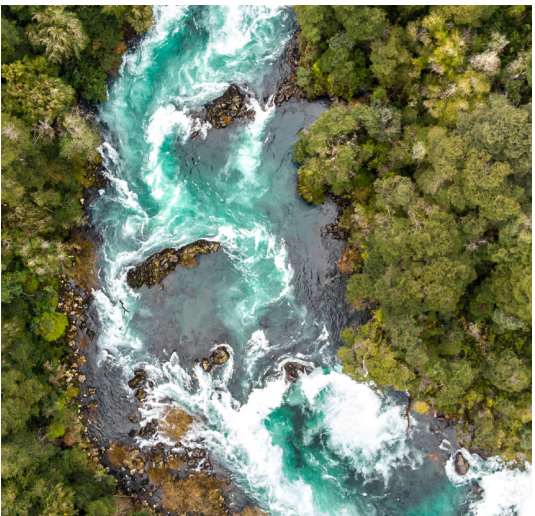


Taskforce on Climate-Related Financial Disclosures Report 2022

Citi's Approach to Climate Change and Net Zero





About This Report

This report presents information on Citi's efforts towards implementing the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). This is our fourth TCFD Report since we voluntarily began reporting using the framework in 2018.

This report reflects a summary of our progress made to date towards incorporating climate risk and opportunity identification and management into our business strategy and disclosure efforts, consistent with TCFD recommendations. The available tools and methodologies to assess climate impacts, evaluate progress in reducing greenhouse gas (GHG) emissions and assess potential climate-driven risks to our own assets and business strategy continue to evolve and improve. Citi is committed to contributing to methodology improvements and evolving its tools to assess climate risk as well as advancing our Net Zero Plan. Climate data, including the quantification of the GHG emissions associated with our clients and our estimates of emissions associated with clients' value chains, will continue to evolve as this data improves.

Citi has committed to achieving net zero emissions associated with our financing activities by 2050, and net zero emissions for our operations by 2030. Our 2021 TCFD Report included Citi's baseline financed emissions and 2030 targets for our Energy and Power loan portfolios, including the methodologies used and initial transition plans. This year's report includes our first update since setting those targets, our progress made to date on our Net Zero Plan and inaugural 2030 targets for four additional loan portfolio sectors – Auto Manufacturing, Commercial Real Estate, Steel and Thermal Coal Mining.

Our climate risk and net zero work are related and reinforce each other. Whereas our climate risk work focuses on the identification, measurement and management of key risks arising from climate change, our net zero work focuses on Citi's impacts on the climate and achieving our net zero emissions targets, which also help reduce risk. Common linkages exist between the two workstreams. For example, both rely on common data elements such as GHG emissions and a better understanding of our clients' climate change mitigation and/or adaptation plans. Additionally, risk management tools can help achieve our net zero goals, and our Net Zero Plan can drive risk mitigation, particularly for credit, strategic and reputational risk.

Contents

Our TCFD disclosure reflects our commitment to understanding and integrating climate risk into our risk management governance, processes and strategies, as well as our commitment to achieving our net zero goals.

Letter from the CEO

The events of the past year have underscored that the transition to a net zero economy will not be smooth or linear. The global ramifications of Russia's invasion of Ukraine have led to massive volatility in the energy markets and renewed concerns about energy security. This has created additional momentum for the energy transition to counter the growing climate crisis. It has also raised new considerations that must be accounted for.

Addressing the world's energy and climate needs will be a balancing act. On the one hand, investing in energy security is essential — the global economy still runs primarily on oil and natural gas and many developing nations have neither the resources nor the infrastructure to make a quick shift to renewables. At the same time, investment in clean energy technologies is critical to addressing climate change, and support for companies working to dramatically reduce their carbon footprints must continue wherever they may be on their respective journeys. These considerations — the energy transition, energy security and access to energy — are not mutually exclusive and must be solved for simultaneously.

At Citi, we are putting our expertise and resources to work to help our clients tackle these climate and energy challenges. In January 2022, we released our initial plan for achieving net zero emissions by 2050, setting ambitious 2030 financed emissions reduction targets for our energy and power loan portfolios. In this year's Task Force on Climate-Related Financial Disclosures (TCFD) Report, we share our first year of progress towards these targets and set out 2030 targets for additional sectors including auto manufacturing, commercial real estate, steel and thermal coal mining.

I have engaged with many of our clients around the world who are committed to doing what it takes to transition to a low-carbon economy. There is a universal acknowledgement, particularly within the hard-to-abate sectors and developing economies, that the transition will take time. So, we will continue to work alongside our clients as they map out pathways that are orderly but ambitious, whilst ensuring they can continue to meet the world's energy needs.

We need to invest heavily to scale new sustainable technologies and their supporting infrastructures to be viable alternatives to fossil fuels, and we have to drive down their associated cost curves to ensure their affordability. Nowhere is the criticality of affordable solutions more important than in emerging markets. Our work last year supporting Indonesia and Vietnam's Just Energy Transition Partnerships and Egypt's

landmark energy transition program has resulted in more actionable playbooks that other countries can learn from and follow.

Obtaining more reliable and actionable climate data also continues to be a challenge that we are navigating across our businesses, and we've been supportive of regulatory developments to ensure more consistent, comparable and reliable climate disclosures.

Over the past year, we have continued to build up our capacity to manage and mitigate climate risks, whilst also realigning our own business around opportunities in the energy transition. That includes augmenting our Clean Energy Transitions banking team, expanding our Climate Risk team and establishing a Head of Net Zero Operations to help realize our net zero commitment for Citi's own sites and facilities. Despite the geopolitical and macroeconomic headwinds, we continue to make progress toward meeting our commitment to financing and facilitating $1 trillion in sustainable finance by 2030.

Meeting the need for energy access whilst also accelerating the transition to a low-carbon economy is no easy feat. But as the world's most global bank that has an on-the-ground presence in 95 countries and does business in nearly 160 countries, we have the unique perspective and local knowledge to support solutions for the clients and communities we serve.

I invite you to learn more about Citi's approach and initiatives across our firm in the pages that follow. Our TCFD Report represents a hallmark of all our climate-related efforts — our commitment to transparency. The report describes our continued efforts towards our climate goals and disclosures in line with the TCFD framework. We are transparent about our progress and the challenges we face on the path to net zero and are committed to sharing our experience so that we all can learn together and chart the course to a healthier, more sustainable future.

Jane Fraser | Chief Executive Officer, Citi

Introduction

Introductory Statements

Citi has over two decades of experience assessing and managing environmental- and social-related risks and opportunities. As these issues have continued to evolve, so has our understanding of climate-related risks and opportunities. This year, we have increased the number of our loan portfolio sectors covered by our Net Zero Plan from two to six. With each sector that we bring into our Net Zero Plan, we leverage our learnings from the other sectors, including the methodologies and metrics used and the client engagement tools developed. We remain committed to improving upon the progress made to date.

Defining Our 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 financed emissions reduction targets for each of the in-scope lending portfolios now includes Auto Manufacturing, Commercial Real Estate, Energy, Power, Steel and Thermal Coal Mining.

A broad governance structure oversees our Net Zero Plan, consisting of the full Board and three Board committees: an ESG Council chaired by our CEO, and a newly formed Climate and Sustainability Council, which combines our prior Global Sustainability Steering Committee and our Net Zero Task Force. Operationalizing this Net Zero Plan will require a coordinated effort across our businesses. We are providing financial support and advice for climate solutions under our $1 Trillion Sustainable Finance Commitment. In addition, we are working to improve our own skill base to better assess and support our clients. We are providing climate-related training to frontline banking teams and risk managers to advance our engagement strategy to better assess our clients' climate risk and transition plans while maintaining transparent and productive communication with a variety of stakeholders including investors, regulators and policymakers. Our sectoral targets, exposures and financed emissions and intensity metrics will serve as benchmarks to keep us accountable and highlight any needs for corrective action. Our Net Zero Plan is summarized in the graphic below. Please click on the links for further detail on each element of our Net Zero Plan.

Citi's Net Zero Plan

We commit to continually apply lessons learned and value the feedback we have received to date. For example, we recently were included in the Institutional Investors Group on Climate Change's and Transition Pathway Initiative's (TPI)[1] financial sector pilot. The TPI is developing a framework to assess the financial sector's preparedness for energy transition and, to that end, conducted a pilot analysis of 27 banks from across the world, including Citi. The pilot indicators attempted to capture a comprehensive picture of Citi's Net Zero Plan by looking at our (1) net zero commitments; (2) short- and medium-term targets; (3) decarbonization strategies; (4) climate governance; (5) climate policy engagement; and (6) audit and accounts. The TPI pilot found that Citi was a leader among other pilot participants in climate governance and noted the granularity of our disclosures regarding our exposure to high-risk sectors.

As a global bank, we also engage with various local and national policymakers around the world on a range of topics including net-zero initiatives, modeling and disclosure. We are also a part of the Net Zero Banking

[1] The TPI Global Climate Transition Centre, launched by the Grantham Research Institute on Climate Change and the Environment (based at the London School of Economics and Political Science) is an independent, authoritative source of research, designed to assess the world's biggest companies as they transition to a low-carbon economy, with particular focus on corporate climate governance and carbon emissions. For more information, please see the TPI's website.

Alliance (NZBA), which is part of the broader Glasgow Financial Alliance for Net Zero (GFANZ). This year's Report also discusses the recommendations and voluntary guidance of GFANZ's *Financial Institutions Net-zero Transition Plans*.

It is difficult to reflect on this past year without acknowledging the humanitarian crisis created by Russia's invasion of Ukraine in February 2022 and the resulting economic uncertainty in global energy security and commodity prices. These events have highlighted the challenges inherent in the clean energy transition, as well as the importance of an orderly and equitable transition that minimizes global disruption while ensuring access to energy. We are working with our clients to explore ways to align their individual emissions reduction strategies with the broader transition to a low-carbon economy.

Informed by GFANZ Recommendations and Guidance

Citi is a member of the GFANZ and NZBA steering groups that provide voluntary guidance on the development of net zero leadership initiatives and frameworks.

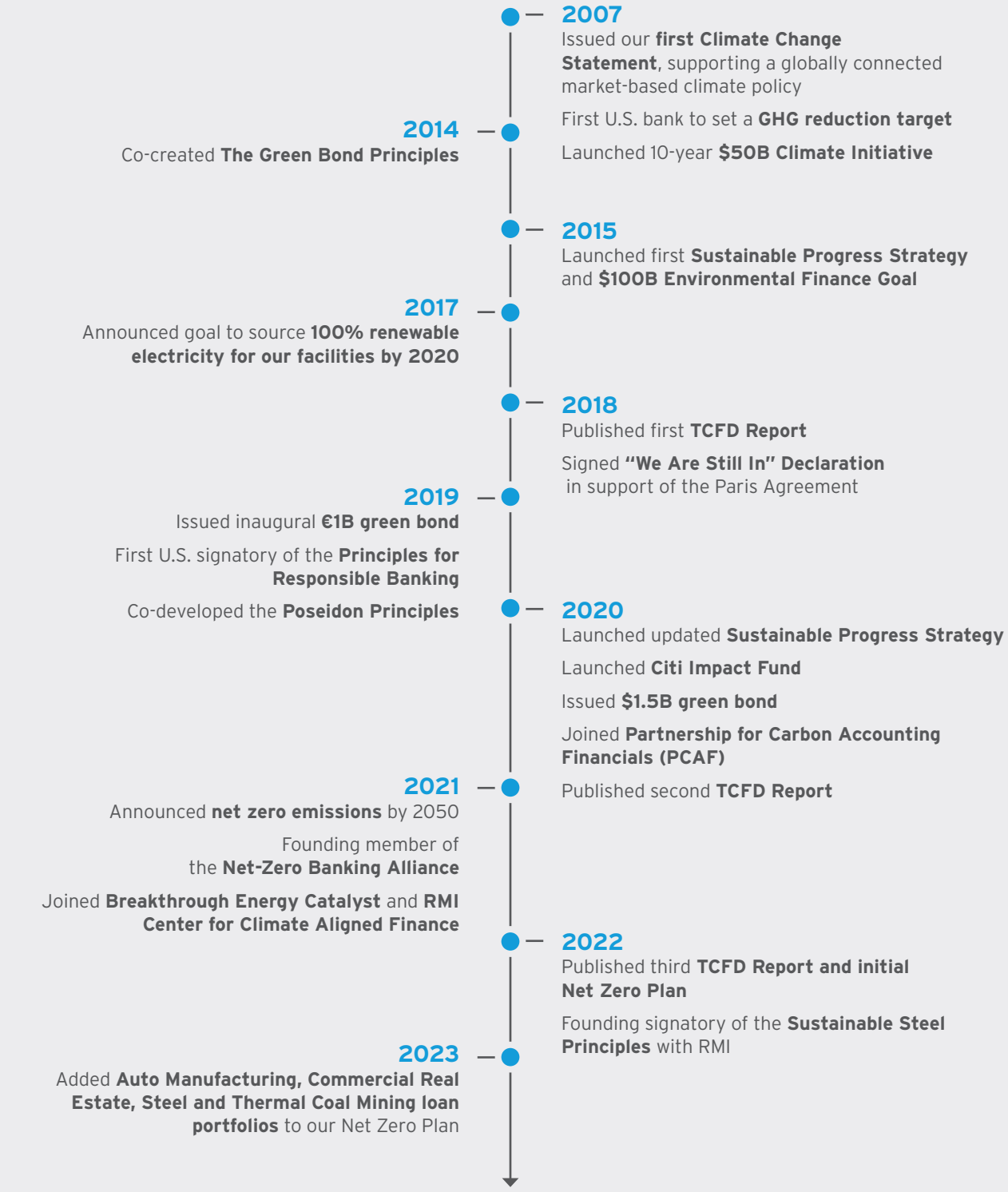
In June 2022, GFANZ released its recommendations and voluntary guidance for Financial Institution Net-zero Transition Plans which identifies four approaches to support real economy GHG emissions reductions:

1. **Climate Solutions**: financing or enabling entities and activities that develop and scale climate solutions;
2. **Aligned**: financing or enabling entities that are already aligned to a 1.5°C pathway;
3. **Aligning**: financing or enabling entities committed to 1.5°C-aligned pathways; and
4. **Managed Phaseout**: financing or enabling the accelerated managed phaseout of high-emitting physical assets.

To that end, the guidance recommends that a net zero plan address ten core components grouped into five themes: (1) Foundations; (2) Implementation Strategy; (3) Engagement Strategy; (4) Metrics and Targets; and (5) Governance. Our Net Zero Plan graphic on page 7 builds upon this guidance.

In addition to continued implementation of the TCFD recommendations, this report is also informed by the GFANZ guidance. We have drawn from GFANZ's guidance 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 unique geographic footprint.

Timeline of Climate Action



A Brief Note on Materiality

At Citi, we recognize that in general, assessing materiality requires thoughtful consideration not only of any applicable materiality standard, but also of our purpose in assessing materiality and in communicating to our stakeholders. Our public disclosures, including our voluntary environmental, social and governance (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. 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, our voluntary ESG disclosures consider broader definitions of materiality promulgated by other frameworks and reporting guidelines that take into consideration a wider range of factors, including the views of stakeholders and our ambition to play a leading role in financing the energy transition.

