
# Nomura TCFD Report 2021

## Implementation of TCFD recommendations

To fulfill our responsibilities as a corporate citizen, Nomura Group recognizes the importance of disclosing climate-related financial information. Nomura supports the Task Force on Climate-related Financial Disclosures (TCFD) and we are committed to consistent and effective disclosures aligned with the TCFD recommendations.

## Index

## 1. Message from CEO

Nomura Group was founded in 1925 with a mission to contribute to the creation of a truly prosperous society through the financial and capital markets. We have a diverse team of 26,000 people from 90 different nationalities working in over 30 countries worldwide.

Global warming has affected the climate in various ways, posing a threat to our lives and ecosystems. Greenhouse gas emissions, if they continue unabated, could have further wide-ranging effects on the natural environment. Corporates, investors and the entire financial system also stand to suffer the negative impacts of climate change.

Under the December 2015 Paris Agreement, countries agreed to strengthen the global response to climate change by holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels. To achieve this goal, Japan, the United States, the United Kingdom and the European Union have pledged to become carbon neutral by 2050, and China by 2060. In addition, Japan announced that it will target a 46 percent reduction in greenhouse gas emissions for fiscal 2030 compared with fiscal 2013, and continue striving for an even higher reduction of 50 percent.

At Nomura, we are committed to reducing our own greenhouse gas emissions, and to leveraging our expertise in the capital markets to deliver financing and solutions to support clients in their efforts. We recognize the importance of disclosing climate-related financial information, and we will continue to support the Task Force on Climate-related Financial Information Disclosure (TCFD) and enhance disclosures based on the TCFD recommendations.

Nomura Group's management vision is to achieve sustainable growth by solving social issues. Our business is built on the trust of our clients and all stakeholders. We believe that the sustainable development of society as a whole will help enhance our corporate value. We will continue to serve our clients with pride and strive to achieve sustainable growth.

Kentaro Okuda
President and Group CEO

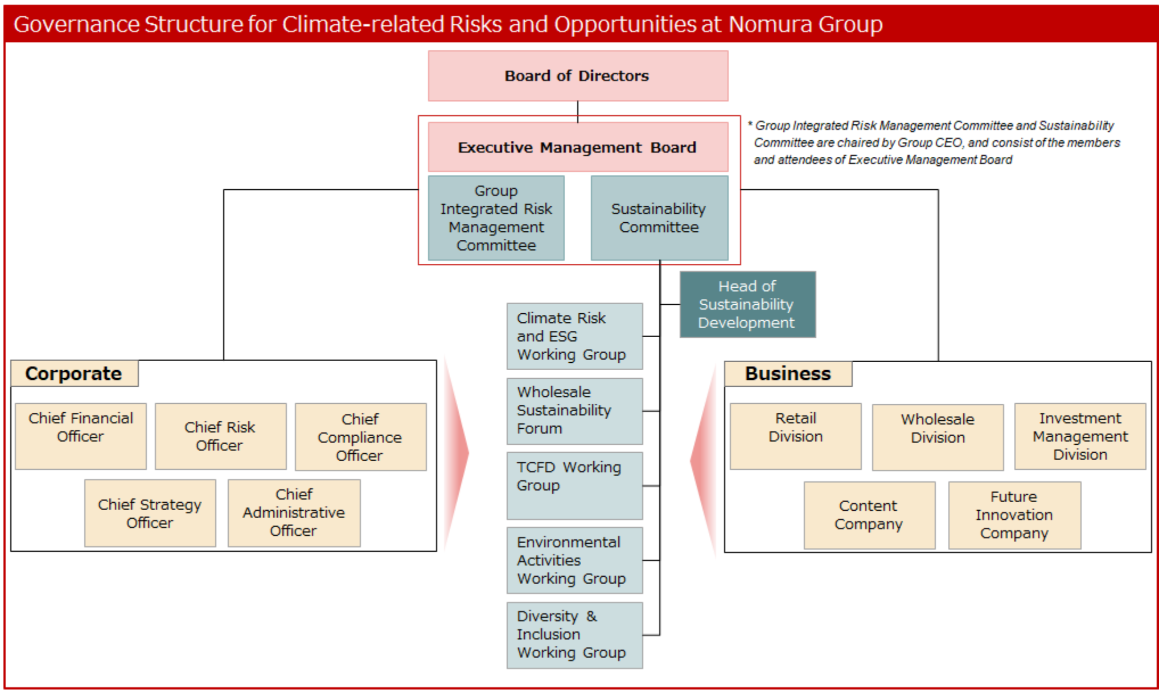
## 2. Governance

In 2009, we published our Environmental Statement and Environmental Policy, which underpin our ongoing initiatives to protect the environment. In light of this, the Board of Directors of Nomura Holdings has stated in its Corporate Governance Guidelines that it will embed ESG considerations, including climate change, in its business activities in order to address social issues and achieve sustainable growth for our company. In the area of risk management, the Group Integrated Risk Management Committee established a Risk Appetite Statement and a Risk Management Policy, which both recognize that ESG factors, including climate change, have a significant impact on various risk categories.

