



## Progress in 2022 Towards Achieving our 2050 Net Zero Goal

2022 was a year in which we made progress on initiatives aimed at achieving our 2050 Net Zero Goal for greenhouse gas (“GHG”) emissions in three main areas.

First, our measurement and disclosure of investment portfolio emissions (“Financed Emissions”) were recognized as being disclosed in accordance with The Global GHG Accounting and Reporting Standard for the Financial Industry, which is the standard under the Partnership for Carbon Accounting Financials (“PCAF”), and our status was changed from “Committed” to “Disclosed.” The disclosures in this Responsible Investment Report 2022 are in accordance with the PCAF Standard for financed emissions for sovereign debt released in December 2022, and we have newly measured and disclosed financed emissions for our company-wide sovereign bond portfolio.

Second, we submitted our 2050 Net Zero Goal and 2030 Interim Target to the Net Zero Asset Managers initiative (NZAM) and both were approved. In setting our 2030 Interim Target, we used the Science Based Targets initiative for Financial Institutions, which is a financial institution version of the Science Based Targets (SBT) and one of the methodologies recommended by NZAM, and established an SBT portfolio coverage ratio of 55% as our 2030 Interim Target. A 55% SBT portfolio coverage ratio refers to 55% (by weight) of the portfolio companies in our investment portfolio having attained SBT approval.

Third, in December 2022 we newly established the Net Zero Strategy Department within the Investment and Research Unit in order to achieve our 2050 Net Zero Goal with certainty. The Net Zero Strategy Department is discussed in detail in the following section.

## Establishment of the Net Zero Strategy Department to Achieve the 2050 Net Zero Goal

On December 1, 2022, we established the Net Zero Strategy Department with the aim of securing our commitment to decarbonization and to steadily advancing our efforts aimed at achieving our 2050 Net Zero Goal. The mission of the Net Zero Strategy Department is to strategically utilize internal and external management resources to gather information and expertise related to net zero, as well as formulate and promote an effective action plan aimed at achieving our 2050 Net Zero Goal and 2030 Interim Target.

Specifically, the Net Zero Strategy Department will advance the following initiatives.

In addition to working together with Nomura Holdings, our holding company, to contribute to achieving the net zero goal for Nomura Group overall, we will continue to address ESG issues while working to secure our place as the Japanese asset manager preferred by clients globally as a responsible institutional investor.

- Expand the asset classes for which we measure and disclose GHG emissions in our investment portfolios to include assets other than listed equities and corporate bonds
- Strengthen the management of climate-related risks and opportunities by expanding the monitoring of carbon metrics, scenario analysis, transition/physical risk analysis, and climate-related opportunity metrics, among other metrics
- Develop appropriate climate-related risk/opportunity assessment methodologies to accelerate the provision of funds for decarbonizing society, and increase the level of sophistication of climate-related ESG integration
- Utilize the above initiatives for climate-related stewardship activities and the development of decarbonization funds
- Enhance the transparency of our efforts by strengthening climate-related disclosure based on TCFD (Task Force on Climate-related Financial Disclosures) recommendations and our NZAM commitment, and by proactively reporting to external evaluation organizations.
- Strengthen collaboration with climate-related initiatives and contribute to global efforts to achieve net zero

## COLUMN

### Net Zero Strategy Department

In recent years, as countries around the world set net-zero targets based on the Paris Agreement, a rapidly growing number of companies are also setting their own net-zero targets. In addition, companies' climate-related disclosures are being promoted in response to the TCFD recommendations, ISSB climate-related disclosure standards, and climate-related disclosure legislation in various countries. In particular, GHG emissions, which are a key metric in climate-related disclosures, have a carbon price attached to them through carbon taxes, emissions trading and other systems, which makes them easy to incorporate into quantitative corporate evaluations.

As the momentum for decarbonization increases around the world, asset managers like us are being strongly urged by clients and various other stakeholders to reduce their own GHG emissions, including the emissions of their investment portfolios, to net zero by 2050, and to carry out advanced levels of ESG integration and engagement in order to efficiently invest the funds necessary for decarbonization. In order to answer such requests, the Net Zero Strategy Department will strategically promote initiatives to achieve our net zero goal and contribute to the decarbonization of society.



Managing Director, Head of Net Zero Strategy Department

**Teppei Yamaga**

## Disclosure Based on the TCFD Recommendations

### Governance

- We recognize that climate-related risks and opportunities have important impacts on our business and our medium- to long-term management targets, and we have therefore established an appropriate governance. The data compiled by the Responsible Investment Department, which acts as the TCFD Secretariat, including carbon metrics, scenario analyses, ESG scores and other climate-related risks and opportunities, are ultimately reported to the Board of Directors via the Executive Management Committee. The Board of Directors is then able to appropriately monitor our climate-related risks and opportunities.
- The analytical data related to climate-related risks and opportunities compiled by the TCFD Secretariat are shared with portfolio managers and analysts. These data are then utilized in company analysis, engagement, and investment decision-making. These data are also regularly reported to the Responsible Investment Committee, which comprises officers in the Investment and Research Unit, where they are used to evaluate a portfolio's climate-related risks and opportunities. For example, at the Responsible Investment Committee meeting in March every year, the analytical data from the portfolio at end of the previous year are reported, and in July the important themes for climate change-related engagement are decided. Additionally, the chair of the Responsible Investment Committee reports the evaluation results to the Executive Management Committee, which allows members of senior management to utilize these reported details to make management decisions.



### Strategy

- We recognize a wide range of short-, medium- and long-term climate-related risks and opportunities. In terms of transition risks, we are closely watching carbon pricing, the stranding of assets, and changes in consumer behavior and preferences. For physical risks, we are focusing on abnormal weather, which is increasing in recent years. Meanwhile, with respect to opportunities, we are paying close attention to products and services related to renewable energy and energy efficiency and conservation, electricity storage, hydrogen, ammonia, CCUS, carbon recycling, as well as disaster prevention and mitigation. In addition, in line with our long-term strategy aiming to realize a decarbonized society, we are focusing on transition finance to support companies that are working to reduce GHG emissions. In principle, we do not divest from (and thereby lose the chance for engagement with) portfolio companies with high levels of GHG emissions. Instead, by continuing to hold on to such companies, we use engagement as a means to encourage these portfolio companies to take measures to combat climate change.
- In addition to Institutional Shareholder Services' (ISS) analysis methodology for climate-related risk and opportunities, we are carefully analyzing the impact that climate-related risks and opportunities have on our business, strategy, financial plans, and portfolio. This includes our financial analysis and transition risk analysis using internal carbon price in our ESG scores for Japanese equities.
- Please refer to Page 32-33 for information on the scenario analysis we performed for our four-asset integrated portfolios.



### Risk Management

- When it comes to a portfolio company's climate-related risks, instead of looking only at carbon metrics for the company alone, we believe it is important to discern and analyze carbon metrics throughout the entire life cycle of a company's products and services as well as throughout the supply chain. Furthermore, we refer to GHG removal and avoided emissions, etc. in our analysis of climate-related risks.
- We manage portfolio risk using ISS's analysis methods for transition risk and physical risk. In addition, we identify and manage portfolio companies' transition risks and physical risks using our own corporate analysis and ESG scores, as well as through engagement.
- Such risk management analysis outcomes are integrated into the comprehensive risk management process. As such, they are shared within the Investment and Research Unit, and are reported to both the Executive Management Committee and the Board of Directors after being monitored by the Responsible Investment Committee.



