consisting of a portfolio of nature-based, energy efficiency and methane destruction credits in an amount equivalent to our Scope 1 real estate emissions. While we recognize the potential value of high-integrity voluntary carbon credits, we do not account for use of carbon credits in measuring progress to our 2025 operational footprint goals. The voluntary carbon credit market is evolving and we are, therefore, using our initial purchases as a learning opportunity to begin developing an effective, long-term approach for the use of carbon credits and removal of residual emissions as we approach our 2030 commitment.

In addition to our operational commitment, we continue screening Scope 3 GHG emissions across our supply chain and employee activities. During 2023, we updated our [Statement of Supplier Principles](#), encouraging our suppliers to track and report their emissions with the hope that suppliers will seek to manage and reduce their emissions. As we continue to evaluate Scope 3 emissions, we plan to leverage company specific emissions data in the Climate Data Hub to identify areas to transition from spend-based emissions factors to use of company-specific data to measure our supply chain emissions to be less reliant on estimations.

## 2022 GHG Screening Inventory

Millions of Metric tons CO<sub>2</sub>e (M mt CO<sub>2</sub>e)

CO <sub>2</sub> e Emissions Category	2019	2020	2021	2022	Primary Source of Emissions
<b>Scope 1 (Direct Energy)<sup>1</sup></b>	0.03	0.02	0.05	0.05	Operations
<b>Scope 2 (Indirect Energy, Market-Based)</b>	0.36	0.06	0.06	0.04	
<b>Scope 3</b>	—	—	—	—	Supply Chain
Category 1 – Purchased Goods and Services	1.63	1.54	1.70	1.86	
Category 2 – Capital Goods	0.35	0.33	0.29	0.33	
Category 3 – Fuel and Energy-Related Activities	0.17	0.13	0.17 <sup>2</sup>	0.15	
Category 4 – Transportation and Distribution	0.15	0.10	0.11	0.13	
Category 5 – Waste	0.02	0.01	0.01	0.01	
Category 6 – Business Travel: Total	0.13	0.02	0.01	0.06	Employee Activities
Category 7 – Employee Commuting: Total	0.08	0.10	0.11	0.11	
Category 15 – Investments <sup>3</sup>	—	62.37	53.93	78.49 <sup>4</sup>	Financing Activities
<b>Total Emissions (Operations, Supply Chain, &amp; Employee Activities)</b>	<b>2.92</b>	<b>2.31</b>	<b>2.51</b>	<b>2.74</b>	
<b>Total Emissions</b>	<b>—</b>	<b>64.68</b>	<b>56.44</b>	<b>81.23</b>	

<sup>1</sup> Scope 1 includes real estate operations and corporate aviation for 2019 to 2022 with corporate vehicles included beginning in 2022.

<sup>2</sup> The 2021 figure for Category 3 has been updated to use more appropriate emission factors than were applied in the prior year. The historical metrics have been recalculated using the appropriate emissions factors to ensure comparability year on year.

<sup>3</sup> Each year's total is reflective of the sectoral coverage at time of disclosure, and therefore do not represent comparable boundaries year-on-year. The financed emissions are calculated per the PCAF Standard, using drawn exposure, and corporate emissions data that lag one year of the financials. Please see our [climate reports](#) for more information.

<sup>4</sup> See page 50 for breakdown of 2022 Financed and Facilitated Emissions.



## Looking Ahead

Achieving a successful low-carbon energy transition requires a global effort involving collaboration among governments, industries, financial institutions, civil society organizations and consumers. Citi plays a vital role in the global economy, not just as facilitators of the capital markets but also as supporters of our clients as they engage in their own transitions. We will continue to work toward achieving our company's net zero goals, pursuing our climate-related targets through engagement opportunities and the expansion of our financing efforts, including directing capital toward innovative, clean energy technologies and the necessary infrastructure for a more sustainable and inclusive energy transition.