Our Sustainability Committee, chaired by our Group CEO, approves the policies and activities that inform our approach to ESG risks and opportunities, including climate change. In April 2021, an executive officer in charge of sustainability development was appointed, and will work to raise awareness within the Group, enhance our efforts, and increase information disclosure and external communications.

To provide enhanced disclosures in line with TCFD recommendations, we set up a TCFD Working Group under the Sustainability Committee. The TCFD Working Group is focused on various themes including ESG business opportunities and risks, as well as initiatives to lower the impact of our business activities on the environment. The working groups under the Sustainability Committee collaborate with the TCFD Working Group on key initiatives. In April 2021, the D&I (Diversity & Inclusion) Working Group was established as the fifth working group to promote sustainability related initiatives. Matters discussed by the working groups are subject to deliberations by the Sustainability Committee. Reports are made periodically to the Executive Management Board, and, as necessary, to the Board of Directors, which oversees group-wide climate change initiatives.

**Governance**



# 3. Strategy

## 3.1 Opportunity

To achieve a sustainable decarbonized society, multiple countries, enterprises, and international organizations have addressed their sustainability related commitment.

- Significant new greenhouse gas neutrality commitments have been made by Japan, China, Korea, EU and the US under the Biden administration
- In 2020, there was a surge of net-zero commitments from companies globally; at least one fifth (21%) of the world's 2,000 largest public companies, representing sales of nearly $14 trillion, now have net zero commitments[1]
- The movements are supported by regulatory frameworks – from United Nations driven initiatives such as SDGs[2], UN PRB[3], UN PRI[4], introduction of taxonomy and labelling framework by EU and other government bodies, NGFS[5] coordinated prudential focus across the financial sector

This in turn will create massive financing opportunities as sectors transition to a greener economy. There is an urgent need for climate finance to scale up in all asset classes.

- Major infrastructure investments; approximately $100-150 trillion investment will be needed over next 30 years to meet the targets of the Paris Agreement[6]
- Majority of investments and transition financing will be needed in Asia (55%)[7]
- Accelerated transition will result in changes and opportunities towards 2030 NDC[8]
- Investors are accelerating asset allocation - Global ESG assets are on track to exceed $53 trillion by 2025, representing more than a third of the $140.5 trillion in projected total assets under management[9]

Amid this global megatrend, our management vision is to achieve sustainable growth by solving social issues. Nomura Group companies will continue to work together across the board with their respective expertise to maximize the collective strengths of the Group to meet the needs of investors and clients and realize a sustainable society under our management vision.

This past year has been a turning point in terms of our sustainability efforts.

*[1] Report by Energy and Climate Intelligence Unit (ECIU) and Oxford Net Zero, Mar 2021*
*[2] SDGs :Sustainable Development Goals*
*[3] PRB :Principles for Responsible Banking*
*[4] PRI :Principles for Responsible Investment*
*[5] NGFS :Network for Greening the Financial System*
*[6] GFMA Climate Finance Report Dec 2020*
*[7] GFMA Climate Finance Report Dec 2020*
*[8] NDC :Nationally Determined Contribution :*
*[9] Bloomberg, 21 Feb 2021*

- We established the Wholesale Sustainability Forum in December 2019; meetings were regularly held throughout 2020 with key staff members across Investment Banking and Global Markets globally to identify opportunities and pursue strategic initiatives.
- Our acquisition of Greentech Capital (Greentech) in April 2020 was a signal of our intent and a key milestone for our franchise and we are driving significant mandates on the platform.
- We established the Wholesale ESG Sectoral Appetite Statement in September 2020 to manage environmental and social risks as we look to grow our ESG credentials.
- In our Retail business, we put together a series of funds focusing on the sustainability growth and the medium to long term investment growth for our clients and launched them as “ESG Product Line-up” in July 2020.
- We were awarded “Investment Bank of the Year for Sustainable Corporate Finance” by The Banker, and an international environmental not-for-profit organization, CDP, named us to its 2020 Climate Change A List, recognizing Nomura as a global leader on climate change initiatives and information disclosure – a great recognition of our efforts.
- We conduct training sessions and workshops for executive officers and employees to raise awareness of sustainability, improve skills, and reduce environmental impact. In fiscal year 2020, we enhanced the program and increased the frequency of events. Many employees participated in the programs.