### Metrics and Targets

- In order to evaluate climate-related risks and opportunities in accordance with our own strategies and risk management process, we measure four carbon metrics recommended by the TCFD (total carbon emissions, carbon footprint, carbon intensity, and weighted average carbon intensity) and perform scenario analyses as well as transition risk analysis and physical risk analysis for equities and corporate bonds portfolios.
- To analyze total carbon emissions, we use Scope 1 and Scope 2 emissions disclosed by companies (if a company does not provide disclosure, we use ISS's estimates) as well as ISS estimates for Scope 3 emissions. Meanwhile, for carbon footprint, carbon intensity and weighted average carbon intensity, we use only Scope 1 and Scope 2 emissions.
- We have established a 2050 Net Zero Goal as well as a 2030 Interim Target. Under the 2050 Net Zero Goal, we will work to achieve net-zero GHG emissions both from our own business operations as well as for assets under management (our investment portfolio). Under the 2030 Interim Target, we will work to ensure that, by 2030, 55% of our investment portfolio assets are being approved by SBTi. We will verify and report on our track record with regard to these targets in accordance with the methodology recognized and endorsed by NZAM.



## Analysis of Carbon Metrics in Investment Portfolios

In this section, we analyze climate-related risks and opportunities for the four company-wide portfolios we manage: Japanese equities; global equities; Japanese bonds and global bonds. We perform analyses in accordance with assessment and disclosure methods including those set forth in The Global GHG Accounting and Reporting Standard for the Financial Industry published by the PCAF which we are a member of, as well as data and analysis methods from ISS.

For equities benchmarks, we used TOPIX for Japanese equities and MSCI ACWI ex-Japan for global equities. For domestic bonds, we used NOMURA-BPI (overall) (only corporate bonds), while for global bonds we used the Bloomberg Barclays Global Aggregate Index (only corporate bonds). Bonds only included corporate bonds, and did not include sovereign or other public bonds.

Please refer to Pages 38-39 for the results of our analysis of our sovereign bond portfolio emissions (financed emissions).

The analysis revealed that the total carbon emissions (Scope 1 and Scope 2) of our Japanese equities portfolio are less than the total carbon emissions of portfolios of the same monetary amount and comprising the same stocks and weightings as the benchmarks.

Also, for global equities, domestic bonds and global bonds, the emissions of our portfolios and the benchmarks were roughly the same.

In terms of the ratio of total carbon emissions accounted for by each industry, there is a high ratio from Energy, Materials and Utilities, as well as relatively high ratios from Industrials depending on the asset class, and the same trend is seen in the industry ratios for weighted average carbon intensity. Through engagement as well as cooperation with climate change-related initiatives, we will continue to encourage portfolio companies to undertake initiatives targeting a decarbonized society.

### Total Carbon Emissions

- Absolute GHG emissions associated with a portfolio
- Unit: tCO<sub>2</sub>e(CO<sub>2</sub> equivalent)
- GHG emissions from portfolio companies are Scope 1,2 and 3

$$\text{Total Carbon Emissions} = \sum_n^i \left( \frac{\text{current value of investment}_i}{\text{Portfolio companies' EVIC}_i} \times \text{issuer's Scope 1 and Scope 2 GHG emissions}_i \right)$$

### Carbon Footprint

- Total carbon emissions for a portfolio normalized by the market value of the portfolio
- Unit: tCO<sub>2</sub>e/US\$ million (investment amount)
- Portfolio companies' GHG emissions in total carbon emissions are Scope 1 and 2

$$\text{Carbon Footprint} = \frac{\text{Total Carbon Emissions}}{\text{market capitalization of portfolio}}$$

### Carbon Intensity

- Volume of carbon emissions per million dollars of revenue (carbon efficiency of a portfolio)
- Unit: tCO<sub>2</sub>e/US\$ million (revenues)
- Portfolio companies' GHG emissions in total carbon emissions are Scope 1 and 2

$$\text{Carbon Intensity} = \frac{\text{Total Carbon Emissions}}{\sum_n^i \left( \frac{\text{current value of investment}_i}{\text{issuer's EVIC}_i^*} \times \text{the revenues of portfolio companies}_i \right)}$$

### Weighted Average Carbon Intensity

- Portfolio's exposure to carbon-intensive companies and metric recommended by TCFD
- Unit: tCO<sub>2</sub>e/US\$ million (revenues)
- Portfolio companies' GHG emissions are Scope 1 and 2

$$\text{Weighted Average Carbon Intensity} = \sum_n^i \left( \frac{\text{current value of investment}_i}{\text{market capitalization of portfolio}} \times \frac{\text{issuer's GHG emissions}_i}{\text{the revenues of portfolio companies}_i} \right)$$

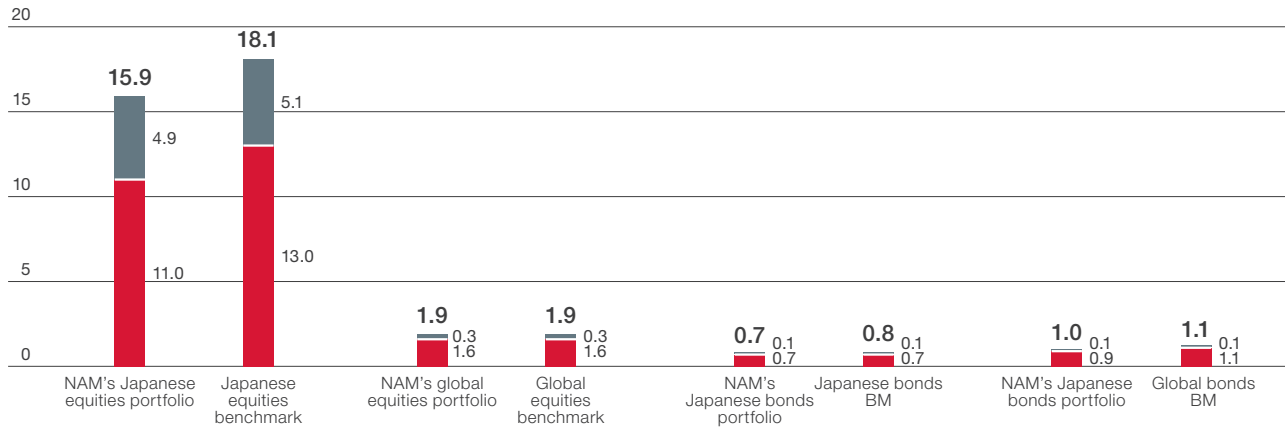
\*EVIC is Enterprise Value Including Cash, and refers to corporate value including cash.

EVIC = Market capitalization of shares (ordinary shares, class shares such as preferred shares) + debt (book value) + non-controlling shareholders' interests (book value).

## Total Carbon Emissions

(Million tCO<sub>2</sub>e)

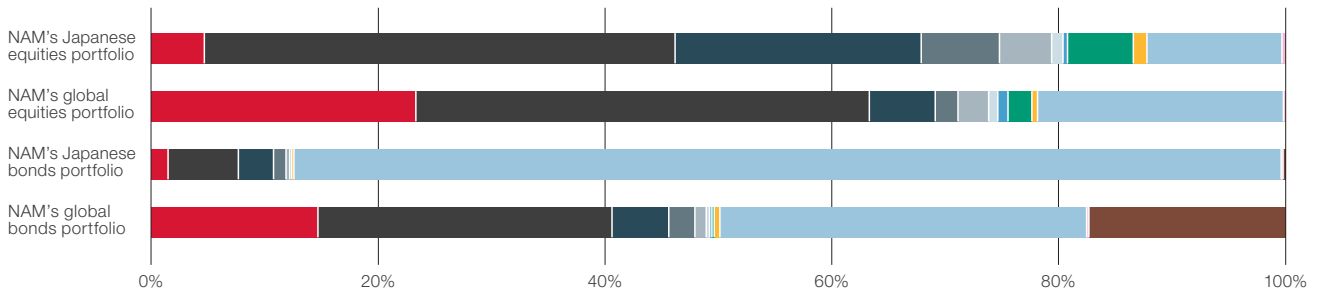
■ Scope 1 ■ Scope 2



		Equities			Bonds			
		NAM's portfolio	BM	% of BM	NAM's portfolio	BM	% of BM	
Scope 3 (Million tCO <sub>2</sub> e)	Japanese equities	184.0	194.3	95%	Japanese bonds	1.8	2.3	80%
	Global equities	12.4	13.9	89%	Global bonds	4.9	3.0	162%
Total of Scope 1, 2, and 3 (Million tCO <sub>2</sub> e)	Japanese equities	199.9	212.4	94%	Japanese bonds	2.6	3.1	82%
	Global equities	14.3	15.8	90%	Global bonds	5.9	4.2	142%

