

NEUBERGER BERMAN

# Task Force on Climate-related Financial Disclosures (TCFD) Report

January 1, 2022 – December 31, 2022 Reporting Period

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Neuberger Berman, founded in 1939, is a private, independent, employee-owned investment manager. The firm manages a range of strategies—including equity, fixed income, quantitative and multi-asset class, private equity, real estate and hedge funds—on behalf of institutions, advisors and individual investors globally. Neuberger Berman’s investment philosophy is founded on active management, engaged ownership and fundamental research, including industry-leading research into material environmental, social and governance factors. Neuberger Berman is a PRI Leader, a designation awarded to fewer than 1% of investment firms. With offices in 26 countries, the firm’s diverse team has over 2,700 professionals. For nine consecutive years, Neuberger Berman has been named first or second in *Pensions & Investments* Best Places to Work in Money Management survey (among those with 1,000 employees or more). The firm manages \$436 billion in client assets as of March 31, 2023. For more information, please visit our website at [www.nb.com](http://www.nb.com).

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\*See back cover for disclaimer.



## A MESSAGE FROM OUR CEO

Neuberger Berman is committed to supporting transparency across the financial system and constantly enhancing our reporting to clients. We are pleased to present this year's Neuberger Berman Group TCFD Report.

At Neuberger Berman, we believe the extent and impact of climate change on our economies and societies can be affected by decisions made by consumers, businesses and policymakers. We believe that introduces two types of risk to the broad economy and individual businesses: physical risk (such as risk to real estate and infrastructure assets from extreme weather events and rising sea levels); and risk associated with the policy goal of transition to a low-carbon economy (such as the risks that changes in policy, regulation, consumer behavior and technology pose to certain products, services and business models). We also believe that where there is risk, there are opportunities: opportunities to finance activities that mitigate the physical impact of climate change, such as resilient infrastructure or reinsurance; opportunities to profit when we see companies' transition-alignment being mispriced; and opportunities to invest in companies that are positively exposed to secular growth themes, such as renewable energy and electrification. Finally, we believe it is our fiduciary duty to our clients to manage these financially material risks and capitalize on these opportunities.

Investors cannot afford to put this off. Climate change is already having an impact, and policymakers are signaling both intent and timeframe for the transition. The U.S. Inflation Reduction Act (IRA) could close two-thirds of the gap between previous emissions policy and 2030 targets. It also aims to close the gap with China, which is a leader in almost every green technology. And while the European Union's efforts may be hampered by a lack of centralized compulsion and financing, its Green Deal Industrial Plan (GDIP) is an ambitious attempt to maintain the bloc's green-transition leadership and persuade sustainable business to stay in Europe.

Our clients are increasingly cognizant of these risks and opportunities and eager to know how we integrate them into our investment processes. Many seek to partner with us to develop those processes. They know a deeply complex transition is underway that will create winners and losers among businesses, sectors and regions—and they recognize that this can affect all asset classes, across both public and private companies in their portfolios. In this report we explain how we have developed proprietary climate-related analytical tools appropriate for each asset class—from listed equities and corporate fixed income to sovereign bonds and private market investments.

In all cases, analysis begins with data—corporate reporting, third-party data, proprietary data, "Big Data"—but doesn't end with it. Many of our tools integrate qualitative insights from our investment and research teams and, ultimately, investment decisions are always made by investment professionals, informed by climate-related data and balancing climate risks and opportunities with traditional factors. We also see a critical role for engagement, as both shareholders and bondholders. We believe companies that have lower carbon emissions today may face lower levels of climate risks, but we recognize that the transition to a low-carbon economy will require an evolving mix of new and legacy technologies and expertise, implying a need to stay invested in high-emitting companies as long as they commit to engaging with capital providers on credible decarbonization plans. Those who follow our NB Votes initiative, where we publish our proxy vote intentions in advance of select shareholder meetings, will have seen how we consistently use this initiative to explain the nuanced judgment that goes into each vote. We don't always vote for or against management, we vote to fulfil our fiduciary duty to protect our clients' best interests, and that intention is reflected in the climate-related votes we undertook this year.

In addition, at Neuberger Berman we are careful to acknowledge that climate change and its attendant financially material effects should not be considered in a vacuum. This means weighing those effects against other, more traditional investment risks. But it also means recognizing the intersections between climate change and other global social and environmental challenges, such as the threat to biodiversity. As the effort to avert the worst impacts of climate change gathers steam, these wider challenges are also likely to become more financially material within investment portfolios.

**GEORGE WALKER**

Chairman and Chief Executive Officer

## AIM AND SCOPE

As an asset manager with a long-term perspective, Neuberger Berman recognizes the impact of climate change and that the transition toward global net-zero emissions is well underway. Ultimately, countries will be shaping policy around their Nationally Determined Contributions (NDCs), and as investors, we have to consider the impact of those policies. We are committed to understanding the climate-related risks and opportunities that are material to the portfolios we manage, as well as to our business strategy and operations.

The extent to which climate considerations are factored into investment decisions is two-fold. First, in line with our fiduciary duty to our clients, we consider climate risks or opportunities that may impact the financial performance of a security or a portfolio. We believe that climate risks for many sectors are material, and therefore, we consider climate risk factors alongside any other environmental, social, and governance (ESG) or financial factor which could impair client capital.

Second, we know that for many of our clients, the climate impact of their portfolio is an increasingly important consideration in conjunction with investment performance. For clients with these outcome-focused objectives, we also consider how climate risks and opportunities may contribute to the requested sustainability outcomes.

This document describes Neuberger Berman Group's climate-related corporate strategy in line with disclosure recommendations of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD). The purpose of this report is to provide our current and future clients and any additional stakeholders with information to help them understand how we assess climate-related issues and opportunities through our approach to governance, strategy, risk management and metrics and targets. It also serves as a disclosure against our commitment to the Net Zero Asset Managers Initiative as well as our Investor Climate Action Plan (as defined by the [Investor Agenda](#)). To satisfy our obligation under the Financial Conduct Authority's PS21/23, we have also published a TCFD report specific to our U.K.-based entity Neuberger Berman Europe Limited (NBEL), which can be found [here](#).

This report will cover the reporting period from January 1, 2022 to December 31, 2022. The calculation date for the reported metrics is December 31, 2022. Our climate-related corporate strategy is reviewed annually and amended as needed.



## GOVERNANCE

### Board Oversight

Neuberger Berman's Board of Directors (the "Board") is responsible for reviewing and approving the Neuberger Berman Group Strategy, which includes the ESG Strategy. As a subset of all enterprise-wide risks, the Board oversees climate-related enterprise risk and reviews the firm's approach to climate-related risks and opportunities at least once a year during the Neuberger Berman Group Board annual meeting.

Where relevant senior management has integrated ESG risk factors and climate-related risks into day-to-day operations at the firm including into budget, overall strategy, capital management, risk management, and other matters that the Board oversees, and this is reflected in the materials that are provided to the Board. The Board is periodically updated on the firm's progress on its commitment to the Net Zero Asset Managers Initiative. In addition, the Board also receives materials and information from the ESG Advisory Council. The ESG Advisory Council provides guidance on new sustainability topics and is currently comprised of six industry experts, including three members with climate expertise.

### Management Responsibility

Senior management is responsible for overseeing the firm's operations, risk department and investment professionals. As a subset of overall management of the enterprise, senior management oversees climate-related risks and opportunities. The CEO is ultimately responsible for updating the Board on material updates and relevant climate-related risks and opportunities, and is supported by the Head of ESG Investing, Chief Risk Officer (CRO), Chief Investment Officers (CIOs) and Chief Operating Officer (COO). The Head of ESG Investing, together with the CRO and CIOs, is responsible for ensuring appropriate climate expertise and analytical capabilities are in place to support portfolio managers and research analysts in understanding the potential implications of climate change for security analysis and portfolio construction.

The governance structure of Neuberger Berman includes four key committees. Neuberger Berman's Partnership, Operating, Investment Risk, and Operational Risk Committees are engaged in discussion on ESG topics and climate-related risks and opportunities as part of the normal course of business.



## NEUBERGER BERMAN'S KEY COMMITTEES

COMMITTEE	MEMBERSHIP	DESCRIPTION	CLIMATE OVERSIGHT
<b>Partnership Committee</b>	Leaders from large businesses and client channels, large equity holders and senior management across asset classes, including the Global Head of ESG Investing.	Engages in how to effectively develop the firm's investment strategies and client franchise through evolving markets, while enhancing our firm culture.	Engages in discussion on ESG topics and climate-related risks and opportunities as part of the normal course of business.
<b>Operating Committee</b>	Global heads of the firm's operating platform functions, including marketing, product COOs across asset classes.	Engages in how to promote high quality execution of our business, including opportunities for global scale, regional specialization and workforce development.	Engages in discussion of ESG topics and climate-related risks and opportunities in the context of evaluating the impacts of sustainability-driven regulation and resourcing data and technology functions in response to demand for sustainability metrics.
<b>Investment Risk Committee</b>	Senior investment leaders including the CRO (Chair), CEO, President and CIO—Equities and other senior investment and risk professionals.	Oversees investment performance and risk evaluation, acts as an escalation point for investment risks, evaluates the suitability of new products under consideration, and oversees and reviews commingled fund liquidity.	Engages in discussion of ESG topics and climate-related risks as a sub-set of enterprise-wide investment risks.
<b>Operational Risk Committee</b>	Senior operations leaders including the Head of Business Risk (Chair), CRO, COO, CFO, CTO, CISO, General Counsel – Asset Management and other senior risk, operations and technology professionals.	Provides oversight of and acts as an escalation point for risks that may expose the firm to uncompensated loss or significant business disruption and acts as a forum for review and approval of actions taken to mitigate, manage or accept those risks.	Engages in discussion of ESG topics and climate-related risks as a sub-set of enterprise-wide operational risks.

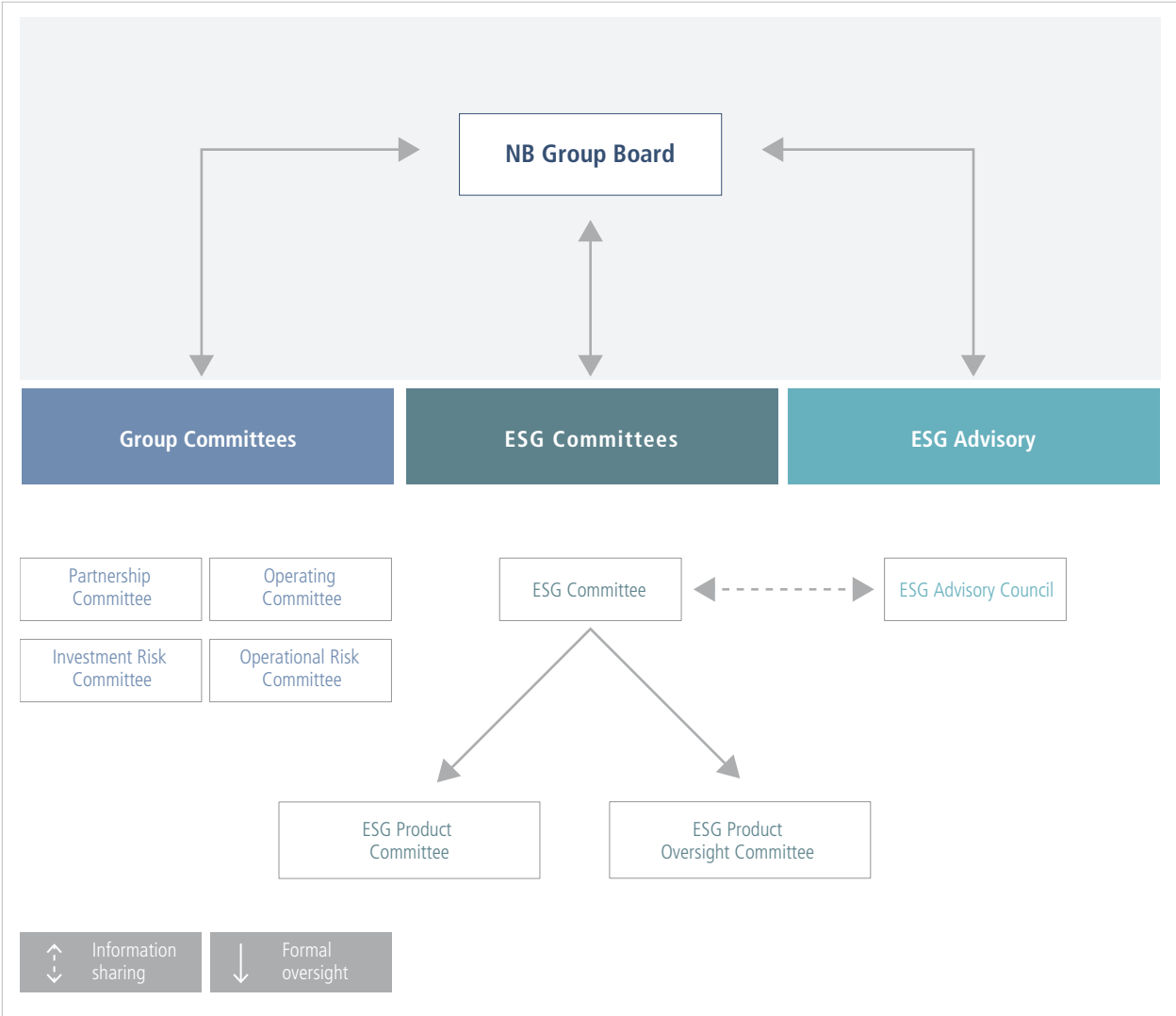
## NEUBERGER BERMAN'S ESG COMMITTEES

In addition, Neuberger Berman has formed specific ESG committees comprised of senior professionals across the firm, which include:

COMMITTEE	MEMBERSHIP	DESCRIPTION	CLIMATE OVERSIGHT
<b>ESG Committee</b>	<ul style="list-style-type: none"> <li>Chaired by the Head of ESG Investing Comprised of senior investment professionals across all asset classes, including the Chief Investment Officer (CIO) for Equities, the Chief Risk Officer (CRO), and representatives from Equity, Fixed Income and Private Equity teams.</li> <li>Includes senior professionals from client coverage, risk management, legal and compliance, marketing, and our client organization.</li> </ul>	The ESG Committee reviews the ESG Strategy for the firm. Its primary responsibility is reviewing the ESG Policy and amending it as needed. It also acts as a cross-asset class forum to share research on ESG issues and trends, and to drive deeper engagement and education on ESG topics across the firm.	<ul style="list-style-type: none"> <li>Reviews the climate-related corporate strategy, which includes the firm's approach to climate-related risks and opportunities, at least once a year.</li> <li>Periodically reviews the firm's progress on its commitment to the Net Zero Asset Managers Initiative.</li> </ul>
<b>ESG Product Committee</b>	<ul style="list-style-type: none"> <li>Chaired by the Head of ESG Investing</li> <li>Includes the Chief Investment Officer (CIO) for Equities and the Chief Risk Officer (CRO).</li> </ul>	The ESG Product Committee oversees ESG commitments made at the product and/or investment level for new products.	<ul style="list-style-type: none"> <li>Oversight includes claims made in relation to climate-related risks and opportunities.</li> <li>Approves or denies the setting of net-zero targets at the product and/or investment level for specific designated assets.</li> </ul>
<b>ESG Product Oversight Committee (EPOC)</b>	<ul style="list-style-type: none"> <li>Co-chaired by the Head of Business Risk and the Head of Investment Risk EMEA and Asia</li> <li>Includes senior leaders such as the Head of ESG Investing, Head of Product Development, and other senior leaders across the support and controls teams (Compliance, Legal, Marketing and Risk).</li> </ul>	The ESG Product Oversight Committee oversees ESG commitments made at the product and/or investment level for existing products.	<ul style="list-style-type: none"> <li>Oversight includes claims made in relation to climate-related risks and opportunities</li> <li>Monitors progress toward net-zero alignment for designated assets that have set a net-zero target.</li> </ul>

While not part of the formal ESG governance structure, the ESG Advisory Council shares material and information with the ESG Committee. Takeaways from the previous quarter are shared at the following ESG Committee meeting.