We will continue expanding our existing efforts.

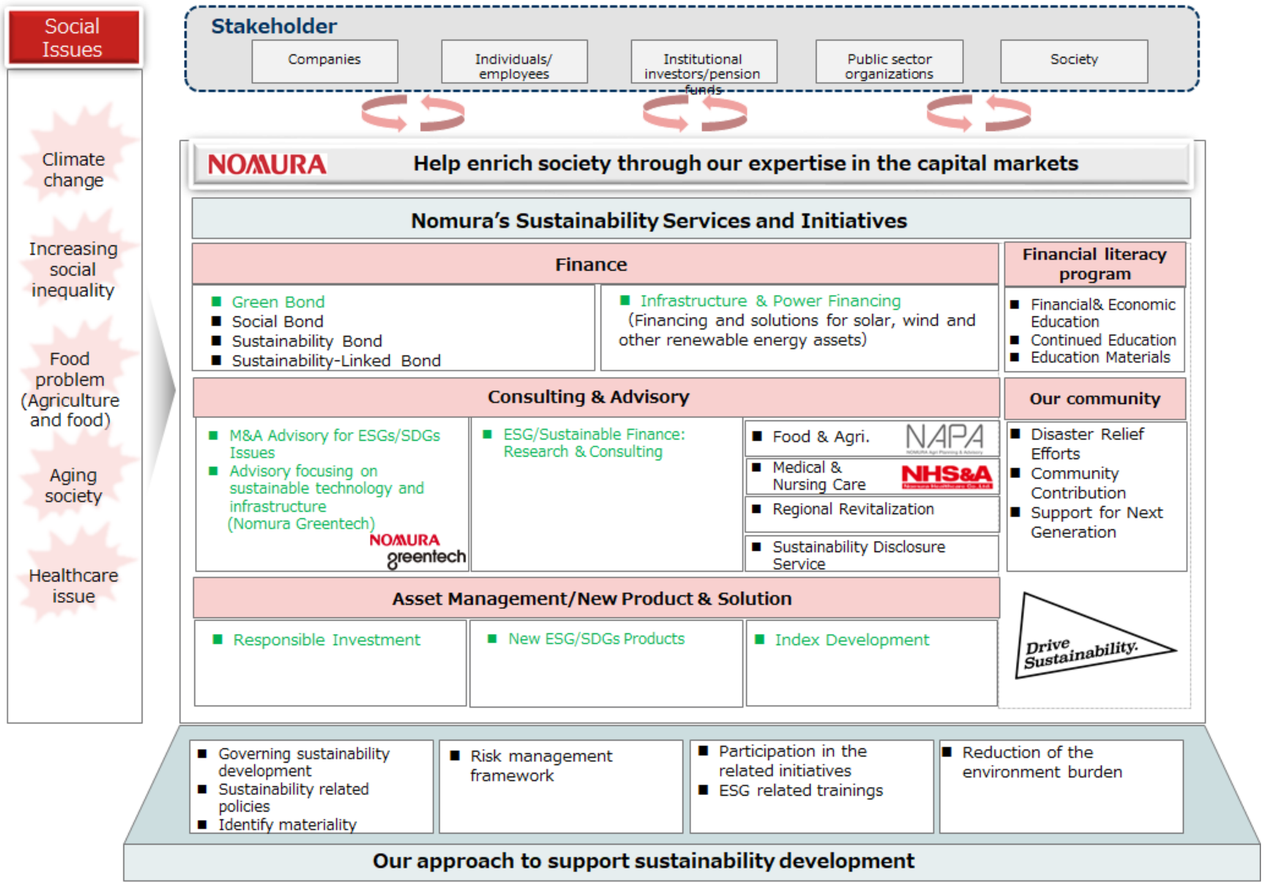
### 3.1.1 Nomura’s Sustainability Services and Initiatives

The term sustainable finance reflects the commercial underpinning of ESG considerations. This commercial necessity is not just a trend, but an underlying economic driver that will affect our business in many ways.

Nomura is dedicated to servicing a diverse range of clients globally, including individual investors and institutional investors, financial institutions, corporates, financial sponsors and government entities. We offer a range of services across Finance, Consulting & Advisory, Asset Management, Products and Solutions. We offer financial services that help clients achieve their sustainability responsibilities and contribute to addressing climate change and social issues.

