TCFD

Advancing ESG integration by analyzing and evaluating climate-related risks and opportunities
Encouraging companies to incorporate climate change measures into their management strategies through constructive dialogue with portfolio companies

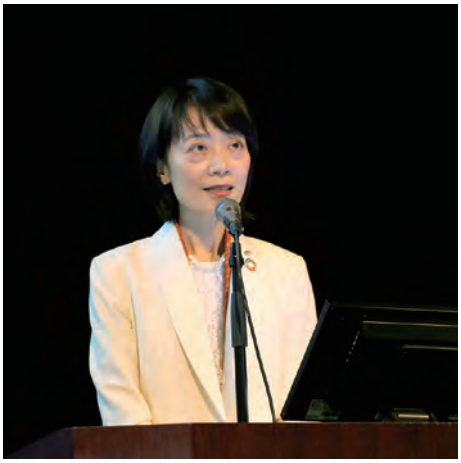
Climate change is one of the most important ESG issues in the management strategies of portfolio companies. Through our TCFD initiatives, we will contribute to the realization of a decarbonized society by enhancing the management of climate-related risks and opportunities and by having portfolio companies include climate change measures in their management strategies through engagement.

We recognize that decarbonizing society is an issue that needs to be addressed over the long term, and that accomplishing this will be a major challenge. However, we feel that nothing will change when it comes to dealing with climate change unless specific actions are taken by investors, who play an important role in providing funds and engaging in dialogue with portfolio companies.

While continuing constructive and amicable dialogue with portfolio companies, we will cooperate to work on climate change issues and contribute to the realization of a decarbonized society.

President & CEO
Nomura Asset Management Co., Ltd.

Junko Nakagawa



Keynote address at the Forum on Decarbonizing Management
(November 19, 2019) co-hosted by
Ministry of the Environment Government of Japan and CDP

Nomura Asset Management's TCFD Initiatives

In response to a request from the G20, the TCFD (Task Force on Climate-related Financial Disclosures) was established in December 2015 by the FSB (Financial Stability Board) to provide information on climate-related risks (transition and physical risks) and opportunities, and to consider measures financial institutions can take.
Following the 2008 global financial crisis, and reflecting on the harm caused by short-term focus for investments, momentum grew for an emphasis on risk management for medium- to long-term investment. Meanwhile, extreme weather around the world has caused enormous damage to companies, and has also had a significant impact on the balance sheets of financial institutions, including property and casualty insurance companies. Given these circumstances, in order to keep the financial system stable, it has become important for companies that financial institutions invest in and lend funds to, to disclose their climate-related financial information under a unified framework. This led to the establishment of the TCFD.
In June 2017, the TCFD submitted the TCFD Recommendations (final report) to the FSB, and made the report public. Subsequently, the TCFD has issued two Status Reports (September 2018, June 2019).
We support the TCFD, as in addition to recognizing climate change as one of the most important ESG issues in our ESG Statement, we understand the importance of climate-related financial disclosures by portfolio companies. We have also been a member of the TCFD Consortium since its establishment in May 2019. Utilizing the Green Investment Guidance formulated by the Consortium in October 2019, through engagement we actively encourage portfolio companies to support the TCFD, disclose climate-related financial information, and integrate climate-related risks and opportunities into their business strategies. Through these initiatives, we are helping to stabilize the financial system with respect to climate change, improve the transparency of capital markets, as well as advance investment with respect to climate-related risks and opportunities.
In this section, we disclose our climate-related governance, strategy, metrics and targets, as well as risk management based on the TCFD Recommendations, and discuss the results of our climate-related analysis in our portfolios.

GIG GREEN INVESTMENT GUIDANCE

Nomura Asset Management is a member of GIG Supporters.

Governance

Our Board of Directors and Executive Management Committee both recognize that climate-related risks and opportunities have important impacts on our business as well as medium- to long-term management targets, and have therefore created an appropriate governance system along with carrying out monitoring.