To further develop our net zero transition plan, we plan to work on:

- Finalizing emissions baselines, identifying decarbonization pathways and setting targets for our portfolio in the Aluminum, Aviation, Cement and Shipping sectors;
- Facilitating and providing bespoke solutions for clients, particularly in the Autos, Energy, Power and Steel sectors to further support their transition plans;
- Measuring progress toward established targets and, where appropriate, revising such goals to account for advances in methodologies and data availability;
- Disclosing facilitated emissions related to capital markets activity and incorporating that into our sectoral targets as appropriate; and
- Further exploring and pursuing climate-related opportunities to help Citi and our clients achieve and sustain progress toward net zero and climate-related targets.

Citi will remain transparent about our approach to climate and net zero, the successes we achieve and the challenges we face as we navigate the energy transition. As our understanding evolves, the available data and tools increase, and our expertise grows, we will continue to collaborate with our stakeholders to accelerate progress toward decarbonization to help address the urgent and systemic risks climate change poses.

Additional actions must be taken by all global participants to ensure a successful and just energy transition and to mitigate the worst impacts of climate change. The pathway to a low-carbon economy may not be a smooth or clear one. However, Citi — as a global financial institution — understands the capacity of our business to act, and we will continue to help our clients as they seek to move toward a low-carbon future.

## Forward Looking Statements

The disclosures included in this report are provided in an effort to align with the recommendations of the TCFD and guidance of GFANZ, respond to stakeholder requests and further enhance our collective understanding of how climate risk translates into Citi's key risk categories. As discussed above, our approaches to the disclosures included in this report differ in certain significant ways from those included in our required disclosures, including those mandated by SEC rules and regulations. For additional information, see "A Brief Note on Materiality" in the Introduction.

Certain statements in this report are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, including, but not limited to, those statements regarding our operational and financed net zero targets, sustainable and transition finance goals and related goals, commitments, strategies, plans, outlook and expected performance. In addition, we may make forward-looking statements in other publicly available documents, and our management may make forward-looking statements orally to analysts, investors, representatives of the media and others. Generally, forward-looking statements are not based on historical facts, but instead represent our and our management's current beliefs regarding future events. Such statements may be identified by words such as "believe," "expect," "anticipate," "intend," "aim," "estimate," "continue," "project," "may increase," "may fluctuate," "predict," "outlook," "goal," "assume," "focus," "forecast," "commit," "potential," "target," "illustrative," "plans" and similar expressions or future or conditional verbs such as "will," "should," "would," "may" or "could." However, any statement that is not a statement of historical fact, regardless of whether it uses any of the foregoing words, is a forward-looking statement.

Forward-looking statements are based on management's current expectations and are subject to risks, uncertainties, changes in circumstances and assumptions that are difficult to predict and are often beyond our control and inherently uncertain. These statements are not guarantees of future results, occurrences, performance or condition and actual results may differ materially from those included in this report. Moreover, many of the forward-looking statements included in this report are based on assumptions, standards, metrics, measurements, methodologies, data and internal frameworks believed to be reasonable at the time of preparation but should not be considered guarantees. In particular, assumptions, standards, metrics, methodologies and frameworks for measurement, reporting and analysis of climate change continue to evolve, vary across jurisdictions and regulatory bodies and are the subject of proposed regulatory changes in multiple jurisdictions, which may have a material impact on our future measurement and reporting, as well as the results of the efforts set forth in this report. Additionally, other sources of uncertainty and limitations exist that are beyond Citi's control and could impact Citi's plans and timelines, including reliance on technological and regulatory advancements and market participants' behaviors and preferences. Furthermore, our ability to measure many of these goals is dependent on data expected to be measured, tracked and provided by our clients and other stakeholders; as a result, our ability to measure progress and meet our targets is subject to the quality and availability of such data, as discussed in this report. Given the inherent uncertainty of the estimates, assumptions and timelines contained in this report, we may not be able to anticipate whether or the degree to which we will be able to meet our plans, targets, goals or commitments in advance. Citi also cannot guarantee that the data provided in its reports will be consistent year-over-year, as data quality, particularly climate-related data improves. Further, Citi has not, and does not intend to, independently verify third-party data. This data should not be interpreted as any form of guarantee or assurance of

accuracy, future results or trends and Citi makes no representation or warranty as to third-party information.