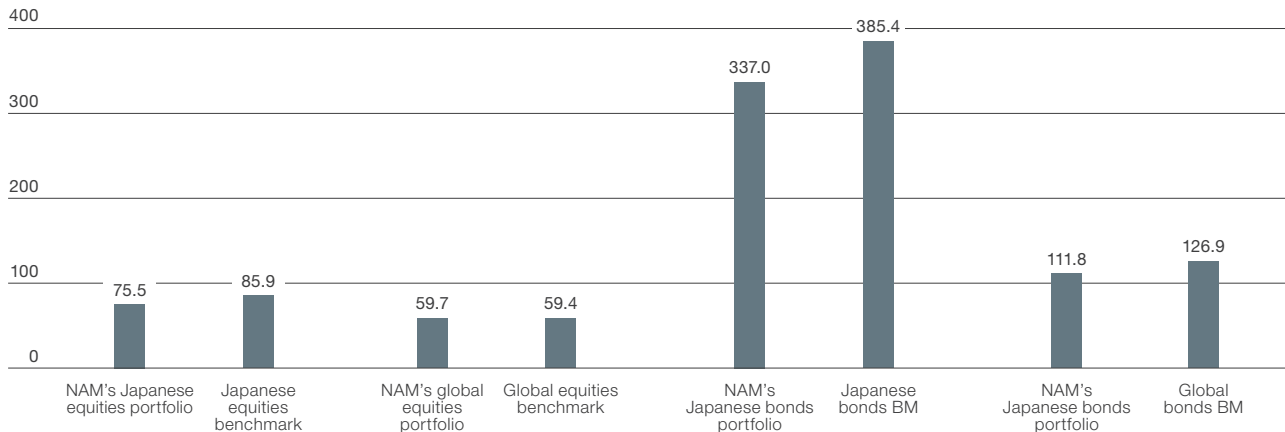
## Ratio of Total Carbon Emissions by Industry

■ Energy ■ Materials ■ Industrials ■ Consumer Discretionary ■ Consumer Staples ■ Health Care  
 ■ Financials ■ Information Technology ■ Communication Services ■ Utilities ■ Real Estate ■ Other

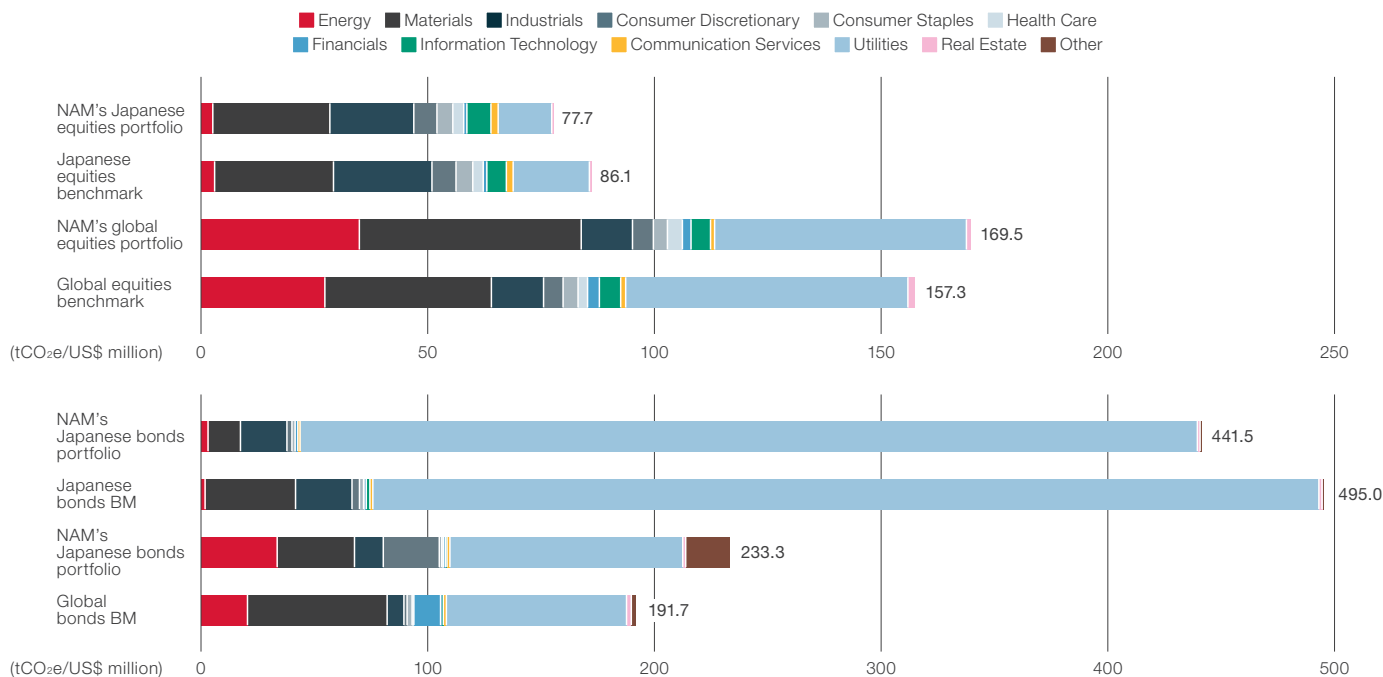


## Carbon Footprint

(tCO<sub>2</sub>e/US\$ million)



## Weighted Average Carbon Intensity and Ratio by Industry



## Scenario Analysis

1	2	3
<b>Sustainable Development Scenario (SDS)</b>	<b>Announced Pledges Scenario (APS)</b>	<b>Stated Policies Scenario (STEPS)</b>
Scenario aligned with the goal of the Paris Agreement adopted at COP21 held in December 2015, which is to limit global warming to well below 2°C compared to pre-industrial levels and pursue efforts to limit warming to 1.5°C. Under this scenario, the earth's temperature is projected to rise approximately 1.5°C by the end of this century.	A scenario which assumes that countries carry out the pledges they have made, including their Nationally Determined Contributions ("NDCs") submitted under Article 4 of the Paris Agreement and their long-term net zero goals, both fully and on time. Under this scenario, the earth's temperature is projected to rise approximately 2.1°C by the end of this century.	A scenario which assumes that countries carry out policy initiatives their governments have already announced, on the assumption that countries will keep ambitions and goals of the policies they are currently implementing. Under this scenario, the earth's temperature is expected to rise approximately 2.6°C by the end of this century.