**Nomura's Sustainability Services and Initiatives**

（Green：Climate change-related businesses）




### 3.1.2 Wholesale Division

**Wholesale Sustainability Forum**

Banks have a key role to play in supporting economic transformation to greener society, and we see tremendous commercial opportunities in creating the products and services that direct positive investment, and this area has become a point of focus for us.

To explore and deliver on sustainable business opportunities, the Wholesale Division formed the Wholesale Sustainability Forum in 2019. The Forum, chaired by the Head of Wholesale has membership across Global Markets and Investment Banking businesses, drawing together key people representing the parts of our businesses that have Sustainable Finance components, as well as bringing together key thought leaders in this space to guide the strategic development of our capabilities.

Additional regional forums have been established in Japan, EMEA[10], the Americas and AEJ[11] to widen the dialogue and monitor the regional ESG developments, opportunities and risks to bring thought leadership, expertise and product perspectives together.

[10] *EMEA: Europe, the Middle East and Africa*
[11] *AEJ: Asia excluding Japan*

The Wholesale Sustainability Forum brings together a wide range of commercial activities as well as franchise and reputational development areas. The objectives of this Forum includes those shown below:

- Setting standards to ensure the business we do today aligns to the aspirations for tomorrow
- Explore and drive commercial opportunities for the firm
- Identify and follow through with partnerships and initiatives
- Provide a framework to track market developments globally
- Coordinate within Wholesale as well as with Retail, Investment Management and Corporate Divisions

## Green & Sustainable Financing

We have been arranging sustainability themed bonds since 2010, and established a dedicated team in 2017. We were one of only five underwriters elected to the Advisory Council to the Green Bond Principles and Social Bond Principles Executive Committee of the International Capital Market Association (ICMA[12]) in 2019. We have been actively participating in ICMA's Climate Transition Finance Working Group, as well as other organizations including the Social Bond and Sustainability-Linked Bond Working Groups and the London Stock Exchange's (LSE[13]) Sustainable Bond Market Advisory Group (SBMAG[14]).

Adding to Nomura's ongoing momentum across the sustainable finance arena, Nomura ranked number 9 in Environmental Finance's Social Bond Managers rankings and number 10 in its Sustainable Bond Managers rankings for 2020.

In 2020, we helped bring to the market the first green Tier 2 subordinated debt instrument from the Dutch bank de Volksbank, and the first sovereign green bond in Samurai format, selling Hungarian government debt in yen to Japanese investors. In Japan, we have managed green bonds from issuers such as Asahi Kasei, Asahi Group Holdings, NTT Finance and Tokyu Fudosan Holdings, just to name a few. Nomura also acted as bookrunner on the domestic tranche of Toyota Woven Planet Bond offering by Toyota Motor Corporation, targeting institutional investors.

We have been active in the sustainability linked and other innovative financing solutions: Nomura was allotted the world's first Sustainable FITs (stock acquisition rights) in March 2020. Airtech Japan's stock acquisition rights are the first in the world in the form of equity financing to receive a second opinion from an evaluation organization from the perspective of ESG and SDGs, in the belief that the use and significance of the funds will contribute to the reduction of environmental impact through energy conservation and the resolution of social problems such as infectious disease countermeasures.

## Infrastructure & Power Financing

The Infrastructure & Power Financing business (IPF) is a dedicated New York-based team focused on sourcing, structuring, executing and distributing financings of green projects and other assets globally. Since

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[12] *ICMA :International Capital Market Association*
[13] *LSE :London Stock Exchange*
[14] *SBMAG :Sustainable Bond Market Advisory Group*

its inception in 2017, the team has made over $8.8billion[15]of commitments to infrastructure and sustainable assets. Today, more than 50% of IPF's portfolio positions are ESG-focused investments (e.g., solar, wind and other renewable energy assets), reflecting the team's leadership in sustainable finance.

The year 2020 was an important year for IPF as it further developed its strong global presence. To date, IPF has executed 42 trades across 7 sectors. The team's success is widely recognized among clients, and has led the business to being shortlisted for North American MLA of the Year by IJ Global. IPF closed several "landmark" ESG-focused transactions in the United States in 2020 including $326million of senior and mezzanine credit facilities supporting the construction of a 180MW solar plus 90MWx4hr storage project in Nevada.