Actual results, performance or outcomes may differ materially from those expressed in or implied by any of these forward-looking statements due to a variety of factors, including, among others, global socio-demographic and economic trends, geopolitical challenges and uncertainties, financial results, energy prices, consumer and client behavior, technological innovations, physical and transition risks associated with climate change, our ability to attract and retain qualified employees, increased attention to climate-related matters, legislative and regulatory changes, potentially conflicting ESG-related initiatives from certain U.S. state and other governments, increased regulatory action and litigation relating to potential “greenwashing” allegations, the outcome of current and future legal proceedings and regulatory investigations, public policies, engagement with clients, suppliers, investors, government officials and other stakeholders, our ability to gather and verify data regarding environmental impacts, our ability to successfully implement various initiatives throughout the company under expected time frames, the ability of our partners or potential partners as well as their suppliers to successfully implement initiatives and produce or scale new technologies under expected time frames, the compliance of various third parties with our policies and procedures and legal requirements and other unforeseen events or conditions. You should not place undue reliance on any forward-looking statement. Other factors that could cause actual results, performance, or outcomes to differ materially from those described in forward-looking statements can be found in this report, in Citi’s filings with the SEC and other disclosures available on our corporate website at [www.citigroup.com](http://www.citigroup.com).

This report contains statements based on hypothetical or severely adverse scenarios and assumptions, which may not occur or differ significantly from actual events, and these statements should not necessarily be viewed as being representative of current or actual risk or forecasts of expected risk. This report may consider disclosure recommendations and broader definitions of materiality used by certain voluntary external frameworks and reporting guidelines that may differ from mandatory reporting, including under U.S. federal securities laws and regulations. Information within this report may therefore be presented from a different perspective and in more detail than our mandatory reporting, including our disclosures required by U.S. federal securities laws and regulations. Thus, while certain matters discussed in this report may be significant, any significance should not be read as necessarily rising to the level of materiality used for the purposes of complying with domestic and international reporting requirements, including U.S. federal securities laws and regulations, even if we use the word “material” or “materiality” in this report. Any discussion of forward-looking statements in this report is not an indication that the subject or information is material to Citi for U.S. federal securities laws and regulations reporting purposes.

Any forward-looking statement speaks only as of the date originally made and is based on management’s then-current expectations, and we do not undertake to update any forward-looking statement to reflect the impact of circumstances or events that arise after any forward-looking statement was made.

# Appendices

## In this Section

### Appendix A

Glasgow Financial Alliance for Net-Zero (GFANZ) Index

### Appendix B

Scope 3, Category 15 Emissions Methodologies

# Appendix A

## Glasgow Financial Alliance for Net-Zero (GFANZ) Index

The following table indicates where readers can find information that addresses the voluntary GFANZ transition plan recommendations.