**FIGURE 1: OVERVIEW OF NEUBERGER BERMAN'S ESG GOVERNANCE STRUCTURE**





## STRATEGY

We are committed to understanding our climate-related risks and opportunities, and managing risks material to our business.

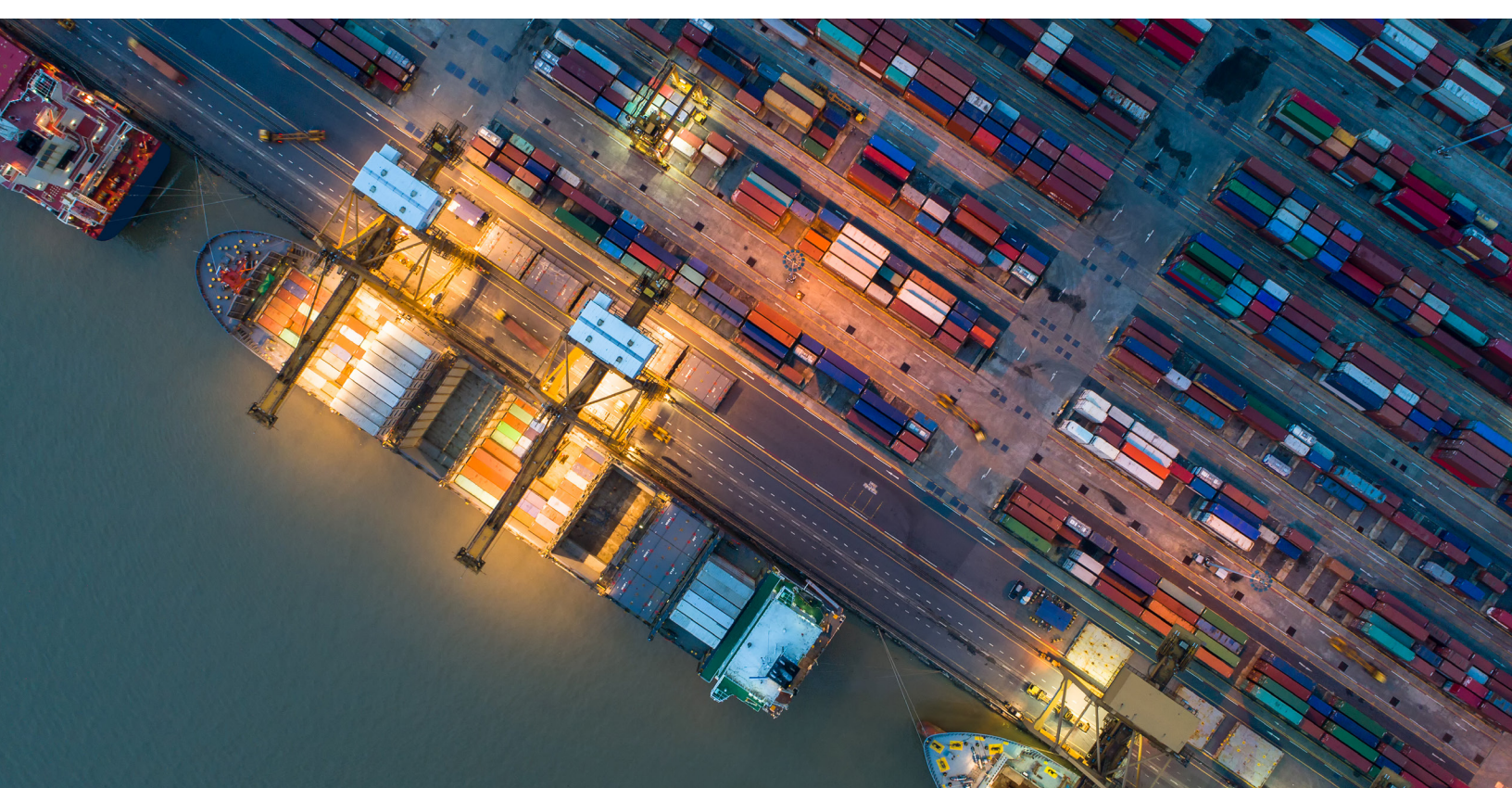
We can segment climate-related risks into two categories:

- **Physical risk:** Physical risks resulting from climate change will be both event-driven (acute) and longer-term shifts (chronic) in climate patterns. Physical risks could result in asset damage and business disruptions to portfolio companies that lead to decreased security valuations and thus affect our investment value chain. Physical risks may also cause direct weather-related damage to our assets and disrupt our own business operations.
- **Transition risk:** The global transition to a low-carbon economy will cause policy, legal, technology and market shifts as the world addresses the mitigation and adaptation requirements related to climate change over the short, medium and long term. Transition risks could result in increased capital expenditures, increased stranded asset risk, and decreased demand for certain goods and services for portfolio companies that lead to decreased security valuations and thus affect our investment value chain. Regulation and shifting consumer preferences regarding green investment products may also directly affect our business.

### Investment Portfolios

We have identified key channels through which climate risks and opportunities would impact portfolio companies and thus present a source of investment risk. We adopt the following definitions regarding timeframe of critical impact, which is when we believe portfolios will have the greatest level of financial exposure to the risk under consideration:

- **Short-term:** 1 year
- **Medium-term:** 2 – 5 years
- **Long-term:** 5+ years



## CLIMATE RISK CHANNELS FOR INVESTMENT PORTFOLIOS

Risk	Description	Timeframe of critical impact	Impact on portfolio companies	Measurement tools used to assess the risk at the portfolio level	Investment risk
<b>Physical: Acute</b>	Risks from increased severity of extreme weather events, including cyclones, flooding, river low flow and wildfires	Long-term	Increased write-offs, capital costs, and insurance premiums due to physical asset damage; decreased revenues due to business disruptions	Climate Value-at-Risk (CVaR), Sovereign Sustainability Assessment, third-party and proprietary catastrophe models	Portfolio performance, which leads to lower AUM and decreased revenues
<b>Physical: Chronic</b>	Risks from increased variability in weather patterns, including wind gusts, precipitation and temperatures, including extreme heat and extreme cold	Long-term	Increased operating expenses due to need to adapt to variable weather patterns and temperatures; decreased revenues due to business disruptions; increased insurance premiums	CVaR, Sovereign Sustainability Assessment	Portfolio performance, which leads to lower AUM and decreased revenues
<b>Transition: Policy</b>	Risks from climate transition regulation that can affect a company's direct operations, suppliers or customers	Short, medium and long-term	Increased capital expenditures due to nationally determined emissions reduction targets or carbon pricing for certain sectors or their suppliers; increased electricity costs due to grid low carbon transition; decreased revenues due to shifting market demand	CVaR	Portfolio performance, which leads to lower AUM and decreased revenues
<b>Transition: Technology</b>	Risks from failing to create or transition to new low carbon emissions technologies	Short, medium and long-term	Decreased demand for products and services; stranded asset risk	CVaR, Net-Zero Alignment Indicator	Portfolio performance, which leads to lower AUM and decreased revenues
<b>Transition: Market</b>	Risks from changing consumer behavior, increased costs of raw materials and uncertain market signals	Short, medium and long-term	Decreased demand for goods and services due to shift in consumer preferences; increased production costs due to input prices; changes in energy costs	Net-Zero Alignment Indicator, NB ESG Quotient, EU Taxonomy Alignment	Portfolio performance, which leads to lower AUM and decreased revenues
<b>Transition: Reputation</b>	Risks from negative stakeholder feedback resulting from inadequate climate action	Short, medium and long-term	Decreased demand for goods and services; decreased revenue from impacts on workforce; decreased capital availability	NB ESG Quotient, Controversy monitoring	Portfolio performance, which leads to lower AUM and decreased revenues

## CLIMATE OPPORTUNITY CHANNELS FOR INVESTMENT PORTFOLIOS

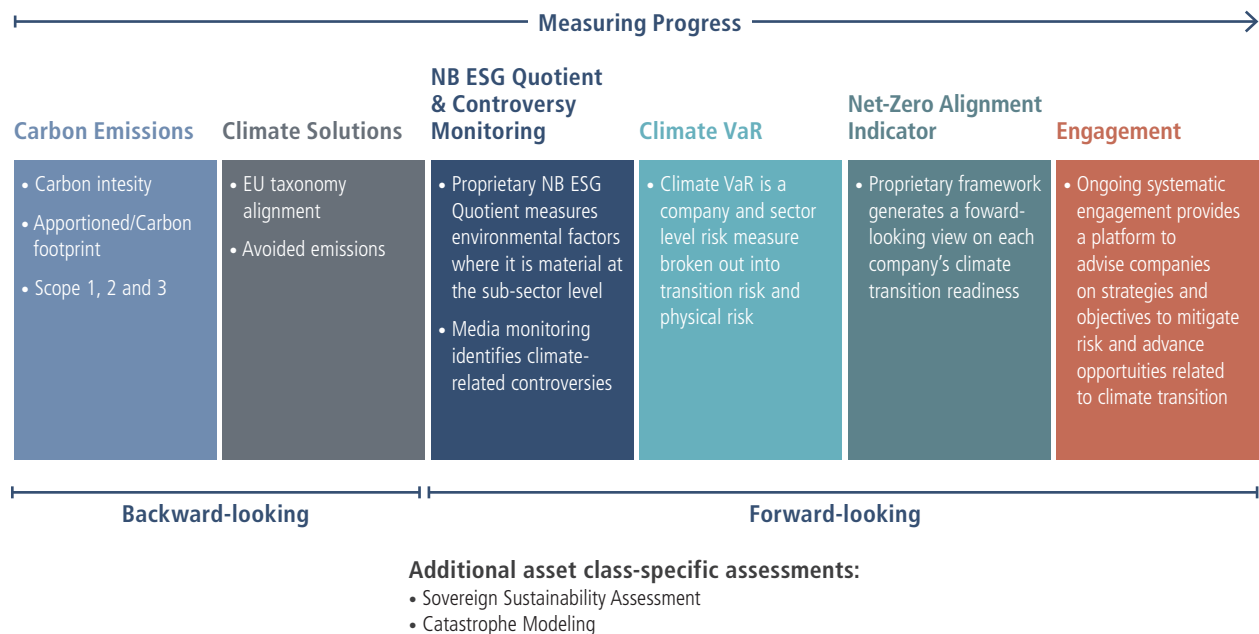
Opportunity	Description	Timeframe of critical impact	Impact on portfolio companies	Measurement tools used to assess the risk at the portfolio level	Investment opportunity
<b>Resource Efficiency</b>	Opportunities from efficiency in use of water and raw materials	Long-term	Decreased operating expenditures due to efficiencies	NB ESG Quotient	Portfolio performance, which leads to higher AUM and increased revenues
<b>Energy Source</b>	Opportunities from use of lower emissions sources, supportive policy incentives and new technologies	Short, medium and long-term	Decreased operating expenditures due to efficiencies, decreased sensitivity to energy prices	NB ESG Quotient, Net-Zero Alignment Indicator	Portfolio performance, which leads to higher AUM and increased revenues
<b>Products &amp; Services, Resilience</b>	Opportunities from development of climate mitigation and adaptation solutions	Short, medium and long-term	Increased revenue through demand for climate mitigation and adaptation solutions	CVaR, Net-Zero Alignment Indicator, EU Taxonomy Alignment	Portfolio performance, which leads to higher AUM and increased revenues
<b>Markets</b>	Access to new markets, use of public-sector initiatives	Short, medium and long-term	Increased revenues due to access to subsidies and tax credits	Net-Zero Alignment Indicator	Portfolio performance, which leads to higher AUM and increased revenues

### Portfolio-level Assessment of Climate Risks and Opportunities

Climate considerations are becoming more important for investors across asset classes. For this reason, we have developed proprietary climate risk and opportunity assessments that are appropriate for the asset class. We distinguish our ESG philosophy by process-focused investing and outcome-focused investing. For process-focused investing strategies, such as our ESG-integrated strategies, the conclusions drawn from each assessment can be used by portfolio managers to more accurately price securities in their investment selection process. In doing so, they can construct more resilient portfolios that can help protect client value over the long term. For outcome-focused investment strategies, where our clients specifically seek to achieve climate or sustainability outcomes alongside financial returns, we continue to be dedicated to launching innovative investment strategies to meet their objectives. In pursuit of this, we have developed processes that measure positive outcomes for climate mitigation and adaptation. Ultimately, as active managers, we rely on the judgment of our investment professionals. There is no one-size-fits-all response to the climate transition—each portfolio manager uses the suite of risk and opportunity assessment tools available to them to make decisions that fit their individual investment and sustainability objectives.

We believe that while backward-looking metrics such as carbon footprint and intensity are important, robust quantification of climate risk should go beyond those metrics and seek to capture forward-looking real-time insights. The figures below identify the suite of backward and forward-looking tools we use, as well as their availability across asset classes.