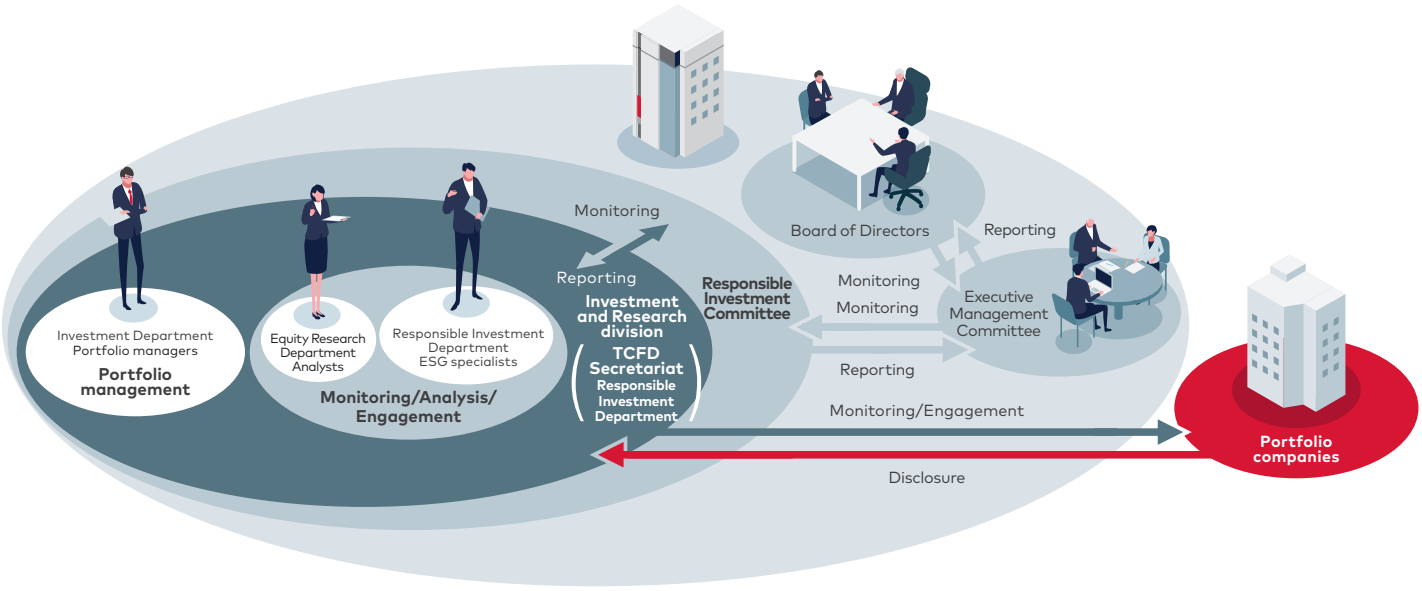
Although Nomura Asset Management is an asset management company under the Nomura Group, based on our Conflict of Interest Management Policy, the decision-making in the Investment and Research division is separated from management decision-making bodies such as the Board of Directors and the Executive Management Committee. In addition to preventing non-public information related to investment and research from being communicated to management in advance, we are working to address climate issues in investment and research in a manner that ensures the independence of decision-making for investment and research. Under this system, the Responsible Investment Department, which is responsible for responsible investment as a whole, acts as the TCFD Secretariat for monitoring climate-related risks and opportunities, and handles all administrative work.

The ESG specialists in the Responsible Investment Department work with the portfolio managers and the equity analysts to manage portfolios by monitoring GHG (greenhouse gas) emissions and ESG scores of portfolio companies, analyze scenarios, and assess transition risks, and also work to understand the climate-related risks and opportunities of portfolio companies. Analytical data such as GHG emissions, ESG scores, and scenario analyses compiled by the Secretariat are shared with investment managers and analysts, and used for company analysis, engagement, and investment decision-making, in addition to being regularly reported to the Responsible Investment Committee comprised of officers from the Investment and Research division.

Based on these reports, the Responsible Investment Committee members, including the executive in charge of the Investment and Research division, the CIOs (chief investment officers) of each asset class, SIOs (senior investment officers), the head of the Equity Research Department, and others, ascertain the climate-related risks and opportunities of investment portfolios and portfolio companies, assess the impact on our business and portfolios, and discuss measures to be taken. Following this, the chair of the Responsible Investment Committee reports the matters reported to the Executive Management Committee, which allows senior management to monitor climate-related risks and opportunities, and determine the appropriate allocation of management resources and make other relevant decisions.

The details are ultimately reported to the Board of Directors via the Executive Management Committee. Through this process, important information about portfolios' climate-related risks and opportunities is shared with a wide range of decision-makers, from management to personnel responsible for investment and research, and is appropriately monitored by the Board of Directors and the Executive Management Committee.

Nomura Asset Management's Governance for TCFD



Strategy

The climate-related risks and opportunities which we have recognized are shown in the table below.
Climate-related risks and opportunities impact corporate value as they affect companies' financial statements, including the balance sheet, income statement and cash flow statement. At Nomura Asset Management, ESG specialists work with portfolio managers and analysts to analyze the impact of climate-related risks and opportunities on a company's business, management strategy, and financial projections, and then incorporate these analyses into our investment strategies, ESG scores, stock price ratings, and other metrics. Analysis results based on corporate GHG emissions and ESG scores are utilized in engagement after making comparisons with benchmarks and other metrics, and are used to improve the corporate value of portfolio companies. If no signs of improvement based on engagement are seen in a company, we consider reflecting this in our investment decision-making.
All of our investment products are subject to climate-related monitoring. We conduct scenario analyses on the impact of climate-related risks and opportunities on our portfolios using information provided by external data vendors, and use the results of analyses in our investment strategies, portfolio management, and engagement. One possible way to build a portfolio that is consistent with the 1.5°C and 2°C targets set out in the Paris Agreement is to adjust the weighting of certain holdings against the benchmark or divest of certain holdings. However, this only a technical and superficial action, and will not lead to effective climate change measures including climate change mitigation and adaptation efforts. We recognize that as an asset manager we play an important role in encouraging companies to promote climate change countermeasures through engagement by continuing to hold shares of companies that have relatively high GHG emissions, and we will continue to actively contribute to climate change countermeasures through these types of activities.