Component		Recommendation	Report Section
Foundations	Objectives and priorities	Define the organization’s objectives to reach net zero by 2050 or sooner, with measurable targets, milestones and timelines, and identify the priority approaches of net zero transition action considering financing climate solutions, decarbonization through seeking net zero-aligned clients and portfolio companies, working to bring clients and portfolio companies into net zero alignment and supporting managed phaseout projects.	<a href="#">Citi’s Net Zero Plan</a>
Implementation Strategy	Products and services	Align existing and new products and services with a 1.5°C net zero pathway to accelerate and scale the net zero transition in the real economy, provide transition-related education and advice, and support portfolio decarbonization in accordance with the institution’s net zero transition strategy.	<a href="#">Climate Opportunities</a>
	Activities and decision-making	Embed the financial institution’s net zero objectives and priorities in its core evaluation and decision-making tools and processes, to support its net zero commitment. This applies to both top-down/oversight structures and bottom-up tools and actions.	<a href="#">Achieving 2030 Targets</a>  <a href="#">Governance</a>
	Policies and conditions	Establish and apply policies and conditions on priority sectors and activities, such as thermal coal, oil and gas and deforestation. Include other sectors and activities within lending, investment and underwriting portfolios that are high-emitting, or otherwise harmful to the climate, to define business boundaries in line with the institution’s net zero objectives and priorities.	<a href="#">Environmental and Social Risk Management</a>
Engagement Strategy	Clients and portfolio companies	Proactively and constructively provide feedback and support to clients and portfolio companies to encourage net zero-aligned transition strategies, plans and progress with an escalation framework with consequences when engagement is ineffective.	<a href="#">Engagement</a>

Recommendation	Recommendation	Report Section	
<b>Engagement Strategy (cont'd)</b>	Industry	Proactively engage with peers in the industry to a) exchange transition expertise as appropriate, and collectively work on common challenges; and b) represent the financial sector's views cohesively to external stakeholders such as clients and governments.	<a href="#">Climate Policy &amp; Regulatory Engagement</a>
	Government and public sector	Ensure that direct and indirect lobbying and public-sector engagement advocate for policies that support or enable an accelerated and orderly transition to net zero, and do not contravene any net zero commitments of the institution. Review portfolio companies' lobbying and advocacy efforts and utilize engagement levers to encourage consistency with the institution's own net zero objectives. Discuss clean investment plans and policies with governments and other key stakeholders to help attract private investment in climate solutions.	<a href="#">Climate Policy &amp; Regulatory Engagement</a>
<b>Metrics and Targets</b>	Metrics and targets	Set targets against key metrics that support the net zero strategy and priorities, including targets for support and scaling of climate solutions, engagement, internal implementation, financed GHG emissions and, where relevant, managed phaseout projects. Monitor a range of metrics to assess progress in implementing the net zero transition plan.	<a href="#">Metrics &amp; Targets</a>
<b>Governance</b>	Roles, responsibilities and remuneration	Define roles for Board and senior management so they have ownership, oversight and responsibility for the net zero targets. Assign appropriate individuals and teams to all aspects of both design and delivery. Review the transition plan regularly to ensure material updates/developments are incorporated, challenges are reviewed as an opportunity to course correct and implementation risks are being managed.	<a href="#">Governance</a>
	Skills and culture	Provide training and development support to the teams and individuals designing, implementing and overseeing the plan so that they have sufficient skills and knowledge to perform their roles (including at the Board and senior management level). Implement a change management program and foster open communications to embed the net zero transition plan into the organization's culture and practices.	<a href="#">Capacity Building &amp; Expertise</a>

# Appendix B

## Scope 3, Category 15 Emissions Methodologies

### Scope of Analysis

Our FY2022 financed emissions calculations encompass the full loan portfolio for the Aluminum, Auto Manufacturing, Commercial Real Estate (CRE) (North America), Energy and Energy-related project financing, Power and Power-related project financing and tax equity financing, Shipping, Steel and Thermal Coal Mining sectors. Structured products (such as derivatives, hedging or trading) are excluded from this scope of analysis at this time.

Our FY2022 facilitated emissions calculations encompass 2022 transaction volumes for Energy and Power clients in equity capital markets (ECM), debt capital markets (DCM) and syndicated loans. These were sourced from Dealogic and align with the Partnership for Carbon Accounting Financials (PCAF) Standard for the scope of covered activities.

The financial reporting year has been determined as January 1, 2022 to December 31, 2022. Financial values related to client loan exposure and company financials have been aligned to this year-end date where possible, or we have taken information as of the company's closest financial reporting year-end date.