**FIGURE 2: MEASUREMENT AND ASSESSMENT TOOLS CURRENTLY USED TO ASSESS CLIMATE RISKS AND OPPORTUNITIES**



**FIGURE 3: AVAILABILITY OF MEASUREMENT AND ASSESSMENT TOOLS ACROSS ASSET CLASSES**

Asset Class	Corporate Fixed Income			Sovereigns		Listed Public Equity			Private Markets and Alternatives		
	Investment Grade Credit	Non-Investment Grade Credit	Emerging Market Debt	Developed Market Sovereigns	Emerging Market Sovereigns	Developed Market Global Equity	Small Cap Equity	Emerging Market Equity	Private Equity	Private Debt	Insurance-Linked Securities
Climate Value-at-Risk	Available	Available	Available	Not Available	Not Available	Available	Available	Available	Not Available	Not Available	Not Available
Carbon Emissions	Available	Available	Available	Available	Available	Available	Available	Available	Not Available	Not Available	Not Available
Net-Zero Alignment Indicator	Available	Available	Available	Available	Available	Available	Available	Available	Not Available	Not Available	Not Available
Climate Solutions	Available	Available	Available	Not Available	Not Available	Available	Available	Available	Available	Not Available	Not Available
NB ESG Quotient	Available	Available	Available	Available	Available	Available	Available	Available	Not Available	Not Available	Not Available
Controversy Monitoring	Available	Available	Available	Not Available	Not Available	Available	Available	Available	Available	Available	Not Available
Engagement	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Not Available
Sovereign Sustainability Assessment	Not Available	Not Available	Not Available	Available	Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Catastrophe Modelling	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Available



- **Carbon Emissions:** We understand that carbon-intensive securities, companies and portfolios will be more materially exposed to transition risks. Therefore, our portfolio managers have access to tools to track (i) carbon metrics at a point-in-time, and (ii) carbon metrics progress year-over-year. While the two main metrics portfolio managers track are carbon footprint and carbon intensity, they also have access to absolute emissions and apportioned emissions. All carbon metrics are available for Scope 1, Scope 2 and Scope 3 emissions (on a best-efforts basis) across our listed public equities and fixed income universe, subject to data availability across certain asset classes.
- **Climate Solutions:** To measure the percentage of any portfolio invested in climate solutions, we generally use revenue alignment with the EU taxonomy for sustainable activities. However, for our specialized impact strategies, we can also calculate estimated avoided emissions for portfolio companies where we deem it relevant to the investment thesis.
- **NB ESG Quotient:** The NB ESG Quotient, our proprietary ESG ratings system, is built around the concept of measuring financially material sector-specific ESG risks and opportunities. Thus, it considers energy efficiency, carbon emissions intensity, carbon footprint and low carbon opportunities where it is material at the sub-sector level. For some sectors, it also considers nature-related metrics such as biodiversity impacts, resource intensity and waste management. It also takes into account ESG controversies that could lead to reputational risk. The NB ESG Quotient covers 4,000+ equity ratings and 2,500+ credit ratings.
- **Controversy monitoring:** Select portfolio managers and research analysts utilize screens to conduct real-time monitoring of climate-related controversies that could lead to reputational risk. Our media-monitoring data provider screens, on a daily basis, over 100,000 public sources and stakeholders in 23 languages, and contains specific filters that identify controversy topics.
- **Climate Value-at-Risk (CVaR):** Different securities and companies will have varying levels of exposure to physical risk depending on the nature of their businesses, real asset holdings and locations of key assets. Additionally, they will have different potential regulatory costs, as well as technology opportunities related to low-carbon technology solutions for companies that need to comply with GHG reduction requirements where sufficient data is available. CVaR estimates the costs related with physical and transition risks at the security level across our listed public equities and corporate fixed income universe for multiple temperature scenarios.
- **Net-Zero Alignment Indicator:** To better capture real-time insights, we designed a forward-looking Net-Zero Alignment Indicator that seeks to capture a company's current status and progress over time toward net-zero targets. The indicator was created in partnership with our clients with decarbonization targets and incorporates specific sub-indicators that were informed by the high-level expectations of the Institutional Investor Group on Climate Change (IIGCC). The indicator utilizes multiple quantitative data points from both traditional ESG data providers and specialized climate data sets, as well as real-time insights from both our credit and equity research analysts. The indicator is utilized across our listed public equities and fixed income universe.

In addition to the tools described above, portfolio managers and research analysts may assess climate risks through direct bilateral engagement with issuers. Asset class-specific tools are further detailed in the next section.

### Listed Public Equity and Corporate Fixed Income

We believe climate risks impact different asset classes through various transmission channels. In equity markets, investors face the risk of losing their entire invested capital. However, they can also participate in upside by investing in companies that are effectively transitioning their business models to net zero or delivering climate solutions. In credit markets, while investors will typically see a return of some principal in the event of a default, credit risk can increase after an acute event such as a hurricane or flood damages corporate assets, impairs cash flows, and thus a corporate's ability to service debt.<sup>1</sup>

We have implemented top-down scenario analysis for modelling transition and physical risks at the company level in line with the recommendations of the TCFD. This scenario analysis currently focuses on listed public equity and corporate-issuer fixed income holdings in the firm's U.S. mutual funds and international UCITS range. Multiple scenarios estimate the impact of warming average temperatures at levels of 1.5°C, 2°C (early action), 2°C (late action), and 3°C. The resulting CVaR considers transition risks, from both policy and technology changes related to the transition to net-zero emissions, and physical risks, including acute weather events and chronic changes in climate patterns. Security-level estimates can be aggregated at the portfolio level, which helps portfolio managers understand CVaR for their portfolios.

CVaR provides a framework for identifying climate risk over the long term and to assist in understanding how issuers can shift their operations and risk practices over time. However, we also recognize that it has limitations in assessing certain sectors. The physical risk output, for example, is highly relevant to industrial companies whose primary exposure comes through facilities location data but doesn't account for e.g., insurance companies who are primarily exposed through their portfolios. The transition risk data may also underestimate the ability of companies in certain sectors, like airlines or cement, to pass through carbon costs. In general, all scenario analysis is dependent on top-down assumptions that need to be contextualized for individual issuers and portfolios. As such, we believe that scenario analysis should serve as a starting point for further bottom-up analysis and identifying potential climate-related risks to address through issuer engagement.

To enable more robust bottom-up assessment, we built the Net-Zero Alignment Indicator, which is considered at both the portfolio and security level across net-zero-committed listed equity and corporate fixed income portfolios. The indicator is designed to assess a company's net-zero transition readiness, and hence its ability to mitigate climate risks.

The indicator includes multiple quantitative data points from both traditional ESG data providers and specialized climate data sets, as well as real-time insights from both our credit and equity research analysts. In particular, it is:

- **Adaptable** by allowing for the constant addition of new factors and data sources, as well as allowing qualitative analyst overrides
- **Sector-specific** with the ability to build custom models with sector-specific data points
- **Integrated throughout our ESG Investing platform** to support engagement and new product development

<sup>1</sup> Basel Committee on Banking Supervision, "Climate-related risk drivers and their transmission channels", 2021

## STRATEGY HIGHLIGHT: CLIMATE TRANSITION MULTI-SECTOR CREDIT

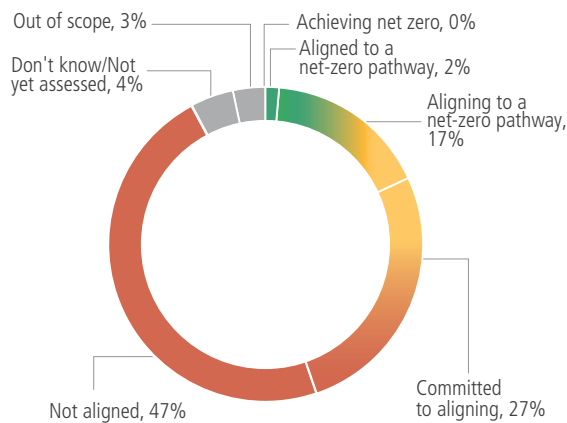
As governments worldwide commit to net-zero emissions targets, many companies and investors have recognized the need to manage the risk of misalignment with those commitments. Many investors also recognize a need to assess alignment so that they can identify and focus engagement on companies' specific areas of weakness.

Climate Transition Multi-Sector Credit is a relative value, credit-focused strategy with flexibility to invest across sectors, credit quality and geographies to generate attractive risk-adjusted returns over a market cycle. The strategy has a dual objective to decarbonize in line with the Paris Agreement through a multi-tool approach, which includes measuring progress through a proprietary alignment indicator:

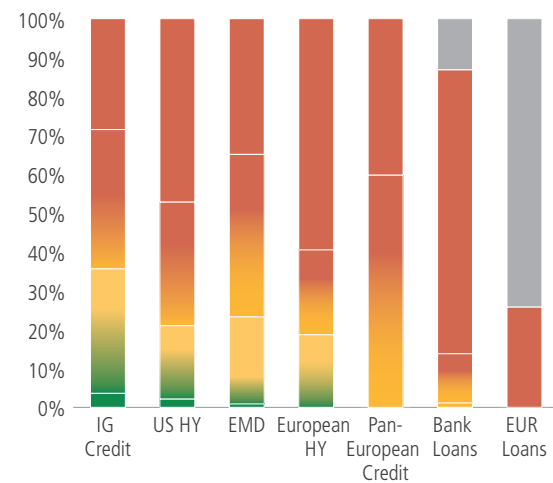
- **Portfolio commitment:** tracking net-zero alignment progress while targeting an accelerated pace of carbon footprint reduction
- **Minimum standards:** avoids carbon-intensive companies that are misaligned with the net-zero transition and failing to demonstrate progress through engagement efforts
- **Company analysis:** key metrics include proprietary Net-Zero Alignment Indicator, CVaR and NB ESG Quotient, to assess exposure to physical and transition risks in the short, medium and long term
- **Engagement:** company- and sector-specific engagements are informed by the Net-Zero Alignment Indicator to maximize company resilience to transition risks

**FIGURE 4: NET-ZERO ALIGNMENT IN ACTION FOR A CLIMATE TRANSITION MULTI-SECTOR CREDIT PORTFOLIO**

### Alignment Status (Portfolio Weight)



### Alignment Status by Asset Type (Portfolio Weight)



Source: NB Analysis. For illustrative purposes only.



## STRATEGY HIGHLIGHT: U.S. EQUITY IMPACT

The U.S. Equity Impact strategy seeks to invest in companies with products and services that have the potential to deliver significant positive social and environmental outcomes. The impact portfolio typically consists of 35 – 45 core holdings selected through proprietary Impact Ratio analysis that complements fundamental research. The investment team also engages with portfolio companies to encourage increased positive impact outcomes. For each potential investment, an impact thesis, impact Key Performance Indicators (KPIs) and impact engagement objectives are identified.

As part of its environmental objective, the strategy invests in climate solutions which are primarily evaluated through the KPIs avoided emissions or reduced emissions. Their quantitative nature facilitates the relative assessment of climate solutions across industries and business models. This helps identify climate opportunities with underappreciated potential to reduce global emissions that could lead to faster growth or a better valuation in the future. Combined with engagement programs to understand and decarbonize traditional Scope 1 – 3 emissions, we believe this approach offers a holistic view of a company's climate impact.

**FIGURE 5: U.S. EQUITY IMPACT STRATEGY IMPACT RATIO**

Company/Sector	Wind Original Equipment Manufacturers (OEM)	Heating, Ventilation, and Air Conditioning (HVAC)	Electric Vehicle (EV) Supply Chain	Railroad	Risk & Climate Analytics
<b>Fundamental Considerations</b>	#1 market share in wind turbine contract manufacturing and longer-term EV frame opportunity, offset by breakeven profitability & cash flow	A consistent share gainer in both commercial and residential HVAC, fueling organic growth above market with self-help cost savings	20% share of Silicon Carbide (SiC) materials market – key for EV power components with 20 years of experience manufacturing	Most efficient railroad in North America via early implementation of precision railroading offers opportunity to win business from trucking	Strong organic growth trends with high recurring subscription revenue base and operating margin improvement potential
<b>Impact Thesis</b>	Manufactured wind turbine blades will avoid carbon emissions from fossil fuel electricity sources (~25% of global GHGs)	A substantial role to play in reducing emissions associated with building heating & cooling (~15% of global energy use)	SiC enables cost-savings and longer range in EVs, driving cost parity to Internal Combustion Engine (ICE) vehicles to address transport emissions (~37% of global GHGs)	Rail is c.70% more fuel-efficient vs. road trucking and a way to address transport emissions (~37% of global GHGs)	Provide research, analytics and software to help understand risks related to weather disasters and climate (~\$313bn in 2022)
<b>Impact KPIs</b>	Estimated 19 million tons of avoided CO <sub>2</sub> per year	Enabled 43 million tons of avoided CO <sub>2</sub> e emissions in 2022	Enable ~250,000 EVs avoiding ~1 million tons of CO <sub>2</sub> per year	Estimated 11 million tons of avoided CO <sub>2</sub> per year	\$120bn+ of annual insured losses modeled in categories such as severe storms
<b>Impact Engagement Objective</b>	Expand U.S. manufacturing facilities supported by policy incentives and backlog	Set interim avoided emission targets to track progress against 2030 objectives	Double SiC capacity annually to achieve scale savings and grow market size	Improve fuel efficiency and achieve emission targets	Further expand environmental and extreme event modeling business to underinsured areas

### Assessing Public Markets Portfolios' Resilience

The extent to which climate scenario analysis is factored into investment decisions is two-fold.

First, in line with our fiduciary duty to our clients, where relevant and appropriate we consider climate risks or opportunities that may have a material impact on the financial performance of a security or portfolio. We believe that climate risks for many sectors are material, and therefore, we consider climate risk factors alongside any other ESG or financial factor which could impair client capital.

Second, we know that for many of our clients, the climate impact of their portfolio is an increasingly important consideration in conjunction with investment performance. When setting net-zero goals we take a client-centric approach, working with clients on setting net-zero targets for individual accounts that have expressed net-zero ambition, but not yet set targets. We also manage specific sustainable and impact co-mingled funds that have affirmed their net-zero intent, consistent with their stated objectives and strategies. For these outcome-focused strategies, we also consider how climate risks and opportunities that may contribute to clients' requested sustainability outcomes.

At the firm level, we review the aggregated CVaR results for firm-wide holdings across listed public equities and fixed income considering scenarios modeled according to the AIM-CGE Integrated Assessment Model (IAM) at least once a year. At year-end 2022, the coverage for this scenario analysis was \$144 billion of assets under management (AUM). Our standard approach centers around scenario analysis of less than 2°C, assuming early action. However, we also have the capability to estimate climate impacts across average warming temperatures of less than 1.5°C, 2°C (late action), and 3°C. The key differences in assumptions across scenarios are indicated in the table below.