Climate-Related Risks and Opportunities

Risks and Opportunities		Description	Short-term	Medium-term	Long-term	Impact on finances	NAM	Portfolio companies
Transition risks	Policies/laws	Introduction of carbon pricing (carbon tax, emissions trading) or regulations/penalties on products/services	←	—	→	Expenditures ↑ Income ↓	●	●
	Technology	Expenditures and/or technological risks in order to replace existing products/services due to competitors developing low-carbon products/services, fossil fuel-related facilities, etc. becoming stranded assets, and to transition to low-carbon technologies (including losses on investments in new low-carbon technologies)		←	→	Expenditures (including impairment losses) ↑ Income ↓	●	●
	Consumer activity/ preferences	Changes in consumer activity/preferences due to heightened awareness of climate change and the decarbonization of society	←	—	→	Revenues ↓ Income ↓	●	●
	Raw materials Expenditures	Soaring raw materials expenditures due to climate change		←	→	Expenditures ↑ Income ↓	●	●
	Reputation	Reputation risk due to climate change, such as worsening view of the overall industry (to which a company belongs)	←	—	→	Revenues ↓ Income ↓	●	●
Physical risks	Acute	Acute risks due to intensification of abnormal weather events, including typhoons and flooding	←	→		Revenues ↓ Expenditures (including impairment losses) ↑ Income ↓	●	●
	Chronic	Chronic risks due to changing rainfall patterns, larger volatility in weather patterns, higher temperatures, and sea level rise			← →	Revenues ↓ Expenditures (including impairment losses) ↑ Income ↓	●	●
Opportunities	Renewable energy	Solar, wind, geothermal, biomass	←	—	→	Revenues ↑ Income ↑		●
	Energy conservation	Energy-saving products, EMS (energy management systems), cogeneration	←	—	→	Revenues ↑ Expenditures ↓ Income ↑		●
	Hydrogen	Production, transport, storage technologies for (CO_2-free) hydrogen, hydrogen electric power generation, fuel cells		←	→	Revenues ↑ Income ↑		●
	Low-carbon mobility	Electric automobiles, fuel cell vehicles	←	—	→	Revenues ↑ Expenditures ↓ Income ↑		●
	Real estate	ZEB/ZEH (zero-energy buildings / zero- energy houses), smart cities	←	—	→	Revenues ↑ Expenditures ↓ Income ↑		●
	Disaster prevention/ mitigation	Resilient products/services to prevent/mitigate disasters	←	—	→	Revenues ↑ Income ↑		●
	Medicines/functional foods	Medicines/functional foods to address infectious diseases and rising temperatures	←	—	→	Revenues ↑ Income ↑		●
	Meat substitutes/lab-grown meats	Meat substitutes (plant-derived), lab-grown meats	←	—	→	Revenues ↑ Income ↑		●
	CCUS	CCU (Methanation, artificial photosynthesis, etc.), CCS			← →	Revenues ↑ Income ↑		●
	Financial products	Climate change-related financial products	←	—	→	Revenues ↑ Income ↑	●	

Metrics and Targets

In order to evaluate climate-related risks and opportunities in accordance with our own strategy and risk management process, we are measuring the following four metrics recommended by the TCFD for each of our portfolios.

1	**Total carbon emissions**	Total GHG emissions related to portfolio
2	**Carbon footprint**	Total carbon emissions divided by the portfolio's market value
3	**Carbon intensity**	Total carbon emissions divided by net revenues of portfolio companies allocated to the portfolio
4	**Weighted average carbon intensity**	The weighted average (based on weight in the portfolio) of emissions per unit of revenues of each company in the portfolio

We also construct our own ESG scores, which are used by portfolio managers in the Investment Department for corporate analysis and investment decisions. Furthermore, we consider carbon pricing effective when analyzing the above four metrics and ESG scores, while referring to the levels announced by the portfolio companies and the levels consistent with the 1.5°C and 2°C targets.

On Pages 16-19, we analyzed climate-related risks and opportunities for four portfolios we manage:

Japanese equities, global equities, Japanese bonds, and global bonds. For our analysis, we use data and analysis methods provided by Institutional Shareholder Services (ISS).

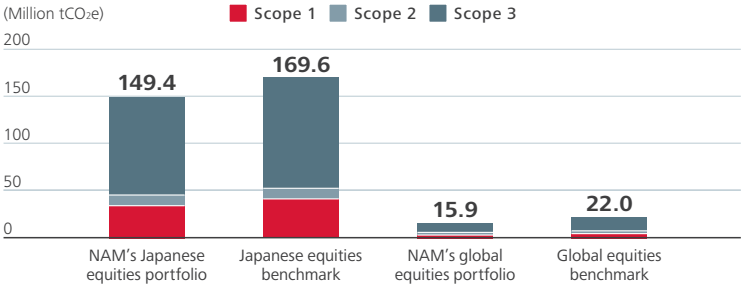
For equities benchmarks,we used TOPIX for Japanese equities and MSCI ACWI ex-Japan for global equities. Bonds only include corporate bonds, and do not include government bonds or other public bonds.