The team has continued its strong momentum into 2021 and has made significant strides in Project Finance league tables. It was top 10 on the North American Project Finance league tables [16] and 3rd for solar financings in Q1 2021. It was involved in more than $700million of ESG-focused deals in Q1 2021 alone.

The team has successfully grown its sustainability franchise in Japan as well. Over the last 18 months, IPF has acted as sole lead arranger for 6 Japanese construction financings for wind and solar projects, totalling over JPY115billion. One of the transactions is JPY24.5billion construction financing for a solar project expected to be among the largest in Japan, The team has established a competitive advantage in the Japanese market, with leading global ESG-focused clients recognizing its considerable experience in the Japanese market and efficient execution capabilities. IPF was 1st in the Japan Renewables Project Finance league tables for Q1 2021[17].

The IPF business is committed to being a core part of the firm's Sustainable Finance strategy. To that end, it is positioning itself as a leader in the battery storage market, while continuing to be a significant lender for stand-alone solar and wind assets in the US and Japan. The business is also working closely with key clients and industry leading organizations such as Climate Bonds Initiative and Sustainalytics to obtain certifications for its ESG-focused transactions.

### Nomura Greentech

Following the acquisition, Nomura Greentech is now a fully integrated investment banking team within Wholesale Division which provides M&A and strategic advisory services and raises capital for sustainable technology and infrastructure clients globally. The team focuses exclusively on clients which are using new technologies to accelerate the transformation of our core infrastructure systems – energy, transportation, food, water and waste – to be lower carbon, more efficient and digitally networked.

The new Nomura Greentech has experienced record momentum over the last year. We have closed or announced 27 M&A and financing transactions for companies in North America, EMEA and AEJ. A few highlights as follows:

*[15] As of 31 December 2020*
*[16] IJ Global. Excludes Social & Defense and Mining sectors*
*[17] IJ Global*

Closed in May 2020, Nomura Greentech acted as exclusive financial advisor to Neste, the world's largest producer of renewable diesel and renewable jet fuel, on its strategic acquisition of Mahoney Environmental. The transaction highlights two of Nomura Greentech's strengths: advising the world's leading companies on ways to increase the sustainability of their supply chain and executing strategic, cross-border M&A to support future growth.

Demonstrating its continued market leadership in the renewable energy space, in March 2021, Nomura Greentech acted as exclusive financial advisor to Caithness Energy on its sale of the 845 MW Shepherds Flat wind farm to Brookfield. In the same month, Nomura Greentech acted as exclusive financial advisor to Schneider Electric on its strategic investment in Uplight, a leader in SaaS[18] solutions for the utility ecosystem. Nomura Greentech's unmatched investor connectivity and unique sector expertise resulted in a successful outcome for all parties.

## Accelerating efforts to develop Sustainability related solutions

In February 2021, Nomura's Global Markets and FTSE Russell launched an ESG index benchmarking the global fixed income market. The new index series named FTSE Nomura Climate CaRD (Carry and Roll Down) World Government Bond Index benchmarks the FTSE Climate Risk-Adjusted WGBI (World Government Bond Index), which measures the performance of global government bonds (currently 22 countries) in the FTSE WGBI Index while reducing exposure to climate change risk. The index is designed to mitigate climate risk, and allows for enhanced returns while meeting the objectives of the ESG benchmark.

In the US, Nomura has a dedicated ESG Quant team assessing the dynamics of product performance against ESG standards. The team has demonstrated equity alpha correlation leveraging both proprietary Natural Language Processing ESG signals and commercial ESG scores. The work can be leveraged to produce a number of systematic strategies including quantitative explanations as to how ESG signals can benefit or hurt fund performance via factor exposures. The product will be beneficial to both passive and active investors, and available for various formats such as funds, ETFs, securities, as well as derivatives. Insights will be leveraged to create business opportunities such as ESG investment strategies, ESG impact on fund performance, and application of NLP[19] and machine learning for thematic investment ideas.

We will continue to provide solutions that meet investors' needs that support the environment and broader ESG initiatives.

## Wholesale ESG Sectoral Appetite Statement

Upon the acquisition of Greentech and our ambition to further develop sustainable finance proposals, we released Wholesale ESG Sectoral Appetite Statement in September 2020. The Statement sets sectoral restrictions and commercial appetite for franchise positioning, applicable to Wholesale business activities such as financing and advisory.

[18] *SaaS :Software as a Service*
[19] *NLP :Natural Language Processing*

The Statement focuses on selected sectors such as mining, energy generation, agriculture and forestry and weapons, and identifies the areas where Nomura will not provide or will restrict financing. Our sector approach is complemented by our cross-sectoral position on climate change, human rights, and activities in protected zones.