**FIGURE 6: AIM-CGE CLIMATE SCENARIO VARIABLES**

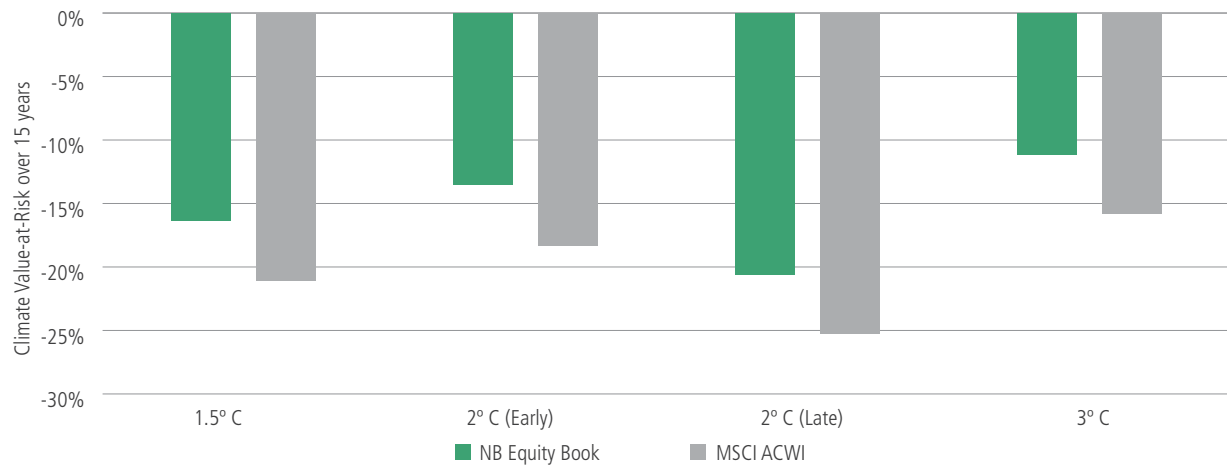
Assumption	AIM-CGE 1.5°C	AIM-CGE 2°C (Early Action)	AIM-CGE 2°C (Late Action)	AIM-CGE 3°C
<b>Population</b>				
World population peak	2070	2070	2070	2070
World population in 2100 (million)	8,990	8,990	8,990	8,990
<b>Electricity generation by fuel source</b>				
2030 fuel mix, renewables (%)	55%	50%	30%	30%
2050 fuel mix, renewables (%)	85%	73%	80%	50%
<b>Carbon sequestration (MtCO<sub>2</sub>/yr)</b>				
Uptake (surpasses 5,000 Mt/yr)	2040	2040	2045	2055
Carbon sequestration peak (Mt/yr)	19,234	22,515	15,196	12,311
<b>Low carbon fuel source in transport</b>				
2050 low carbon fuel sources (%)	21%	8%	14%	4%
<b>GHG emissions</b>				
Peak year	2020	2020	2020	2020
90% reduction achieved by	2045	2090	2055	N/A
Zero emissions achieved by	2055	N/A	2060	N/A
<b>Outcomes</b>				
Global warming temperature 2100	1.30°C	1.60°C	1.78°C	2.78°C
Global carbon price 2100 (\$/tCO <sub>2</sub> )	\$1,500	\$1,000	\$4,000	\$250

Source: MSCI ESG Research.

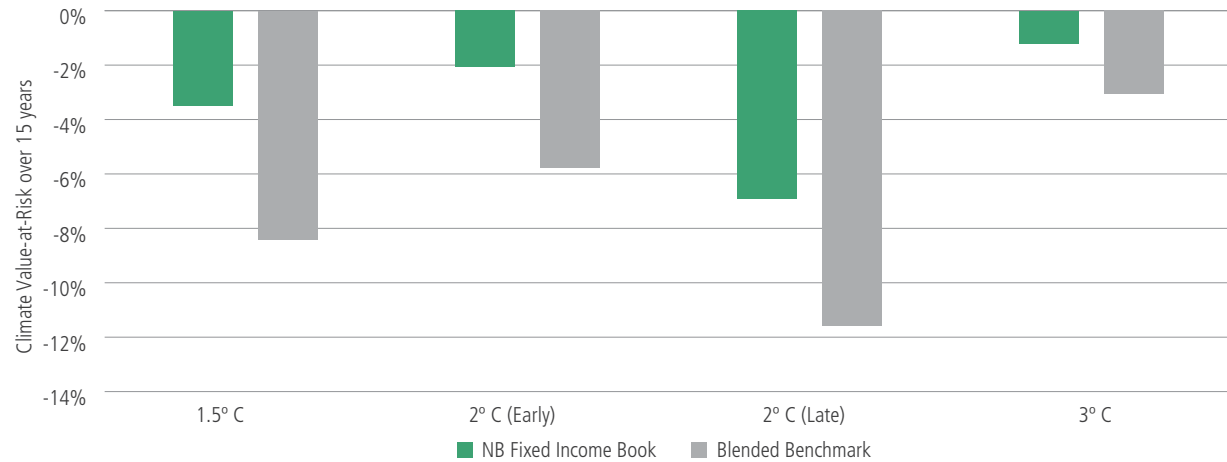
Across all scenarios, for a 15-year time horizon, our firm-wide client holdings are more resilient to climate risks than their respective benchmarks.

**FIGURE 7: CLIMATE VAR ANALYSIS COMBINES PHYSICAL AND TRANSITION IMPACTS UNDER FOUR REPRESENTATIVE TEMPERATURE PATHWAYS FOR EQUITY AND FIXED INCOME SECURITIES VS. RESPECTIVE BENCHMARKS**

**Equity Exposure to Aggregated Climate Risk**



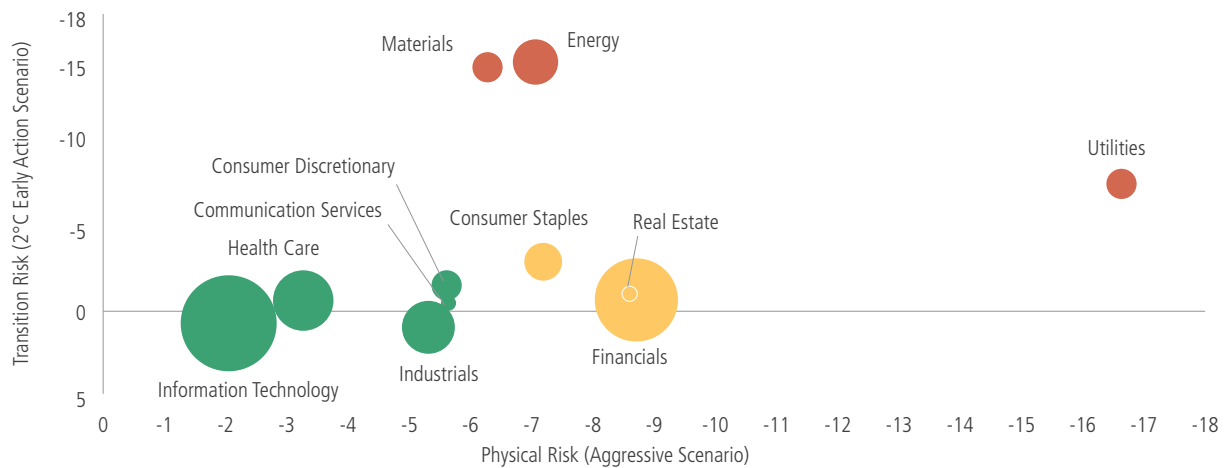
**Fixed Income Exposure to Aggregated Climate Risk**



Note: Blended Benchmark: 65% BBG Global Aggregate Corporate Index/25%ICE BofA Global High Yield Index (HW00)/10%JP Morgan Corporate Emerging Markets Bond Index - Regular Diversified.

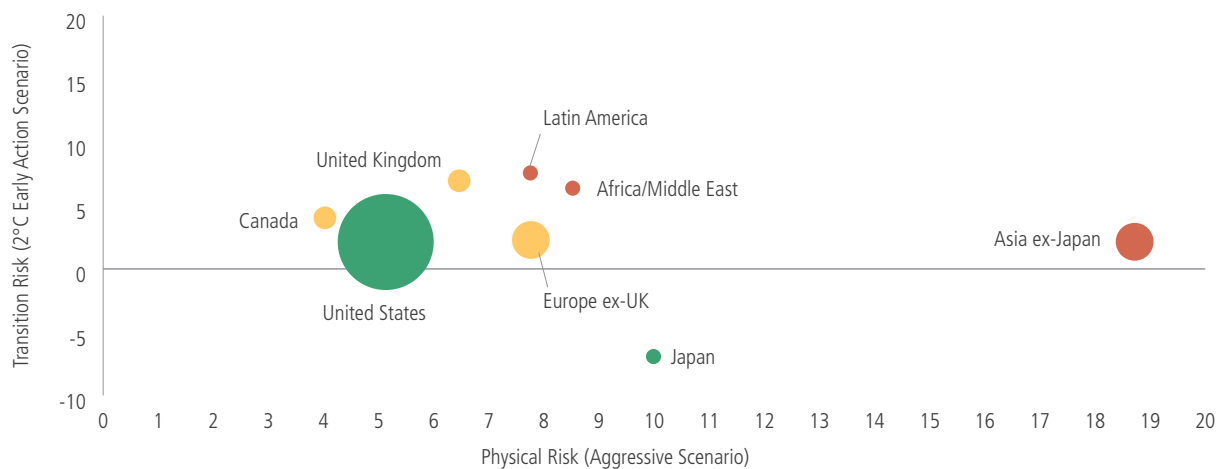
In addition, the holdings-level CVaR data allows us to identify key sectors and regions within the portfolio with the highest financial exposure to climate risks overall, as well as specific types of physical risks. While some sector/region combinations within the portfolio face significant climate risk, we have a lower level of exposure to those sectors relative to overall investment in the region. In terms of physical risk, the assets we manage face lower physical risk than MSCI ACWI in all categories except for river low flow and tropical cyclone risk.

**FIGURE 8: LOWER LEVEL OF FINANCIAL EXPOSURE ACROSS THE NB PORTFOLIO TO THE HIGHEST CLIMATE RISK SECTORS**



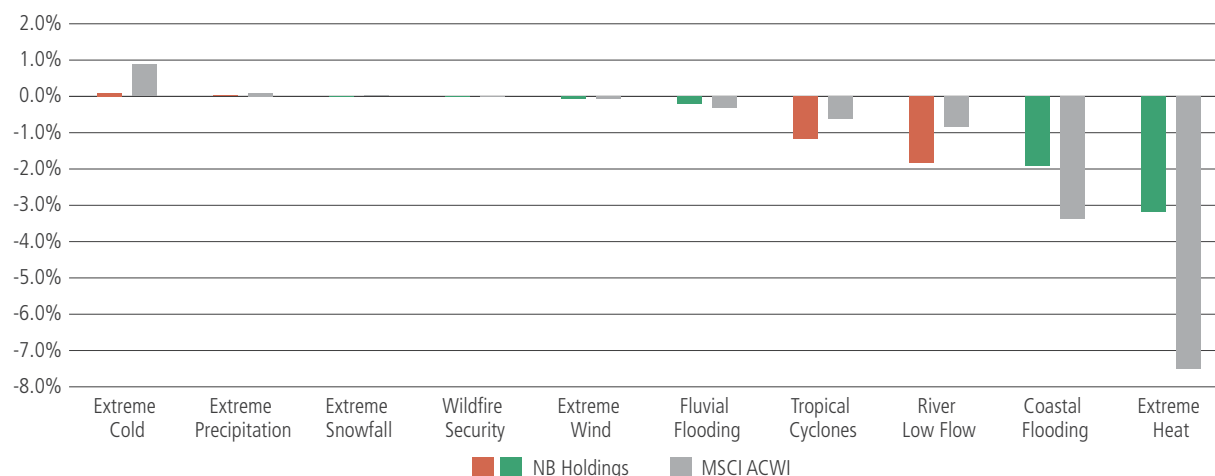
Source: MSCI. Climate impact by sector. Climate risk is shown from best overall (green) to worst overall (red). The circles represent holdings size.

**FIGURE 9: LOWER LEVEL OF FINANCIAL EXPOSURE ACROSS THE NB PORTFOLIO TO THE HIGHEST CLIMATE RISK REGIONS**



Source: MSCI. Climate impact by region. Climate risk is shown from best overall (green) to worst overall (red). The circles represent holdings size.

**FIGURE 10: LOWER IMPACT FROM PHYSICAL RISKS ACROSS THE NB PORTFOLIO COMPARED TO MSCI ACWI (EX. RIVER LOW FLOW AND TROPICAL CYCLONES)**



Source: MSCI. Climate impact by physical risk type.

### Sovereigns

Climate risks are also important to assess for sovereign issuers as they are for corporate issuers. For sovereigns, the effects of physical risk are particularly important and primarily transmitted through lower tax revenues—as a result of impaired corporates or households—and increased spending to fund adaptation measures.<sup>2</sup> We believe that an effective approach to assessing sovereign sustainability needs to be forward-looking, surmount the challenges of data limitations and be comparable to corporate sustainability measures. We measure climate risks and opportunities for sovereigns by leveraging carbon metrics, the NB Sovereign ESG Quotient and NB Sovereign Sustainability Assessment and Net-Zero Alignment Indicator for sovereigns.

First, we assess the level and trend of territorial net GHG emissions, adjusted for GDP, to understand climate mitigation efforts by the sovereign. The Sustainable Emerging Market Debt Strategies exclude sovereign issuers who are in the top 25th percentile in territorial greenhouse gas emissions per GDP globally, absent improvement over the past three years.

Second, the NB Sovereign ESG Quotient, which applies to all emerging and developed market sovereigns, includes eight environmental indicators that make up a combined 20% weight of the quotient: energy efficiency, climate adaptation, carbon emissions per GDP, carbon emissions trend adjusted for the economic cycle, air and household pollution, unsafe sanitation and tree cover loss. For Sustainable Emerging Market Debt strategies, we also deploy a NB Sovereign Sustainability Assessment. Leveraging Notre Dame Global Adaptation Initiative Index scores, we measure sovereigns' projected vulnerability to climate risks across six categories—food, water, health, ecosystem services, human habitat and infrastructure—and readiness across three key categories: economic, governance and social. Through this analysis, our portfolio managers can gain a better understanding of the risks to sovereigns that will be exacerbated by climate change, such as overcrowding, food insecurity, inadequate infrastructure and civil conflict.

Third and finally, to measure Net-Zero Alignment for sovereigns, we leverage GermanWatch's Climate Change Performance Index (CCPI), Climate Action Tracker (CAT) and the Net Zero Tracker to gain a holistic understanding of a sovereign's alignment with net zero.