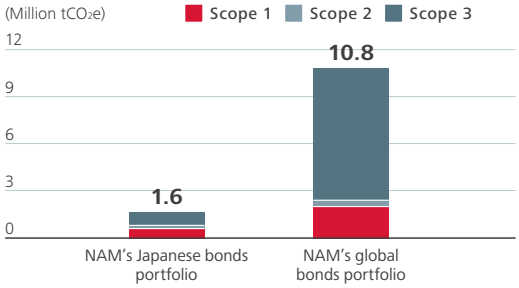
The analysis revealed that the total carbon emissions of our Japanese equities portfolio and global equities portfolio were less than the total carbon emissions portfolios of the same monetary amount and comprised of the same stocks and weightings as the benchmarks. The ratio of total carbon emissions accounted for by each industry is characterized by a high ratio from Materials and Utilities, as well as a relatively high ratio from Energy and Industrials. The same trend is seen in the industry ratios for weighted average carbon intensity.

Going forward, as goals in managing climate-related risks and opportunities, we will work to create climate change-related funds and reduce GHG emissions in our portfolios. In addition, we have joined major initiatives related to climate change, such as the PRI, TCFD, and CA100+, and through engagement we will continue to encourage portfolio companies' efforts towards a decarbonized society and their participation in climate change-related initiatives.

In addition to the above, as its responsibility as a globally-operating corporate group, Nomura Group is committed to solving climate change issues through its businesses and reducing the environmental impact of its business activities. In December 2018, Nomura Group formulated medium- and long-term CO_2 emissions reduction targets for the entire Group on a global basis. The global targets include reducing CO_2 emissions (total) 32% by FY2030 (medium-term) and 65% by FY2050 (long-term) compared to FY2012 emissions.

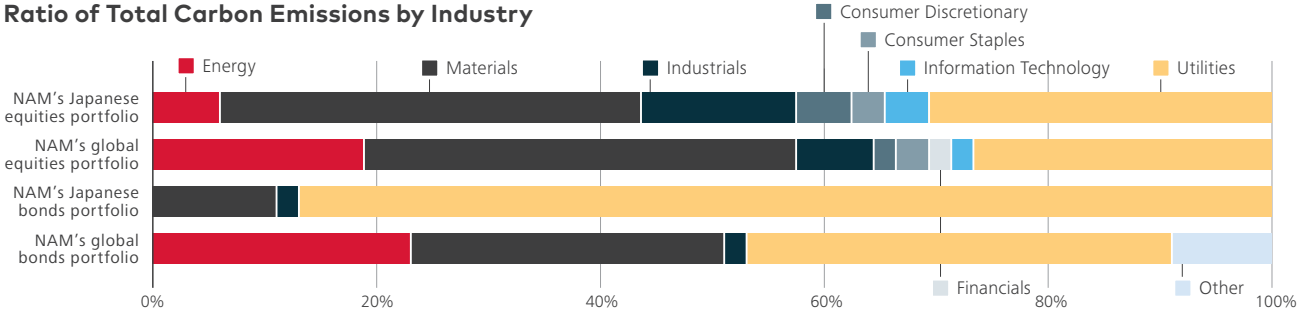
Total Carbon Emissions





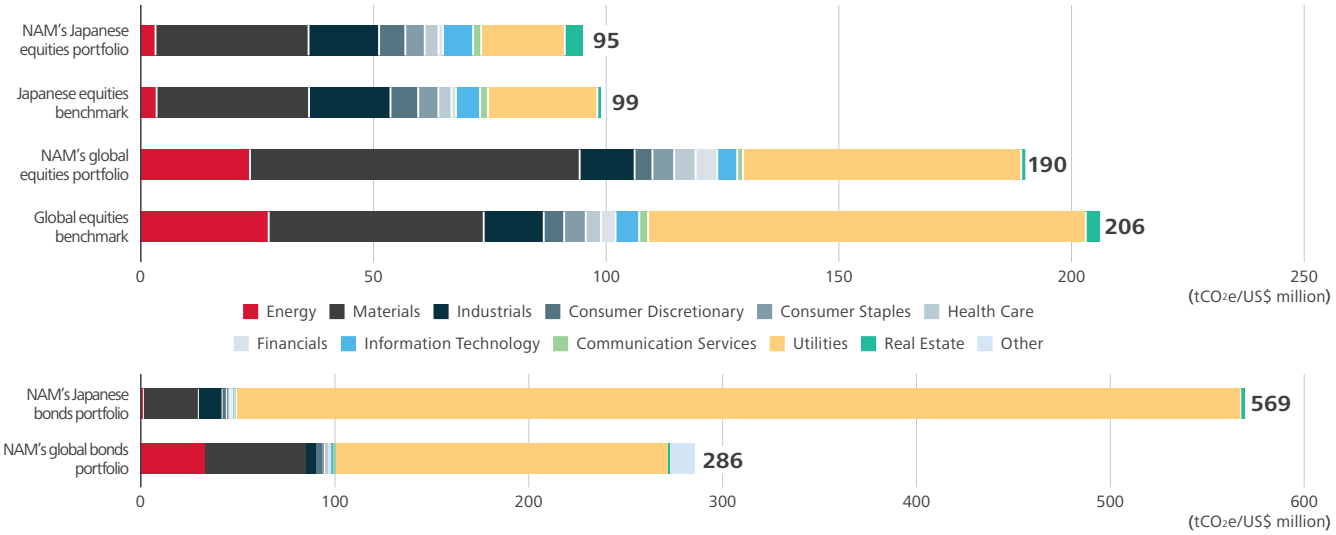
*For equities, total carbon emissions have been calculated using the company's ownership stake versus total market capitalization. For bonds, total carbon emissions have been calculated using adjusted enterprise value (total market capitalization + total debt).
*"Global" means the world excluding Japan; the same shall apply in this TCFD section.