For the purposes of discussing climate risks and opportunities in this TCFD Report, we use an approach to materiality that is consistent with the TCFD recommendations. Therefore, this report incorporates a climate change "double materiality" perspective — 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 TCFD Report and many of our other voluntary disclosures capture details on ESG issues, including climate-related risks and opportunities that may not be, and are not necessary to be, incorporated into our required disclosures. Our approach to materiality in this TCFD Report and other voluntary ESG disclosures also means that statements made in this report and in our other voluntary disclosures 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 voluntary 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 voluntary ESG disclosures are likely to 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 risk and our progress under the Net Zero Plan. Since our 2021 TCFD Report, we have:

- Expanded our Board of Directors' oversight of certain climate-related matters such as climate risk and climate and ESG disclosures. Codified the integration of climate-related issues with certain Board committees, including incorporating oversight of our climate disclosure risk and controls environment into the Audit Committee (AC) charter and climate risk oversight into the Risk Management Committee (RMC) charter;

- Commenced an ESG Disclosure Committee to support the Board and AC and provide oversight of Citi's disclosure controls and procedures;

- Expanded and realigned our Climate Risk team to be part of the Enterprise Risk Management function within Risk and further added subject matter expertise;

- Launched two climate training pilots for our BCMA (Banking, Capital Markets and Advisory), Risk Management and Global Functions teams involving in-person workshops focused on providing foundational knowledge of climate risks and client transition plans;

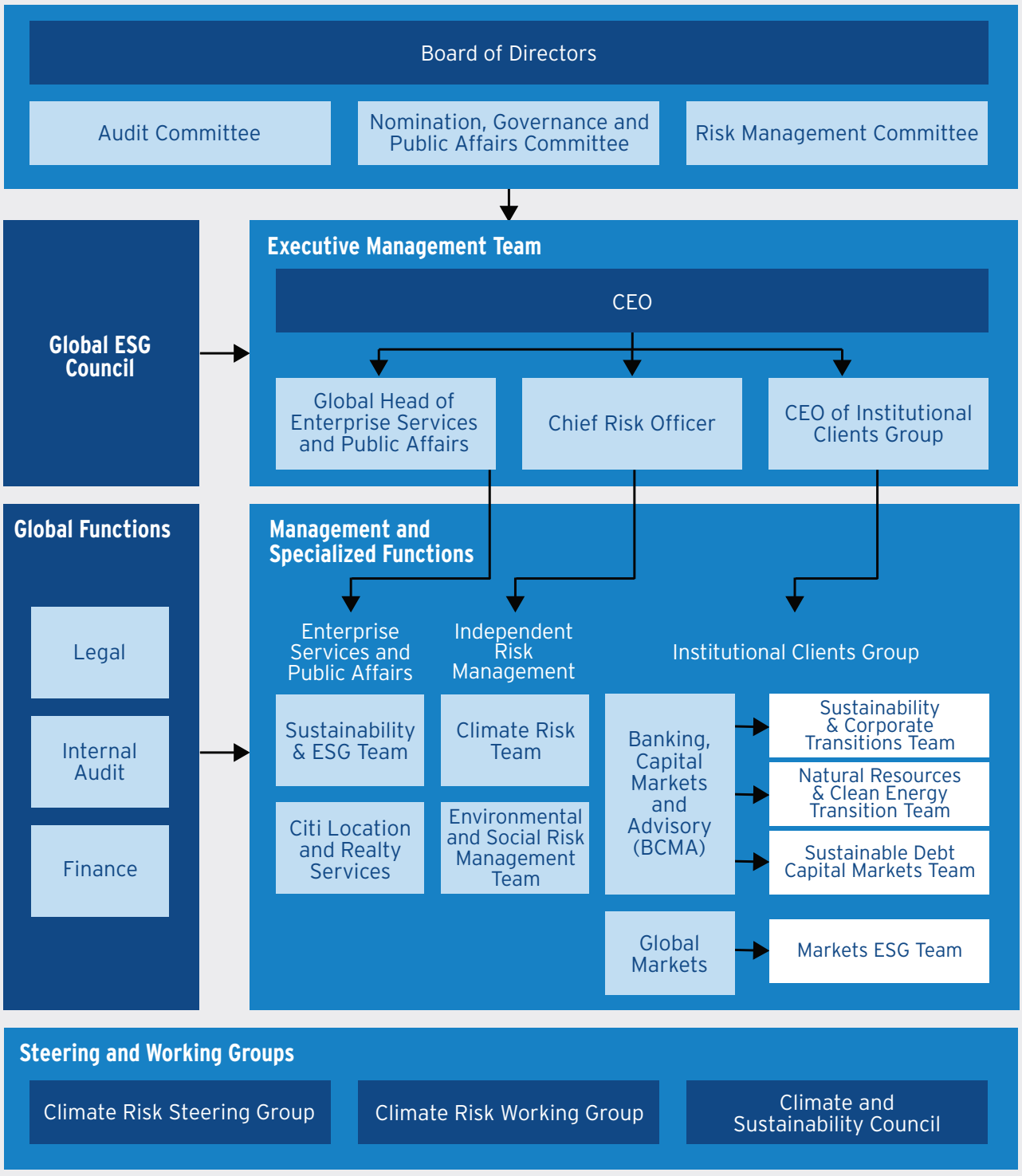
- Further built out our Clean Energy Transition (CET) team (formed in 2021 and expanded in 2022 to include Corporate Banking), which focuses on providing advisory and capital-raising services to companies involved in energy transition;

- Expanded capacity of our Sustainability & Corporate Transitions (SCT) team to cover the Asia Pacific (APAC) region with new team members based in Singapore and Australia, and formed an SCT Corporate Banking Team; and

- Established a new management position — the Head of Net Zero Operations — to provide leadership and expertise to help us reach our net zero operations commitment.

Our 2021 TCFD Report included a diagram which illustrated our climate governance structure. The following diagram is an updated version of last year's structure and reflects the changes Citi made since our last TCFD Report.

Climate Change Governance at Citi



Board Oversight

Citi's full Board of Directors has ultimate oversight of Citi's approaches to considering, evaluating and integrating climate-related risks and opportunities throughout the organization, including oversight of our Net Zero Plan.

The Board receives regular reports from key personnel regarding climate-related matters. Since 2021, the Board has received four reports regarding Citi's Net Zero Plan and progress towards Citi's climate-related goals. The Board also received a climate risk and net zero deep-dive tutorial from the Chief Sustainability Officer (CSO), Global Head of Climate Risk and the Global Head of Corporate Banking.

Three Board-level committees also have direct 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 and advising management on climate-related matters. The NGPAC receives reports from Citi's Chief Sustainability Officer on at least an annual basis. The NGPAC also reviews Citi's policies, programs and disclosure approach for sustainability and climate change issues, and oversees management's engagement with investors and major external stakeholders on sustainability and climate change matters. Since 2021, the NGPAC has received a number of meetings to review shareholder proposals (including ones related to fossil fuel financing and biodiversity) and received an ESG update in 2022. 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 2022, the RMC received updates on climate risk including the climate risk management framework, client-level climate assessment methodology and results of climate scenario analysis. 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, such as general compliance with legal and regulatory requirements and our internal disclosure controls and procedures. Ultimately, the AC has oversight over the controls and procedures related to Citi's ESG and climate-related reporting, including both voluntary disclosures and regulatory filings. In 2022, the AC held two meetings to review existing ESG disclosure controls and procedures. For more information on the roles and responsibilities of the AC, please see our AC Charter.

Details regarding our Board's and Board committee's oversight of climate matters, including the scope of the NGPAC's oversight of Citi's climate activities and performance and the RMC's oversight of risk policies and frameworks, are described in greater detail in our prior TCFD Reports and in these committees' charters on our website.

Management Responsibility

The role of assessing and managing climate-related risks and opportunities is a shared responsibility across Citi. Senior managers from the Institutional Clients Group, Risk Management, Enterprise Services and Public Affairs, Finance and Legal collaborate and work simultaneously to manage climate risk and implement Citi's Net Zero Plan.

In 2022, Citi's climate management governance structure continued to evolve as we enhanced our climate strategy to implement our Net Zero Plan and meet our global objectives. We updated and reorganized our climate management structure to respond to our growing understanding of climate-related risks and how to best achieve our climate goals. Accordingly, we added a new position, the Head of Net Zero Operations, in 2022 to provide leadership and expertise to specifically help us reach our goal of net zero emissions for our operations by 2030. This role works closely with the Citi Location and Realty Services team, which is responsible for monitoring and reporting on operational footprint goals. Also, in 2022 we realigned our Climate Risk team to be housed within our Enterprise Risk Management function to further embed climate within our risk management policies and practices. We continued to grow our Climate Risk team to increase the capabilities and climate-related expertise of this important management body. We also are combining our former Global Sustainability Steering Committee and Net Zero Task Force into the Climate and Sustainability Council to further operationalize our net zero and sustainability goals and facilitate cross functional collaboration across Citi's businesses.

In 2022, 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 on a near monthly basis to discuss sustainable finance progress, climate data governance and progress towards our net zero operations commitment. The ESG Council additionally reviewed our net zero financing progress, which included discussions of targets for new sectors and for the Energy and Power sectors.

Given Citi's global presence and the growing international shift from voluntary reporting to mandated climate-related disclosures, our climate governance has grown to further involve global functions including Legal, Internal Audit, Finance and Compliance. These global functions work with our management and specialized groups to assist in the development of our climate-related disclosures and prepare for emerging regulation applicable to our global entities.

Additional details regarding the management structure of our climate governance including our corporate, risk management, business units and operations and technology groups are described in greater detail in pages 12-14 of our 2021 TCFD Report.

Skills, Culture & Expertise

We understand that achieving our climate goals and implementing our Net Zero Plan requires the members of our governance teams to further develop climate-related expertise and capabilities. At Citi, we believe that the Board should be composed of individuals who are skilled in more than one area, with the ability to advise on a wide array of potential risks, and thereby contribute more broadly to the oversight of the firm. We therefore continue to educate our entire Board, as well as senior management, to build out climate-related expertise and capabilities. For example, as discussed earlier, since 2021, the Board has received four reports regarding our Net Zero Plan and a deep-dive net zero tutorial from seniors. Our senior management also continued to expand their climate expertise and capability to evaluate and manage climate risk and implement our Net Zero Plan through internal deep-dive presentations designed for specific banking teams and participating in internal and external webinars and roundtables.

Realizing our climate goals and implementing our Net Zero Plan also requires a skilled workforce with climate expertise. Citi is continuing to evaluate and develop employee training pilots on climate change. We have continued to offer our enterprise-wide training module on climate risk and have launched targeted foundational training for frontline banking teams. 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 members of the Executive Management team and senior management include progress on our Net Zero Plan and target setting, our $1 Trillion Sustainable Finance Commitment 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

- CEO of ICG, Chief Risk Officer, Global Head of Enterprise Services and Public Affairs, and Global Co-Heads of BCMA - 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 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 implementing our approach to climate change. These executives include the CSO, Head of Environmental and Social Risk Management (ESRM), Global Head of Climate Risk, Head of Net Zero Operations and the Global Head of Building Operations, whose team is responsible for our environmental footprint goals.

Strategy

This period of low-carbon transition presents new challenges and unique opportunities which we are embracing across the firm. As clients around the globe seek to both develop and take advantage of these opportunities, we want to be there to support their transition. To this end, we have re-organized key business teams to provide cross-sector expertise and financing. We are also focused on managing the risks that climate change presents to our firm through updated climate risk management processes as well as through our Net Zero Plan.

Net Zero Commitment

In 2021, Citi announced our commitment to achieving net zero GHG emissions by 2050. In line with this commitment, we have set interim targets that were developed in accordance with our net zero methodology, outlined below.

Step 1: Identifying Scope and Metrics	To start, we determine what emissions are relevant and appropriate to include for each sector and what parts, if any, of the sector portfolio should be excluded from the process.
Step 2: Establishing the Baseline	Next, we calculate financed emissions and emissions intensity metrics for each sector, and determine the appropriate type of baseline and target for that sector. Here, we determine what data sources to use and determine our data quality score.
Step 3: Identifying Decarbonization Pathways and Setting Targets	To understand the possible pathways from our baseline to our ultimate net zero target, we benchmark against available scenarios for each sector and decide on the appropriate one. Next, we identify the difference between our current portfolio emissions and where they need to be by 2030, under the selected decarbonization pathway. We then establish our interim 2030 targets.
Step 4: Developing Strategies for Achieving the Targeted Emissions Reductions	This next step involves the development of an implementation plan to achieve targeted reductions in each of the sectors. For corporate clients material to our net zero boundary, this entails a review of their decarbonization goals and plans together with more broadly engaging with them on their strategy and identifying transition business opportunities with respect to (for example) transition finance or advisory.
Step 5: Reporting and Verification	We report our emissions and information on our transition plan in our annual TCFD disclosure. This includes financed emissions attributed from our clients' Scope 1, Scope 2 and relevant Scope 3 emissions. This stage also includes continual work on improvements to our financed emissions data, such as using client engagement to increase and enhance publicly reported information.

Citi's Net Zero Transition Principles — Summary

In 2021, we drafted our Net Zero Transition Principles to guide us in our implementation of our net zero commitment and targets.

Net Zero Leadership – Set ambitious and transparent net zero targets aligned with climate science.

Focus on Transition – Partner with clients through their transition and assist clients' and governments' evaluation of carbon-intensive assets and subsequent retirement or divestment.

Social Responsibility – Strive to ensure Citi's transition to net zero is consistent with sustainable development objectives and assess the impact of our financing decisions upon lower-income communities and developing countries.

Client Transparency – Partner with clients to aid development of their decarbonization strategies, communicating clearly and transparently.

Constructive Engagement – Promote climate-related policies and regulations.

Disclosure – Annually report on Citi's progress and transition.

Net Zero Plan for New Sectors

Before detailing our Net Zero Plan for Auto Manufacturing, Commercial Real Estate, Steel and Thermal Coal Mining, this section briefly describes how we calculate our emissions baselines and key metrics utilizing the Partnership for Carbon Accounting Financials (PCAF) methodology and analyze various climate scenarios (including those published by the International Energy Agency (IEA) to understand the potential decarbonization pathways and establish emissions reduction targets.

Establishing our Net Zero Methodology

PCAF is an open collaboration of financial institutions working to develop a global carbon accounting standard for how financial institutions measure and disclose Scope 3 "financed emissions," or the underlying GHG emissions generated by the entities in which a financial institution invests or to which it lends money. Citi joined PCAF in 2020 and has drawn upon its methodology in calculating our financed emissions. For more information on PCAF, see page 45 of our 2020 TCFD Report.

In last year's report, we explained how we calculate absolute financed emissions metrics in two ways: (1) using committed funds (the capital available to a client for a certain use) and (2) using outstanding funds (the funds actually drawn down on such available credit), per the PCAF standard. For the purposes of understanding our absolute financed emissions, forward-looking emissions management and establishing absolute targets where relevant (for certain sectors), we rely on the first of these approaches — total committed exposure. This more accurately reflects the maximum amount that Citi has agreed to finance for these clients, although we provide both metrics for transparency. We have used the committed funds approach for all four new sectors.

Currently, there is no single, global, cross-sector data provider that adequately and consistently covers our needed scope for data to analyze emissions and assess physical and transition risks across our operations and portfolios. Instead, we obtain historic reported data and leverage certain third-party vendors, such as CDP (formerly, the Carbon Disclosure Project) and S&P Global Trucost, to supplement existing data to meet specific needs. We also use the PCAF emissions factor database when needed to fill data gaps.

PCAF has established a data quality hierarchy that allows Citi to score emissions estimates for all clients. Data scores range from 1 to 5, with a score of 1 signifying disclosed and third party verified emissions — the highest quality data — and a score of 5 signifying the greatest level of estimation based on sectoral economic activity emissions factors — the lowest quality data. Without client specific data, the sector-level estimations can result in inaccurate estimations of client emissions. We are continually working to improve the data that we use, which will in turn refine the calculation results that we report in our annual disclosures. Please see the "Metrics & Targets" section of this report for further details of our PCAF data quality score for each of our sectors.

Scenario Benchmarking

To better inform our decarbonization pathways and support the development of interim targets, we evaluate and use a variety of scenarios. Our NZBA commitment indicates that we use the UNEP FI Guidelines as the framework for aligning our portfolios with pathways to net zero by 2050. However, the UNEP FI Guidelines do not specify the scenarios to be used in target setting. For most sectors, Citi has used the industry-specific scenarios issued by the International Energy Agency (IEA) in its annual World Energy Outlook and interim special reports — notably, the IEA Sustainable Development Scenario (SDS) and Net-Zero Emissions (NZE) scenarios.[2] We continue to assess appropriate scenario benchmarks, such as the use of Carbon Risk Real Estate Monitor (CRREM) to benchmark our Commercial Real Estate portfolio. For more information on scenario selection, see page 22 in Citi's 2021 TCFD Report.

Auto Manufacturing

Our Auto Manufacturing methodology is focused on Original Equipment Manufacturers (OEM) producing light-duty vehicles, which are responsible for approximately half of transport sector emissions. Medium- and heavy-duty vehicles are expected to require different technologies as the transition to a low-carbon economy progresses; given these distinctions, Citi has at this time excluded medium- and heavy-duty manufacturers from its Auto Manufacturing boundary.

For the Auto Manufacturing sector, we used the PCAF methodology to calculate the absolute financed emissions using outstanding fund amounts and also ran the calculations using committed funds. For data sources, we utilized the following:

- S&P Global Trucost dataset
- Production data from LMC Automotive, a GlobalData Company

[2] For our Steel portfolio, we have utilized the RMI Methodology. Please see below.

- PCAF emissions factor database

Automotive production data included, among other items, the number of vehicles produced by each OEM, and was used to estimate tailpipe emissions where needed and to calculate the physical intensity metric. In determining whether to set an absolute- or intensity-based emissions target, we considered how a target for this sector may accommodate continued growth in this sector and growing demand for mobility, but in a manner that facilitates decarbonization. We have therefore set an intensity-based emissions target for this sector. We benchmarked against the NZE 2050 scenario to determine our decarbonization pathway and set our interim 2030 goal, in alignment with our already-established Energy target, which relies on the same assumptions for decarbonization across the two sectors.

Thermal Coal Mining

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[3]. We are using total committed funds to calculate our financed emissions baseline. We used S&P Global Trucost for emissions data and supplemented this with production and revenue data. Our data quality, per the PCAF hierarchy, scored 3.1 (out of 5), reflecting our reliance on production data (the availability of emissions data in this area is limited by a lower number of companies disclosing such information).

We have selected an absolute emissions target for this sector using the International Energy Agency Sustainable Development Scenario, OECD Pathway ("IEA SDS OECD") as guidance. When benchmarking against the IEA SDS OECD scenario, which is a more ambitious pathway compared to NZE 2050 due to expectations that OECD countries will decarbonize sooner than the overall global approach, the implied target reduction is 83.5% by 2030. We have decided to raise that thermal coal financed emissions reduction target to 90%. The ESRM Policy targets a 100% credit exposure phaseout by 2030 for companies deriving ≥ 25% of their revenue from thermal coal mining, and our Net Zero Plan sets an emissions reduction target of 90% for companies deriving ≥5% of their revenue from thermal coal mining.

[3] Our ESRM policy applies to companies that derive ≥25% of their revenues from thermal coal mining. Under the ESRM Policy, by the end of 2025, Citi will have reduced its credit exposure to thermal coal mining companies by 50% from a 2020 baseline; after 2025, we will no longer facilitate capital markets transactions or mergers and acquisition advisory and financing for these companies; and by the end of 2030, our remaining exposure to such companies will be zero.

Steel

Citi participated in a working group facilitated by the Rocky Mountain Institute (RMI) to design and develop the Sustainable STEEL Principles (SSP), a solution for measuring and disclosing the alignment of steel lending portfolios with 1.5°C climate targets. We have utilized the SSP Methodology to aid the scope, boundaries and target setting of this sector within our Net Zero Plan.