The Statement forms the foundation for ESG screening as part of the transaction approval processes.

### 3.1.3 Investment Management Division

#### Responsible Investment

As a responsible institutional investor, Nomura Asset Management aims to realize a decarbonized society by enhancing the management of climate-related risks and opportunities, and through engagement to encourage portfolio companies to incorporate measures for climate change in their management strategies. In addition to conducting analyses and assessment of advanced climate-related risks and opportunities based on its own ESG scores, Nomura Asset Management also works to enhance portfolio companies' enterprise value, as well as the performance of funds it manages, through engagement, voting, and other approaches to investee companies, as well as through partnerships with various stakeholders in climate change-related initiatives. In March 2019, Nomura Asset Management announced its support for the TCFD and has disclosed information based on the TCFD recommendations. For more information, see Nomura Asset Management Responsible Investment Report.

### 3.1.4 Retail Division

In our retail business, we developed a series of funds focusing on sustainable growth and the medium to long term investment growth of our clients and launched them as an “ESG Product Line-up” in July 2020.

We also initiated a periodic ESG investment program for our retail clients, and continued to take proactive measures in the ESG retail market. As of March 31, 2021, the net asset value of our ESG Product Line-up was over JPY580billion.

New issuance and investment in the ESG bond market has become popular in the Japanese retail investor market.

We are working to increase awareness of the ESG bond market by holding ESG seminars for our retail clients and showing videos of ESG seminars via our social media channels, as part of initiatives to accelerate ESG investment in the bond market.

As a financial institution, Nomura Group has a responsibility to expand the scope of ESG investment in Japan. We will continue to promote awareness of sustainable finance among our individual investors through our retail marketing activities.

### 3.1.5 Contents Company: Research & Consulting

The ESG Team was established in the Equity Research Department within our Content Company in December 2020 so as to consolidate our effort and expertise in this space. The team provides ESG package research based on its macro market insight as well as analysis on corporate activities, and leads ESG research functions including Nomura Research Center of Sustainability, Quant Solutions Research and Index Planning Teams. We have already hosted a number of investor calls and sessions this year on key themes including hydrogen and renewable energy, connecting the expertise of the ESG Team with our global client franchise, and are looking to further enhance our research capabilities to better support our clients as well as business functions to drive key sustainability agenda.

Nomura Research Center of Sustainability, aligned with the ESG Team in the Equity Research Department, was launched earlier in 2019. The Center is working to strategically identify and conduct research into areas of sustainability closely linked to the financial and capital markets and provide value-added information and proposals to our clients. The Center started to publish "Nomura Sustainability Quarterly" in June 2020, which is published in an e-book format in consideration of sustainability.

Quant Solutions Research Team provides ESG advisory to our corporate clients concerning their management for sustainability. The team started joint research with Sustainable Lab, an award-winning start-up in January 2021, with regard to environment and social perspectives.

**Sustainability training to cultivate thought leaders**

Nomura Group actively conducts training sessions and workshops for executive officers and employees to raise awareness of sustainability, improve skills, and reduce environmental impact. In Japan, ESG training is held once a year for all executive officers and employees. In fiscal year 2020, more than 15,000 employees participated in our ESG training, an attendance rate of close to 100%. In addition, regular in-house workshops are organized by the Sustainability Development Department. Executive officers and employees participate in the programs on a voluntary basis from many departments in Japan and our offices overseas. We also provide opportunities for employees to learn about sustainability through training when they newly join Nomura or are newly appointed as a department head or branch manager.

For sustainable finance, we provide training tailored to the business responsibilities of each executive officer and employee. The Wholesale Division covers a number of topics, including Nomura's approach to sustainability, alignment of our business to the UN Sustainable Development Goals (SDGs), our sustainable finance products and capabilities, global economic, political and regulatory developments, climate and ESG risk. We launched the training program in December 2020 and over 1,000 people have attended the sessions since then.

Since November 2020, the Nomura Research Center of Sustainability has held study sessions for employees with specially invited external experts. In fiscal year 2020, we organized four sessions, and active discussions were held on more specialized sustainability topics from diversified points of view, creating an open platform that connects employees across the Group as well as with people outside the Group.

We will continue to promote such initiatives to develop our capacity to respond to diverse sustainability-related needs.

### 3.2 Risks

Climate risks are widely recognized to have two aspects – physical and transition risks. Physical risk refers to the risk of loss or damage driven by extreme weather events, such as hurricane, flood, drought, heatwave or frost. Transition risk involves various types of risks caused by the potential failure of keeping pace with the world's transition to a lower-carbon economy.