Ratio of Total Carbon Emissions by Industry



*Industries whose composition ratio of the Global Industry Classification Standard (GICS) is less than 1% are not included in industry classifications.

Weighted Average Carbon Intensity and Ratio by Industry

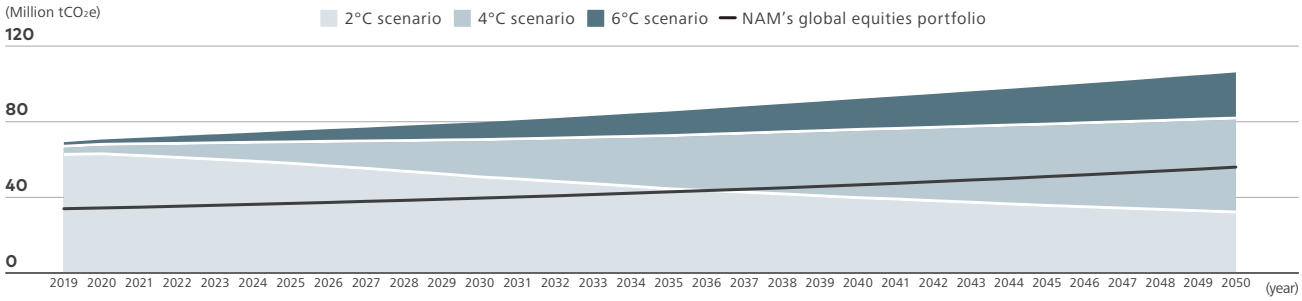


Scenario analysis

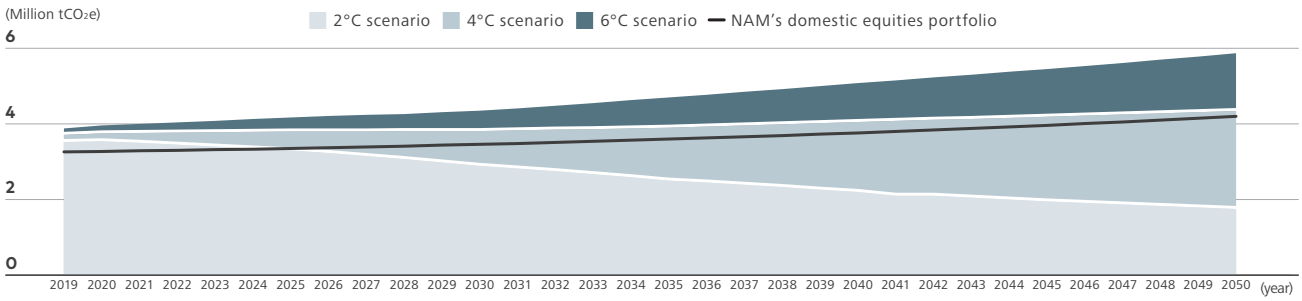
We compared the total carbon emissions of our Japanese and global equities portfolios (only Scope 1 in this scenario analysis) with the 2°C, 4°C, and 6°C scenarios agreed to in the Paris Agreement. These three scenarios are set out in an IEA (International Energy Agency) report.

The scenario analyses confirmed that global equities portfolio is likely to reach the total carbon emissions permitted in the 2°C scenario earlier than our Japanese equities portfolio. This is because our global equities portfolio includes shares in the energy, materials, and utilities sectors in emerging and developing countries, where GHG emissions are increasing in tandem with economic growth. Our analysis also hints at the importance of calling on measures to address climate change across the market, as our investment portfolios include many passive investments.