For the steel production industry, the SSP Methodology focuses on the calculation of emissions intensity per ton of steel produced within a fixed system boundary. It bifurcates the production of steel into two categories, each with their own unique emissions reduction pathway — ore-based (mined) and scrap-based (recycled). We have set a single emissions intensity target for the steel sector that accommodates the differentiated decarbonization pathways for primary and secondary steel producers.

The SSP Methodology covers Scope 1 and Scope 2 GHG emissions and some upstream, indirect Scope 3 GHG emissions from purchased products (such as emissions from purchased pellets) as well as the processing of sold products (such as emissions from steel rolling mills). Citi has aligned with this boundary for our absolute financed emissions reporting. Through this fixed boundary system approach and inclusion of some upstream Scope 3 emissions, the most carbon-intensive aspect of the iron value chain (use of product) is also captured under the SSP approach. Due to data availability, we are including — where more granular data is not available — all Scope 3 GHG emissions categories to calculate our absolute financed emissions.[4] We used S&P Global Trucost and CDP data for these calculations. Our initial data quality for this sector scored 2.1 (of 5) on PCAF's scale.

We aligned with the SSP Methodology's steel production North American Industry Classification System (NAICS) codes to identify which companies to include in our baseline assessment. We have calculated our absolute financed emissions for PCAF reporting using outstanding funds, as well as committed funds to align with our NZBA target boundary.

We intend to use CRU, the SSP's partner data provider, to calculate the steel portfolio Climate Alignment Score. Per the SSP climate alignment methodology, which measures annual alignment with the scenario, Citi will set a target to have a Climate Alignment Score of 0 in 2030. This equates to aligning with IEA NZE 2050 scenario, but at a more granular level (ensuring the portfolio is NZE-aligned for the primary and secondary steel production). As the Climate Alignment Score measures annual alignment to the scenario, year-on-year portfolio decarbonization is required to continue meeting the score. Given timing constraints on data delivery, we were unable to calculate Citi's Climate Alignment Score for year-end 2021 in time for publication. We plan to report this metric in a future disclosure.

[4] See GHG Protocol, Technical Guidance for Calculating Scope 3 Emissions at 8-10 (2013).

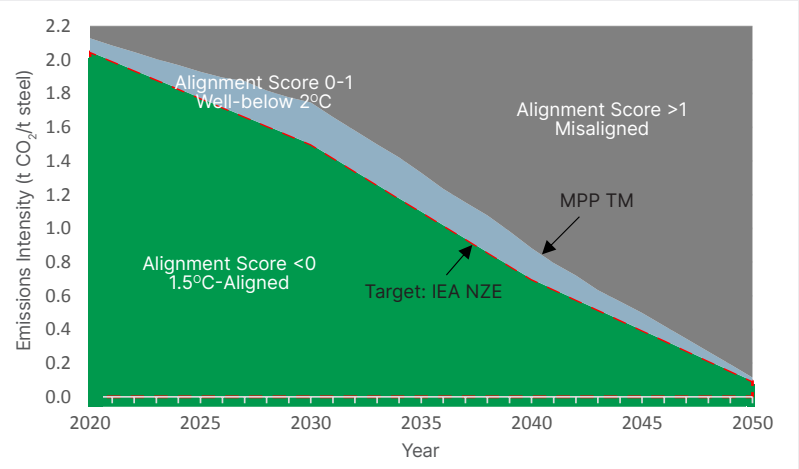
Sustainable STEEL Principles Methodology

The Sustainable STEEL Principles (SSP) are a turn-key solution for measuring and disclosing the 1.5°C alignment of steel lending portfolios. Designed to support the practical achievement of net zero emissions in the steel industry, they also provide the tools necessary for client engagement and advocacy.

The SSP is focused on reporting the emissions intensity of steel produced at the product level from a specific asset/individual sites. Emissions need to be reported in accordance with a defined fixed system boundary, irrespective of corporate ownership or control. The fraction of ore and scrap inputs used to produce steel should also be disclosed. The SSP provides steelmakers with a consistent method for reporting emissions from ore- and scrap-based metallic inputs and steel product and for using emissions data calculated from measured energy for specific processes within the supply chain.

The output of the SSP methodology is a portfolio level Climate Alignment Score, which indicates alignment to the IEA NZE scenario and the MPP Technology Moratorium scenario.

ALIGNMENT ZONE FOR A SAMPLE STEEL MAKER[5]



The SSP were based on the model of the Poseidon Principles – a framework focused on the shipping sector. Launched in 2019, the Poseidon Principles are now a global climate standard, with signatory banks representing approximately 65% of the global shipping finance portfolio.

As a member of the working group, Citi worked closely with RMI and corporations in the steel industry in the design and development of the SSP. RMI has now launched similar consortiums for the Aviation and Aluminum sectors, which Citi is also participating in to help develop climate-aligned finance approaches for each of these hard-to-abate sectors.

[5] Source: RMI Alignment Zone Briefing: https://climatealignment.org/wp-content/uploads/2022/06/alignment_zone_briefing.pdf, page 4.

Commercial Real Estate

For the Commercial Real Estate (CRE) sector, under our Net Zero Plan, we are focusing on direct financing and using the PCAF Commercial Real Estate asset class methodology. For our initial baseline and target, we considered North American clients given the regional variation of data quality. The PCAF Commercial Real Estate asset class methodology includes on-balance sheet loans specifically for the purchase and refinance of commercial real estate and investments in the same. In alignment with the PCAF Standard, our baseline emissions are comprised of a building's operational emissions, or Scope 1 and 2. We have included three loan portfolios for the baseline emissions and annual absolute emissions disclosure for this sector — Citi Community Capital (CCC), Global Wealth and Markets. However, we decided to not include CCC in our target setting process, so as to avoid any unintended incentives to reduce lending in this area.

In calculating our baseline, we have relied on publicly available data through CRREM, the EIA Commercial Building Energy Consumption Survey (CBES), Residential Energy Consumption Survey (RECS), and the EPA. These data sources, while regionally specific, still create a highly estimated data quality emissions footprint. We are continuing to develop strategies for ensuring that we have the sufficient quantity and quality of data, as measured against the PCAF data score hierarchy. This year, our PCAF data quality score for the CRE sector was 4.4 (out of 5), indicating the high degree of estimation used to calculate this footprint. Unlike other sectors, where we can rely on corporate emissions reporting to bolster our data quality, building-specific data (such as metered energy use and calculated emissions) are not as readily reported and in a consistent manner across regions. Therefore, improving the data quality of the CRE sector calculations will require a unique engagement approach that occurs in a different context than that of our corporate clients. As we refine the data in the coming years, we will continue to assess appropriate target pathways for the portfolio.

For the CRE sector, we have set an intensity target, highlighting the projected sectoral growth decoupled from GHG emissions, and acknowledge that decarbonization of the CRE sector will largely rely on the decarbonization of the Power sector (a primary source of building emissions is purchased electricity). We have benchmarked against the U.S. CRREM scenarios for property types relevant to the current portfolio.

Next Steps

We recognize that there is no one-size-fits-all approach to achieving 1.5°C-aligned targets across sectors. As illustrated in the Achieving 2030 Targets graphic on page 25, there are a variety of levers that we expect to be needed to achieve our targets. Client engagement remains the priority, and as we proceed with our client reviews, we will look to identify and communicate expectations we see for our clients.

Our baseline emissions calculations and sector target setting will continue to evolve as we expect our access to quality data to increase. We plan to continue progressing through our Net Zero Plan for the Auto Manufacturing, Commercial Real Estate, Steel and Thermal Coal Mining sectors; notably, developing strategies to achieve our targets and beginning reporting and verification of our progress. In 2023-2024, we intend to assess the materiality to calculate baselines and set targets for our remaining sectors, including Agriculture[6], Aluminum, Aviation, Cement, and Shipping.

[6] Assessment of the Agriculture sector will take into account the impact of food security considerations as well as social impacts.

Emissions Data Lag

The quality and availability of climate-related data continues to be a significant challenge. At the time of the analysis disclosed in this report, the data available for calculating financed emissions and emissions intensity and measuring progress was nearly two years old, given the availability of the data at the time. For example, the 2030 targets and baselines set for new sectors — Auto Manufacturing, Commercial Real Estate, Steel and Thermal Coal Mining — were developed using 2020 emissions data, which given corporate reporting timelines was the most recent data available at the time we began the analysis. We also used 2020 emissions data for this year's annual reporting on Energy and Power portfolios. Our data team is working with leading aggregation vendors of corporate disclosure on environmental metrics; however, the lag on reporting and collection remains difficult to address. Therefore, we currently face a data mismatch — we are using 2021 financial data to represent our credit exposure and the clients' financials, but are pairing that with 2020 emissions. We hope that emissions data will continue to improve and that the data lag will diminish as disclosure regimes evolve.

Given the current data availability lag across relevant sectors, we have used 2020 emissions data across our calculations for consistency purposes, except for the project finance portfolio, where we are fully estimating emissions based on 2021 project production data. Given the current data availability lag, it is possible that our progress against our targets will be similarly delayed, potentially delaying our confirmation of any progress against such targets.

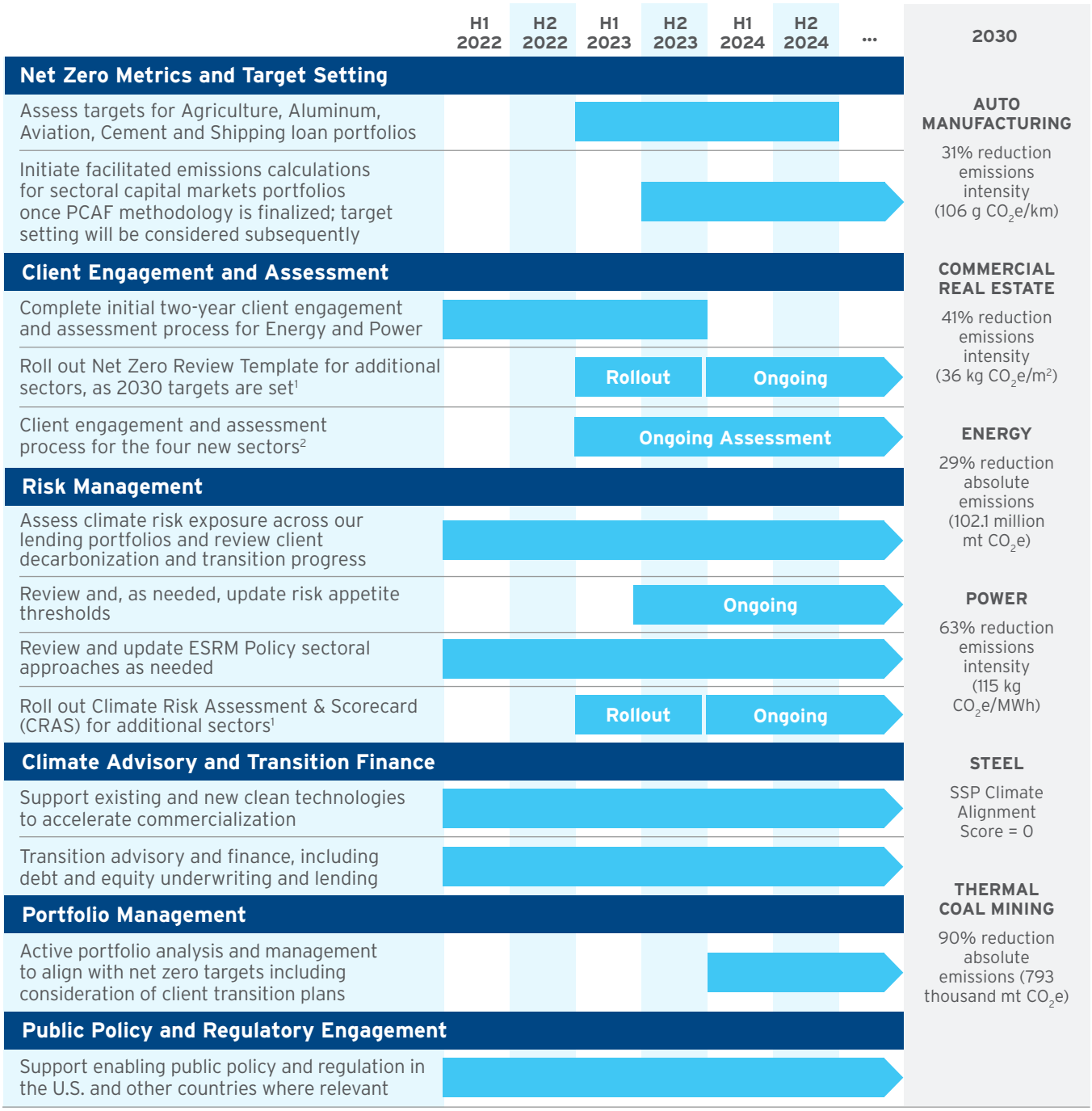
Citi plans to undertake reviews of our targets after five years. We will continue to be transparent about the impacts of the data lag while moving forward with our climate commitments, notwithstanding this constraint. We believe that increased attention to climate disclosure, including mandatory disclosure in many jurisdictions, will ultimately reduce the data lag, enabling our reported results to be more timely and reflect current progress.

Net Zero Plan – Energy and Power Update

The first step in the implementation of our Net Zero Plan for the Energy and Power sectors has been to increase engagement with our clients to better understand their emissions profile and transition plans, a process that we anticipate will continue through the end of 2023. Last year, we began extensive efforts to review our Energy and Power client base, collect available emissions data, establish a baseline for financed emissions for these two sectors and set a series of goals to reduce our financed emissions footprint by 2030. Our initial focus consists of engaging with our clients across a broad range of key considerations including: GHG emissions (as disclosed or via third-party estimations where not disclosed), GHG emissions reduction targets, climate risk scoring, decarbonization/transition plans and other considerations.

Achieving 2030 Targets

Below, we provide an update to our timeline indicating the steps we are taking to achieve our 2030 targets, including the new sectors.



[1] Refer to page 30 for further details on the Net Zero Review Template and page 41 for further details on the CRAS.
[2] New sectors include: Auto Manufacturing, Commercial Real Estate, Steel and Thermal Coal Mining.

A Note on Our Progress Toward 2030 Targets

Climate-related data and methodologies continue to evolve and improve. For data from 2019 to 2020, the most recent emissions data available at the time of our analysis for our 2020 and 2021 financed emissions footprints, Citi found that more companies reported their climate-related data (for example, Scope 1 and 2 emissions data disclosure in our Energy portfolio increased 2% by exposure). This has resulted in improved PCAF data quality scores for Energy and Power financed emissions from 2020 to 2021. As more clients directly reported their emissions, we were able to reduce the number of estimates we utilize when calculating our emissions metrics; our scores are higher as disclosures and verified data become available. However, climate-related reporting continues to fall short of the necessary quality, quantity and consistency to permit comparability across clients, industries and sectors, which underscores the necessity of client-level engagement.

With respect to financed emissions, a number of important variables create year-to-year volatility in reported figures and distort meaningful analyses of client decarbonization progress. These can include equity market volatility, transitory spikes or falls at year-end in committed client capital, data transitioning from estimates to reported actuals and a client's own reporting consistency or cadence. An example includes material equity market value fluctuations in the enterprise value of public companies, which may impact Enterprise Value Including Cash (EVIC), and subsequently, the results of PCAF calculations.

We believe, therefore, that our stakeholders should assess our progress using a number of metrics. This includes PCAF financed emissions calculated with committed funds, normalized PCAF results that control for EVIC fluctuations, and physical intensity, financial intensity and data quality scores, among others. However, we also expect that as these challenges are systemically addressed and data gaps are closed, the year on year metrics will become more meaningful to determining progress. Our financed emissions data for the various sectors are disclosed in the "Metrics & Targets" section of this report.

Carbon Credits

Citi intends to meet our 2030 financed emissions targets through real reductions in financed emissions. Our priority is to help our clients as they seek to reduce emissions. We do not plan to purchase carbon credits ourselves to reach our interim targets. However, we recognize that some activities, such as agricultural and industrial processes and energy-related activities, may not achieve absolute zero emissions by 2050. These industries provide products and services that are important to society and are likely to remain relevant in the future. In these instances, we intend to focus on credits that are additional, certified and restricted to carbon removals. Currently, however, removal technology remains largely limited and costly and therefore, cannot be relied on as an alternative to cross-sector emissions reductions. The market for nature-based removal credits is somewhat more developed, and we see important co-benefits to biodiversity and emerging markets development as this market grows.

For our operational emissions, we remain firmly focused on our 2030 emissions reduction goal. We also recognize the potential of the voluntary carbon markets to support clean technology and nature. We intend to begin purchasing voluntary credits to match our Scope 1 GHG emissions for 2022 and beyond. These credits are being purchased to complement our 100% renewable electricity commitment, which we have met by purchasing renewable electricity attributes, where feasible, in the country where the electricity is used by facilities. Where it is not feasible to source renewable electricity within country, we are purchasing an equivalent amount of renewable electricity in regionally aligned markets to further support renewable electricity markets. We will continue to evaluate the availability of removal credits to offset any remaining emissions as we near our 2030 operational target.