Please find the below list of risks currently recognized by Nomura as having the potential to affect our business.

**Major climate risks that could potentially affect Nomura's business**

| Type of risk | Potential risks |
|---|---|
| Physical risk | ■ Damage to Nomura's facilities or employees, interruptions to our business and increased expenses due to extreme weather events<br>■ Clients or counterparties suffering from extreme weather events, resulting in a decline in business or even bankruptcy<br>■ Loss of collateral value in asset-based finance transactions, e.g. real estate |
| Transition risk | ■ Price fluctuation in Nomura's trading assets or positions, caused by policy change or innovation accompanying the transition to a low-carbon society. Syndication failure due to changing investor appetite<br>■ Clients' assets becoming stranded as a result of the transition to a lower-carbon economy, such as coal mines, oilfields and natural gas facilities, resulting in pressure on business performance and creditworthiness<br>■ Reputational risk arising from project finance transactions with inherent GHG emissions, and syndication failure due to a change in investor appetite<br>■ Our existing product line-up becoming obsolete due to the change in clients' appetite during the transition, loss of competitiveness in new product development<br>■ Decline in existing businesses, higher costs or higher capital charges due to changes in legislation and the regulatory environment<br>■ Reputational risks resulting from an inadequate understanding of regulatory or policy change |

## 4. Risk Management

Risks that could have an imminent impact on the firm are recognized as “Top Risks”. Climate risk is recognized as one of the “Emerging Risks”, which includes those risks that are understood to affect the firm over the medium to long term. The Group Integrated Risk Management Committee (“the GIRMC”) closely reviews these risks and considers remediating actions. The Board of Directors also undertakes periodical monitoring of them.

The GIRMC sets governance over the firm’s risk management framework, where financial risk is managed by the Risk Management department reporting into the Chief Risk Officer, and non-financial risks are managed by the Legal, Compliance & Control departments reporting into the Chief Compliance Officer. The approaches for managing climate risk for financial risks and non-financial risks are outlined separately below.

### 4.1 Financial Risk Management

Financial risk is the risk of losses in the firm’s portfolio, arising from such risk factors as market fluctuation or deterioration in the creditworthiness of the firm’s counterparties. Financial risk management aims to identify, assess, and manage such risks. Additionally holistic risk management approaches are undertaken, including transactional review processes and scenario analysis.
As all categories of financial risk are expected to be significantly impacted by climate change, the firm is making enhancing the risk management frameworks to assess and manage the climate risks as described below. The overall impact of climate change on Nomura is also assessed and examined holistically through scenario analyses.

#### 4.1.1 Risk Assessment

A set of sectoral and country heatmaps have been developed as tools for the initial stage of risk identification for ESG risks (including physical and transition climate risks). These risk identification tools are used within risk management processes as a top down approach to identify the vulnerabilities to ESG factors at country and sector levels, as described in a number of processes below.

Sector heatmaps have been developed using data primarily sourced from United Nations Environment Program - Finance Initiative (UNEP FI) heatmaps for climate risks, as well as from other heatmaps sourced from external providers. These external data are aligned with Nomura’s sector-of-risk classification and then evaluated.

Country heatmaps have been developed for each of the ESG drivers, including physical and transition climate risks, using country level indicators for each ESG driver. The indicators are used to rank the country, and the relative ranking of the country is used to determine the country's risk rating.

#### 4.1.2 Market Risk Management

Market risk is the risk of loss in values of financial assets and liabilities due to fluctuations in market risk factors. Risk limits are set on market risk metrics and closely monitored and controlled, reflecting the market environment and the degree of Nomura's risk acceptance.

At Nomura, the market risk management framework is applied to the trading positions that tend to turn around relatively quickly. Nonetheless, the potential impact of climate change on such positions will be assessed going forward, by utilizing the stress analysis approach that assumes spontaneous materialization of physical and transitional risk.

#### 4.1.3 Credit Risk Management

Credit risk is the risk of loss arising from an obligor's default, insolvency or administrative proceedings which results in the obligor's failure to meet its contractual obligations in accordance with the agreed terms. The evaluation of counterparties' creditworthiness involves a thorough due diligence and analysis of the business environment in which they operate, their competitive position, management and financial strength as well as flexibility. Following the credit analysis, the probability of default is estimated for a given counterparty or obligor through an alphanumeric rating scale, which is recognized as the internal credit rating.