NAM's Japanese equities portfolio



NAM's global equities portfolio

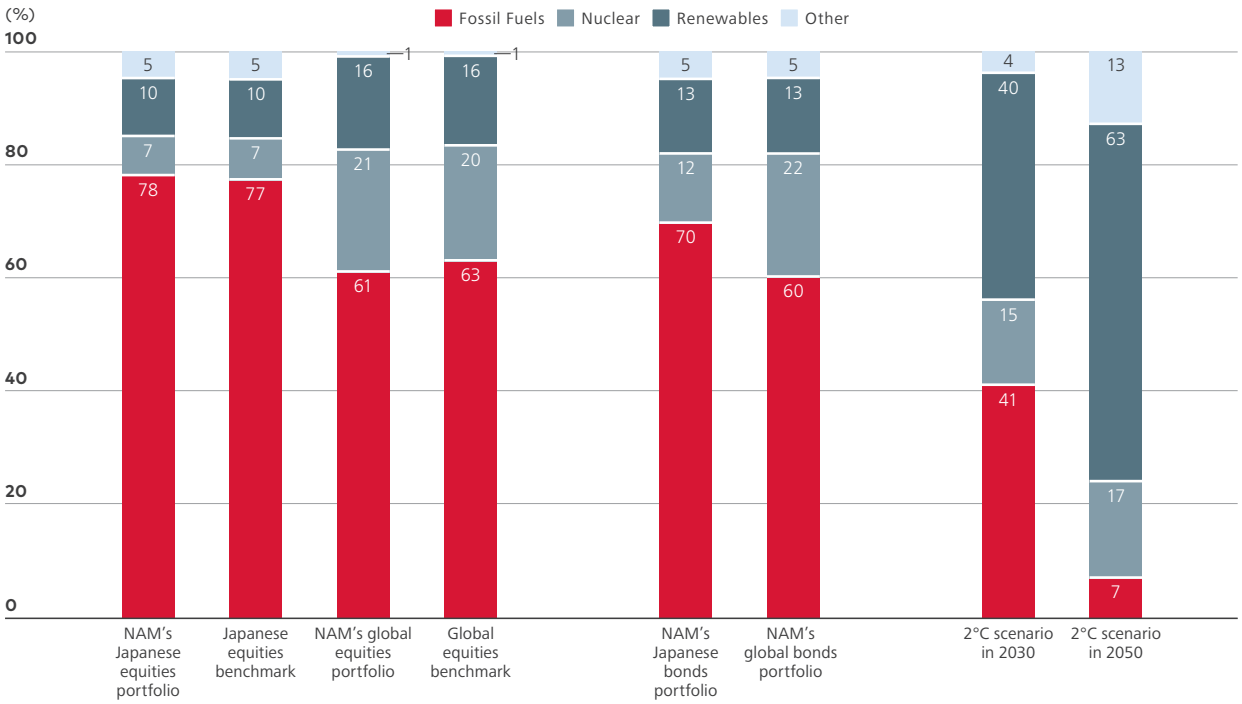


Risk Management

We classify climate-related risks into transition risks and physical risks. A company's climate-related transition risks are heavily dependent on the company's GHG emissions. Based on the TCFD Recommendations, we measure four portfolio metrics (refer to "Metrics and Targets") and compare them with the benchmarks and industry peers.
In addition, we feel it is important to analyze GHG emissions throughout the life cycle of a company's products and services, and use emissions and avoided emissions throughout the global supply chain disclosed by companies on a complementary basis. Meanwhile, for companies' climate-related physical risks, we use information provided by external data vendors. With respect to climate-related transition risks and physical risks, we refer to the information disclosed by companies as well as information provided by external data vendors. If such information is insufficient, during engagement activities we directly ask companies about the status of their efforts to address climate-related risks. In 2019, we carried out 117 ESG engagements in Japan focusing on environment-related risks and opportunities.
In managing climate-related risks, the Responsible Investment Department (Secretariat) works with the portfolio managers and equity analysts to regularly measure GHG emissions and monitor ESG scores. The results of these analyses are reported by the Responsible Investment Department to the Responsible Investment Committee, and then to the Board of Directors via the Executive Management Committee. If we determine that climate-related risks will have a significant impact on our business, business strategy, or financial projections, we will encourage improvement through our corporate engagement activities. At present, the Investment and Research division is taking the lead role in identifying, evaluating and managing climate-related risks, but we are considering integrating this process into our comprehensive risk management at the overall company level.

Transition Risk Analysis – Energy Generation Mix (Portfolio, Benchmark, 2˚C Scenarios)

The graph below compares our portfolios, the benchmarks, and power mix based on the power generation volume in the 2°C scenario. The 2°C scenario, based on IEA forecasts, shows the energy generation mix that is likely to limit the temperature increase in 2030 and 2050 to less than 2°C above pre-Industrial Revolution levels.
While the energy generation mix of both our domestic equities and global equities portfolios are almost the same as the benchmarks, the ratio of fossil fuels is higher in comparison to the energy generation mix in 2030 and 2050 under the 2°C scenario.
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.