Climate Opportunities

Sustainable Finance

In April 2021, Citi established its $1 Trillion Sustainable Finance by 2030 Commitment, comprising of environmental and social criteria. Our commitment aligns with the agenda of the UN SDGs, including affordable and clean energy through investment in industries, companies and technologies that will ensure the transition to a low-carbon economy. The environmental criteria within the goal are intended to support innovation and collective action through the financing and facilitation of a wide array of climate solutions, such as renewable energy, clean technology, water conservation and sustainable transportation and social criteria such as affordable housing, economic inclusion, food security and healthcare. For further detail on our $1 Trillion Sustainable Finance Commitment, please see the "Metrics & Targets" section of this Report.

Clean Energy Transition

To address the needs of clients involved in energy transition and sustainability, Citi has established a dedicated Clean Energy Transition (CET) group. CET offers the suite of Citi's corporate and investment banking products and services to help companies involved in energy transition execute on their business plans and achieve scale. CET is part of Citi's Natural Resources & Clean Energy Transition (NRCET) group that also houses Citi's Energy, Power and Chemicals teams that focus on advising corporate clients on strategic matters including energy transition.

Related to our focus on new climate technology opportunities, Citi has acted as an agent and/or advisor in capital raising for early stage and growth companies. Citi has significant experience in the advisory and capital raising space with respect to the energy transition in the form of private raises for this purpose. For example, Citi has helped raise $3 billion in capital for companies in this market during 2022.

Clean Energy Tech & Meeting Energy Demands

We believe that, in some circles, the net zero dialogue has focused too much on driving down emissions from high-carbon sectors, such as Oil and Gas, and not enough on the climate technology solutions that will be required to reduce emissions while continuing to extend access to energy and to support emerging markets. It is clear from 1.5°C climate scenarios that, in order to drive down emissions, we will need to electrify vast segments of our economy, such as transportation and the heating and cooling of our homes. Improving energy efficiency will also be essential. Electric vehicles will need to be the dominant type of new vehicle sold by approximately 2030. By 2050, electricity will need to be predominantly renewable, such as wind and solar, and nuclear power will also be important. And, finally, there will be a growing market and need for sustainable fuels, hydrogen and carbon capture, utilization and sequestration (CCUS). Transition of the energy sector is not just about reducing emissions, but meeting energy demands of today and tomorrow.

The Effect of the U.S. Inflation Reduction Act on Citi's Finance Activities

In August 2022, the U.S. enacted the Inflation Reduction Act ("IRA"), which allocates $369 billion to spur investment in businesses and technologies that will facilitate and accelerate decarbonization. In addition to extending tax credits for renewable energy development, this major piece of climate legislation introduces new tax credits and incentives to support: energy storage; electrification of transportation; building electrification and energy efficiency; domestically produced renewables equipment; low-carbon hydrogen; carbon capture utilization and storage; methane emissions reduction; bio-fuels; and nuclear power. This Act represents unequivocal prioritization and increased momentum for emissions mitigation and reduction technologies. Citi is closely following the implementation of the IRA and recognizes it could allow more clients to access tax incentives than have historically been able to do so. We are evaluating financing opportunities as guidance becomes available with the objective of assisting our clients and accelerating the transition to a low-carbon economy.

Examples of Client Engagements in 2022

esVolta

Generate Capital, PBC ("Generate"), a leading sustainable infrastructure company that owns and operates more than 2,000 assets globally, announced its acquisition of esVolta, a leading developer, owner and operator of utility-scale battery storage projects around North America. Citi served as sole financial advisor to esVolta and ran a competitive sales process for them in a record acquisition year for battery storage companies. esVolta's portfolio includes over 1 GWh of operational and utility-contracted projects in the U.S. and Canada and has additional energy storage projects including across Arizona, California, Colorado, Montana, New Mexico, Texas and Washington in its development horizon. By adding a growing team of experts with a pipeline of attractive projects, this acquisition enables Generate to expand into the market of large-scale battery storage projects that support the power grid.

GIC Private Ltd.

In April 2022, GIC Private Ltd. ("GIC") agreed to invest and co-lead the private capital raise for Climeworks AG, one of the most advanced and pioneering industry players in direct air capture ("DAC") technology. GIC is a leading global investment firm established in 1981 to secure Singapore's financial future and serves as the manager of Singapore's foreign reserves. Climeworks builds and operates DAC facilities, which capture CO_2 directly from the air and store it permanently underground. Climeworks operates the world's first and only commercial-scale DAC plant, in Iceland. With total proceeds of CHF 600 million ($650 million USD) raised, the investment supports Climeworks with the capital to unlock the next phase of its growth, scaling direct air capture up to multi-million-ton capacity and implementing large-scale facilities. Citi served as the sole financial advisor to GIC on this capital raise.

Engagement

We work with new and existing clients across varying stages of transformation in their strategies and goals as they navigate the transition to a low-carbon economy. When we issued our 2021 TCFD Report, which included our initial net zero targets, we spent significant time explaining our methodology to clients and how we intend to engage with them. Many of our clients are still in the initial phases of establishing and meeting their decarbonization goals, although we continue to be impressed with many of their unique and creative decarbonization strategies that are optimized for their distinct business models.

One of our ongoing engagement priorities is to identify clients with high emissions footprints and engage in discussions on climate strategy, such as emissions reductions plans. To aid our engagement efforts, we have developed a Net Zero Review Template to pull together information on our clients' profiles (see below).

Our conversations related to the Template, are only the jumping-off point for further engagement, strategic dialogue and the delivery of Citi's capabilities to help empower clients in achieving their goals.

Citi is also engaging with those clients who are not yet disclosing their own emissions and encouraging them to start doing so. Disclosure of emissions will be needed to understand our clients' current emissions profiles and transition opportunities and to inform future business decisions.

Net Zero Review Template

In 2022, we began piloting a Net Zero Review Template. Corporate clients with material emissions relative to our baseline in the Energy and Power sectors are reviewed, with a conclusion as to the strength of their transition plan. Where we identify clients that have important gaps, our intent is to work with them on their own transition strategies.

The Template shares some of the same inputs as the Climate Risk Assessment & Scorecard (CRAS) (described further on page 41), including absolute emissions and emissions intensity data as well as disclosed targets. The Template also includes the climate score output from the CRAS. The Template includes questions on a company's decarbonization plan, including factors such as governance, scope (what emissions categories are included), capital expenditure plans and asset retirement schedules (where available/applicable), among others.

We plan to have Net Zero Review Templates for additional sectors as interim net zero targets are set. We also plan to track client progress once baselines per sector are established. A sample of the considerations within the Template are provided below, but we expect that the Template may be further refined after the pilot stage.

Net Zero Review Template Summary: Inputs and Considerations

Business Metrics	❒ Revenues, returns and historical client relationship ❒ Future business opportunities
Company Decarbonization Plan	❒ Stated decarbonization plan or strategy ❒ Targets applicable to sector, target years and coverage (Scope 1, 2 and 3) ❒ Governance, including Board oversight and ties to remuneration ❒ Assessment of strengths and weaknesses of transition plan
Emissions Data	❒ Scope 1, 2 and 3 absolute emissions and emissions intensity ❒ PCAF data quality score (indicating the extent to which emissions are disclosed or need to be estimated) ❒ Emissions assurance status
Output from Climate Risk Assessment Scorecard	❒ Overall score and score breakdown
Capital Expenditures	❒ Insight regarding capex allocated towards transition and towards traditional businesses
Other Considerations	❒ Emerging markets presence ❒ State-owned enterprise ❒ Energy security factors ❒ External benchmarks
Citi Net Zero Metrics (Sector-Specific)	❒ Attributed absolute emissions, emissions intensity and climate alignment score for relevant sectors
Output	Assessment of strengths and weaknesses incorporating perspectives from client engagement

Biodiversity

In last year's report, we highlighted some of the issues intersecting climate including biodiversity and nature. Citi remains committed to expanding our understanding of the dynamics between climate and biodiversity and, to that end, engaged in the early development process for the Taskforce on Nature-related Financial Disclosures (TNFD) as a member of the initial Informal Working Group. We now serve as a member of the TNFD Forum. Citi has closely reviewed biodiversity risks and impacts under our ESRM Policy since its 2003 inception, first focusing on project-related financing and later adding sector-wide reviews to evaluate alignment with international standards in management practices to avoid, minimize and mitigate potential biodiversity impacts.

Citi's Global Data Insights (CGDI) team has also been exploring the biodiversity data landscape and has begun to consider how we can integrate such information across our business. The CGDI team has been accepted as part of TNFD's Data Catalyst Group, which was launched in July 2022 to convene market participants with high-quality, trusted data on biodiversity risks to respond to the lack of adequate, decision-useful biodiversity data.

Avoiding Deforestation

An important part of the intersection between climate and biodiversity is avoiding deforestation. To that end, Citi remains committed to our long-standing ESRM Policy, which, since inception, has included a commitment to not engage with companies known to be in violation of local or national forestry and logging laws. We require our forestry clients operating in tropical forests to be members of the Forest Stewardship Council (FSC) and to pursue FSC certification (an assurance that products come from forests that are responsibly managed, providing social, economic and environmental benefits). This also includes the establishment of management systems consistent with the principles of No Deforestation, No Peat and No Exploitation (NDPE). We annually review our forestry clients to confirm their ongoing commitment to these principles.

Citi is also a member of the Roundtable on Sustainable Palm Oil (RSPO) and requires all downstream palm oil clients (processors and traders) to become members of the RSPO. These clients must commit to a time-bound action plan to achieve 100% RSPO certification within three to five years of becoming a Citi client. Citi's ESRM team monitors progress annually on alignment with RSPO principles and criteria to ensure palm oil clients' operations are consistent with the principle of NDPE. We evaluate our clients' identification and preservation of high conservation areas (including peatlands and high carbon stock forests) and implementation of best practice fire prevention to avoid causes of deforestation.

In early 2023 Citi updated its ESRM Policy to incorporate additional sector-specific requirements for clients active in soy and beef production in or sourcing from sensitive ecoregions of Latin America. Soy clients that are identified as producing in or sourcing from the above ecoregions will be reviewed for membership and certification with the Roundtable on Responsible Soy (RTRS). Beef clients that are identified as producing in or sourcing from the above ecoregions will be reviewed for clear policies and management plans that demonstrate commitments to 100% traceability of their supply chain in sensitive ecoregions, in alignment with the Accountability Framework – a toolkit based on international norms and industry best practice for companies to prevent deforestation driven by the production of agricultural commodities, including livestock, in their operations and supply chains.

Climate-Related Data

One of the many challenges Citi and other companies face in developing and implementing net zero plans concerns the availability and quality of data, both of which present major limitations. Although it is necessary for us to utilize imperfect information in the implementation of our Net Zero Plan, given the urgency of climate change, we continue to advance our data improvement work with the intention of incorporating additional insights from such data and analyses as they become available.

Climate Data Utility

One aspect of our data improvement work is to build an internal, central data hub of climate-related data. As part of our firmwide climate strategy, the central data hub will support various needs across our businesses, such as climate stress testing, PCAF calculations and credit risk processes. To aid our efforts,

we utilize software that connects to an external transition risk model and a data assimilation tool that includes data from a range of leading vendors.

Additionally, Citi has developed a broader "ESG Insight Platform," which is a database of over 6,000 public companies' ESG profiles, aggregated from third-party data providers, designed to make robust and consistent data available across the firm.

Data Governance

Citi is implementing a number of data governance processes to support our retail and corporate businesses. These are being led by various working groups, including the Climate Data and Analytics Working Group. This group brings together colleagues from across the firm who have business requirements or responsibilities for climate data and analytics and serves as a forum to share ideas or collaborate on these issues. The CGDI team provides the Working Group with regular updates on the developments of our climate data hub design, data sourcing for sectors in the context of financed emissions calculations, as well as transition risk and physical risk model vendor evaluations. The CGDI team also owns the primary data governance of all inbound and ingested environmental data, and this is guided by the enterprise-wide data standards.

Climate Policy and Regulatory Engagement

Constructive engagement with the public sector is one of our Net Zero Transition Principles, as we know that achieving net zero will also require public policy and technology solutions. We continue to engage with regulators and policymakers — locally, nationally and internationally — to further efforts regarding climate policy and regulation. In 2022, Citi's climate-related engagement priorities in the U.S. included the SEC proposed climate disclosure rule, for which Citi submitted a comment letter to the SEC (see page 36), the tax incentives for climate solutions included in the Bipartisan Infrastructure Law and the Inflation Reduction Act; proposed principles for the risk management of climate-related financial risks issued by the Basel Committee on Banking Supervision (BCBS) and by U.S. regulators, for which Citi submitted a comment letter to the BCBS; and global harmonization of climate-related disclosure regulation. Citi is also a member of trade and business associations that may lobby on different issues, including climate change, but these associations do not necessarily not necessarily represent Citi's positions on every issue. Below is a summary of certain trade and business associations that Citi is a member of, and how Citi has engaged with them on climate-related issues.

CLIMATE-RELATED ENGAGEMENT WITH TRADE ASSOCIATIONS

Trade Association	About	Climate Change Position	Areas of Influence and Alignment
Business Roundtable (BRT)	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. Business Roundtable 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 degrees Celsius above preindustrial levels, consistent with the Paris Agreement. In the U.S., the Roundtable supports a comprehensive, coordinated and market-based approach that includes 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.
Bank Policy Institute (BPI)	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 physical- and transition-related risks of climate change on banks' businesses and operations.	Citi is a member of BPI's Climate Working Group and has engaged on BPI's position on the SEC proposed climate disclosure rule, climate-related financial risk and climate scenario analysis.
Financial Services Forum	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.	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.	Citi is a member of the Climate Risk Working Group and provided input for its position on climate disclosure regulation.

continued on next page

Trade Association	About	Climate Change Position	Areas of Influence and Alignment
Global Financial Markets Associated (GFMA) and affiliates SIFMA, AFME, ASIFMA	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.	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.	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.
Institute of International Finance (IIF)	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.	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 to advocate for sustainable finance policies and solutions that are well-aligned internationally and prioritize prudent risk management, global financial stability and economic growth.	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.

continued on next page

Trade Association	About	Climate Change Position	Areas of Influence and Alignment
U.K. Finance (UKF)	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.	A longstanding proponent of climate responsibility being brought into the mainstream of the management and supervision of banking and finance. Delivering the Net Zero Transition is a Board-agreed priority for the organization. A "supporting institution" of the NZBA, U.K. Finance provides advocacy support, knowledge-sharing and training for banking and finance firms, embedding climate responsibility into their governance and strategy in support of whole economy transition to Net Zero by 2050 and supports the establishment of clear definitions on ESG reporting within a globally aligned framework.	Citi is a member of UKF's Sustainability Committee, which oversees its policy work related to sustainability disclosure, product labeling, green finance and climate change.
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.	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.	Citi participates in the Task Force on Climate Actions and Center for Capital Markets Competitiveness. Citi also helped form an informal Climate Solutions Working Group of Chamber members who are climate leaders and want to engage collectively with the Chamber to discuss where its climate policy and litigation activities are not aligned with members' positions.

Over the last year, Citi has engaged with a number of regulators to discuss climate strategy and regulatory approaches/developments, including several informal discussions with the SEC regarding net zero commitments and the importance of reliable and quality data.

SEC Proposed Rule on Climate-Related Disclosures

In March 2022, the SEC released a proposed rule — The Enhancement and Standardization of Climate-Related Disclosures for Investors — that would require registrants to include certain climate-related information in SEC filings. Citi would be subject to the proposed rule.

We provided comments on the proposed rule, showing support for the overall goal of providing

consistent, comparable and reliable decision-useful climate disclosures. Additionally, we noted our support for leveraging existing voluntary disclosure frameworks, particularly the TCFD recommendations, alongside the inclusion of GHG emissions reporting requirements for Scopes 1 and 2 and, where material or part of a registrant's specific emissions reduction targets, Scope 3, with appropriate safe harbor provisions.

Our comments also identified four areas of concern with the proposed rule and offered suggestions, based on our experiences, to make the final rule more decision-useful for investors and, importantly, workable and effective for issuers to implement. These four areas were:

1. **Timing**: We asked the SEC to provide an extended and staggered timeline for implementation of the final rule's requirements, to allow for the significant operational readiness necessary for compliance. We also sought a push back of the adoption timeline for reporting Scope 3 disclosures, due to industry-wide concerns about data quality and the climate data lag.

2. **Materiality Thresholds**: We recommended that the SEC consider removing the line-by-line disclosures of the proposed requirements under Regulation S-X and to adopt the established materiality criteria currently used for financial reporting.

3. **Reporting Clarifications**: We asked the SEC to clarify or revise the materiality and categorization requirements for Scope 3 reporting and the applicable safe harbor protections.

4. **Other Revisions**: We sought clarification from the SEC with respect to the disclosure requirements surrounding scenario analysis, Board climate expertise and historical GHG emissions reporting.

A copy of our comment letter can be found here.

Challenges Faced

It has been nearly two years since we first announced our net zero commitments, and we are continually facing new and different challenges as we advance our climate strategy and Net Zero Plan. In 2021, we identified the following challenges:

- The availability and quality of data ➔ Much of the raw data we use in our analyses is based on estimated or unverified figures. Citi remains committed to advancing our data quality in parallel with our decarbonization efforts and is engaged with the leading data vendors and industry groups to try to improve overall data quality. The lag in third-party disclosure of climate data also continues to be a challenge, as it can significantly lag typical financial reporting information and disclosures.

- The translation of targets into processes to guide our financing and other business operations to

drive towards our targets ➔ We are developing internal processes in several areas, particularly in identifying metrics and performance indicators to assess our clients' transition progress as well as our own related progress in achieving the targets in our Net Zero Plan, while simultaneously managing our level of risk and returns on our portfolios.