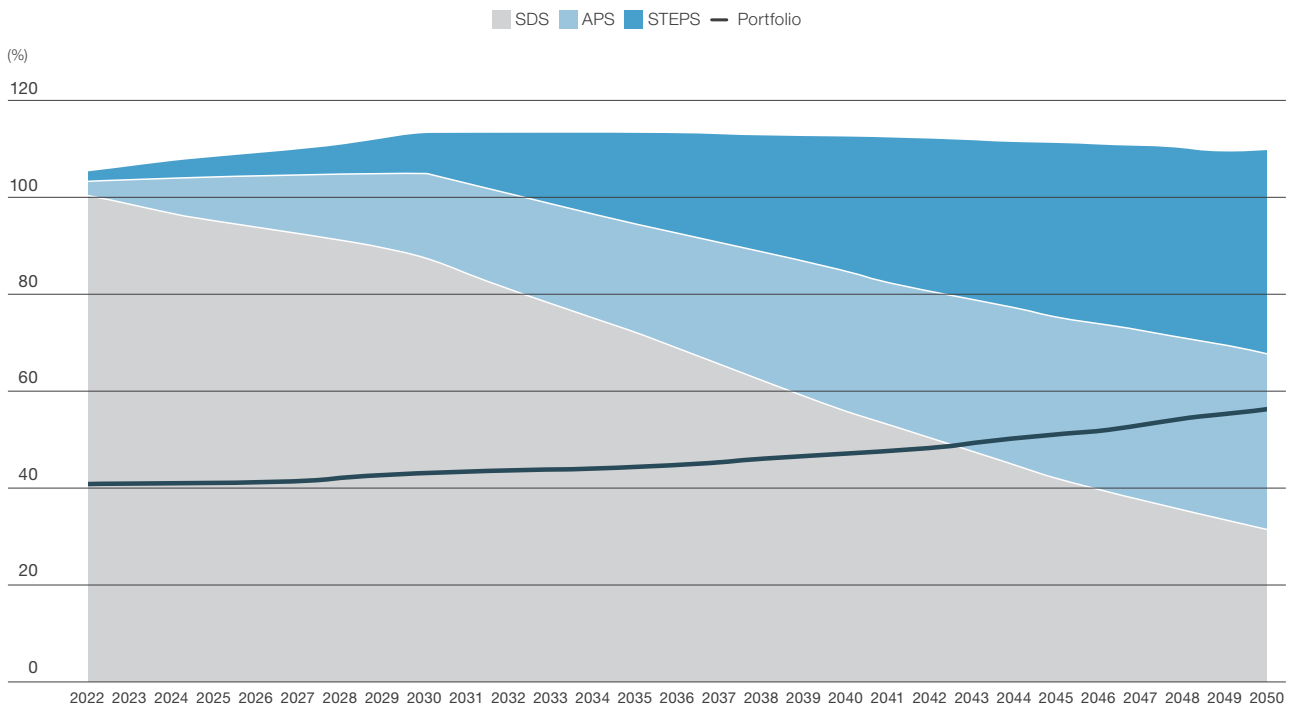
For total carbon emissions of our four asset integrated portfolio, we used data from ISS, and performed scenario analyses based on the three scenarios in the World Energy Outlook 2021 issued by the International Energy Agency (IEA). For the total carbon emissions used in our scenario analyses, in light of the specific characteristics of transition risk in each sector, we used only Scope 1 emissions for the utilities companies, only Scope 3 emissions for fossil fuel-producing companies, and both Scope 1 and Scope 2 emissions for all other companies.

The scenario analysis confirmed that our four-asset integrated portfolio is likely to reach the total carbon emissions permitted in the SDS around 2043. This is evidence of the improvement in the investment portfolio since the end of 2021,

when we found that the portfolio was likely to reach the total carbon emissions permitted in the Sustainable Development Scenario around 2040.

We feel that the portfolio's emissions were greatly impacted by the fact that our global equities and global bonds portfolios include comparatively high weightings of stocks and bonds in the Energy, Materials, and Utilities sectors, centered on emerging countries and developing countries, where GHG emissions are high in conjunction with economic growth. Our analysis also hints at the importance of continuing to call for measures to address climate change across the market, as our investment portfolios include many passive investments, mainly in Japanese equities.

### Comparison of NAM's four-asset integrated portfolio's total carbon emissions and carbon budget under each scenario



\*On the graph's y-axis, the 2022 carbon budget for SDS is set at 100%.

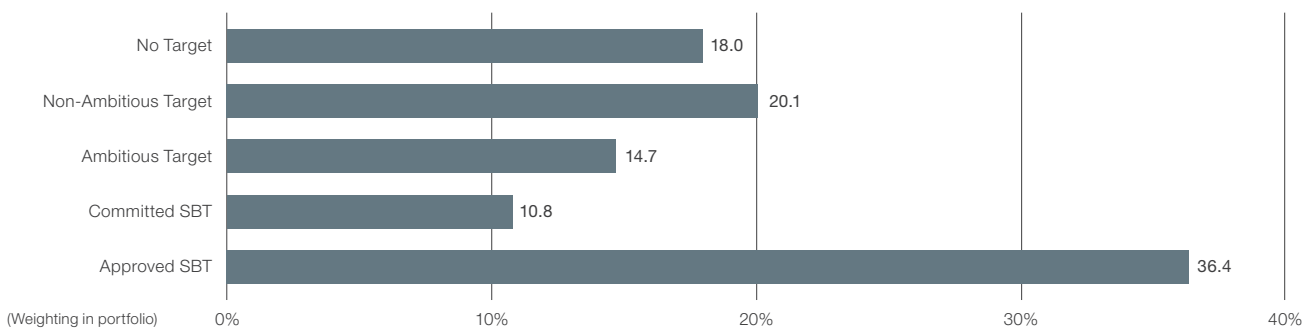
### Status of GHG Reductions by Portfolio Companies

As one of the methodologies for checking the progress made on the 2050 Net Zero Goal and the 2030 Interim Target for portfolio assets, NZAM, of which we are a signatory, recommends the Science Based Targets initiative for Financial Institutions (also referred to as "SBTi for FI"). Under the SBTi for FI, financial institutions will monitor the ratio of portfolio companies whose targets have been approved by SBTi (SBT portfolio coverage ratio) as well as the temperature ratings developed by the CDP and the WWF. We are utilizing ISS's analytical tools to monitor GHG reduction targets of portfolio companies in the investment portfolio (including SBT approval).

As of the end of 2022, the SBT portfolio coverage ratio for our four-asset integrated portfolio was 36.4%, which was higher than 27.0% in 2021.

SBT commitments and SBT approvals of portfolio companies show that they have set GHG reduction targets based on scientific grounds, and this is objective proof of our investment portfolio's move to decarbonize and an important stepping stone towards realizing a decarbonized society. Therefore, through engagement and other means, we will encourage portfolio companies to proactively commit to SBTs and obtain approval.

### Status of Portfolio Companies' GHG Reduction Targets in Four-Asset Integrated Portfolio



## Transition Risk Analysis

It is important to analyze climate-related transition risk in detail due to the fact that this risk is highly dependent on GHG emissions which have a relatively high correlation with both stock price performance and enterprise value. We feel it is key to analyze GHG emissions throughout the entire life cycle of a company's products and services, and on a supplementary basis we use GHG emissions throughout the global supply chain as well as GHG absorption as disclosed by companies.