Physical Risk Analysis

ISS analyzes the physical risks of industries and regions from long-term and catastrophic perspectives. We use the results of analyses performed by ISS to understand the physical risks (acute and chronic) in our portfolios for each industry and region, and refer to this information when considering allocations for industries and regions. The results of analyses of physicals risk for each industry and region in our portfolios are as follows. These results show the industries and regions with relatively high physical risk.

Industrial Analysis of Physical Risk (Acute)

*The % in the table are the total weights of each GICS sector in each NAM portfolio

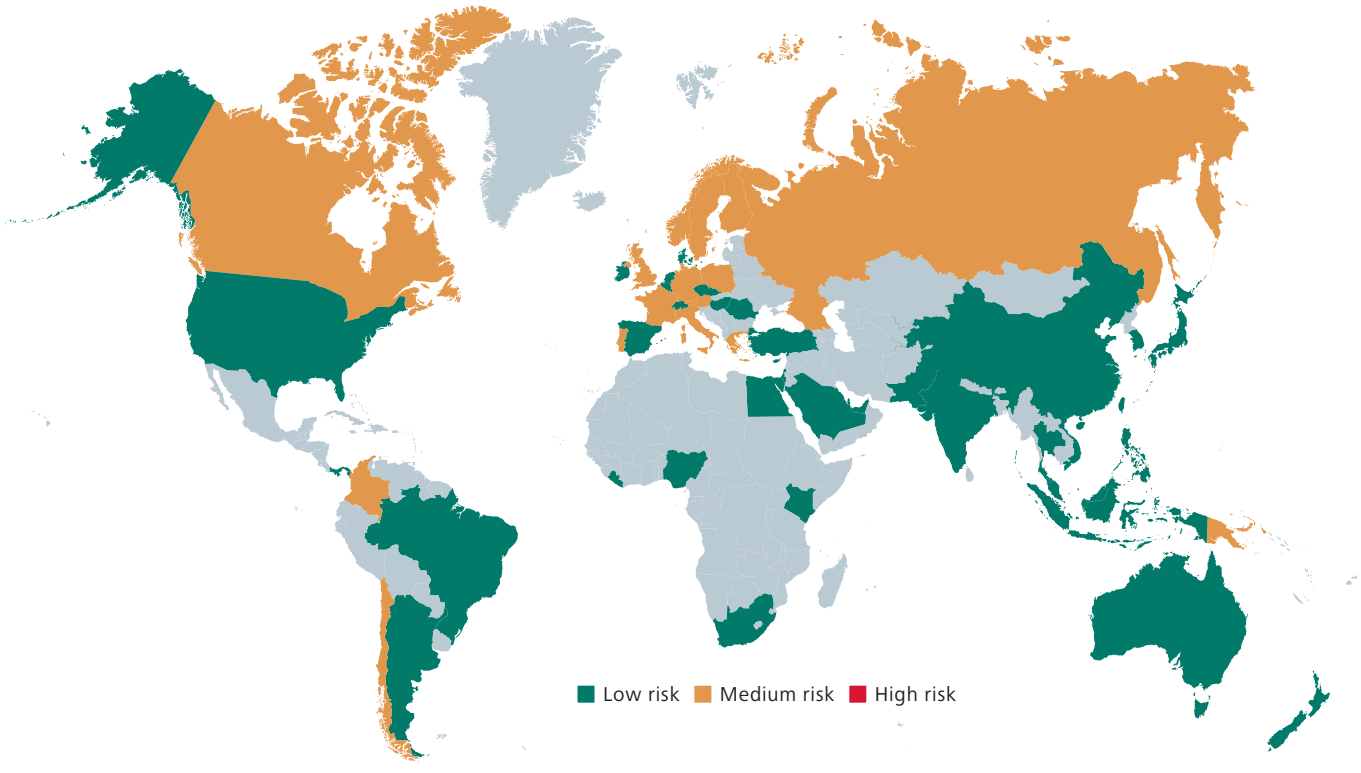
	Energy	Materials	Industrials	Consumer Discretionary	Consumer Staples	Health Care	Financials	Information Technology	Communication Services	Utilities	Real Estate	Other
NAM's Japanese equities portfolio	1%	6%	21%	18%	8%	9%	8%	13%	8%	1%	5%	0%
NAM's global equities portfolio	4%	3%	9%	8%	8%	19%	20%	16%	6%	4%	2%	0%
NAM's Japanese bonds portfolio	0%	4%	13%	10%	2%	0%	36%	2%	2%	27%	4%	0%
NAM's global bonds portfolio	6%	4%	4%	6%	2%	3%	39%	2%	7%	4%	1%	22%

Industrial Analysis of Physical Risk (Chronic)

	Energy	Materials	Industrials	Consumer Discretionary	Consumer Staples	Health Care	Financials	Information Technology	Communication Services	Utilities	Real Estate	Other
NAM's Japanese equities portfolio	1%	6%	21%	18%	8%	9%	8%	13%	8%	1%	5%	0%
NAM's global equities portfolio	4%	3%	9%	8%	8%	19%	20%	16%	6%	4%	2%	0%
NAM's Japanese bonds portfolio	0%	4%	13%	10%	2%	0%	36%	2%	2%	27%	4%	0%
NAM's global bonds portfolio	6%	4%	4%	6%	2%	3%	39%	2%	7%	4%	1%	22%