- The transition obstacles faced by developing countries are often more complex ➔ Less robust socioeconomic institutional capacity constrains implementation of low-carbon transition pathways across emerging markets. Such obstacles include, for example, poor, inconsistent and delayed data as well as less developed regulatory schemes for the monitoring and reporting of emissions. This challenge is compounded by the lack of global regulatory and policy alignment on climate and other sustainability matters. Finally, developing countries often have more limited capacity to transition due to unequal and challenged access to climate finance. They also frequently lack the investment capital necessary to fund adaptation and mitigation solutions, including renewable energy and technology-driven clean energy alternatives.

Challenges regarding the availability and quality of climate-related data are more evident as we set targets for additional sectors, given the disparity of data quality and quantity across different sectors. Given our reliance on data that is based on estimated or unverified figures, precision is difficult, and this creates challenges for many of our climate-related activities, from scenario analysis to tracking progress towards our financed emissions targets. However, as the availability and quality of data improves, we will review and update our Net Zero Plan and remain as transparent as possible with respect to this evolving landscape.

Current geopolitical events have underscored the fact that the energy transition is unlikely to be smooth and linear. The Russian invasion of Ukraine in February 2022 resulted in volatile energy markets and widespread focus on energy security concerns and reliance on fossil fuels. At Citi, as our clients respond to the current energy market, we understand that our transition plans may need to adapt to accommodate energy security and access to energy needs, while also facilitating the transition to clean energy. For example, actions aimed at ensuring global energy supply could mean the financed emissions footprint in our portfolio may grow before it shrinks. Our net zero strategy prioritizes the focus we place on creating a responsible transition, and addressing these needs is not mutually exclusive.

Risk Management

We continue to consider and integrate climate-related matters into our overarching risk management framework and processes and, to that end, collect and analyze relevant data to support this effort. Over the past year, Citi has continued to develop tools to assess climate risk and engage our clients with respect to climate risk and transition plans. We have also continued building risk identification, management and scenario analysis capabilities.

Climate Risk Management Framework

This year, we concluded the development of our Climate Risk Management Framework (CRMF). The CRMF is designed to promote a globally consistent approach to managing climate risk across Citi. The CRMF details the governance, roles and responsibilities and principles to support the identification, measurement, monitoring, controlling and reporting of climate risks. The CRMF is progressively being embedded into business-as-usual risk management processes across the bank as well as relevant policies and standards. It is expected the CRMF will evolve over time to reflect new tools and processes as well as industry standards and best practices in climate risk management.

Refining Risk Identification and Understanding Risk Exposure

Citi continues to enhance its focus on climate risk driven by the increasing significance of strategic, reputational and financial risk considerations, including embedding these considerations into Citi's overarching risk management approach.

Citi continues to view climate risk as a crosscutting risk under our Enterprise Risk Management Framework, which can manifest in each of the risk categories in our risk taxonomy. Citi will continue to review this risk designation as we develop our climate risk management approach. The table below indicates the impacts that climate risk drivers can have on our key risk categories.

Citi has developed an internal risk identification process in which it quarterly evaluates its top risks, which are defined as risks that have the potential to produce an impact large enough to threaten Citi's ability to maintain any of its core operations to serve its customers, Citi's earnings, liquidity, capital, or operating model, or Citigroup's or Citibank NA's risk profile. Climate risk was recently designated as a top risk through this process. In light of the variable nature of this process, however, we may not report on this internal classification on a forward basis but will continue to enhance our disclosure on how we manage our risk and the areas that present the most significant climate risk in future TCFD reports.

Risk Category	Definition	Climate Drivers
Credit	Risk of loss resulting from the decline in credit quality (or downgrade risk) or failure of a borrower, counterparty, third party or issuer to honor its financial or contractual obligations	Climate drivers can have an impact on an obligor's business model, sources of income/revenue, spend/cost and value of assets, resulting in the reduced ability to pay and value of the collateral as well as increase in the utilization of credit facilities
Market	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	Climate drivers, or change in expectation of drivers, can result in a change in market value of the bank's held to maturity investments, or an increase in the volatility of market variables including interest rates, FX rates, equity and commodity prices and credit spreads, which can result in losses
Liquidity	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
Strategic	Risks to current or anticipated earnings, capital or franchise or enterprise value arising from poor, but authorized business decisions (in compliance with regulations, policies and procedures), an inability to adapt to changes in the operating environment (e.g., economic, regulatory or legislative, competitive), or other external factors that may impair the ability to carry out a business strategy	Climate drivers can have an impact on the bank's ecosystem (i.e., suppliers, customers, competitors, investors and society) through changing economic conditions, regulations, low-carbon products and preferences and legal action, which can lead to the need to make strategic shifts
Operational	Risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events	Climate drivers can affect the bank's locations (e.g., damage, inaccessibility), employees (e.g., productivity, ability to commute) or operations of third-party providers resulting in disruption of normal business operations. Climate drivers can also exacerbate several sub categories 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 reporting requirements, data management risk (e.g., due to fragmented data and solution providers), model risk (e.g., challenges in validation of complex and non-traditional climate models).
Compliance	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) and increased use of external analytics providers, which could all result in fines, civil money penalties, payment of damages and the voiding of contracts
Reputation	Risk to current or projected financial condition and resilience arising from negative public opinion	Climate drivers can increase reputational risk if Citi is perceived not to be meeting, sufficiently progressing or providing sufficient transparency on its climate-related commitments

To deepen our understanding of the sectors or areas of our business that are most sensitive to climate risk, we have established a heatmap framework. We have applied our heatmap framework to our corporate and public sector portfolios and Citi's own facilities. Additionally, through client assessments and scenario-analysis exercises, we continue to identify additional areas of the portfolio that may be more vulnerable to climate risks (physical and transition).

This year, in addition to our sectoral heat map, we expanded our climate risk heatmap to cover our largest country exposures for internal use. For transition risk, we reviewed countries' emissions per capita and reliance on fossil fuel industries. For physical risk, we assessed countries' exposure to acute and chronic weather events. Potential mitigants (such as level of human development, government commitments and government fiscal space) were also used to weigh the individual climate risk factors. Assessments such as these are integral to Citi's continued climate risk identification efforts.

Climate Risk Assessments

To help Citi understand the climate risk profiles of our individual corporate clients, we have created a tool called the Climate Risk Assessment & Scorecard (CRAS). Our goal is to progressively embed this tool into our risk management processes to help inform our decision-making moving forward.

The CRAS was designed to identify the most material climate risks our clients face and the management plans in place for adaptation and mitigation of those risks, using both quantitative and qualitative inputs. The tool assesses clients' vulnerability to climate 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, our own sector heat maps and certain climate risk metrics. Points are attributed based on vulnerability and mitigation considerations as well as alignment with best practices, and are aggregated into a final climate score. This final score captures a company's degree of vulnerability from climate-related financial risks and the extent of a company's preparedness to mitigate these risks through its strategy, governance and disclosures.

The development of the CRAS has been a joint effort between Risk Management and BCMA and has been an iterative process. We have successfully completed pilot programs using the CRAS, focusing on clients in the corporate sectors deemed most vulnerable according to our heat maps. We plan to expand the scope to additional clients and sectors as we integrate results into underwriting processes.

Results from the CRAS also serve as inputs into the Net Zero Review Template, which Citi is piloting to help prioritize engagement with a particular focus on transition opportunities for clients. For more details on the Net Zero Review Template, please see page 30.

Climate Risk Assessment & Scorecard (CRAS) 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
Capital Expenditures	Capital expenditures allocated to transition
Government Support	Available grants, subsidies and regulatory mechanisms to support transition
Physical Risk Mitigants	Client's adaptation measures for physical risk impacts
Governance	Senior-level climate-related oversight and ties to remuneration
Transparency	Disclosures aligned with TCFD or other recognized frameworks
Output	**Overall climate score with individual scores for:** Vulnerability; Management Mitigation & Adaptation; and Governance & Transparency

Environmental and Social Risk Management Policy

Integrating climate risk into our policies and sector standards provides the foundation to consistently identify and manage climate-related risks throughout the enterprise. Since 2015, our ESRM Policy has addressed the increasing credit risk, stranded asset risk and reputation risk related to declining demand for thermal coal mining and coal-fired power. In addition, our early 2023 updates to address the climate-related impacts from deforestation in the agribusiness sector are discussed in the Biodiversity section of this Report.

Coal Policy

Our ESRM Policy commitments related to coal-fired power generation have been updated over time as the credit and reputational risk related to coal has increased. We have committed not to finance any new coal-fired power plants or expansions of existing plants globally, in line with existing regulations in many countries such as the U.S., which have prevented new coal-fired capacity being built for many years.

We have reviewed our coal-fired power clients' GHG reporting and low-carbon transition plans, including commitments to retire existing coal plants. Our analysis considered a combination of client disclosures, third-party ESG analysis, CDP disclosures and direct client engagement. This evaluation will continue into our net zero engagement and progress towards our 2030 targets. A comprehensive summary of time-bound milestones for coal-fired power clients through 2040 is available below.

Coal-Fired Power Generation Financing Reduction Commitments		
After 2021 Citi will not:	**After 2025 Citi will:**	**After 2030 Citi will:**
• Provide acquisition financing or advisory services related to coal-fired power plants • Onboard new clients with ≥20% of power generation from coal-fired power plants unless such clients meet certain criteria: - publicly report GHG emissions annually, consistent with the GHG Protocol - engage with Citi on their low-carbon transition strategy to diversify away from coal-fired power generation and align with the Paris Agreement • Onboard new clients that have plans to expand coal-fired power generation	• No longer extend capital/provide financial services to clients without low-carbon transition strategies to diversify away from coal-fired power and align with Paris Agreement decarbonization pathways by 2030 (in OECD countries) or 2040 (non-OECD countries)*	• No longer provide capital/ financial services for clients in OECD countries with ≥5% of coal-fired power generation • No longer provide capital/ financial services for clients in non-OECD countries unless such clients have a low-carbon transition strategy designed to reduce the share of power generation from coal-fired power plants to less than 5% by 2040

**Exceptions may be considered if the proposed transaction is being pursued in the context of a low-carbon transition strategy.*

We have set targets to phase out Citi's financing of companies deriving ≥25% of their revenue from thermal coal mining. We also established a series of milestones in order to facilitate meeting this goal, including reducing our credit exposure to coal mining companies by 50% by the end of 2025 (from a 2020 baseline). After 2025, Citi will no longer facilitate capital markets transactions or mergers and acquisition advisory and financing for such companies. Citi's remaining exposure to these companies will be reduced to zero by the end of 2030.

Thermal Coal Mining Reduction Commitments		
By December 2025 Citi will:	**After 2025 Citi will:**	**After 2030 Citi will:**
Reduce our credit exposure to these companies* by 50% from a 2020 baseline)	No longer facilitate capital markets transactions or mergers and acquisition advisory and financing for these companies*	Reduce all remaining exposure to these companies* to zero

**Defined as any mining company deriving ≥25% of its revenue from thermal coal mining.*

Thermal Coal Mining Exposure		
2020 Baseline	**Credit Exposure as of YE 2021**	**Credit Exposure as of YE 2022**
$1.091 billion	$765 million* (30% reduction from baseline)	$ 586 million (46% reduction from baseline)

**This figure has been updated as part of a facility-level data review exercise that identified a few facilities that were excluded from the originally reported exposure.*

Our net zero target for the Thermal Coal Mining sector builds upon our ESRM Policy on Coal but brings more companies in scope for calculating and reporting on our financed emissions. As further detailed in the "Strategy" section of this Report, Citi has adjusted the boundary of our net zero target for the Thermal Coal Mining sector to include those companies that derive ≥5% of their revenue from thermal coal mining.

Fossil Fuel Financing

Currently, fossil fuels are a driver of the global economy and continue to be a major component of the world's energy portfolio. However, meeting global net zero commitments in line with the Paris Agreement will require emissions to be drastically reduced during this decade. The expected shift away from fossil fuels globally, in pursuit of renewable and alternative energy, will have a significant effect on clients in carbon-intensive sectors — including coal mining, power generation and certain segments of the energy sector.

The financial services sector can play a significant role helping to enable low-carbon business models. As a global bank with exposure to many carbon-intensive segments of the economy, and as a top lender to the energy sector in particular, Citi has an opportunity and a responsibility to support our clients in their transition. As such, client engagement and transition are a key component of our net zero commitment. Our philosophy is to meet our clients where they are and help them identify areas where they can decarbonize. We ask our clients: What is your short-term decarbonization and longer-term transition plan? What is your pathway? What are your metrics? What is your capital expenditure strategy, and how are you allocating capital to help transition to a low-carbon business model?

Energy is one sector where transition considerations are particularly complex. Currently, we are seeing interesting developments among the largest integrated oil and gas companies, which are investing in technologies that leverage their current technical expertise and capabilities, ranging from offshore wind development, to biofuels, to hydrogen, to carbon removal technology. Other clients, however, have less ability today to branch out from oil and gas production, and instead are focusing on decarbonizing their operations. Although we acknowledge that operational Scope 1 and 2 GHG emissions are a fraction of the Scope 3 GHG emissions from the combustion of oil and gas, we also believe that any efforts to decarbonize today, for example by increasing operational efficiency or decreasing methane emissions, amount to real GHG emissions reductions and climate benefits, and provide some clients with a foothold to make progress and potentially identify further opportunities for decarbonization.

We also recognize that while there is an imperative for a transition to a low-carbon economy, we must be mindful that countries are in different stages of development with different energy and social needs. Developing markets should be allowed to grow and develop their economies, and they should have more leeway to transition to clean energy than developed markets. There also needs to be more investment and innovation to help those economies become part of the clean energy transition. It is critical that the low-carbon transition accounts for the priorities for developing countries to increase their access to energy, and for workers currently involved in carbon-intensive sectors to continue to maintain their livelihoods and receive support to transition and apply their skills to new technologies and/or sectors.

Scenario Analysis

Citi uses climate risk scenario analysis, including stress testing, to assess the potential impact of climate-related risk drivers on Citi's risk profile across a range of plausible climate-related pathways. Climate change is expected to have far-reaching systemic impacts in breadth and magnitude, affecting governments, businesses and households across all geographies and sectors.

The associated effects are expected to feed through the economy via two principal channels — transition and physical risks — which are both characterized by deep uncertainty and non-linearity:

- Transition Risks arise from the process of adjusting toward a low-carbon economy and encompass policy and legal changes, technological changes, and shifting consumer/market sentiment and societal preferences and
- Physical Risks arise through "acute" weather-related events such as heatwaves, floods, wildfire 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.

These risks are generally foreseeable based on prevailing scientific studies but exhibit a high degree of uncertainty driven by lack of clarity around the precise outcomes in terms of time horizon/future pathways and their associated impact on the valuations of financial assets and borrowers' creditworthiness. This uncertainty elevates scenario analysis as a critical tool to reflect the broad range of possible outcomes and model the complex linkages across climate drivers, economic and financial variables, and sector/counterparty-level responses needed to estimate quantitative impact.

Design choices for Citi's internal exploratory exercises to date have largely focused on enabling capacity building and setting boundary outcomes (e.g., sudden adoption of an overnight carbon tax) to compare against internal capital binding benchmarks. These internal exploratory exercises encompass portfolio-specific pilots focused on more targeted sectors (e.g., Oil & Gas, Commercial Real Estate) and scaling gradually across to Enterprise-wide exercises across all major portfolios. Scenarios have typically included more tractable assumptions such as a globally coordinated carbon tax policy and static balance sheet to streamline analytical and operational challenges as a trade-off to more plausible and realistic scenarios at the outset.

Major regulatory stress tests have been launched in several jurisdictions over recent periods and have generally been focused on the most systemically important and sizable institutions within each jurisdiction. These stress tests leverage a common set of climate reference scenarios from the Network for Greening the Financial System (NGFS) or Intergovernmental Panel on Climate Change (IPCC). Citi has met these requirements for each of the legal entities deemed in scope, which are comprised of differing portfolios based on local business footprint and legal vehicle structure. The delivery of these regulatory exercises has further established foundational data, scenario and modeling capabilities, which leverage both external and internal analytical platforms.

Initial internal scenario-based exercises have also been more targeted on heatmapping activities to enhance targeted physical risk identification across commercial real estate, residential real estate and our own facility/third-party operational risk considerations. Future internal exercises will aim to further enrich the range of outcomes through higher resolution scenarios, internal modeling infrastructure that tailors more to firm-specific climate risks and enhanced data integration to enable more granular risk capture.

This proactive approach towards capability enhancements extends to enhancing risk identification to inform more tailored scenario narratives, accelerating internal modelling efforts to decrease vendor dependency and establishing centralized data architecture to support overlapping climate data needs across the Bank. Below, we include a summary of our key recent scenario analysis exercises.

SUMMARY OF KEY CLIMATE SCENARIO ANALYSIS EXERCISES

	← 2021 →			← 2022 →		
Exercise	**Initial Pilot Analysis**	**Hong Kong Monetary Authority Stress Test**	**Other Legal Entity Exercises**	**Monetary Authority of Singapore Stress Test**	**European Central Bank Stress Test**	**Enterprise-Wide Internal Stress Test**
In-scope Portfolios	U.S. CRE, Oil & Gas Portfolios, Own Facilities	Residential Mortgages	Corporate Loans, Broker-Dealer Exposures	Wholesale & Retail lending portfolios	Corporate Loans	All major portfolios
Risk Types Assessed	Credit, Operational	Credit	Credit, Counterparty Credit, Market, Operational	Credit	Credit	Credit, Counterparty Credit, Market
Climate Risks Modelled	Transition & Physical Risk	Physical Risk	Transition & Physical Risk	Transition & Physical Risk	Transition & Physical Risk	Transition Risk
Scenarios	NGFS, RCP	RCP	Internal Scenario (anchored on NGFS)	NGFS	NGFS, RCP	Internal Scenario (anchored on NGFS)
Time Horizon	Short & Long Term	Short & Long Term	Short Term	Long Term	Short & Long Term	Short Term

Climate-Related Operational Risk

We continue to refine our approach to the identification and management of climate-related operational risks. For Citi's operational footprint, we have evaluated 360 primary Citi locations through IPCC-aligned scenarios. This will allow us to better assess, evaluate and manage the potential climate-related physical risks to which our operations may be subject.