The specific transition risk analysis method involves using ISS data to analyze the power generation exposure and

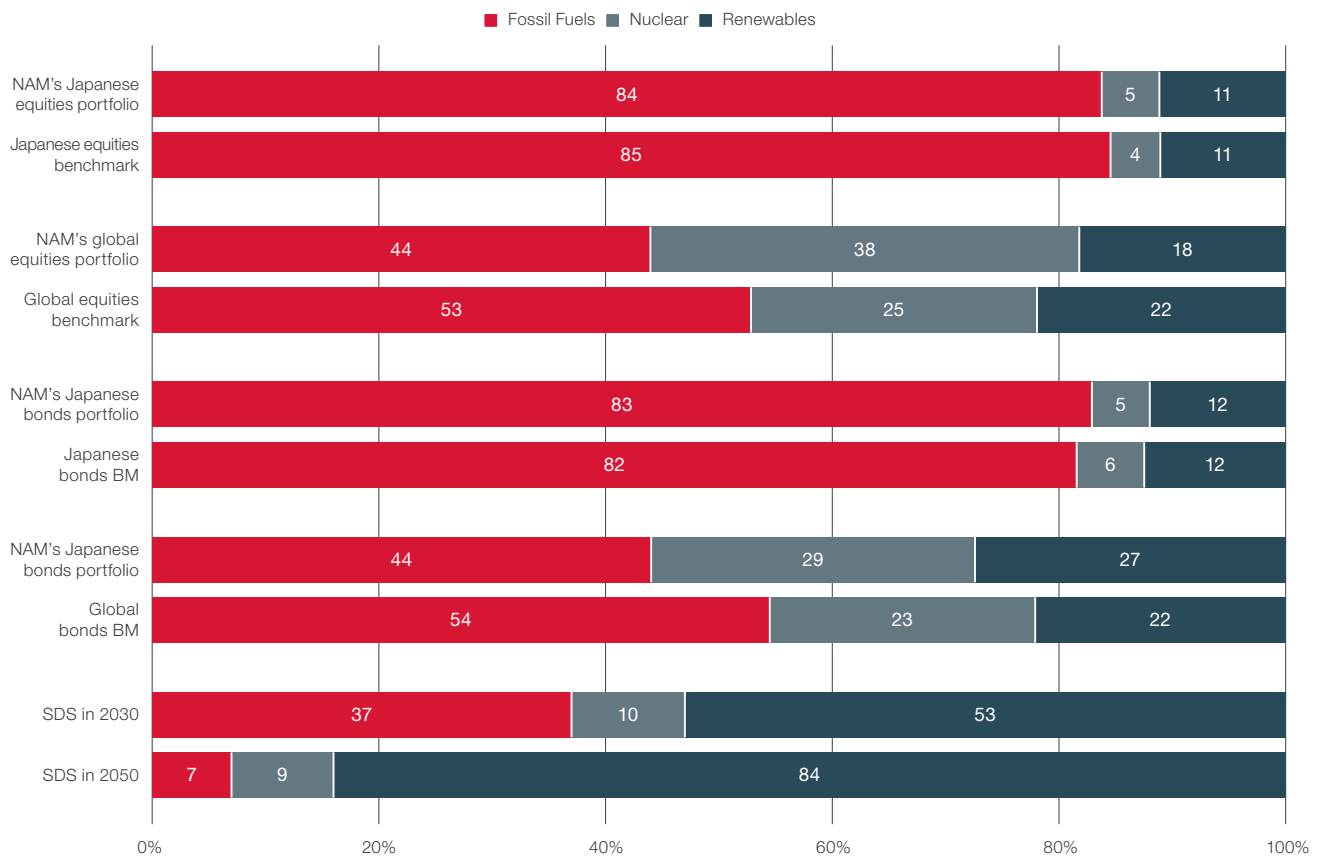
future GHG emissions (risk of stranded assets) on an energy generation basis in the portfolio, and the ratio of problematic resource development (shale oil/gas development and fracking, crude oil or gas drilling in the arctic, oil sands development, etc.), along with using the carbon risk rating, which is ISS's proprietary transition risk assessment. Furthermore, the environment score within our proprietary ESG score includes evaluations of climate-related transition risk, and we use internal carbon price to analyze its financial impact by transition and GHG emissions.

## Power Generation Exposure Analysis (Portfolio, Benchmark, SDS)

The graph below compares the power generation exposure of our portfolios, the benchmarks, and the SDS on a power generation volume basis. The SDS, based on IEA forecasts, shows the power generation exposure that is likely to limit the temperature increase in 2030 and 2050 to less than 1.5°C above pre-industrial levels. The power generation exposure of both our Japanese equities and Japanese bonds portfolios are almost the same as the benchmarks. Meanwhile, the ratio of fossil fuel power generation in our global equities and

global bonds portfolios are lower than the benchmarks. Also, the fossil fuel power generation exposure in all asset classes are higher compared to the power generation exposure in 2030 and 2050 under the SDS.

By increasing the ratio of renewable energy in our portfolios through engagement with portfolio companies, we will strive to reduce the transition risk from fossil fuels, as well as reduce the total carbon emissions and weighted average carbon intensities of our portfolios.





## Climate-related Risk and Opportunity Evaluation in our ESG Scores

Within environmental and climate change category of our own ESG scores for Japanese equities, in order to properly evaluate portfolio companies, we assess climate-related risks that reflect GHG absorption and conduct quantitative

assessments of climate-related opportunities including avoided emissions and removals (“avoided emissions, etc.”) by utilizing our internal carbon price.

### COLUMN

#### Climate-related Risk Evaluations Using Internal Carbon Price and GHG Absorption

In the past, transition risk assessments were generally based on the amount of GHG emissions, but using internal carbon price and the amount of GHG absorption allows transition risk evaluations to reflect a company’s real situation more accurately.

From 2021, we use internal carbon price to analyze financial impact in the evaluation of climate related transition risk in the environment score within our ESG score. For example, if a carbon tax or emissions trading system is introduced, a portfolio company’s GHG emissions become a cost. From the standpoint of the impact on enterprise value, a more accurate transition risk analysis can be performed if the ratio of this cost to shareholders’ equity or cash flow is analyzed. For GHG emissions, we used data disclosed by companies for Scope 1 and Scope 2 emissions (if a company does not provide disclosure, we use ISS’s estimates), and for Scope 3 emissions we used ISS’s estimates. In addition, internal carbon price used to replace GHG emissions with economic value is periodically reviewed referencing the market price (EUA in EU ETS, etc.), internal carbon price levels in portfolio companies, and reports from international organizations such as the World Bank.

From 2022, we have included GHG absorption in the climate change category of the environmental score in our ESG score. Specifically, in the environmental score, we are deducting GHG absorption disclosed by a company from its GHG emissions in both: 1) our assessments of whether the company discloses its GHG emissions and the change in emissions over time; and 2) our financial impact analysis using internal carbon price. In our

ESG score, in our definition of GHG absorption, we include: 1) the amount of GHG directly removed from the atmosphere, including by forests and CCUS; 2) avoided emissions which contribute to a reduction in emissions, such as through a company’s technology, products, or initiatives; and 3) GHG emissions offset by carbon credits. We collect data on a company’s GHG absorption from its disclosed reports and other information, and build our own database.

Net-zero GHG emissions to mitigate climate change refers to the GHG emissions minus the amount of GHG absorption equaling zero. Consequently, it is necessary for a company to utilize the amount of GHG absorption to account for the emissions that remain after a company has done all it can to reduce its emissions. Due to the fact that a company’s actions to avoid and remove GHG emissions reduce its net GHG emissions and thereby can lower its climate-related risk, we feel that reflecting GHG absorption in a company’s ESG score is consistent from the standpoint of assessing enterprise value. GHG absorption deducted from a company’s GHG emissions can be up to maximum of 20% of ISS’s GHG emissions data (total of Scope 1, Scope 2 and Scope 3).

Data on such GHG absorption can be used as an impact metric in climate-related opportunity analyses as well as in impact investing.

Given the fact that avoided emissions and carbon offsets are included in our definition of GHG absorption, we are not using the GHG absorption data in our 2050 Net Zero Goal or our 2030 Interim Target.

# COLUMN

## Quantitative Evaluations of Climate-related Opportunities Using Avoided Emissions and Internal Carbon Price

In 2023, we have started to quantitatively include avoided emissions, etc. in the opportunity evaluation category of the environmental score for Japanese equities. In this evaluation, we measure the ratio (impact) of the economic value, calculated by multiplying the amount of avoided emissions, etc. disclosed by the company by the internal carbon price that we use when evaluating companies, to the company's operating profit. There is a positive correlation between a company's avoided emissions, etc. and the amount of net sales and other business metrics,

and we believe that this is one optimal metric to evaluate climate-related opportunities that will lead to both a reduction in society's overall emissions as well as an increase in enterprise value. An increasing number of companies are disclosing their avoided emissions, etc., so through this new quantitative evaluation of climate-related opportunities we hope to encourage companies to disclose their avoided emissions, etc. and make further efforts to achieve net zero, as well as promote related dialogue.