Low risk Medium risk High risk

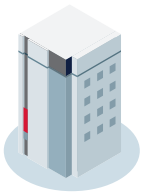
Regional Analysis of Physical Risk (NAM's domestic equities and foreign equities portfolios)



Our Future Initiatives to Address Climate Change

In these analyses, we can gain a detailed and comprehensive understanding of climate-related risks and opportunities in our portfolios by utilizing both the framework recommended by the TCFD as well as data and analysis methods provided by ISS. In particular, although the total carbon emissions and the weighted average carbon intensities of our domestic and global equities portfolios are lower than those of the benchmarks, the scenario analysis shows the timing of when the total carbon emissions of each portfolio will reach the level allowed under the 2°C scenario. The analyses of transition and physical risks also enable us to identify the industries and regions in which we should pay attention to the fossil fuel exposure and physical risks of our portfolios.

Going forward, through engagement with portfolio companies, we will pursue the following initiatives in order to reduce climate-related risk in our portfolios and promote investment in climate-related opportunities.



Nomura Asset Management

- Actively participate in climate change countermeasures through climate-related initiatives we have joined such as PRI, TCFD, and CA100+, cooperating with other investors and sharing best practices
- Further raise the level of TCFD disclosure and ESG integration related to climate change
- Develop climate change-related financial products
- Develop financial analysis/valuation techniques utilizing carbon pricing

Portfolio Companies

- Support TCFD and climate-related financial disclosure based on the TCFD Recommendations, including scenario analysis and GHG reduction targets
- Incorporate climate change countermeasures into KPI for executive compensation
- Attain approval of science-based targets and commit to them
- Provide information to CDP, join RE100
- Introduce internal carbon pricing
- Disclose Scope 3 and avoided emissions that enable GHG emissions to be assessed in the life cycle of products and services and throughout the supply chain

Column

Monitoring of GHG Emissions in Individual Funds

In "Nomura Asset Management's TCFD Initiatives," we analyzed and evaluated climate-related risks and opportunities for all of our portfolios, but we also monitor the GHG emissions of individual funds using the following four metrics recommended by TCFD.
The results of monitoring are shared with each investment officer. In addition, these results are regularly reported to the Executive Management Committee and the Board of Directors through our Responsible Investment Committee.
If GHG emissions are high compared to the benchmarks, we check the contributions from the fund's constituent stocks or bonds, ensure awareness of climate-related risks and opportunities during engagement with portfolio companies, and discuss their efforts to reduce GHG emissions.

Total Carbon Emissions

- Absolute GHG emissions associated with a portfolio
- Unit: tCO_2e(CO_2 equivalent)

$$\sum_{n}^{i}\left(\frac{\text{current value of investment } i}{\text{issuer's market capitalization } i}\times\text{issuer's Scope 1 and Scope 2 GHG emissions } i\right)$$

Carbon Footprint

- Total carbon emissions for a portfolio normalized by the market value of the portfolio
- Unit: tCO_2e/US$ million (investment amount)

$$\frac{\text{total carbon emissions}}{\text{market capitalization of portfolio}}$$

Carbon Intensity

- Volume of carbon emissions per million dollars of revenue (carbon efficiency of a portfolio)
- Unit: tCO_2e/US$ million (revenues)

$$\frac{\text{Total carbon emissions}}{\sum_{n}^{i}\left(\frac{\text{current value of investment } i}{\text{issuer's market capitalization } i}\times\text{the revenues of portfolio companies } i\right)}$$

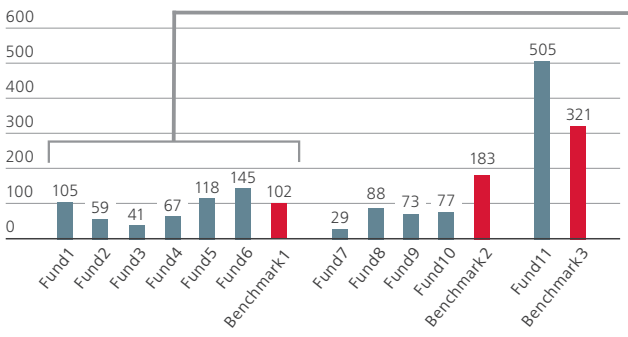
Weighted Average Carbon Intensity

- Portfolio's exposure to carbon-intensive companies and metric recommended by TCFD
- Unit: tCO_2e/US$ million (revenues)

$$\sum_{n}^{i}\left(\frac{\text{current value of investment } i}{\text{market capitalization of portfolio}}\times\frac{\text{issuer's Scope 1 and Scope 2 GHG emissions } i}{\text{the revenues of portfolio companies } i}\right)$$

Weighted Average Carbon Intensity

(tCO_2e/US$ million)



Weighted Average Carbon Intensity and NAM's Own Climate Change (E1) Score