<sup>2</sup> Basel Committee on Banking Supervision, "Climate-related risk drivers and their transmission channels", 2021

### STRATEGY HIGHLIGHT: SUSTAINABLE EMERGING MARKETS DEBT HARD CURRENCY STRATEGY

Sustainable Emerging Markets Debt Hard Currency strategy seeks to outperform the JPMorgan JPM EMBI Global Diversified Index by investing primarily in hard currency emerging market debts issued by countries that comply with the strategy’s sustainable investment criteria. The strategy deploys a proprietary sovereign sustainability screen that goes beyond sovereign ESG scores and tilts portfolio to best-in-class countries based on climate-change preparedness, progress on UN SDGs, and “Do No Harm” and minimum thresholds.

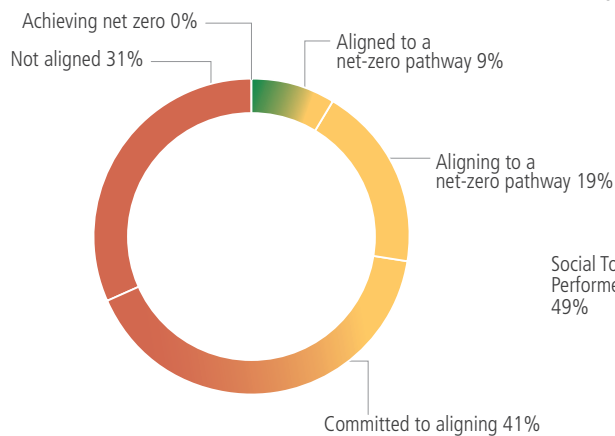
The strategy measures countries’ progress on climate mitigation and adaptation, and thus preparedness for transition and physical risks respectively. Based on income-adjusted Notre Dame Global Adaptation Initiative Index scores, portfolio exposure is tilted toward:

- 1) Countries in the top 25th percentile in latest year scores
- 2) Countries in the second 25th percentile showing improvement over latest three years

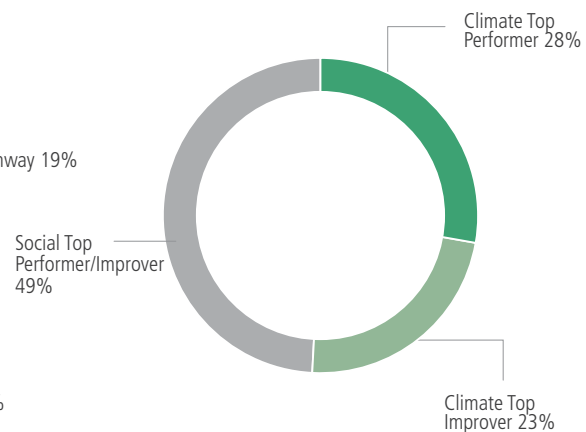
This strategy also deploys our Sovereign Net-Zero Alignment Indicator, tilting toward sovereigns that are further along the alignment spectrum.

**FIGURE 11: NET-ZERO ALIGNMENT AND SOVEREIGN SUSTAINABILITY ASSESSMENT IN ACTION FOR A SUSTAINABLE EMERGING MARKETS DEBT PORTFOLIO**

#### Alignment Status (Portfolio Weight)



#### Climate Adaptation & Emissions Performance (Portfolio Weight)



Source: NB Analysis. For illustrative purposes only.

### Private Markets and Alternatives

A key benefit of private markets is that they afford investors the opportunity to benefit from climate upside by investing in earlier stage climate solutions. The private equity industry also tends to invest in lower-carbon industries (e.g., technology and healthcare), which helps mitigate transition risk. However, the ability to mitigate transition risk differs between general partners (GPs), who tend to take controlling stakes in their targets, and thus have direct influence over climate-related decisions, and limited partners (LPs), who exert their preferences mainly through capital commitments and engagements with GPs. In addition, carbon data availability is limited compared to public markets. Within NB Private Equity,<sup>3</sup> we apply a materiality-based assessment to conduct targeted climate risk analysis for certain direct investments. We have a systematic approach for identifying direct investments for which we would conduct our climate risk analysis, which is primarily focused on physical risk, but in some instances includes transition risk. NB Private Equity continues to work toward more comprehensive climate analysis over time by requesting carbon emissions metrics from private equity primaries, co-investments and select secondaries investments, and engaging with GPs on climate-related topics. Engagement remains a key means to encourage greater awareness, disclosure and action on climate risk by private equity managers.

Within the alternatives space, there are some investment strategies where the assessment of climate risks is intrinsic to the class, for example, insurance-linked securities (ILS). As an overarching theme, the ILS asset class involves the transfer of climate-related catastrophe risk into the broader capital markets. Insurance-linked securities are neither equity nor traditional debt, but rather support insurance contracts ready to pay when a pre-defined set of criteria are met, usually linked to the risk of large-scale, low probability natural catastrophe events (i.e., hurricanes, earthquakes and wildfires). We believe this transfer of climate-related catastrophe risk into the broader capital markets contributes to the enhancement of corporate and societal climate resiliency, and that the ILS asset class is therefore unique in that it inherently incorporates many environmental and social factors as part of the direct investment process. Furthermore, our approach to the asset class promotes climate adaptation by quantifying acute physical climate risks and developing products that transfer the risk and contribute to a growing an innovative risk transfer market. We quantify climate risks by applying deep expertise in the use and application of catastrophe models and proprietary tools. The risk products and the risk transfer expertise we then provide promote societal resilience by facilitating faster disaster recovery and relief financing.



<sup>3</sup> "NB Private Equity" consists of Private Equity Investment Portfolios and Co-investment Platform and Private Equity Secondary Platform.

### Business Strategy & Operations

In addition to investment portfolios, we know that climate change will also likely impact Neuberger Berman’s own business strategy, financial planning and operations across various dimensions, including how we design investment solutions in response to client demand, choose our facilities, and access capital. We have identified key channels through which climate risk will affect our business operations and adopt the same definition regarding timeframe of critical impact that we do for investments.

#### CLIMATE RISK CHANNELS FOR BUSINESS STRATEGY & OPERATIONS

Risk	Description	Timeframe of critical impact	Business risk
<b>Physical: Acute</b>	Risks from increased severity of extreme weather events, including cyclones, flooding, river low flow and wildfires	Long term	Physical damage to offices, business disruptions due to extreme weather events, increased insurance premiums
<b>Physical: Chronic</b>	Risks from increased variability in weather patterns, including wind gusts and precipitation, and temperatures, including extreme heat and extreme cold	Long term	Increased operating expenses to allow people and equipment to continue working under extreme heat and cold
<b>Transition: Policy</b>	Risks from climate transition regulation that can affect a company's direct operations, suppliers or customers	Short, medium and long term	Increased costs to comply with existing and emerging sustainability disclosures through adoption of ongoing monitoring tools and data vendors, both for our business (under e.g., the EU’s Corporate Sustainability Reporting Directive (CSRD)) and investment products (e.g., fund disclosure rules in the EU, U.K. and U.S.)
<b>Transition: Technology</b>	Risks from failing to create or transition to new low carbon emissions technologies	Short, medium and long term	N/A
<b>Transition: Market</b>	Risks from changing consumer behavior, increased costs of raw materials and uncertain market signals	Short, medium and long term	Meeting demand from new and existing clients to implement and monitor climate objectives requires using third-party data and developing internal infrastructure. In addition, internal education and hiring resources necessary to support clients in meeting their climate goals
<b>Transition: Reputation</b>	Risks from negative stakeholder feedback resulting from inadequate climate action	Short term, medium and long term	Increased costs of maintaining robust governance procedures to avoid greenwashing investment products



## CLIMATE OPPORTUNITY CHANNELS FOR BUSINESS STRATEGY & OPERATIONS

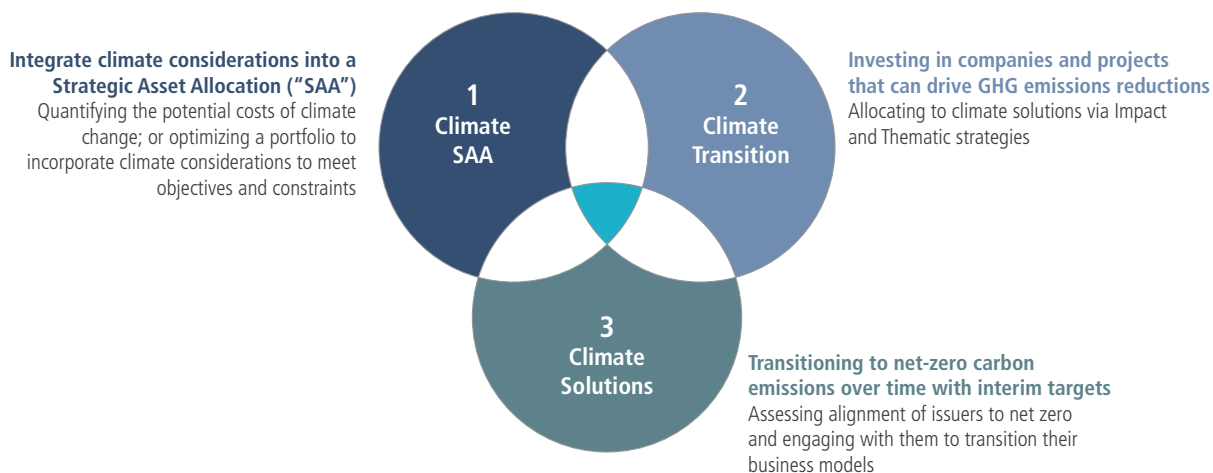
Opportunity	Description	Timeframe of impact	Investment opportunity
Resource efficiency	Opportunities from efficiency in use of water and raw materials	Long term	Decreased operating expenditures for leased offices
Energy Source	Opportunities from use of lower emissions sources, supportive policy incentives and new technologies	Short, medium and long term	Decreased operating expenditures for leased offices
Products & Services, Resilience	Opportunities from development of climate mitigation and adaptation solutions	Short, medium and long term	Growing demand from new and existing clients to offer strategies that deliver climate outcomes such as climate transition and climate solutions
Markets	Access to new markets, use of public sector initiatives	Short, medium and long term	Access to sustainability-linked credit

**Providing Investment Solutions**

As climate impact becomes more important for some of our clients, we also see an opportunity to partner with them on developing solutions to invest in the climate transition and in climate solutions. These opportunities are taken into consideration when resourcing the ESG Investing team, embedding ESG resources on investment teams, and enhancing ESG data and technology capabilities.

We offer clients climate-related solutions at both the asset allocation and individual investment strategy level, which can be combined or used independently to achieve their climate objectives.

**FIGURE 12: DEVELOPING CLIMATE-RELATED INVESTMENT SOLUTIONS FOR OUR CLIENTS**



Our Climate-Integrated Strategic Asset Allocation (Climate-Integrated SAA) solution serves to incorporate climate risks and opportunities into top-down portfolio construction for multi-asset portfolios. It can also include carbon emissions constraints for net-zero-committed portfolios. The framework consists of two building blocks: a corporate bond and equity methodology, and a sovereign methodology. Our proprietary corporate methodology converts the CVaR metrics into security-level expected return impacts, which we then use to adjust our capital market assumptions. Individual security assumptions are aggregated at the benchmark level, allowing us to create a climate-optimized portfolio that also optimizes on client-specific fundamental objectives such as yield, duration and volatility.

In terms of individual strategies, we offer climate transition strategies, net-zero-aligned, and thematic or climate solutions strategies. Climate transition strategies rely on the output of our Net-Zero Alignment Indicator to tilt toward companies that stand to benefit from the global energy transition. Net-zero-aligned strategies are committed to achieving net zero and have adopted either a carbon footprint or portfolio alignment interim target by 2030. Thematic or impact strategies can capture companies that are developing and providing innovative solutions to climate change.

### Navigating the Regulatory Landscape

As a global investor, we operate in many different jurisdictions, all of which are adopting sustainability-related reporting and disclosure requirements, which presents a source of transition risk for our business strategy and operations. One of the main risks is that some of these evolving requirements end up contradicting each other. In addition, the volume of new requirements and, in some cases, the unpredictability of regulatory change, will continue to be a risk from a resource, financial and an organizational perspective. As different governments can have diverging views on the climate transition, political changes contribute to this regulatory and policy-related uncertainty. The need to comply with these regulations is taken into consideration when applicable in business decisions around developing or enhancing infrastructure such as committees focused on ESG matters, risk oversight and monitoring and internal audit. We monitor legal and regulatory requirements that may directly affect our business, which include but are not limited to:

- **Corporate reporting requirements**, including under the EU's Corporate Sustainability Reporting Directive and the U.K.'s ESG Sourcebook
- **Fund disclosure requirements**, including under the SEC's proposed fund disclosure rules, the U.K.'s proposed Sustainable Disclosure Requirements and the EU's Sustainable Finance Disclosure Regulation (SFDR) add (CSDDD)
- **Due diligence and the definition of fiduciary duty**, including the U.K. government's clarification of fiduciary duty as part of its Green Finance Strategy and the EU's evolving definition in the context of the EU Corporate Sustainability Due Diligence Directive add (CSDDD)

### Considering Climate Risk in Operations

We also actively seek to identify and monitor our potential exposures to climate-related physical risks, and are aware that the firm's facilities, data centers and key locations may be at risk. Through top-down climate modelling and proxy data, we have estimated the specific physical climate risks our headquarters in New York and regional headquarters in Hong Kong, London and Tokyo may face. Extreme heat is the largest risk factor for our New York, Hong Kong and Tokyo offices. In London, our office is vulnerable primarily to river flooding.

## RISK MANAGEMENT

Neuberger Berman identifies, assesses and manages climate risks through a framework that is jointly implemented by the ESG Investing team, the Investment teams, and the Internal Audit and Enterprise Risk teams. The ESG Investing team is responsible for providing guidance on avoidance policies that are applied to certain vehicles to minimize climate risks; supporting issuer engagement efforts on climate risks; and engaging in discussions with policymakers and regulators to promote transparency and clarity on climate topics. The Investment teams are responsible for assessing climate risks and opportunities at the company level; in process-focused investing strategies, the conclusions drawn from this assessment may be used in pricing securities and constructing climate-resilient portfolios, whereas in outcome-focused investing strategies they may be used to drive specific climate outcomes. Climate risk assessments can also be used to identify engagement priorities.