Throughout this report, we offer our emissions calculations based on two components of client exposure:

- Drawn amount: value of the loan that the borrower has drawn down as of the year-end date.
- Committed amount: outstanding amount plus undrawn committed credit which the borrower has available, less any amounts related to fronting facilities.

Sector portfolios are identified using an internal industry classification system. For sectors with previously disclosed absolute financed emissions (Auto Manufacturing, Commercial Real Estate, Energy, Power, Thermal Coal Mining and Steel), please reference our [2021](#) and [2022 TCFD Report](#) appendices for detailed information on scope and methodology. Aluminum and Shipping are further detailed below.

#### *Aluminum*

For the purposes of its financed emissions calculations, Citi includes in its Aluminum sector boundary entities that are involved in the primary production, recycled production and semi-fabrication value chain segments. This aligns with guidance under the Sustainable Aluminum Finance Framework (SAFF) and covers the most material sources of emissions for the sector.

#### *Shipping*

Citi's Shipping financed emissions calculations cover ship operator exposure. Relationships were deemed in scope if they are included in the Poseidon Principles and to capture unsecured lending, also included relationships with the following North American Industry Classification System (NAICS) codes:



NAICS Code	Name
483111	Deep Sea Freight Transportation
483112	Deep Sea Passenger Transportation
483211	Inland Water Freight Transportation
483113	Coastal and Great Lakes Freight Transportation
483212	Inland WATER Passenger Transportation

### [Absolute Emissions Data Inputs](#)

Scope 1 and 2 emissions have been included in the financed emissions calculations for all clients within the covered sectors: Aluminum, Auto Manufacturing, Energy, Power, Shipping, Steel and Thermal Coal Mining, and in the facilitated emissions calculations for Energy and Power.

These emissions include:

- Reported actual company emissions as sourced through Sustainable1 or CDP;
- Reported actual company or site emissions from publicly available databases (such as the EPA or CDP) and/or company disclosures;
- Sustainable1 estimations based on reported company data or their proprietary estimation model; and
- Estimated emissions based on industry average emissions factors by sector from the Partnership for Carbon Accounting Financials (PCAF) emissions factor database.

### [Capital Markets Facilitated Emissions Calculation Methodology](#)

With the publication of the PCAF Standard on Facilitated Emissions, Citi has leveraged this approach for its first facilitated emissions disclosure:

$$\text{Facilitated Emissions} = \sum_c \frac{\text{Citi League Table Share}_c}{\text{EVIC or Total Debt} + \text{Equity}_c} \times 33\% \times \text{GHG Emissions}_c$$

(with c=company)

Citi's League Table Share is based on value of the transaction volume and is sourced from Dealogic.

## [Additional Metric Calculation Methodologies](#)

For details on Citi's approach to calculating Absolute Finance Emissions for:

- Business Loans
- Project Finance for Energy and Power
- Scope 3 for relevant sectors (Auto Manufacturing, Energy, Steel, Thermal Coal Mining)
- Commercial Real Estate

And additional related metrics of:

- Portfolio Intensity
- Sustainable STEEL Principles Climate Alignment Score

Please reference the [2021](#) and [2022 TCFD Report](#) appendices.

## [Updates to Above Referenced Methodologies](#)

As we continue our annual calculation process, some changes in scope and boundary may better reflect Citi's emissions. We plan to update these as needed and will continue to disclose any changes. We have updated the scope and methodology of our Power sector portfolio weighed physical emissions intensity metric.

This year, we added tax equity financing to the metric, which includes wind and solar project tax equity financing. The intensity for this was calculated using National Renewable Energy Laboratory (NREL) emissions factors for the respective generation types.

Additionally, to better capture any data gaps for entities that generate power, but do not have data for, we have leveraged a world average power generation emissions factor from the International Energy Agency (IEA) to include entities that were previously excluded. This gap was only about 7% of portfolio exposure, but we wanted to conservatively estimate where these entities contribute to our portfolio intensity.



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