As a result of this work, Citi has improved its understanding of the potential risk impacts to its operations with considerations for:

1. Incremental Climate Physical Risk Forecast:
   Which geographic locations have the highest future incremental physical risk exposure due to climate change (includes both acute and chronic physical risk perils)?

2. Concentration Risk:
   In which locations does Citi have the highest concentrations of business disruption risk, based on staff concentrations and high criticality processes?

Citi combines the findings from the concentration risk and incremental climate physical risk forecast to generate an inherent risk of business disruption due to climate change mapped against each business within the primary locations for Citi facilities. Through this process, Citi is better able to identify the overall climate-driven inherent business disruption risk and the level of staff and business process concentration in each location.

The highest operational risks were found to be physical damage risk (from both acute and chronic weather events) and business disruption and third-party risk (from acute weather events).

While this exercise is still an initial methodology that may further evolve, these early findings will support Citi's decision making in areas such as our short- and medium-term placement of processes, staff and technology infrastructure; policies and standards for high-risk locations; and enhancement of continuity of businesses and disaster recovery plans, among others.

Climate Training

Achieving our goals and managing risk requires continual learning and development in the climate space. Accordingly, we have established a number of initiatives around further training of our workforce across the frontline and various functions. These initiatives included the 2021 launch of a foundational Climate Risk Training module firmwide and the provision of supplemental presentations and workshops to target groups. This training aimed to educate a broader audience on the integration of climate risk considerations into our risk management processes. To date, this initial recommended training module has been taken by approximately 5,000 employees.

Citi recognizes that climate-related training needs to be tailored to different positions and teams (e.g., risk management employees, frontline bankers and industry teams) where the development of subject matter

expertise is imperative. Therefore, in 2022, Citi launched two different training pilots that involved virtual and in-person workshops for colleagues in banking, risk and global functions. The first training focused on foundational knowledge of sustainability and climate science for a cross-business cohort of BCMA bankers. The second of these trainings focused on a "deeper dive" in assessing transition plans and client engagement, specifically for the Energy and Power portfolios.

Metrics & Targets

Citi's climate-related metrics and targets provide quantitative information on our climate strategy and performance. In this section we summarize the operational and financial data that support our climate strategy and performance, and guides our progress towards our Net Zero Plan and our climate-related goals.

Our $1 Trillion Sustainable Finance Commitment

The month after we announced our net zero commitment, we also set our $1 Trillion Sustainable Finance Goal for 2030. This commitment is aligned with the UN SDGs, and spans our business offerings and exemplifies how our Net Zero Plan is being integrated across Citi. We believe that Citi, as the world's most global bank, has an important role to play in supporting businesses' transitions toward a more just and sustainable low-carbon economy. Our $1 trillion commitment includes environmental and social criteria and is a core component of our work to accelerate the transition that supports society's environmental, social and economic needs.

PROGRESS TOWARDS OUR $1 TRILLION SUSTAINABLE FINANCE GOAL COMMITMENT

($ IN BILLIONS)

Criteria[1]	2020	2021	Total	%
Circular Economy	0.4	2.1	2.5	1.1%
Clean Technology	0.6	0	0.6	0.3%
Energy Efficiency	1.2	2.5	3.7	1.6%
Green Buildings	1.6	1.4	2.9	1.3%
Renewable Energy	7.0	19.5	26.5	11.9%
Sustainable Agriculture & Land Use	0.2	0	0.2	0.1%
Sustainable Transportation	3.7	46.7	50.4	22.7%
Water Quality & Conservation	1.3	1.6	2.9	1.3%
Environmental: Multiple[2]	12.9	47.7	60.6	27.3%
Affordable Basic Infrastructure	0.7	0.3	1.0	0.5%
Affordable Housing	10.4	10.6	21.0	9.5%
Diversity & Equity	0.3	0.3	0.6	0.3%
Economic Inclusion	3.9	2.7	6.6	3.0%
Education	4.3	0.9	5.3	2.4%
Healthcare	4.1	1.9	6.0	2.7%
Food Security	0	0	0	0.0%
Social: Multiple[2]	1.4	4.3	5.7	2.6%
Environmental & Social[3]	8.5	17.1	25.6	11.5%
Total[4]	**62.4**	**159.7**	**222.1**	**100.0%**

[1] Following the announcement of the $1 Trillion Sustainable Finance Goal in 2021, we performed a retroactive review of 2020 sustainable finance activities using our updated goal criteria, which is reflected in the accounting of environmental and social finance activities on this page.
[2] Denotes activities falling under multiple environmental or social criteria, including green or social bond transactions where the issuer's framework comprises multiple eligible categories.
[3] Refers to transactions that met both environmental and social finance criteria. Credit for such transactions were split evenly between the environmental and social finance goals.
[4] Figures may not sum to totals due to rounding.

A description of our environmental and social finance criteria and the applicability of certain exclusionary criteria can be found on pages 49 to 50 of our 2021 TCFD Report. For additional details, please see page 27 of our 2021 Environmental, Social and Governance Report.

Poseidon Principles

Citi is a founding signatory of the Poseidon Principles, a global framework to promote decarbonization of the international shipping sector, and we have disclosed our climate alignment score since 2019. Our alignment score for 2021 was impacted by our clients' operational priorities as well as the residual impacts of the COVID-19 pandemic, in particular the effect of port congestion and demand in the container sector as well as the tentative resumption of the cruise industry in 2021. The cruise segment represented +6.3% of our total alignment score of +12.2%, indicating that we are slightly more misaligned compared to the 2020 alignment score of +11.7%. Our cargo alignment score was also impacted in 2021 due to the significant tonnage demand increase in dry cargo as well as the pre-existing issues in the container sector. Most of the misalignment relates to three individual client situations in which COVID-19-driven operational issues during 2021 are unlikely to have been repeated in 2022. We therefore expect significant improvement in next year's report for our 2022 total alignment score, which will be reflective of a more normal market environment.

Citi continues to partner with clients that are actively considering the development of the next generation of shipping technology. The new International Maritime Organization (IMO) Carbon Intensity Indicator (CII) and Energy Efficiency Existing Ship Index (EEXI) regulations that went into effect in January 2023 provide further signals as to where the industry needs to reduce emissions and explore retrofitting opportunities. Although decarbonizing shipping depends on the pace of the energy transition, we see clients looking to source alternative fuels, develop new technologies and consider additional alternative solutions as part of their long-term strategy. We will continue to support our clients in all of their different approaches to reduce emissions which, in turn, will help Citi meet its own targets as we look to support the decarbonization of global supply chains.

In 2022, Citi delivered its Poseidon Principles disclosure to the Secretariat, and that disclosure is now published on the Poseidon Principles website.

Risk Exposure

We provide an update to our climate risk heat mapping, for which we developed a more formal and detailed methodology in 2021 to determine the vulnerability scores assigned to each sector. The climate risk heat mapping categorizes sectors under one of four vulnerability scores, ranging from "low" to "high." We have established sub-scores using the rubric in the following table for various aspects of transition and physical risks.

CLIMATE RISK HEAT MAPPING

		Low ← Vulnerability Score → High			
		1	2	3	4
Transition Risks	Regulatory	No regulatory/ policy changes are expected to meaningfully impact the sector financially such as through asset devaluation, increased expenditure (e.g., compliance costs) and/or loss of revenue	Minor impact to the sector expected from potential regulatory/policy changes (e.g., building efficiency) resulting in financial impact asset devaluation, increased expenditure (e.g., compliance costs) or loss of revenue; impact only on a subset of the sector, subset of geographies and/or only indirect impact	Moderate impact to the sector expected from regulatory/ policy changes (e.g., carbon taxes) relating to the sector's carbon intensity; direct impact with noticeable economic implications on the sector through impacted asset valuation, increased expenditure (e.g., compliance costs) and/or revenue loss	Major impact to the sector expected due to expected regulatory/policy changes relating to the sector's carbon intensity; significant shift expected in the business model or economics of the sector impacting asset valuation, expenditures (e.g., increased compliance costs) and/or revenue
	Technology	Outside of general modernization of technology, no technology shifts are expected for the sector	Minor impact to the sector expected from technology changes (i.e., impact only on a small subset of the sector, or only indirect impact through supply chain) that result in market share loss	Moderate impact to the sector expected from technology changes, resulting in some shift in the economics of some companies in the sector leading to market share loss	Major impact to the sector expected from technology changes, resulting in substitution of a significant portion of existing companies (i.e., market share loss)
	Stakeholder	There is no expectation of stakeholder composition or preferences changing for the industry	Minor stakeholder impact due to expected shift in preferences, with minor financial impact on companies (e.g., revenue, vendor pricing)	Moderate stakeholder impact is expected for the sector in terms of stakeholder preferences and composition with modest financial impact (e.g., revenue, vendor pricing)	Major stakeholder impact is expected in terms of both client preferences and composition of stakeholders resulting in significant financial impact (e.g., revenue loss, vendor pricing)
	Legal	No increased litigation concerns are expected to impact the industry that would lead to increased financial burden (e.g., legal fees, settlements)	Minor litigation concerns are expected to impact the sector with minor financial consequences (e.g., legal fees, settlements)	Moderate litigation concerns are expected to impact the sector with modest financial impact (e.g., legal fees, settlements)	Major litigation is expected to impact the sector, with significant financial impact (e.g., legal fees, settlements)

continued on next page

		Low ← Vulnerability Score → High			
		1	2	3	4
Physical Risks	Acute Hazard	Acute physical hazards have no impact on the day-to-day operations of companies in the sector	Sector would experience minor impact from acute physical hazards on operations (e.g., revenue loss due to business disruption), or minor damage to assets (e.g., asset devaluation)	Sector would experience moderate and protracted impact from acute physical hazards on operations (e.g., revenue loss due to business disruption), or moderate damage to assets (e.g., asset devaluation)	Sector would experience major and protracted impact from acute physical hazards on operations (e.g., revenue loss due to business disruption), or significant damage to assets (e.g., asset devaluation)
	Chronic Hazard	Chronic physical hazards have no impact on the operations or valuation of assets/companies in the sector	Chronic physical hazards have minor potential impact on the operations (e.g., increased insurance cost) or valuation of assets/companies in the sector	Sector would experience moderate and sustained impact on the operations (e.g., increased insurance cost) or valuation of assets/companies in the sector	Sector would experience major and irreversible impact on the operations or valuation of assets/companies in the sector

The overall score is determined by assigning the highest sub-score as the sector's overall score. While this may result in some sectors being assigned a vulnerability score that is higher than the average of all climate risks, we have decided to take this more conservative approach in order to recognize that the sector is exposed to climate risks up to that highest level under our methodology.

Our heatmap assessment helps us to prioritize portfolios when further evaluating the risks within each business unit. We intend to initially focus on the higher-risk, higher-exposure sectors. However, additional due diligence will be required to differentiate the vulnerabilities of individual counterparties within each sector (taking into consideration differences in business models, geographic footprint and climate adaptation and/or mitigation plans).

It is important to note that these risks are not expected to manifest in every sector immediately. For this reason, the table on pages 54 to 56 should not be interpreted as imminent risks to existing exposures, but rather, exposures we are proactively identifying to focus on, where we will work methodically in the coming years to better understand, analyze and manage our climate risk exposures in these sectors.

A comprehensive table of our credit exposures is provided below, including a further detailed breakdown of identified sectors into subsectors and, for each, the level of risk relating to physical and transition climate risk. By looking at the subsector level, we can further distinguish between the levels of risk within an individual sector.

We note that since our 2021 TCFD Report, there have been minor updates within the table, but there have been no substantial changes to our heatmap as we have been prioritizing climate risk assessments focused on more vulnerable sectors.

CLIMATE RISK HEAT MAPPING AND CREDIT EXPOSURE

Low 1 2 3 4 High

$ in Millions	2021 Total $ Exposure	2021 % of Total Exposure	2021 Funded	2021 % of Funded Exposure	Climate Risk[1] Transition Risk	Climate Risk[1] Physical Risk
Energy & Commodities[2]	**48,973**	**6.9%**	**13,485**	**4.7%**		
Integrated Oil & Gas	12,264	1.7%	2,339	0.8%	4	2
Oil & Gas Exploration & Production	11,799	1.7%	3,193	1.1%	4	2
Oil & Gas Storage & Transportation	6,326	0.9%	1,209	0.4%	4	2
Oil & Gas Refining & Marketing	8,600	1.2%	3,271	1.1%	4	2
Oil & Gas Equipment, Services and Drilling	4,397	0.6%	1,007	0.4%	4	2
Commodity Traders	3,897	0.5%	1,961	0.7%	3	2
Other	1,689	0.2%	506	0.2%	4	2
Power	**26,199**	**3.7%**	**5,610**	**2.0%**		
Alternative Energy	1,749	0.2%	981	0.3%	1	2
Electric Utilities	6,512	0.9%	1,967	0.7%	3	3
Gas Utilities	1,343	0.2%	474	0.2%	3	2
Independent Power Producers & Service Operators	2,183	0.3%	393	0.1%	3	3
Multi-Utilities	11,826	1.7%	1,378	0.5%	3	3
Water Utilities	1,328	0.2%	161	0.1%	2	3
Other	1,258	0.2%	256	0.1%	3	3
Transportation	**75,106**	**10.5%**	**30,747**	**10.8%**		
Autos	48,210	6.8%	18,662	6.6%	4	1
Automobile Manufacturers	16,386	2.3%	5,997	2.1%	4	1
Auto Parts & Equipment	9,377	1.3%	3,808	1.3%	4	1
Auto-Related Financing, Leasing and Rentals	19,751	2.8%	7,313	2.6%	3	1
Other	2,696	0.4%	1,544	0.5%	4	1
Aviation	9,582	1.3%	3,839	1.3%	3	3
Shipping & Maritime Logistics excluding offshore	8,238	1.2%	5,208	1.8%	3	2
Shipping & Maritime Logistics offshore	1,036	0.1%	253	0.1%	4	2

[1] Over medium to long term
[2] In addition to this exposure, Citi has energy-related exposure within the public sector (e.g., energy-related, state-owned entities) and transportation sector (e.g., offshore drilling under Shipping & Maritime Logistics). Citi's total exposure to these energy-related sectors is approximately $4.5 billion, of which approximately $2.3 billion consisted of direct outstanding funded loans.

continued on next page

$ in Millions	2021 Total $ Exposure	2021 % of Total Exposure	2021 Funded	2021 % of Funded Exposure	Climate Risk[1] Transition Risk	Climate Risk[1] Physical Risk
Logistics	8,040	1.1%	2,785	1.0%	3	3
Air Freight & Logistics	507	0.1%	255	0.1%	3	3
Rail	1,140	0.2%	267	0.1%	1	2
Trucking	539	0.1%	290	0.1%	3	1
Other	5,854	0.8%	1,973	0.7%	3	3
Industrials	**68,338**	**9.6%**	**20,755**	**7.3%**		
Building Products & Related	7,413	1.0%	2,406	0.8%	3	1
Capital Goods	45,619	6.4%	13,544	4.8%	3	3
Paper Forest Products & Packaging	6,786	1.0%	3,002	1.1%	3	1
Professional Services	8,520	1.2%	1,803	0.6%	2	1
Metals & Mining	**13,892**	**1.9%**	**6,089**	**2.1%**		
Coal[3]	506	0.1%	80	0.0%	4	4
Steel	3,553	0.5%	2,203	0.8%	3	2
Aluminum	859	0.1%	601	0.2%	3	2
Stainless Steel	127	0.0%	93	0.0%	3	2
Nonferrous & Ferrous Minerals	2,345	0.3%	942	0.3%	3	2
Other	6,502	0.9%	2,170	0.8%	3	2
Chemicals	**25,550**	**3.6%**	**8,525**	**3.0%**	3	1
Consumer Retail & Health	**112,387**	**15.8%**	**41,720**	**14.7%**		
Food Beverage & Tobacco	35,710	5.0%	16,375	5.8%	3	3
Agricultural Products	6,721	0.9%	4,075	1.4%	3	3
Beverages	9,047	1.3%	3,702	1.3%	1	3
Food Products	15,370	2.2%	7,189	2.5%	3	2
Tobacco	2,551	0.4%	563	0.2%	1	3
Other	2,022	0.3%	847	0.3%	3	3
Health Care Equipment & Services	33,393	4.7%	8,826	3.1%	1	1
Household & Personal Products	7,962	1.1%	3,273	1.2%	2	2
Retail	18,276	2.6%	6,535	2.3%	2	1
Hotels Restaurants & Leisure	3,943	0.6%	1,475	0.5%	1	2

[3] Based on Citi's Risk Industry Classification, which differs from how Citi defines thermal coal mining companies under its ESRM Policy. For reporting on our thermal coal mining exposure, see page 44.

continued on next page

$ in Millions	2021 Total $ Exposure	2021 % of Total Exposure	2021 Funded	2021 % of Funded Exposure	Climate Risk[1] Transition Risk	Climate Risk[1] Physical Risk
Consumer Durables & Apparel	13,104	1.8%	5,236	1.8%	2	2
Real Estate	**69,808**	**9.8%**	**46,220**	**16.2%**		
Commercial Real Estate	53,181	7.5%	31,907	11.2%	2	3
Residential Real Estate	16,627	2.3%	14,313	5.0%	2	3
Financial Institutions[4]	**129,582**	**18.2%**	**64,405**	**22.6%**	3	2
Insurance	**28,495**	**4.0%**	**3,162**	**1.1%**		
Life insurance	5,223	0.7%	784	0.3%	1	1
Property & Casualty Insurance	15,102	2.1%	2,193	0.8%	2	3
Reinsurance	6,447	0.9%	113	0.0%	2	3
Other	1,723	0.2%	71	0.0%	2	3
Public Sector[5]	**23,842**	**3.3%**	**12,464**	**4.4%**	3	3
Tech, Media & Telecom	**84,333**	**11.8%**	**28,542**	**10.0%**		
Media & Entertainment	12,336	1.7%	2,547	0.9%	1	1
Hardware	24,404	3.4%	9,580	3.4%	2	2
Software & Services	23,144	3.2%	5,392	1.9%	1	1
Telecom	22,258	3.1%	9,959	3.5%	1	2
Other	2,192	0.3%	1,064	0.4%	2	2
Other Industries	**6,591**	**0.9%**	**2,802**	**1.0%**	1	1
Total[6]	**713,096**	**100.0%**	**284,527**	**100.0%**		

[4] Includes Banks, Finance Companies, Securities Firms, Asset Managers and Funds, and Financial Markets Infrastructure.
[5] Certain countries may see high transition and physical risks based on commodities exposure and geographic location.
[6] Sums may not match FY 2021 10k due to rounding from increased granularity in industry breakdowns.