## Physical Risk Analysis

In recent years, hurricanes, cyclones, heavy rains, floods, heat waves, forest fires, and droughts, which are thought to be impacted by climate change, are frequently occurring around the world. The impact of these events on the businesses and assets held by portfolio companies can no longer be ignored, and analyzing physical risks is becoming increasingly important. In analyzing the physical risks of portfolio companies, in addition to ISS's risk analysis and physical risk score by industry and region, we utilize the portfolio's Value at Risk (potential negative impact of physical risk on the value of a

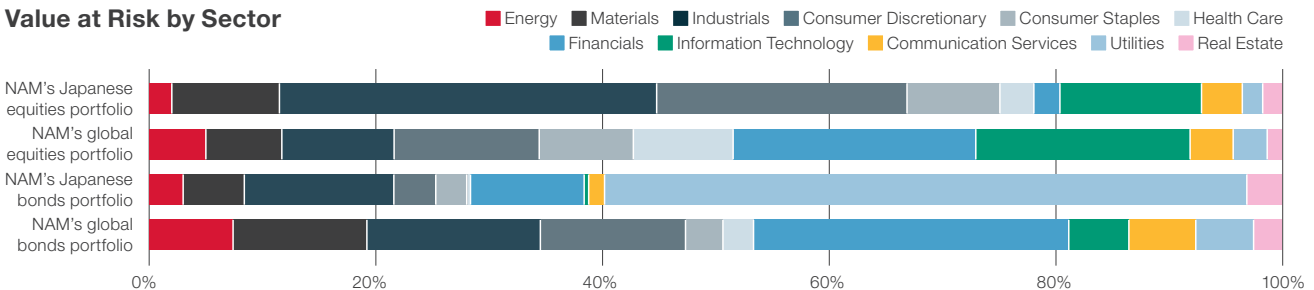
portfolio) calculated as the potential value lost through 2050 due to damage incurred by the business assets owned by portfolio companies from abnormal weather stemming from climate change. For Japanese companies, if necessary, we use disclosure materials and company websites to research the regions of offices, factories, and important owned assets, and we also check hazard maps and other materials published by local governments in order to supplement our analysis of physical risk.

## Physical Risk Analysis by Sector and Region

We utilize ISS data to analyze physical risks by industry and region. The graph below shows the percentage of Value at Risk related to physical risk in each sector through 2050 for our Japanese equities, global equities, Japanese bonds, and global

bonds portfolios. The higher the ratio, the greater the potential negative impact of physical risk on the value of companies in that industry. We calculate the Value at Risk of each portfolio, but it is used internally and not disclosed in this report.

### Value at Risk by Sector



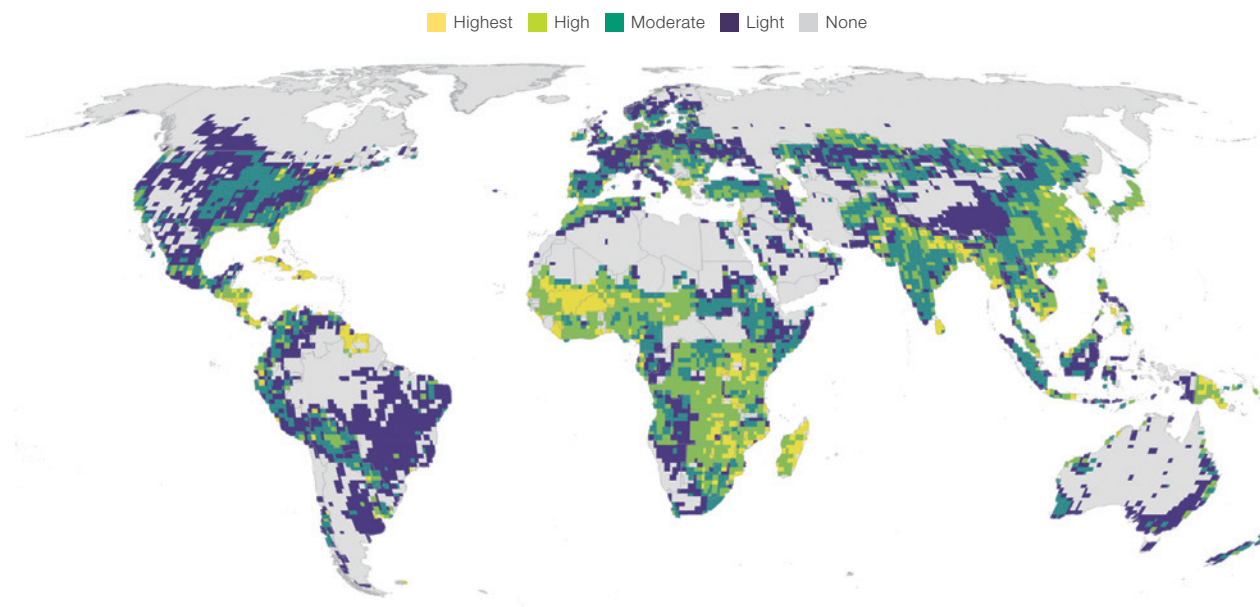
### Portfolio Value at Risk (%)

NAM's Japanese equities portfolio	NAM's global equities portfolio	NAM's Japanese bonds portfolio	NAM's global bonds portfolio
2.1%	0.9%	2.7%	0.6%

## The Physical Risk By Region

The below map shows the physical risk by region for our four asset integrated portfolio. Along with the ratio by industry, we use this map as a reference when considering industry

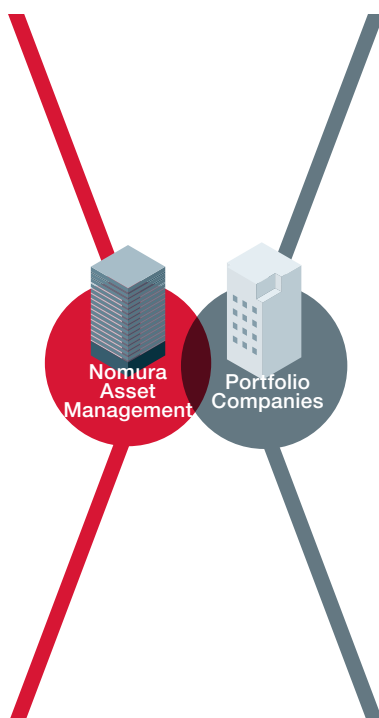
and regional allocations. These analyses enable us to identify sectors and regions with relatively high physical risk.



## Climate Change-Related Engagement with Portfolio Companies

Through engagement with portfolio companies, we are advancing the following initiatives in order to reduce climate related risk in our portfolios and promote investment in climate-related opportunities.