The Enterprise Risk team, comprised of the Investment Risk and Business Risk teams, oversee ESG-related risks, including climate risks, as part of the firm's top-down Risk Framework and Governance structure. The firm has established a Risk Appetite Statement, which defines the Risk Framework's five key pillars: Strategic, Financial, Investment, Operational and Regulatory Risk. The framework assesses the level and types of risk that the firm is willing to accept to achieve its strategic objectives and plans, and to ensure compliance with applicable regulatory requirements. We have also identified a set of Risk Categories, which are detailed on our Risk Register, an inventory of operational risks, and this includes climate risk. This is complemented by a bottom-up approach to identify and manage climate risks throughout a product life cycle alongside all risk inherent to the activities conducted. Climate-related risk is integrated throughout the process of defining, measuring and monitoring identified through each portfolio's risk profiles. Throughout this process, climate-related risks are identified both at the entity and product level and assessed accordingly in respect of significance toward the risk appetite level and possible financially material impacts.

The Enterprise Risk team regularly engages with portfolio managers and the ESG Investing team on strategy/fund-level ESG risks, which may include reviewing key ESG metrics, including those related to climate such as carbon emissions, CVaR, etc., as well as implementation of avoidance policies on specific funds/accounts. The Head of Business Risk and the Head of Investment Risk EMEA and Asia also chair the ESG Product Oversight Committee, which oversees ongoing compliance with ESG claims for all strategies/products and is a member of the ESG Product Committee and the ESG Committee.

Finally, the Internal Audit team performs full-scope audits of the ESG Investing function and evaluates ESG integration practices, which may include climate risks and opportunities assessments, of individual investment teams.

### Investment Portfolios

Within investment portfolios, we leverage three key pillars to identify and manage climate risks: (i) minimum standards, (ii) issuer engagement, and (iii) policy advocacy and industry collaboration.

#### Minimum Standards for Certain Vehicles

For certain clients and investment vehicles, we believe there are benefits to avoiding certain companies and issuers that face materially negative climate risks. We have a number of avoidance policies designed to meet client climate and sustainability objectives and comply with regulations in specific jurisdictions.

- **Thermal Coal Involvement Policy:** The Neuberger Berman Thermal Coal Involvement Policy applies to all of our co-mingled U.S. registered mutual funds, exchange traded funds, and closed-end funds and international UCITS range. Consistent with our fiduciary duty to clients to provide attractive investment returns while mitigating risk, investments in companies that have more than 25% of revenue derived from thermal coal mining or are expanding new thermal coal power generation are subject to formal review and approval by the ESG Committee before the initiation of any new investment positions in the securities of such companies. The Thermal Coal Involvement Policy does not apply to subadvised funds.
- **Global Standards Policy:** The Neuberger Berman Global Standards Policy applies to all of our UCITS and QIAIF portfolios that have been categorized as either Article 8 or Article 9 financial products in accordance with the Sustainable Finance Disclosure Regulation (SFDR). The policy excludes violators of (i) the United Nations Global Compact Principles (“UNGC Principles”), (ii) the OECD Guidelines for Multinational Enterprises (“OECD Guidelines”), (iii) the United Nations Guiding Principles on Business and Human Rights (“UNGPs”) and (iv) the International Labour Standards (“ILO Standards”). The UNGC principles state that businesses should support a precautionary approach to environmental challenges, promote environmental responsibility, and encourage the development of environmentally friendly technologies.
- **Sustainable and Enhanced Sustainable Exclusion Policies:** The Neuberger Berman Sustainable and Enhanced Sustainable Exclusion policies are implemented for certain mandates and funds that are either labeled as sustainable, or impact, or specifically opt-in to using these exclusion policies. These policies have specific thresholds relating to coal, unconventional oil and gas supply (oil sands), conventional oil and gas, and electricity generation from thermal coal, liquid fuels (oil) and natural gas.
- **Private Markets Avoidance Policy:** NB Private Markets Avoidance Policy is available to implement for certain mandates and funds across primary, direct co-investment, secondary and private debt strategies. This policy applies to new investment opportunities made on behalf of select clients and commingled funds, and is generally consistent with global standards, including UNGC Principles, and addresses topics related to sanctions, controversial weapons and thermal coal, among others. The potential for additional avoidance and other ESG considerations is driven by the investment teams, client mandates, third-party ESG label requirements or regulations. Our separate accounts can be customized based on a client’s values and preferences.

### Issuer Engagement

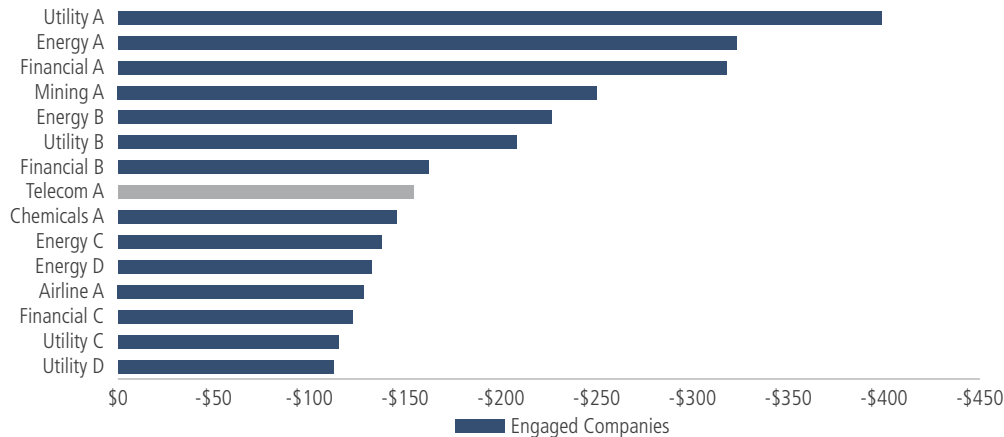
We use engagement as a tool to mitigate exposure to transition and physical risks by encouraging issuers to enhance disclosures, evaluate their practices, and make changes to mitigate potentially material risks where necessary.

As illustrated below, of the 15 companies with the highest CVaR across our firm-level equity holdings, in 2022 we proactively engaged with 14. For our firm-level fixed income holdings, we engaged with 11 out of the 15 highest CVaR holdings.

Our climate change engagement priorities include encouraging company boards to establish formal oversight of climate risk; encouraging issuers to disclose emissions and set Science-Based Targets; requesting disclosure on how companies are managing physical and transition risks; and tracking management responsiveness and progress toward these goals. In addition to asking companies for emissions disclosure, we also ask for TCFD-aligned reporting. We believe escalation of engagement should be investment-driven, taking into consideration matters such as investment objectives, issuer-specific circumstances, and our history of engagement. In the event that an issuer is not taking sufficient action to manage climate risks, we may take investment action.

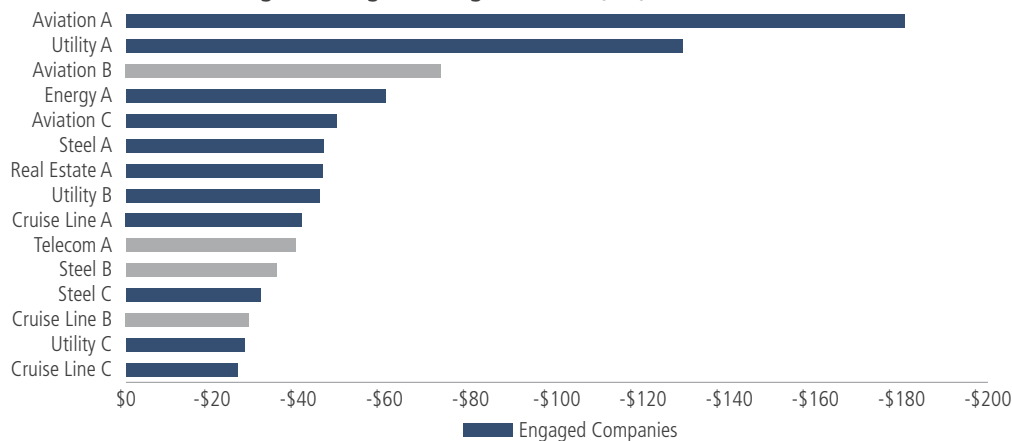
**FIGURE 13: REGULAR ENGAGEMENT WITH THE HIGHEST CLIMATE RISK HOLDINGS ACROSS EQUITY AND FIXED INCOME**

**NB Equity Holdings with Highest Weighted CVaR (\$M) as of December 31, 2022**



Of the 15 companies with the highest equity CVaR, NB has proactively engaged on climate with 14

**NB Fixed Income Holdings with Highest Weighted CVaR (\$M) as of December 31, 2022**



Of the 15 companies with the highest fixed income CVaR, NB has proactively engaged on climate with 11

Between January 1, 2022, and December 31, 2022, our corporate engagement efforts included:

**FIGURE 14: OUR 2022 CORPORATE ENGAGEMENT EFFORTS**

	CLIMATE ENGAGEMENT				
	Total Engagement	Green Opportunities	Climate Risk Management	Climate Reporting	Physical Risk
Public Equity	901	454	251	151	45
Fixed Income	1,276	433	393	406	44

### Engagement Highlights

- In the 2022 proxy season, we published our vote intentions along with our rationales on 63 shareholder proposals through NB Votes, our advance proxy-voting initiative. Of these, nine vote intentions related to material climate-related topics.
- We are a lead investor in the Climate Action 100+, a five-year initiative coordinated by the UN-backed Principles for Responsible Investment and other groups, and lead engagement with a large aerospace company through the initiative.
- As part of our efforts to consider “Principal Adverse Impacts” under the Sustainable Finance Disclosure Regulation (SFDR), we engaged in a mass letter campaign directed to issuers where we lacked critical data, including emissions data, requesting that they disclose this information.
- Neuberger Berman engages with private equity managers on a range of ESG topics including climate-related topics. We encourage greater disclosure of climate-related data such as carbon emissions. We also serve as a platform to disseminate knowledge and education related to net-zero initiatives and implementation considerations.

At Neuberger Berman the fixed income and equity analysts collaborate and share resources for external engagement. We believe that this is a real strength as all teams can leverage, and ultimately benefit, from the engagement activities conducted across the various asset classes. Occurrences that prompt engagement may differ depending on asset class. For example, a public equities team may seek to engage with a company regarding an upcoming proxy vote at a company’s annual general meeting, while a fixed income team may seek to engage with an issuer regarding an upcoming issuance or a material change to the issuer’s credit profile. Research analysts and portfolio managers track these engagements in dedicated research management tools for both public equities and corporate fixed income.

In addition, for specific mandates with client-directed net-zero objectives, the Net-Zero Alignment Indicator allows us to undertake more targeted stewardship in areas where a company is making less progress toward net-zero alignment. Research analysts and portfolio managers can drive targeted engagement toward very specific areas of improvement. As a result, the indicator creates a positive feedback loop: research analysts and portfolio managers can conduct engagements on the weakest sub-indicators, and the company’s responses can be fed back into the indicator to enhance our insights.

The ability to access a sovereign is not comparable to that of a corporate issuer, but it is certainly not impossible, and where opportunities arise, we seek to engage. A sovereign issuer’s path to sustainability will vary based on geographical, historical, demographic and socioeconomic factors, and as a result, progress can be slow and modest. When it comes to net zero or climate resilience, as investors we rely on commitments made by policymakers and published through e.g., the Nationally Determined Commitments (NDCs). However, these tend to be very high-level documents and we view it as our responsibility to understand how a sovereign will deliver on any commitments it has made. For instance, for some sovereigns we may consider it prudent for the NDCs to be considered no more than a declaration of intent, whereas for others we seek to understand gaps in implementation such as incomplete transition plans for sectors like transportation or agriculture. We think engagements through industry initiatives can be influential in improving a sovereign’s overall climate resilience and ability to generate long-term excess returns.



## EQUITY ENGAGEMENT CASE STUDY

### Independent and collaborative engagement to encourage decarbonization and Just Transition-related actions

**Background:** National Grid plc is an international electricity and gas company that transmits and distributes electricity and natural gas. As a regulated utility in both the U.S. and U.K., National Grid relies on both community and regulator support to continue to maintain its social license to operate. Any changes in affordability of energy or job losses as a result of the energy transition could present reputational and/or policy risk to the company. As such, we have regularly engaged National Grid on its climate strategy including Just Transition considerations.

**Engagement Scope and Process:** Our engagements have included discussions with the company's independent board chair and members of senior management both via conference calls and an in-person meeting in our Neuberger Berman offices. We also disclosed our support for the company's climate action plan in advance of the company's 2021 AGM given its robust disclosure.

In the case of utilities, a Just Transition should be inclusive of workers as well as customers and communities. This requires the company to engage with community stakeholders and key labor groups, as well as transparently report on these efforts.

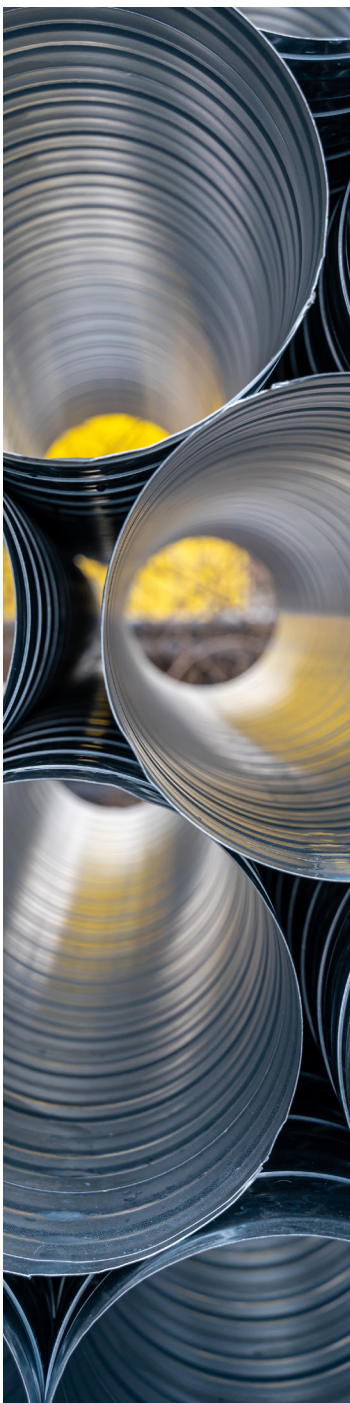
We have engaged with the company on the topic of Just Transition within the context of overall climate action plans. We view the company's disclosure on interim GHG targets in addition to its stated net zero ambition as best practice as it enables us to engage more deeply with the company on its progress toward its targets and the rigor of them. However, in recent years, we have encouraged the company to incorporate Just Transition-related actions into its climate action plan.

**Outlook & outcomes:** We have been pleased to see the company implement meaningful efforts in this area.

The company has incorporated Just Transition practices into its overall climate action plan through its "Grid for Good" program, where employees work with disadvantaged communities to improve employability skills around STEM and other roles required for a green transition. The company has also published a Fair Transition report where they have outlined their approach to a Just Transition.