Net Zero Financed Emissions Data and Targets

In addition to the absolute financed emissions we began calculating for our Energy and Power portfolios last year, in 2022, we calculated absolute financed emissions for our Auto Manufacturing, Commercial Real Estate, Steel and Thermal Coal Mining portfolios, as well as adding Energy-related project financing to the Energy financed emissions boundary. We calculated these figures according to the PCAF methodology (using funds outstanding) and in alignment with our net zero target boundaries (using total funds committed).

As noted in our 2021 TCFD Report, we expect the quality of our annual emissions data to improve as our clients' climate disclosure and data quality and quantity increase. In our analysis this year, we found the financed emissions data quality scores for the Energy and Power sectors improved as follows from 2020 to 2021:

FINANCED EMISSIONS DATA COVERAGE

Data Coverage	Auto Mfg	Commercial Real Estate	Energy		Power		Steel	Thermal Coal Mining
	2021	2021	2020	2021	2020	2021	2021	2021
% of portfolio reporting emissions: Scope 1 and 2 (by committed exposure)[1]	94%	N/A	63%	65% *(Excluding project finance)*	81%	77% *(Excluding project finance)*	76%	50%
% of portfolio reporting emissions: Scope 3 (by committed exposure)[1,2]	75%	N/A	18%	3%[4]	N/A	N/A	54% *(Upstream* 6% *(Downstream)*	0%
PCAF Scope 1 and 2 Data Quality Score (out of 5)[3]	2.1	4.4	3.2[5]	2.9 *(Excluding project finance)* 2.9 *(Project finance only)*	3.0	2.6 *(Excluding project finance)* 3.0 *(Project finance only)*	2.1	3.1
PCAF Scope 3 Data Quality Score (out of 5)[3]	2.3	N/A	3.6[5]	3.6	N/A	N/A	3.1 *(Upstream)* 3.8 *(Downstream)*	3.0

[1] Only inclusive of counterparty data with PCAF Data Quality Scores 1 and 2. Percentages disclosed in last year's TCFD Report were based on a select group of S&P Global Trucost identifiers for directly disclosed data. The revised calculation presented in the table above is instead based on data that achieves a PCAF data quality score of 1 or 2 (data from partial disclosures also qualifies for score 2).
[2] Scope 3 is not tracked for the sectors for which it is not material.
[3] Data scores range from 1 to 5, with a score of 1 signifying the highest quality data and a score of 5 signifying the lowest quality data. Scores are weighted by drawn exposure.
[4] Due to the lower level of manual adjustments used for data sources this year, the amount of data with PCAF data quality scores of 1 and 2 has decreased. In instances where emissions estimates from third-party data providers were within a negligible margin of emissions disclosed by clients, we deferred to data coming from the third-party dataset.
[5] This data quality score was erroneously calculated in last year's report and has since been revised.

2021 FINANCED EMISSIONS SUMMARY

Sector	Energy[1] *(Scope 1-3)*	Power[2]	Auto Manufacturing *(Scope 1-3)*	Commercial Real Estate[3] *(Scope 1-2)*	Thermal Coal Mining *(Scope 1-3)*	Steel *(Scope 1-3)*
2020 Financed Emissions *(Committed Exposure)*	**143.8** M mt CO_2e	**12.0** M mt CO_2e (Scope 1-2)	N/A	N/A	N/A	N/A
2020 Emissions Intensity *(Physical)*	**81.4** g CO_2e/MJ	**313.5** kg CO_2e/MWh (Scope 1)	N/A	N/A	N/A	N/A
2021 Financed Emissions *(Outstanding Drawn Exposure)*	**36.2** M mt CO_2e	**4.3** M mt CO_2e (Scope 1-2)	**4.9** M mt CO_2e	**425** k mt CO_2e	**3.6** M mt CO_2e	**4.5** M mt CO_2e
2021 Financed Emissions *(Committed Exposure)*	**100.3** M mt CO_2e[4]	**11.0** M mt CO_2e (Scope 1-2)	**13.0** M mt CO_2e	**526** k mt CO_2e	**7.9** M mt CO_2e	**7.1** M mt CO_2e
2021 Emissions Intensity *(Physical)*	**81.8** g CO_2e/MJ	**308.2** kg CO_2e/MWh (Scope 1)	**154** g CO_2e/km	**61** kg CO_2e/m^2	**3.2** t CO_2e/ short ton	TBD
2021 Emissions Intensity *(Per $ million committed)*	**2,260** mt CO_2e/ $MM Committed	**473** mt CO_2e/ $MM Committed	**993** mt CO_2e/ $MM Committed	**27** mt CO_2e/ $MM Committed	**22,097** mt CO_2e/ $MM Committed	**2,581** mt CO_2e/ $MM Committed
2021 Year-End Commited Exposure *(Billions)*	**$44.40**	**$23.30**	**$13.00**	**$19.40**	**$0.36**	**$2.74**

[1] *Includes project finance for 2021.*
[2] *Includes project finance for 2020 and 2021.*
[3] *Includes direct financing within North America (NAM) only.*
[4] *Adjusting for Enterprise Value Including Cash (EVIC) fluctuations, the normalized result is 113.8 M mt CO_2e.*

There are three key contributors to fluctuations in financed emissions from year to year — the exposure, the company value (EVIC for public, Debt and Equity for private), and the company emissions. We saw these dynamics play out in the Energy sector last year in particular, where the data mismatch (where energy companies ended 2021 with high valuation — but this was following a year of decreased production and emissions in 2020) has lowered our financed emissions figures for 2021. In an effort to adjust for one of these superficial drivers, we have tested a proposed PCAF EVIC adjustment method (intended for Asset Managers'

portfolios) to create a normalized metric by calculating an adjustment factor based on the portfolio EVIC fluctuation. The normalized energy financed emissions footprint is 113.8 M mtCO_2e. As there is no recognized method for normalizing this fluctuation, this year we disclosed this adjusted metric to acknowledge that these calculations, heavily based on estimation, will go through a large degree of refinement over the coming years. We will continue to monitor methodologies to normalize these fluctuations, and plan to follow any published guidance from PCAF once available. As we continue to refine our data and metrics, we will maintain transparency on these learnings and continue to assess appropriate pathways to stay aligned with our net zero commitment.

Key Design Decisions and 2030 Targets

The key design decisions for developing the 2030 emissions targets for each of our priority carbon-intensive sectors are summarized in the table below:

2030 EMISSIONS REDUCTION TARGETS

Sector	Baseline (Year)	Target Metric	Climate Scenario	2030 Target
Energy (Scope 1-3)	**143.8** million mt CO_2e (2020)	Absolute	IEA NZE 2050	**29%** reduction from 2020 baseline **102.1** million mt CO_2e
Power (Scope 1)	**313.5** kg CO_2e/MWh (2020)	Intensity	IEA SDS OECD	**63%** reduction in Scope 1 intensity per MWh **115** kg CO_2e/MWh
Auto Manufacturing (Scope 1-3)	**154** g CO_2e/km (2021)	Intensity	IEA NZE 2050	**31%** reduction in intensity per km from 2021 baseline **106** g CO_2e/km
Commercial Real Estate* (Scope 1-2)	**61** kg CO_2e/m^2 (2021)	Intensity	CRREM Pathways	**41%** reduction in intensity per m^2 from 2021 baseline **36** kg CO_2e/m^2
Steel (Scope 1-3)	**SSP Climate Alignment Score TBD** (2021)	Intensity	IEA NZE 2050	SSP Climate Alignment Score = 0
Thermal Coal Mining (Scope 1-3)	**7.9** million mt CO_2e (2021)	Absolute	IEA SDS OECD	**90%** reduction from 2021 baseline **793** thousand mt CO_2e

** Within North America only, excluding Citi Community Capital portfolio*

Operations

As a global bank, we believe in the importance of reducing the impact of our facilities and our operations. As part of our Net Zero Plan, we have committed to achieving net zero operational emissions by 2030.

As part of this commitment, we are prioritizing the reduction of emissions from our operations as much as possible, although we acknowledge that some emissions offsetting will likely be necessary for hard-to-abate operational emissions. Carbon capture and sequestration technology still remains largely limited and costly. There is also a need to scale the deployment of existing energy efficient and renewable technologies to support the protection of the environment beyond our value chain. In support of this need, Citi will begin to purchase 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 direct GHG emissions. We plan to rebalance the carbon credit portfolio mix to only use removal credits as we near our 2030 operational target.

We have been tracking, reporting and reducing emissions for over two decades. In 2020, we introduced the fourth generation of operational footprint goals for 2021 to 2025. These goals, which form the foundation of our net-zero operations commitment, seek to reduce not just our emissions but also our energy, water and waste consumption and impacts across our operations. Progress on our first year of reporting toward these new goals is provided below. Please note that, as a result of having fewer people using Citi buildings due to the ongoing COVID-19 pandemic, our progress for 2021 indicates that we exceeded some of our goals during the year. That trend could briefly reverse in the coming years as our employees continue to return to the office, before progressing again toward meeting our goals.

2025 OPERATIONAL FOOTPRINT GOALS

(MEASURED AGAINST 2010 BASELINE)

Category	Goal		Progress through 2021
GHG EMISSIONS	45%	reduction in location-based GHG emissions	49.8%
ENERGY	40%	reduction in energy consumption	37.9%
	100%	maintain renewable electricity sourcing	100%*
WATER	30%	reduction in total water consumption	38.8%
	25%	of water consumed to come from reclaimed/reused sources	7.0%
SUSTAINABLE BUILDINGS	40%	of floor area to be LEED, WELL or equivalent certified	34.7%**
WASTE	50%	reduction in total waste	55.8%
	50%	of waste diverted from landfill	22.8%

** 91% sourced within the same market boundary as use; 9% sourced from regionally aligned markets.*

*** 2021 total includes 14 Excellence in Design for Greater Efficiencies (EDGE) projects in Latin America.*

For more information on our work to meet these goals, please see the "Sustainable Operations" section of our 2021 Environmental, Social and Governance Report. A summary of our 2021 energy consumption is also provided below:

2021 ENERGY CONSUMPTION

Energy Type	GWh
Scope 1 - Energy Consumed	210
Natural Gas	178
LP Gas	1
Fuel Oil	0
Diesel	32
Scope 2 - Energy Purchased	1,137
Electricity	1,111
District Heating (Steam & Chilled Water)	26
Total Energy*	**1,348**

**Figures may not sum to total due to rounding.*

In our 2021 TCFD Report, we published the results of our initial emissions screening inventory. We have continued to screen our Scope 3 GHG emissions associated with our supply chain through the use of spend-based emissions factors (EPA EEIO). Since completing our first comprehensive screening inventory across operations, supply chain and employee emissions for 2020, we expanded our review this year to include 2019 through 2021.

2021 OPERATIONS, SUPPLY CHAIN AND EMPLOYEE ACTIVITIES GHG SCREENING INVENTORY

MILLIONS OF METRIC TONS CO_2E (M MT CO_2E)

CO_2e Emissions Category	2019	2020*	2021	Primary Source of Emissions
Scope 1 (Direct Energy)**	0.03	0.02	0.05	Operations
Scope 2 (Indirect Energy)	0.36	0.06	0.06	
Scope 3 (Supply Chain and Employee Activity)				
Category 1 – Purchased Goods and Services	1.63	1.54	1.70	Supply Chain
Category 2 – Capital Goods	0.35	0.33	0.29	
Category 3 – Fuel and Energy-Related Activities	0.17	0.13	0.28	
Category 4 – Transportation and Distribution	0.15	0.10	0.11	
Category 5 – Waste Generated in Operations	0.02	0.01	0.01	
Category 6 – Business Travel: Total	0.13	0.02	0.01	Employee Activities
Category 7 – Employee Commuting: Total	0.08	0.10	0.11	
Category 7 – Employee Commuting	0.00	0.03	0.03	
Category 7 – Work from home	n/a	0.07	0.08	
Total Emissions	**2.9**	**2.3**	**2.6**	

**Methodological Changes:*
Scope 2: Changed from location-based emissions to market-based emissions to quantify the benefit of renewable electricity use.
Scope 3: The U.S. EPA updated their methodology for Scope 3 emissions factors resulting in a material change. Demonstrating the magnitude of the EPA methodology change, the factor for plastic bags, films and sheets (e.g., credit card production materials) increased 47% increasing Category 1 while the factor for computers (e.g., data center and other technology hardware) reduced 77% reducing Category 2 emissions. Due to the significance of the change, Categories 1, 2 and 4 have been re-calculated in their entirety to ensure meaningful comparisons.

***Scope 1 includes real estate operations and corporate aviation.*

Throughout 2022, we have been developing our Net Zero Plan for our operations. As part of this progress, we have determined to follow a 1.5°C pathway, which indicates that our operational emissions should be reduced by 4.2% per year, on average, from 2019 through 2030. Our renewable electricity use (Scope 2) puts us well on the path for our operations (Scope 1 and 2). However, addressing supply chain and employee activity emissions (Scope 3) remains a challenge in part due to data limitations.

Citi intends to continue the steady progress we have made thus far, enabling real reductions in the near term as we best determine how to approach the challenges of calculating Scope 3 GHG emissions and ultimately driving real, quantifiable reductions across our supply chain and employee activity emissions. To that end, we will continue to progress our operational efficiency and optimization efforts, our renewable electricity use and seeking replacement or alternative low carbon fuel options (e.g., sustainable aviation fuel, renewable natural gas, etc.).

Looking Forward

Although Citi is working to support the transition, banks alone cannot drive this change, and the broader private sector will need to more broadly engage to see meaningful progress. To efficiently and effectively harness the power of the market and to drive progress towards a low-carbon economy, the availability and quality of climate-related data needs to be improved, and the global community will need to continue to encourage meaningful climate regulation and governmental support and strengthen the methodologies for assessing and mitigating climate risks. Additionally, Citi is focused on proactively balancing support for our existing clients in the Energy and other sectors with scaling up investments in innovative, low-carbon energy technologies and infrastructure as we spur progress towards global net zero goals.

Some of the most important work to achieve a low-carbon economy will happen at the ground level. As a result, our future climate efforts will focus on expanded and enhanced client engagement and financing efforts to provide our clients with the necessary tools and resources to establish their unique decarbonization pathways and make progress towards their related targets and goals.

In the future, we also plan to continue, among other efforts:

- Developing emissions baselines and targets for additional sectors in our portfolio, such as Agriculture, Aluminum, Aviation, Cement and Shipping;
- Continuing to measure progress towards established targets, revising such goals where appropriate to account for advances in methodologies and data availability; and
- Exploring climate-related opportunities to help achieve and sustain progress toward net zero targets, including, for example, advising clients on funding new climate technology opportunities.

We will remain transparent about our challenges and our successes as our understanding of climate-related risks and opportunities continues to evolve. Changes to the global economy to support the low-carbon transition will require enormous global cooperation, and we plan to continue sharing our tools and lessons learned that accelerate our collective progress on our path to decarbonization.

The transition to a low-carbon society will not be smooth or perfectly linear, especially in light of the global economic disruptions of 2022, which we expect will continue into 2023 and beyond. However, as the world's most global bank, we strive to leverage the full power of our business and to act with urgency to help address the risks posed by climate change while ensuring a just, fair and inclusive low-carbon transition.

Forward-Looking Statements

The disclosures included in this report are being provided in an effort to align with the TCFD recommendations and GFANZ guidance, respond to investor and other 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 section.

Certain statements in this report are "forward-looking statements," 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 and plans. 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, 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. 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. Further, Citi has not, and does not intend to, independently verify third-party data. 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, climate-related conditions and weather events, pandemics, legislative and regulatory changes, 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 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.

This report contains statements based on hypothetical 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 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. 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 the 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

In preparing this report, Citi referred to the voluntary GFANZ *Financial Institution Net-zero Transition Plans - Fundamentals, Recommendations, and Guidance* report, which was published in November 2022. The following table indicates where readers can find information that addresses the recommendations within the GFANZ report.