- Active involvement in climate change countermeasures, cooperation with other investors and stakeholders, and sharing of best practices through climate-related initiatives we have joined, such as PRI, TCFD, Climate Action 100+, NZAM and PCAF
- Enhance climate change-related ESG integration, including climate-related risk/opportunity analysis for the investment portfolio
- Develop financial analysis/corporate valuation methods using internal carbon price and GHG absorption
- Develop climate change-related financial products that contribute to realizing a decarbonized society consistent with our 2050 Net Zero Goal and 2030 Interim Target
- Enhance the transparency of our efforts towards climate change through TCFD disclosure in our Responsible Investment Report



- Climate-related financial disclosure based on the TCFD Recommendations including scenario analysis and GHG reduction targets
- Disclose Scope 3 and GHG absorption that enable GHG emissions to be assessed in the life cycle of products and services and throughout the supply chain, encourage GHG reductions by suppliers, customers and other business partners.
- Introduction of internal carbon price and disclosure of price level by portfolio companies
- Incorporate climate change countermeasures and external evaluations related to climate change into KPI for executive compensation
- Obtain approval of science-based targets (SBT) or commit to them
- Respond to CDP questionnaires, join initiatives such as RE100/EP100/EV100, etc.
- Obtain verification and assurance of GHG emissions and GHG absorption data

Please refer to Page 63, 71 for actual examples of climate change-related engagement.

## Analysis of Sovereign Debt Portfolio Emissions (Financed Emissions)

In December 2022, the Second Edition of the PCAF's The Global GHG Accounting and Reporting Standard for the Finance Industry was released. In this Second Edition, the sovereign debt asset class was added to the methodologies for measuring and disclosing GHG emissions for investment and loan portfolios. Following the release of the new Standard, we measured the emissions of our investment portfolio for both domestic and overseas sovereign debt held as of December 31, 2022.

The methodology for measuring sovereign debt portfolio emissions is different from the methodology for measuring portfolio emissions for listed equities and corporate bonds. Specifically, the definitions for emission scopes and the computation of investment ratios (attribution factor) used in measurements are different. Regarding supply chain emissions for countries, which form the base for measurements, Scope 1 is defined as the domestic GHG emissions from sources located within the country territory, Scope 2 is defined as energy-related imported GHG emissions, and Scope 3 is defined as GHG emissions attributable to non-energy imports from another country. In addition to these, financial institutions are being urged to measure consumption-based emissions. In computing the attribution factor, which is the ratio of investment in the investee, unlike the ratio of the amount invested to EVIC which is used for measuring GHG emissions for listed equities and corporate bond portfolios, in measuring the sovereign debt portfolio emissions, the ratio of the invested amount (exposure

to sovereign bond) to PPP (Purchase Power Parity)-adjusted GDP is used.

For measuring Scope 1 emissions, we mainly use GHG data (Annex 1 countries) from the UNFCCC (United Nations Framework Convention on Climate Change), while for measuring Scope 2 and Scope 3 emissions we mainly use the OECD's CO<sub>2</sub>, and we measure consumption emissions using CO<sub>2</sub> data only. The UNFCCC's Scope 1 data for non-Annex 1 countries contains considerable variation in the timing of each country's most recent data, so these data have not been reflected in the measurement results noted on the graphs, but we are separately monitoring the measurement results for non-Annex 1 countries, including the most recent data that we can capture, and these data are included in the notes as reference data.

Our sovereign bond portfolio includes large amounts of U.S. and Japanese sovereign bonds, and thus our sovereign bond portfolio's emissions are greatly impacted by the emissions of these countries. Data for emerging countries are not yet sufficiently released, and for the current measurements there are areas that we cannot completely supplement. However, if data accessibility further improves going forward, it will enable us to improve the quality of the data we disclose. The role that any one country should play in the decarbonization of society is becoming more important. We will continue to proactively advocate for the realization of a decarbonized society by monitoring the financed emissions of our sovereign bond portfolio and through engagement.

### Sovereign debt portfolio emissions

$$\text{Book value of amount invested} \sum_i \left( \frac{\text{Book value of amount invested}_i}{\text{PPP-adjusted GDP}_i} \times \text{GHG or CO}_2 \text{ emissions}_i \right)$$

### Sovereign debt portfolio Production emissions intensity

$$\text{Sovereign debt portfolio Production emissions intensity} = \sum_i \left( \frac{\text{Book value of amount invested}_i}{\text{Book value of portfolio}} \times \frac{\text{Production emissions}_i}{\text{PPP-adjusted GDP}_i} \right)$$

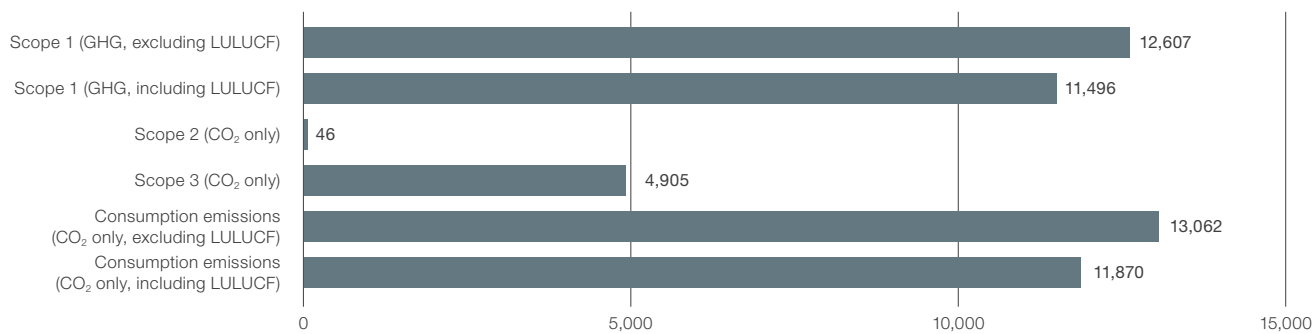
### Sovereign debt portfolio Consumption emissions intensity

$$\text{Sovereign debt portfolio Consumption emissions intensity} = \sum_i \left( \frac{\text{Book value of amount invested}_i}{\text{Book value of portfolio}} \times \frac{\text{Consumption emissions}_i}{\text{Population}_i} \right)$$

## Definition of scopes and consumption emissions for measuring sovereign debt portfolio emissions

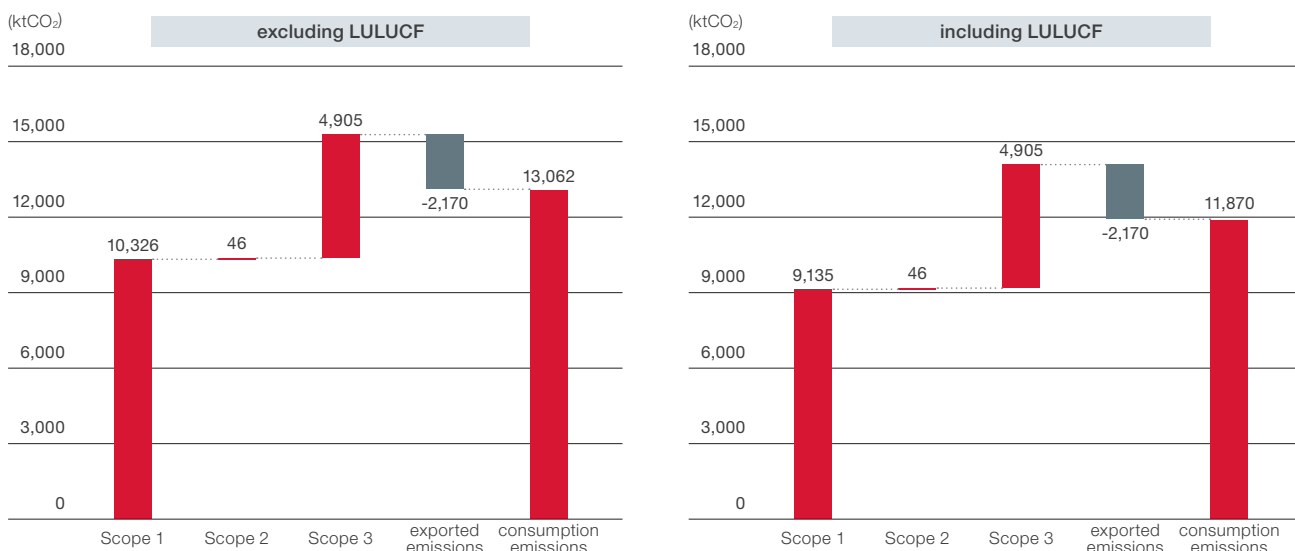
scope 1	Domestic GHG emissions from sources located within the country territory
scope 2	GHG emissions occurring as a consequence of the domestic use of grid-supplied electricity, heat, steam and/or cooling which is imported from another territory
scope 3	Emissions attributable to nonenergy imports as a result of activities taking place within the country territory
Consumption emissions	GHG emissions on a consumption basis within the country (scope 1 + scope 2 + scope 3 – exported emissions)