Over the coming years, we intend to continue the dialogue with the company to better incorporate best practices as they emerge.





## INVESTMENT GRADE CORPORATE DEBT ENGAGEMENT CASE STUDY

### Engaging a pipeline transportation and energy storage company on mitigation climate transition risks

**Background:** Kinder Morgan is a leading U.S. pipeline transportation and energy storage company. We have a longstanding relationship with the company's management team, with whom we meet several times a year, including on financially material ESG issues. As a player in the energy space, we believe Kinder Morgan could face significant climate transition risks, from a changing policy environment, to changing end-consumer behavior, to reputational risks. As such, we have engaged the company on its decarbonization strategy.

**Engagement Scope and Process:** Beginning in 2018, we have engaged with Kinder Morgan on its response to the energy transition. As a first step in this journey, we urged the company to start measuring and disclosing its Scope 1 and 2 emissions publicly. We were pleased to see them do so in their 2021 ESG report. This report also identified potential sources of emissions reductions for the company's business operations.

While we acknowledge this important step, we see additional room for improvement. We have encouraged the company to follow up on its disclosure with emissions reduction targets for Scope 1 and 2, which would allow investors to better understand risks facing the company. While it has not yet done so, the company has focused on reducing methane emissions through the use of technologies to reduce venting and fugitive emissions.

**Outlook & Outcomes:** We will continue to encourage the company to set Scope 1 and 2 emissions reduction targets, but believe the progress made thus far is a key step in what will be a multi-year transition for them. It is important for us to keep management accountable. We believe they understand our concerns and we expect this to be continuous dialogue with incremental improvement over time.



## CORPORATE DEBT ENGAGEMENT CASE STUDY

### Rare weather-related events highlight the need for investment in power grid infrastructure

**Background:** Vistra Corp. is a Texas-based integrated retail electricity and wholesale power generation company. In recent years the corporate debt team, in collaboration with the equity teams, has regularly engaged with management on diversifying the company's generation portfolio and other matters. Following several winter storms in Texas, we also sought to engage the company on its strategy to mitigate the financial impacts of physical climate risks.

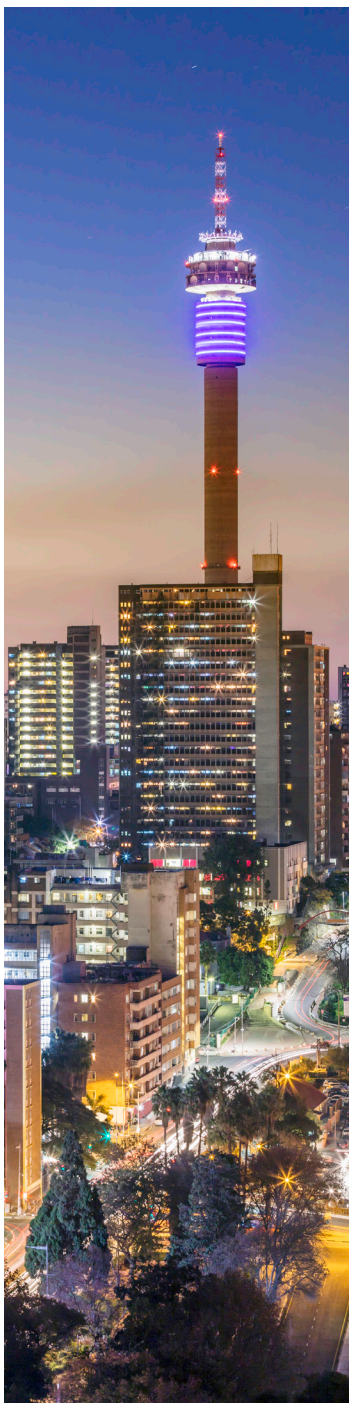
**Engagement Scope and Process:** In February 2021, Texas experienced an uncommon occurrence of extremely cold temperatures as a result of several winter storms, which the region's power grid were not prepared for.

In addition to Vistra's own power generating units being impacted by the storms, the company also experienced supply chain challenges, as exploration and production (E&P) companies were unable to deliver adequate gas supplies to the state, and pricing challenges, as commodity prices surged, but electricity prices were capped.

While Vistra could not have anticipated the weather event, we believe the company could have been better prepared for the price shocks and supply chain challenges that ensued. We engaged with the company multiple times throughout 2021 and encouraged management to take steps to improve its preparedness for future physical impacts on its operations, including supply chain resiliency.

**Outlook & Outcomes:** Vistra invested \$50 million in 2021 for enhanced weatherization of its power generating units in the ERCOT market and implemented new risk management policies to further protect its operations.

To address supply chain resiliency, Vistra added dual fuel capabilities and increased its fuel storage capacity, and participated in processes with the Public Utility Commission of Texas and Electric Reliability Council of Texas (ERCOT) to implement Texas legislation in response to the winter storms, particularly the registration and weatherization of critical gas and electric infrastructure.



## SOVEREIGN DEBT ENGAGEMENT CASE STUDY

### South Africa

**Background:** We had the opportunity to engage with the government of South Africa to discuss the country's decarbonization strategy. This engagement was organized by the Emerging Markets Investors Alliance, which enables institutional emerging market investors to support good governance, promote sustainable development, and improve investment performance in the governments and companies in which they invest.

**Engagement Scope and Process:** We discussed several aspects of the decarbonization strategy such as carbon taxation, use of carbon offsets, tracking climate expenditure. In particular, we discussed aspects of the South Africa Climate Change Bill, including targets and accountability mechanisms. The national greenhouse gas emissions trajectory in South Africa Climate Change Bill currently reflects South Africa's 2015 NDC targets, which are considerably less ambitious than the updated 2021 NDC. While the Bill describes these as an interim greenhouse gas emissions trajectory, we believe the trajectory targets should reflect the 2021 updates. Furthermore, despite the wide scope of the legislation, there do not appear to be sufficient provisions for offenses and penalties. Only one criminal offense is listed (failure to prepare and submit a greenhouse gas mitigation plan to the Minister of Environment) and there are no clear linkages to non-compliance and carbon tax penalties. We also sought to understand if the authorities have set clear timeframes for sectoral emission targets and carbon budgets, since the absence of these deadlines could result in implementation delays.

**Outlook & Outcomes:** Based on our engagement, we believe that decarbonization is a significant priority for the South African government. As part of our ongoing engagement efforts, we intend to liaise with the Treasury on incorporating the updated targets in the Climate Bill, and the punitive measures and implementation timeframes. Additionally, we intend to engage with the Department of Forestry and Environment on these topics and with the Budget Office on climate budget tagging.

### Policy Advocacy & Industry Collaboration

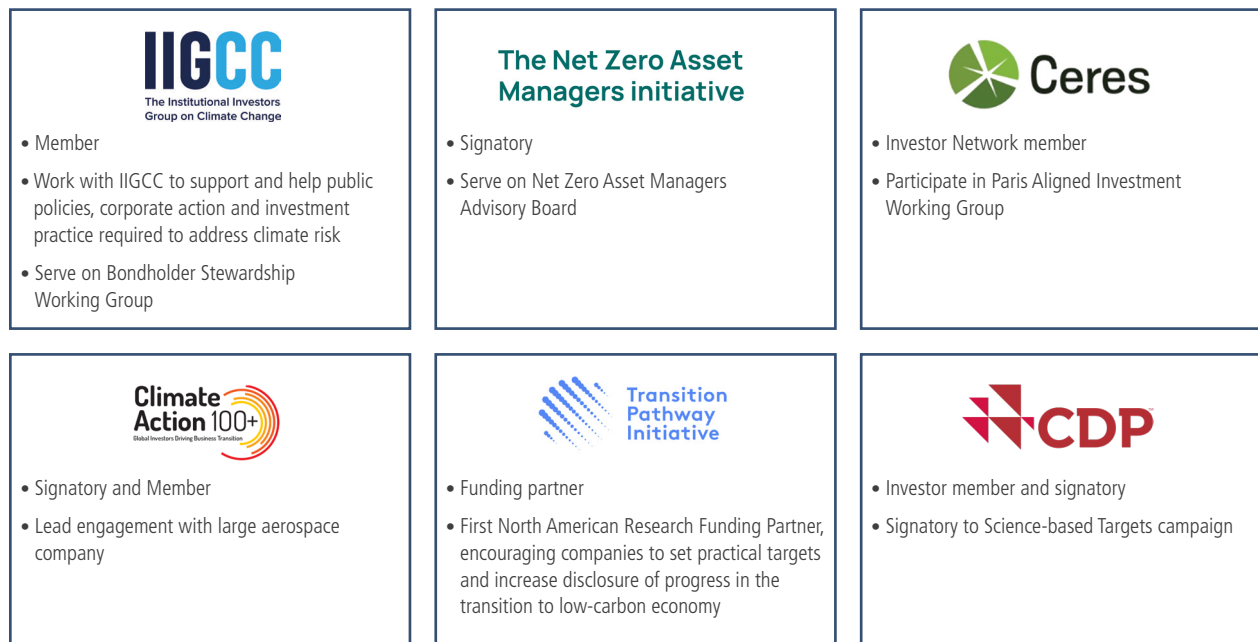
We recognize that policymakers play a crucial role in maintaining and enhancing the sustainability and stability of financial markets, as well as setting reporting and disclosure standards and reducing greenwashing by clarifying climate-related terminology. As such, we proactively engage with them on climate-related topics that we believe can help further client objectives, including on sustainability-related disclosures and the global alignment of reporting requirements. We action this through formal letters to domestic and foreign financial regulators, responses to policy consultations, and participation in industry-wide working groups and collaborative efforts.

Our policy advocacy over the past year included:

- Engaging with the U.K. government on their Net Zero Review, both by submitting a response to the public consultation and by actively contributing to the work of the UK Sustainable Investment and Finance Association (UKSIF).
- In terms of climate disclosures, engaging with the IFRS Foundation regarding its consultation on sustainability reporting and the SEC regarding its climate consultation. We also engaged the FSA in Japan to support TCFD-like disclosures in that jurisdiction, and to encourage the regulator to think about Scope 3 disclosures in the near future.
- Supporting trade associations such as the PRI’s Global Policy Reference Group (GPRG) and the Investment Association’s (IA) Net Zero Forum, both of which we are active members of, in their policy-related engagement efforts and their alignment with the Paris Agreement.
- Joining the Taskforce for Nature-Related Disclosures (TNFD) forum, where we are involved in framework consultations.
- We are also active members of the Securities Industry and Financial Markets Association (SIFMA), European Fund and Asset Management Association (EFAMA), the Investment Company Institute (ICI Global), which provide a forum for us to debate and share our practitioner views on emerging policy issues.

In addition, we collaborate with a number of climate-focused industry organizations where we believe our leadership can make a significant contribution, including:

**FIGURE 15: OUR CONTRIBUTION TO CLIMATE-FOCUSED INDUSTRY ORGANIZATIONS**



## Business Strategy & Operations

As climate change accelerates, we believe its impacts could affect not only investment portfolios, but increasingly also directly affect our business operations. To prepare for this possibility, the Business Risk team, which manages the implementation of control and governance processes, is also considering climate as part of its overall approach to risk management. Specifically, three sub-teams within this function interface with climate risks. First, the Operational Risk team, as part of the operational risk identification process within our Risk and Control Self-Assessment (RCSA) program, identifies relevant climate risks associated with key processes, discusses these risks with the department owners, documents the risks along with key controls and assesses residual risk exposure. In addition, all errors and breaches identified are recorded on NB's operational risk database (NORD) to ensure consistency of the resolution and investigation, with a dedicated workflow that ensures independent review from the Operational Risk team and the Compliance team. Within NORD, there are dedicated categories to record whether there is any climate-related impact associated with an error or breach.

Second, the Asset Management Guideline Oversight (AMGO) undertakes exclusion monitoring by implementing pre-trade restrictions directly into the order management systems, which alert portfolio managers to transactions that may potentially be in breach of client investment guidelines. By overseeing continuous compliance with the applied exclusion policies for a certain vehicle or account, AMGO ensures that the client's desired level of climate risk tolerance is maintained.

Third and finally, the Business Continuity team is engaged in the identification, monitoring and management of potential exposures to climate-related physical risks across our business. This team has developed an Incident Response Guide that outlines specific procedures to follow during an event or business disruption, including climate-related disasters.

We also recognize that our own operational carbon footprint could subject us to transition risks. Both our clients and our employees expect Neuberger Berman to be prepared for these scenarios, and we have taken specific steps to minimize our exposure in this regard:

- We carefully consider energy efficiency and other sustainability metrics when selecting buildings for our offices. In fact, 50% of the buildings in which we have a tenancy have a sustainability accreditation such as LEED, BREEM or WELL (a designation given when building standards demonstrate a commitment to occupant health and comfort).
- We have enhanced our recycling efforts, leading to a waste diversion rate of 60% (the percent of waste kept out of landfills and incinerators) in our New York headquarters.



## METRICS & TARGETS

We employ several metrics across both the investments we manage and our own operations to track progress against our climate strategy and ensure we are actively holding ourselves accountable. In 2022, we worked with our ESG data and technology teams to enhance our firm-level reporting capabilities for investment portfolios. In addition, we partnered with a sophisticated carbon platform to measure complete Scope 1, 2 and operational Scope 3 emissions across our global offices in over 6 - 26 countries. We are pleased to share a summary of select carbon metrics across our in-scope client portfolios, as well as our own operations for the first time.

As part of the Net Zero Asset Managers Initiative, we have set an interim target for assets where clients have directed us to manage the account in line with net zero by 2050. The target-setting methodology conforms with the Paris-Aligned Initiative Net Zero Investment Framework (NZIF) to be managed in line with net zero by 2050. We are committed to working in partnership with our clients and portfolio managers to achieve this goal. In setting our interim targets, we have taken a client-centric approach. Through our firmwide initiative we engage with clients on setting net-zero targets for individual accounts that have expressed net-zero ambition, but not yet set targets. Our current committed AUM reflects:

- a) where we have received client approval to implement a decarbonization target;
- b) where the portfolio management team, through engagement strategies, commits to support investing aligned with net-zero emissions whilst still seeking to meet client outcomes; or
- c) specific sustainable and impact funds that have affirmed their intent, consistent with their stated objectives and strategies, to invest with the goal of net-zero alignment.

We have defined two decarbonization options for our net-zero committed investment teams, who can each determine the methodology most aligned with their investment process and philosophy:

- a) **Portfolio decarbonization reference target:** 50% reduction in carbon footprint by 2030 relative to a 2019 baseline and a subsequent decline to net zero by 2050.
- b) **Portfolio coverage & portfolio decarbonization reference target:** Achieve >90% of portfolio (by value) with Science-Based Targets initiative (SBTi) validated targets (or equivalent as assessed by our Net-Zero Alignment Indicator) by 2030 and to achieve 100% of the portfolio's AUM by 2050. The portfolio must also achieve a 30% reduction in carbon footprint by 2030 relative to a 2019 baseline and a subsequent decline to net zero by 2050.