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.	Defining Our Net Zero Plan
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.	Climate Opportunities
	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.	Achieving 2030 Targets
	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.	Environmental and Social Risk Management Policy
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.	Engagement
	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.	Climate Policy and Regulatory Engagement

continued on next page

Component		Recommendation	Report Section
Engagement Strategy (cont)	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.	Climate Policy and Regulatory Engagement
Metrics and Targets	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.	Metrics & Targets
Governance	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.	Governance
	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.	Skills Culture & Expertise

Appendix B

Baseline Emissions and Sector Intensity Methodology

Scope of Analysis

Our FY2021 financed emissions calculations encompass the full loan portfolio for the Auto Manufacturing, Commercial Real Estate (CRE), Energy and Energy-related project financing, Power and Power-related project financing, Steel and Thermal Coal Mining sectors. Capital markets activity, structured products (such as derivatives, hedging or trading) and tax equity-financed projects are excluded from this scope of analysis at this time.

The financial reporting year has been determined as January 1, 2021 to December 31, 2021. 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:

- Outstanding 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, further detailed below.

Auto Manufacturing

The industry boundary for Auto Manufacturing focuses on Original Equipment Manufacturers (OEM) of light-duty vehicles.

Commercial Real Estate

To evaluate each counterparty's emissions performance, we focus on GHG emissions associated with the direct financing of existing buildings in North America, excluding properties under construction as of December 31, 2021, land and lot development, agricultural properties, indirect financing (e.g., Real Estate Investment Trusts (REITs) and Real Estate Operating Companies (REOCs), or securitized assets) and properties located outside of North America. This exclusion is in part due to data limitations and lack of operational emissions from said property types in our loan book. Since data quality for this sector is best in

North America, and much of our financing within the real estate space is located within North America, we are currently looking at only North American properties.

Energy and Power

For industry descriptions, see our 2021 TCFD Report. For project finance loans, we include actively operating electricity generation-related assets in the reporting year for the Power sector and actively operating projects in the Energy sector, which include midstream assets.

Steel

We have followed the Sustainable STEEL Principles (SSP) guidance to determine in-scope counterparties, focusing on crude steel producers, while excluding stainless steel producers and fabricators from the scope of our financed emissions reporting.

Suggested NAICS to identify these counterparties include:

NAICS	Corresponding Index Entries
212210	Iron Ore Mining
331110	Iron and Steel Mills and Ferroalloy Manufacturing
331210	Iron and Steel Pipe and Tube Manufacturing from Purchased Steel
331221	Rolled Steel Shape Manufacturing
331511	Iron Foundries
331513	Steel Foundries (except Investment)
332111	Iron and Steel Forging

Thermal Coal Mining

The in-scope counterparties were determined to include thermal coal mining companies with ≥5% revenue generated from thermal coal mining activities. Mining companies that only produce metallurgical coal were excluded. For companies that produce both thermal coal and metallurgical coal, financed emissions calculations are inclusive of Scope 1 and 2 emissions resulting from both thermal and metallurgical coal activities.

Business Loans Calculation Methodology

Scopes 1 & 2

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

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

For details on the PCAF calculation approaches for Business Loans and principles of best available data calculations and methodology on estimating emissions in the absence of company financials and emissions disclosures, please see our 2021 TCFD Report.

Scope 3

Auto Manufacturing

For Auto sector loans, Scope 3 tailpipe emissions are the most carbon intensive segment of the vehicle value chain. Therefore, for the automotive sector, only Scope 3 Category 11: Use of Sold Products is included in the Scope 3 financed emissions calculations. Auto manufacturers report their Scope 3 tailpipe emissions in two ways, using a Well-to-Wheel (WTW) methodology or using a Tank-to-Wheel (TTW) methodology. Well-to-Wheel calculations capture combustion of fuel over the lifetime of a vehicle as well as upstream emissions associated with fuel extraction and transport. Tank-to-Wheel calculations only capture the end use combustion of the fuel in the vehicle's tank over its lifetime.

We calculate Scope 3 tailpipe emissions using a hybrid approach, deferring to the public disclosures made by parent companies, despite inconsistent approaches (e.g., TTW or WTW), using publicly reported data provided by S&P Global Trucost, and using a bottom-up, production-based approach when neither S&P Global Trucost nor publicly disclosed data is available. The bottom-up calculation, shown below, uses make, model and body data from LMC, regional lifetime kilometer assumptions, EPA emissions factors and fuel efficiency data from Fueleconomy.gov:

$$\textit{Tailpipe } CO_2e \textit{ emissions} = \sum_{v} \textit{Vehicle Units}_v \times \textit{Fuel Efficiency}_v \times \textit{Avg lifetime km}_v \times \textit{Emissions Factor}_l$$

with l = location
with v = vehicle

The equation captures parent company fleet emissions over the lifetime of the fleet. The vehicle units and their corresponding fuel efficiency provide a metric measuring kilometers traveled per gallon of fuel consumed. Total gallons consumed over the life of the vehicle were determined using the average lifetime kilometer metric. Finally, a fuel combustion emissions factor was applied to total lifetime gallons consumed. Equation inputs and their associated assumptions are further discussed below.

For clients that produce only electric vehicles, we treat their tailpipe emissions associated with EV battery charging as zero, as emissions from battery charging are covered by the electric power generators in the Power sector.

Energy

For details on our Energy Scope 3 calculation methodology, please see our 2021 TCFD Report.

Steel

For Steel sector loans, there is a high degree of variability in Scope 3 emissions given the complexity of final steel product manufacturing processes and the variation among different steel plants (e.g., integrated vs. non-integrated steel plants). The SSP fixed system boundary includes upstream Scope 3 emissions, Category 1 – purchased goods and services, and downstream Scope 3 emissions, Category 10 – processing of sold products. FY2020 Scope 3, Category 1 emissions were obtained through CDP disclosures, when available. Where data was unavailable through CDP, upstream and downstream Scope 3 emissions were obtained through S&P Global Trucost, when available.

When using S&P Global Trucost data, Scope 3 emissions are broken down into "upstream" and "downstream," not by category. As such, applying S&P Global Trucost Scope 3 emissions data for financed emissions calculations leads to an overestimation of financed Scope 3 emissions compared to the SSP boundary.

Thermal Coal Mining

Thermal coal product combustion Scope 3 emissions are the most carbon-intensive segment of the thermal coal mining value chain. These emissions belong to Scope 3, Category 11, and are considered "downstream" in the value chain. To calculate these emissions, we use S&P Global Trucost downstream Scope 3 emissions data, where available, and for companies that do not have S&P Global Trucost data available, or the emissions values are estimated by S&P, a bottom-up approach is applied by using thermal coal sales figures, sourced through company sustainability reports and/or annual reports, and United States Environmental Protection Agency (EPA) emissions factors.

For the bottom-up approach, thermal coal combustion emissions were calculated using the following formula.

$$\textit{Combustion emissions } CO_2e = \sum_{c} \textit{Tons of thermal coal sold}_c \times \textit{Emissions Factor}$$

with c = company

Tons of thermal coal sold

Thermal coal sales values for CY2020 are sourced through companies' sustainability reports or annual reports. For companies that do not report coal sales by type, a thermal coal sales ratio is used to calculate thermal coal sales.

Emissions factors

The U.S. EPA "Mixed (electric power sector)" emissions factors (under Coal and Coke category for stationary combustion) are used in this calculation. The emissions factors are sourced through the U.S. EPA's Center for Corporate Climate Leadership GHG Emission Factors Hub, (April, 2022 update).

Global warming potential (GWP)

GWP is applied to CH_4 and N_2O emissions to calculate the total CO_2e emissions. The GWP values used in the calculation are from the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4). We use AR4 instead of the latest AR5, per the recommendation of the US EPA.

Project Finance Calculation Methodology

Our approach to calculating financed emissions for each project finance loan, is aligned with the PCAF calculation approach for project finance:

$$\textit{Financed Emissions } CO_2e = \sum_p \frac{\textit{Outstanding Amount}_p}{\textit{Total equity + debt}_p} \text{ X } \textit{Project Emissions}_p$$

with p = project

Power

For our project finance methodology related to electric power generation, see our 2021 TCFD Report.

Energy

This year, due to most Energy projects being midstream (i.e., part of the transportation of fuel process), we are only calculating operational emissions (Scopes 1 and 2), as they represent the most material source of emissions for midstream projects. Energy projects include natural gas pipelines, liquid pipelines, liquified natural gas (LNG) plants and Floating Production Storage & Offloading (FPSO), and emissions are estimated based on the following by project type:

Natural gas transmission pipelines

For natural gas transmission pipelines, methane emissions account for more than 99% of GHG emissions (source: EPA GHGRP 2020 dataset, Transmission Pipelines). A common metric used for transmission pipeline companies to track their GHG emissions is methane emissions intensity, which is a measure of methane emissions relative to natural gas throughput. A 2020 methane emissions intensity of 0.142% was reported by ONE Future Coalition for the transmission and storage sector. This average methane emissions intensity was calculated based on U.S. companies representing 56% of U.S. pipeline mileage. With the limitation of regional data access, this U.S.-based average methane emissions intensity was used to estimate GHG emissions for all natural gas pipelines projects in the FY2021 dataset. The

equation used to calculate GHG emissions is presented below.

CO_2e emissions (tonnes) from natural gas pipeline operations = *natural gas Throughput (scf)* X *methane content of natural gas (%)* X *methane density* X *methane emissions intensity (%)* X *methane GWP*

Liquid pipelines[7]

To calculate GHG emissions from liquid pipelines, an emissions intensity of tCO_2e/t-km was calculated based on a research paper "Carbon footprint of oil products pipeline transportation."[8] In this paper, a detailed Life Cycle Assessment (LCA) model is established to analyze carbon emissions of an oil products pipeline system from construction to disposal. Data from six Chinese oil pipelines were adopted as the the benchmark case study to reflect emissions produced in different stages.

The average calculated life cycle emissions intensity based on the case studies is 1.45*10-5 tCO_2e/t-km. As approximately 30% of emissions come from pipeline operation phase, an emissions intensity of $4.36 * 10^{-6}$ tCO_2e/t-km was applied to estimate emissions from liquid pipeline projects using the annual throughput and pipeline distance data. The equation used to calculate GHG emissions is listed below.

CO_2 emissions (tonnes) from oil pipeline operations = *annual Oil Throughput (bbl)* X *conversion factor (tonnes/bbl)*[9] X *pipeline distance (km)* X *4.36* X *10^{-6} tCO_2e/t-km*

with t-km = a unit of measure representing the transport of one tonne of goods over the distance of one kilometer

Note: the pipeline distances provided reflect a network of pipelines with many entry and delivery points instead of point-to-point pipelines, and as a result, there is a possibility of overestimating emissions as the products do not travel through the whole network.

Floating production storage and offloading (FPSO)

Published CO_2 intensity is applied to calculate GHG emissions for oil and gas production.

Liquified natural gas (LNG) processing plants

GHG emissions calculated for the LNG plant projects are based on project specific emissions factors sourced through company reports.

[7] Liquid pipelines use the unit t-km in their financed emissions calculations. This unit represents a measure of the transport of one tonne of goods over a distance of one kilometer
[8] Huang, L., Liao Q, Liang Y, and Zhang H (2021) Carbon footprint of oil products pipeline transportation, published in Science of the Total Environment.
[9] U.S. Environmental Protection Agency

Commercial Real Estate Calculation Methodology

Baseline emissions for this sector focus on a building's operational activity to capture Scope 1 and Scope 2 emissions. Where possible, and given variable constraints on emissions data, calculations capture a building's energy consumption, but exclude all remaining value chain segments from scope (e.g., embodied emissions from construction, etc.).

The formula used to calculate a building's operational emissions is as follows:

$$\textit{Building Operational Emissions} = \textit{Emissions Factor}^{(10)} \times \textit{Gross Floor Area}$$

The financed emissions formula for the CRE Sector is as follows:

$$\textit{Financed Emissions} = \sum_{c} \frac{\textit{Committed Amount}_{c}}{\sum \textit{Value at Origination}_{a}} \times \sum_{a} (\textit{Gross Floor Area}_{a} \times \textit{Emissions Factor}^{(10)}{}_{a})$$

with c = counterparty
with a = asset

External Data Inputs for Commercial Real Estate

Carbon Risk Real Estate Monitor (CRREM) Emissions Data

Building emissions data was derived predominately from the CRREM module, which includes emissions information for approximately 11 different property types across 44 different countries. The data is derived from 2018 actual emissions, projecting emissions intensities until 2050 by property type and location. In the absence of actual emissions, we leveraged a property and location crosswalk to triangulate the appropriate CRREM emissions factor by property type and location to apply against Gross Floor Area (GFA). This approach was used to determine the estimated building emissions of a property for the year 2020.

CRREM does not segregate Scope 1 and 2 emissions from its intensity metrics. CRREM's emissions factor includes fugitive leaks, unlike other readily available emission factors. Further information on the CRREM Methodology can be sourced in their methodology documents[11,12].

To validate CRREM emission disclosures, a comparison was performed using EPA emission factors derived from EIA CBECS and RECS consumption data. This comparison largely confirmed that estimated emissions leveraging CRREM in the U.S. were within range of the EIA's database.

Though CRE uses an asset level approach, to remain consistent with other sectors, GHG emissions are pulled for CY2020. In FY2021, CRREM emissions for CY2020 were matched to all properties.

---

[10] Emission factors leveraged for the calculation include: CRREM and EIA/EPA. Both sources utilize property-specific and location-specific consumption to triangulate an appropriate metric.
[11] CRREM Risk Assessment Reference Guide
[12] CRREM Downscaling and Assessment Methodology

EIA Commercial Building Energy Consumption Survey (CBECS) and Residential Energy Consumption Survey (RECS)

To supplement CRREM, as well as create average properties where Gross Floor Area (GFA) was unavailable within datasets, the U.S. Energy Information Agency (EIA)'s Commercial Building Energy Consumption Survey, known as CBECS and Residential Energy Consumption Survey, or RECs, was leveraged to supplement data gaps around properties from Citi's internal databases and provide a U.S.-centric emission factors. This approach was used to provide more granularity to U.S. property pathways than CRREM accounts for. The data is derived from 2018 building consumption for CBECS and 2015 building consumption for RECS. In the absence of actual emissions, Citi property data leverage a property and location crosswalk to triangulate the appropriate EIA CBECS/RECS building average and census region to apply against GFA. This approach was used to determine the estimated building emissions of a property for the year 2020.

Focusing on the methodology to supplement data gaps, CBECS and RECS property data points were used to develop a Whole Building Methodology by U.S. census region, deriving a property type and/or property sub-type to source the average GFA by census region. Where floor area is unavailable, building emissions will be estimated using a Whole Building Approach, resulting in a PCAF data quality Score 5.

Environmental Protection Agency (EPA) Emission Factors

In conjunction with the EIA CBECS and RECS average property types, where a regional census region approach could be applied, EPA emission factors were developed to provide a more accurate estimation of the U.S. portfolio. Property- and state-specific emissions factors were developed through a geographic crosswalk, which aligned the eGRID electricity data and EIA combustion data by state to U.S. Census region. These electricity and fuel consumption by property type and census region were then converted using EPA emission factors. Scope 1 & 2 emission intensities were then summed by property type and census region and then applied to their relevant properties.

Sector Intensity Calculation Methodology

Sectoral emissions intensity metrics were calculated for our portfolios in all covered sectors: Auto Manufacturing, Commercial Real Estate, Energy, Power, Steel and Thermal Coal Mining.

The Power and Energy portfolio intensity metrics are inclusive of our commercial and project finance loans. For all sectors, portfolio-weighted physical intensity was calculated as the sum of parent company emissions intensities, weighted by the parent-level committed exposure as a percentage of total portfolio-level committed exposure. The physical emissions intensity metric, by sector is as follows:

Sector	Physical Intensity Metric
Auto Manufacturing	Grams of CO_2e emitted for each lifetime vehicle kilometer (g CO_2e/km) for each company (Scopes 1-3)
Commercial Real Estate	Kilograms of CO_2e emitted for each square meter (kg CO_2e/m^2) for each property (Scopes 1-2)
Energy	Kilograms of CO_2e emitted for each MJ produced (kg CO_2e/MJ) for each company or project (Scopes 1-3)
Power	Kilograms of CO_2e emitted for each MWh produced (kg CO_2e/MWh) for each company or project (Scope 1)
Steel	Kilograms of CO_2e emitted for each ton of steel produced (kg CO_2e/ton) for each company, weighted by primary or secondary production to calculate a Climate Alignment Score (Scopes 1-3)
Thermal Coal Mining	Kilograms of CO_2e emitted for each short ton produced (kg CO_2e/short ton) for each company (Scopes 1-3)

For the Power sector, FY2020 electricity generation information is sourced through CDP and S&P Global Trucost and project operating information is sourced from annual credit reports and public company disclosures.

Energy sector company oil and gas production for FY2020 is primarily sourced through Wood Mackenzie data and from the EPA Greenhouse Gas Reporting Program (GHGRP).

Auto sector local make production figures for FY2020 is sourced from LMC Automotive, a GlobalData Company data. This data provides information about vehicle powertrain, annual volumes projected beyond 2030 and other vehicle information pertaining to production location and vehicle body type.

Coal sector production information is sourced from public company disclosures.

Through the SSP, for the Steel sector, we will receive crude steel production and emissions data from a third-party data provider, CRU to calculate the climate alignment score.

Sustainable STEEL Principles Climate Alignment Score Methodology

For further details on the Sustainable Steel Principles and its methodology, please see here.