### Sovereign bond portfolio emissions (Units: ktCO<sub>2</sub>e (in the case of GHG), ktCO<sub>2</sub> (if CO<sub>2</sub> only))



\*LULUCF: Land Use, Land Use Change and Forestry  
 \*Production emissions Scope 1 use 2020 UNFCCC Annex 1 country's GHG data and 2021 PPP-adjusted GDP announced by the World Bank.  
 \*Scope 2 and Scope 3 use the OECD's CO<sub>2</sub> data for 2018 and 2021 PPP-adjusted GDP announced by the World Bank.  
 \*For consumption emissions, Scope 1 emissions use 2020 UNFCCC Annex 1 country CO<sub>2</sub> data, while Scope 2, Scope 3 and exported emissions use the OECD's CO<sub>2</sub> data for 2018 and 2021 PPP-adjusted GDP announced by the World Bank.  
 \*When measured including the most recent data released by each UNFCCC Non-Annex 1 country, Scope 1 emissions were 13,222ktCO<sub>2</sub>e (GHG, excluding LULUCF) and 12,057ktCO<sub>2</sub>e (GHG, including LULUCF), while consumption emissions were 13,507ktCO<sub>2</sub> (CO<sub>2</sub> only, excluding LULUCF) and 12,269ktCO<sub>2</sub> (CO<sub>2</sub> only, including LULUCF).

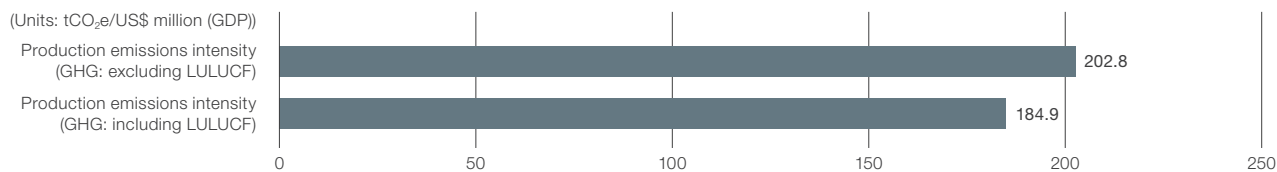
### Breakdown of consumption emissions (CO<sub>2</sub> only, excluding LULUCF / including LULUCF).



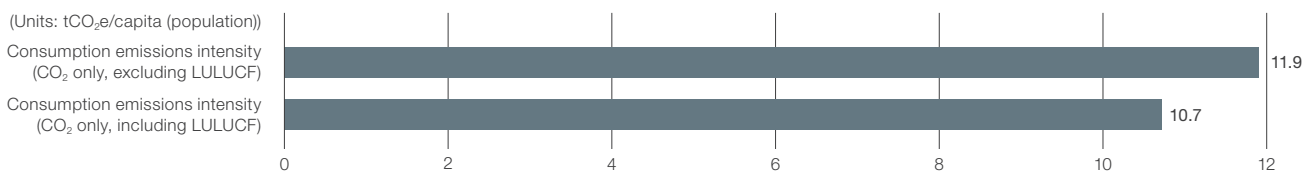
\*When measured including the most recent data released by each UNFCCC Non-Annex 1 country, Scope 1 emissions (CO<sub>2</sub>, excluding LULUCF) were 10,786ktCO<sub>2</sub>, while consumption emissions (CO<sub>2</sub> only, excluding LULUCF) were 13,507ktCO<sub>2</sub>.  
 \*When measured including the most recent data released by each UNFCCC Non-Annex 1 country, Scope 1 emissions (CO<sub>2</sub>, including LULUCF) were 9,537ktCO<sub>2</sub>, while consumption emissions (CO<sub>2</sub> only, including LULUCF) were 12,269ktCO<sub>2</sub>.

\*For countries for which Scope 1 data cannot be obtained, even if Scope 2 and Scope 3 data are available, Scope 2 and Scope 3 are excluded from the final calculation of the consumption emissions. Therefore, the values for (Scope 1 + Scope 2 + Scope 3 – exported emissions) and consumption emissions do not match.

### Sovereign Bond Portfolio Emissions Intensity (Carbon Intensity)



\*Scope 1 data above are used for production emissions. For GDP, 2021 PPP-adjusted GDP announced by the World Bank is used.  
 \*When measured including the most recent data released by each UNFCCC Non-Annex 1 country, the above values are 212.7tCO<sub>2</sub>e/US\$ million (GDP) (excluding LULUCF) and 193.9tCO<sub>2</sub>e/US\$ million (GDP) (including LULUCF).



\*Consumption emissions are defined the same as above. For populations, 2021 World Bank data are used.  
 \*When measured including the most recent data released by each UNFCCC Non-Annex 1 country, the above values are 12.1tCO<sub>2</sub>/capita (population) (excluding LULUCF) and 10.9tCO<sub>2</sub>/capita (population) (including LULUCF).

## Cooperation with Climate Change-related Initiatives

In March 2019, we pledged our support for the TCFD, and starting with our Responsible Investment Report 2019 we have been providing disclosure in line with the TCFD Recommendations, and also offering detailed disclosure and reports on GHG emissions monitoring for individual funds, covering our company-wide Japanese equities, global equities, Japanese bonds, and global bonds portfolios. We have also been a member of the TCFD Consortium since its establishment in May 2019, and we are a member of the GIIG Supporters, a group of investors that utilize the Green Investment Guidance formulated by the TCFD Consortium in October 2019 to engage with portfolio companies and actively encourage them to support the TCFD, disclose climate-related financial data, and integrate climate-related risks and opportunities into their management strategies. The TCFD Consortium released the amended Green Investment Guidance 2.0 in October 2021. While utilizing the Green Investment Guidance, we actively encourage investee companies to endorse the TCFD, disclose climate-related financial information, and integrate climate-related risks and opportunities into their management strategies through engagement. Furthermore, in December 2019, we joined Climate Action100+, and through this initiative we collaborate with other institutional investors to encourage portfolio companies to take action to combat climate change, while

we also joined NZAM and PCAF in August 2021.

In June 2015, Nomura Holdings, representing all of Nomura Group, became a signatory of the CDP. With this, Nomura Asset Management became one of the CDP's signatories, but in November 2021 we became a signatory on a standalone basis. We are responsible for the responses to questions for the asset manager on Nomura Holdings' CDP questionnaire.

Furthermore, in September 2022, Nomura Holdings, in collaboration with 6 leading companies (Nomura Holdings, Inc. being the chair) and 73 member companies, established the "GX Business Working Group" as a part of the GX (=Green Transformation) League's important initiative to develop rules for market creation. For the realization of a carbon neutral society, the GX Business Working Group aims to establish an appropriate framework to properly evaluate Japanese companies' opportunities and their contribution to climate change (emission reductions based on the products and services they provide to the market). In addition, through the discussion with leaders and members of the working group, the GX Business Working Group intends to develop a guideline and take initiative on climate-related opportunities. As a member of Nomura Group, Nomura Asset Management will proactively contribute to the GX Business Working Group's activities and discussions.



0 TCFD &  
NET ZERO GOAL BY 2050