Read more about our interim targets [here](#).

### Investment Portfolios

At the firm level, in-scope assets for this report are approximately \$240 billion, of which \$205 billion is composed of corporate assets and \$35 billion is in sovereign holdings (our methodology for determining in-scope assets is further detailed in the disclaimer). For these holdings, consistent with TCFD guidance, we report total carbon emissions, carbon footprint and weighted average carbon intensity across Scope 1, 2 and material Scope 3 emissions. We report material Scope 3 emissions on a best-efforts basis according to the Partnership for Carbon Accounting Financials (PCAF) standards. In addition, we report the percentage of the portfolio that has SBTi-validated targets.

The AUM coverage varies due to data availability for underlying measures. Our carbon metrics cover approximately \$176 billion in assets. Carbon intensity is dependent on revenue and is thus fully covered. Total apportioned carbon emissions and carbon footprint rely on Enterprise Value Including Cash (EVIC) and as a result have somewhat lower coverage.

**FIGURE 16: CARBON METRICS FOR CORPORATE SECURITIES**

Metric	Description	Formula
<b>Total Emissions</b>	The absolute carbon emissions associated with a portfolio, expressed in tons CO <sub>2</sub> e	$\sum_i^n \frac{\text{current value of investment}_i}{EVIC_i} \times \text{issuer's emissions}_i$
<b>Weighted Average Carbon Intensity</b>	Portfolio's exposure to carbon-intensive companies, expressed in tons CO <sub>2</sub> e/\$M revenue. Carbon emissions are allocated based on portfolio weights (the current value of the investment relative to the current portfolio value)	$\sum_i^n \frac{\text{current value of investment}_i}{\text{current portfolio value}} \times \frac{\text{issuer's emissions}_i}{\text{issuer's \$M revenue}_i}$
<b>Carbon Footprint</b>	Total carbon emissions for a portfolio normalized by the market value of the portfolio, expressed in tons CO <sub>2</sub> e/\$M invested	$\sum_i^n \frac{\frac{\text{current value of investment}_i}{EVIC_i} \times \text{issuer's emissions}_i}{\text{current portfolio value } (\$M)}$
<b>SBTi Validated Targets</b>	Percentage of market value with targets approved by the Science-Based Targets initiative	$\sum_i^n \frac{\text{current value of investment}_i}{\text{current portfolio value}} \times \text{companies with validated SBTi}$

The carbon metrics for corporate securities are in line with the TCFD recommendations and the PCAF standards. For carbon footprint, we have elected to use EVIC as the denominator in accordance with the PCAF standards and in order to cover both equity and debt.

**FIGURE 17: CARBON METRICS FOR SOVEREIGN SECURITIES**

Metric	Description	Formula
<b>Financed Emissions</b>	Financed emissions of sovereign debt are calculated by multiplying the attribution factor by the Sovereign Domestic Emissions and Exported Emissions of the respective sovereign borrower	$\sum_i^n \frac{\text{outstanding amount}_i}{\text{PPP-adjusted GDP}_i} \times \text{sovereign's emissions}_i$
<b>Weighted Average Carbon Intensity – Production Emissions per PPP-adjusted GDP</b>	Sovereign Domestic Emissions and Exported Emissions per PPP-adjusted GDP	$\sum_i^n \text{portfolio weight}_i \times \frac{\text{country production emissions } (tCO_2e)_i}{\text{PPP-adjusted GDP } (\$M)_i}$
<b>Weighted Average Carbon Intensity – Consumption Emissions per Capita</b>	Sovereign Domestic Emissions and Imported Emissions per Capita	$\sum_i^n \text{portfolio weight}_i \times \frac{\text{country consumption emissions } (tCO_2e)_i}{\text{country population}_i}$

The TCFD recommendations do not include a specific formula for the calculation of sovereign financed emissions. The formulas included reflect our interpretation of the PCAF standards.

**FIGURE 18: FIRM-LEVEL METRICS FOR PORTFOLIO CORPORATE ASSETS**

Indicator	Total Corporate Assets	Unit
<b>Total Emissions</b>	<b>75,289,100</b>	<b>tCO<sub>2</sub>e</b>
Scope 1 & 2	12,190,081	tCO <sub>2</sub> e
Scope 3*	63,099,019	tCO <sub>2</sub> e
<b>Weighted Average Carbon Intensity</b>	<b>3,037</b>	<b>tCO<sub>2</sub>e/\$ million revenue</b>
Scope 1 & 2	229	tCO <sub>2</sub> e/\$ million revenue
Scope 3*	2,808	tCO <sub>2</sub> e/\$ million revenue
<b>Carbon Footprint</b>	<b>1,012</b>	<b>tCO<sub>2</sub>e/\$ million invested</b>
Scope 1 & 2	71	tCO <sub>2</sub> e/\$ million invested
Scope 3*	940	tCO <sub>2</sub> e/\$ million invested
<b>SBTi-Validated Targets</b>	<b>23.83</b>	<b>Market Value %</b>

Source: Neuberger Berman (Holdings), S&P TruCost (emissions), MSCI (EVIC).

\*Scope 3 included company investments in NACE sectors L2: 05-09, 10-18, 19, 20,21-33, 41-43, 49-53, 81).

**FIGURE 19: FIRM-LEVEL METRICS FOR PORTFOLIO SOVEREIGN ASSETS**

Indicator	Total Sovereign Assets	Unit
Weighted Average Carbon Intensity – Production Emissions per PPP-GDP	322	tCO <sub>2</sub> e per \$million GDP-PPP
Weighted Average GHG Emissions – Consumption Emissions per Capita	17	tCO <sub>2</sub> e per capita

Source: Neuberger Berman (Holdings), S&P TruCost (emissions, GDP, population).



## Business Operations

We are committed to addressing our operational emissions consistent with efforts to achieve global net-zero emissions by 2050, and are undertaking further analysis to reduce and offset our operational emissions. In addition, for our NY headquarters, we measure our nature-related impacts including water usage and waste recycled.

**FIGURE 20: ENVIRONMENTAL METRICS ACROSS OUR BUSINESS OPERATIONS**

Indicator	2022	Unit
<b>Scope 1 &amp; 2</b>	<b>4,710</b>	<b>mtCO<sub>2</sub>e</b>
Scope 1	1,561	mtCO <sub>2</sub> e
Scope 2	3,149	mtCO <sub>2</sub> e
<b>Scope 3</b>	<b>11,286</b>	<b>mtCO<sub>2</sub>e</b>
3.3 Fuel and energy related categories	1,494	mtCO <sub>2</sub> e
3.5 Waste generated in operations	233	mtCO <sub>2</sub> e
3.6 Business travel	6,689	mtCO <sub>2</sub> e
3.7 Employee commuting	2,862	mtCO <sub>2</sub> e
3.8 Upstream leased assets	8.3	mtCO <sub>2</sub> e
<b>Environmental Metrics</b>		
Total water Used (NY headquarters)	7.3	gallons
Waste recycled (NY headquarters)	59%	diversion rate

Above, we have reported our global emissions for Scope 1, 2 and 3.3, 3.5., 3.6., 3.7., and 3.8.

We have reported on Neuberger Berman's business operations:

- (i) that are material to the Neuberger Berman business as a financial institution; and
- (ii) where we had access to sufficiently robust data within the reporting period.

Source of data for the Firm's global business travel:

For the purposes of this report, we have relied on a third party data provider and have not independently verified the accuracy of this data. We have recently engaged a new third party data provider to calculate our global operational emissions (which includes the firm's global business travel).

This has enabled Neuberger Berman to expand the scope of its emissions calculations.

The Neuberger Berman 2022 Annual Report relied on data provided by a different third party data provider, who used a different methodology for calculating the Firm's global business travel. This resulted in a different mtCO<sub>2</sub>e figure being disclosed for global business travel in this report, compared to the figure disclosed in the Neuberger Berman 2022 Annual Report.

## LOOKING AHEAD

Looking ahead, we believe governments, companies and investors will continue to feel and respond to the effects of climate change, and new investment risks and opportunities will arise as a result. We are dedicated to continuing to identify, assess and manage these risks and opportunities to protect client assets. As regulators increase sustainability disclosure requirements, climate data gaps will eventually narrow. We will continue to do our part in this by thoughtfully engaging with issuers to encourage them to disclose financially material climate risks and formulate action plans to address those risks. As data quality improves, we will also seek to enhance our climate risk measurement tools and extend their applicability across additional asset classes. Finally, we look forward to continuing to partner with our clients on developing solutions that meet their individual investment and climate objectives.



## DISCLAIMER

Across the industry, carbon emissions and climate risk data face limitations, including but not limited to lack of standardization of data reported and data aggregation methodologies, gaps in data coverage for private and emerging markets, time-lags in reported data, and reliance on estimates by third party ESG data vendors.

We have taken specific steps to mitigate these limitations, including but not limited to utilizing third-party data and proxy data along with internal research; developing a proprietary ESG rating (NB ESG Quotient), which supplements third-party data with internally generated research and knowledge; developing a Net-Zero Alignment Indicator; engaging in a mass letter campaign to request ESG data metrics (including carbon emission and climate risk metrics) directly from issuers; engaging directly with issuers and policymakers to advocate for greater standardized disclosures; and engaging our third party ESG data vendors on improving data coverage.

For certain asset classes adequate, reliable and/or verifiable data coverage was not available to Neuberger Berman Group to meet the TCFD reporting standards and these asset classes were thus excluded.

They include:

- **Private markets:** Private markets funds currently face challenges that inhibit our ability to disclose carbon emissions and related risks specifically in relation to such funds. Currently, we request portfolio company metrics of general partners (GPs) across private equity primaries, co-investments, and select secondaries on a look-through basis. However, we have received a low response rate for such metrics. Overall, portfolio company level data of primaries and secondaries tends to be inconsistent across both data coverage and frequency of reporting. Specifically for secondaries, obtaining data on a look-through basis is even more challenging where our private markets funds are a secondary buyer of private equity fund positions. In response, our private markets funds have developed a methodology for estimating the carbon footprint of such funds' investments (limited to certain direct and primary funds investments). However, we continue to request and encourage the disclosure of actual data as we believe that the available estimated data may be limited in its accuracy and application to the full portfolio.
- **Senior Floating Rate Loans (including CLOs), Municipals, Currency and Cash Management:** For these asset classes, the Climate Value-at-Risk (CVaR) and carbon metrics are generally not made available by our data vendors, therefore we were unable to generate TCFD metrics for dedicated strategies for these asset classes.
- **Alternatives:** Our key public markets alternatives strategies include hedge funds, options, commodities, diversified real assets and long/short real estate. For these asset classes CVaR or carbon metrics are also not made available by our data vendors. However, where such strategies hold substantial equity and fixed income assets, they have been included in our TCFD reporting.

Where proxied emissions data has been used, we have relied on third parties to gather this data. While we use best efforts to ensure the accuracy of the data reported, we cannot verify third party data.

# Talk to Neuberger Berman

For more information, please contact your Neuberger Berman representative or visit [www.nb.com](http://www.nb.com).

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## PORTFOLIO MANAGEMENT CENTERS

Atlanta  
Bermuda  
Boston  
Buenos Aires  
Chicago  
Dallas  
Hong Kong  
London  
Los Angeles  
Milan

New York  
Paris  
Philadelphia  
San Francisco  
Shanghai  
Singapore  
The Hague  
Taipei  
Tokyo  
Toronto

## OFFICES

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Bogota  
Boston  
Buenos Aires  
Chicago  
Dallas  
Los Angeles  
Morristown  
New York  
Philadelphia  
San Francisco  
São Paulo  
Tampa  
Toronto  
West Palm Beach  
Wilmington

### EUROPE, MIDDLE EAST & AFRICA

Dubai  
Dublin  
Frankfurt  
London  
Luxembourg  
Madrid  
Milan  
Paris  
Rome  
Stockholm  
Tel Aviv  
The Hague  
Zurich

### ASIA PACIFIC

Hong Kong  
Melbourne  
Mumbai  
Seoul  
Shanghai  
Singapore  
Sydney  
Taipei  
Tokyo

All information is as of March 31, 2023 unless otherwise indicated.

Principles for Responsible Investment (PRI) 2020 Leaders' Group: The year 2020 represents the first year that asset managers became eligible for PRI Leader designation, which formerly included asset owners only. The new designation was awarded to only 20 of the ~2100 investment manager PRI signatories. The Leaders' Group showcases signatories at the cutting edge of responsible investment, and highlights trends in what they are doing. PRI uses signatories' reporting responses and assessment data to identify those that are doing excellent work in responsible investment – across their organizations and with a focus on a given theme each year. The 2020 theme is climate reporting. Information about PRI Leader is sourced entirely from PRI and Neuberger Berman makes no representations, warranties or opinions based on that information.

This material is provided for informational purposes only and nothing herein constitutes investment, legal, accounting or tax advice, or a recommendation to buy, sell or hold a security. Information is obtained from sources deemed reliable, but there is no representation or warranty as to its accuracy, completeness or reliability. All information is current as of the date of this material and is subject to change without notice. Any views or opinions expressed may not reflect those of the firm as a whole. Neuberger Berman products and services may not be available in all jurisdictions or to all client types. Investing entails risks, including possible loss of principal. Investments in hedge funds and private equity are speculative and involve a higher degree of risk than more traditional investments. Investments in hedge funds and private equity are intended for sophisticated investors only. Indexes are unmanaged and are not available for direct investment. **Past performance is no guarantee of future results.**

Firm data, including employee and assets under management figures, reflect collective data for the various affiliated investment advisers that are subsidiaries of Neuberger Berman Group LLC (the "firm"). Firm history and timelines include the history and business expansions of all firm subsidiaries, including predecessor entities and acquisition entities. Investment professionals referenced include portfolio managers, research analysts/associates, traders, product specialists and team-dedicated economists/strategists.

The Neuberger Berman Asset Allocation Committee reviews and sets long-term asset allocation models and establishes preferred near-term tactical asset class allocations. The views of the Asset Allocation Committee may not reflect the views of the firm as a whole, and Neuberger Berman advisers and portfolio managers may recommend or take contrary positions to the views of the Asset Allocation Committee.

This material is being issued on a limited basis through various global subsidiaries and affiliates of Neuberger Berman Group LLC. Please visit [www.nb.com/disclosure-global-communications](http://www.nb.com/disclosure-global-communications) for the specific entities and jurisdictional limitations and restrictions.

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