Nomura is enhancing its credit risk management framework to incorporate the analysis of physical and transitional climate risks. Sectoral and country heatmaps are used to identify counterparties most exposed to physical and transition risks. This analysis is utilized in the internal credit rating process, for example by including direct or indirect costs incurred by the counterparty to manage climate-related risks, such as additional investments. Broader ESG factors are also incorporated into the credit ratings.

#### 4.1.4 New product and transactional review process

Nomura has established robust processes to determine whether to proceed with proposed new products and transactions, including the identification of inherent risks, and examination of the implementation of risk mitigation on each proposal.

- **New Product Approval Process**: The process to evaluate and approve new products that Nomura intends to offer. The risks and the associated management processes are examined cross-functionally, and identified risks must be mitigated well for the products to be approved.

- **Transaction Committee Process**: There are various risks inherent in transactions depending upon the market, transaction type, counterparty, and asset class. To assess the key risks and mitigations related to proposed transactions, Nomura has established a committee process in which the risk threshold linked to each committee and the escalation process have been defined.

In September 2020, the Wholesale Division formulated the ESG sectoral appetite and introduced it into the transaction screening process. Going forward, the due diligence process will be strengthened through the Transaction Committee Process accordingly in order to make the process more effective.

#### 4.1.5 Credit Exposure Analysis

Nomura has developed metrics, to provide transparency on credit exposures for the most sensitive parts of the firm's portfolio to carbon transition, based on the counterparty loan equivalent (LEQ). These measures will assist the firm identify the potential climate risks, followed by the quantitative analysis of the future impact.

1. **Carbon Related Assets (CRA)**
   To align with the recommendation of the TCFD, we have developed a concentration measure for carbon-related assets in the credit portfolio. The TCFD recommends that carbon-related assets are those assets tied to the energy and utilities sectors excluding water utilities and independent renewable power. We use our internal sector allocation process to determine the exposures that align to this TCFD definition. Our internal sectors for Oil & Gas, Coal, Thermal, Midstream, Power (excluding renewables) and Utilities (excluding water) are included in this measure.
2. **High Transition Risk (HTR)**
   To estimate the risk we would be exposed to through the decarbonization of global economies, we have established a concentration measure for the total credit exposure to "High Transition Risk" sectors. The scope includes all sectors that are assessed as having the highest risk (i.e. Weak / High) in the sector heatmap for Transition Risk. This includes our internal sectors for Transportation, Automobiles, Oil & Gas, Power (excluding renewables), Coal, Chemicals and Metals & Mining. There is currently no credit exposure to Coal, as of March 31, 2021.

Note that some sectors included in the CRA measure are excluded from this measure (e.g. Thermal, Midstream and Utilities) as they have Medium level Transition Risk.

| Measure | % Total Credit Exposure[1] | (of which Loans) |
|---|---|---|
| **Carbon Related Assets (CRA)** | 1.40% | 0.80% |
| **High Transition Risk (HTR)** | 1.50% | 0.70% |
| **HTR Top 3 Sub-Sectors** | | |
| **Transportation** | 0.40% | 0.10% |
| **Power** | 0.30% | 0.20% |
| **Oil & Gas** | 0.30% | 0.20% |

[1] Exposures as of 31st March 2021, based on the counterparty LEQ.

To measure the credit exposure we use the "Counterparty LEQ" metric based on our internal methodology. Counterparty LEQ is the total amount of Loan and Loan Equivalent Exposure ("LEQ") of the counterparty credit exposures.

As these metrics are sector-based they may include investments which are beneficial from the climate change perspective. For example, a reduction of GHG emissions, from project finance for carbon capture and storage for a power plant would be included. We plan to enhance our climate reporting capabilities over the next year to incorporate carbon intensity factors.

### 4.1.6 Scenario Analysis

Stress tests are generally used to capture risks which may not be readily identified by other risk management methods, with the analysis using sensitivities and forward looking plausible scenario assumption, for assessing the impact on P&L and exposure, and the adequacy of capital and liquidity, which are utilized or referred to when setting risk appetites and limits.

Stress Testing is an integral part of Nomura Group's overall risk governance and is used as a tool to assist forward-looking risk management and decision-making by enhancing communication amongst Corporate Functions, Business Divisions and senior management. The scenario and sensitivity analysis is performed at hierarchical levels of Nomura Group and by counterparty or by transaction on a regular basis or an ad-hoc basis as needed. For the scenario analysis, various scenario assumptions (e.g. scenario horizons, shock levels, and scenario probabilities) are defined according to the objectives of the excercise.

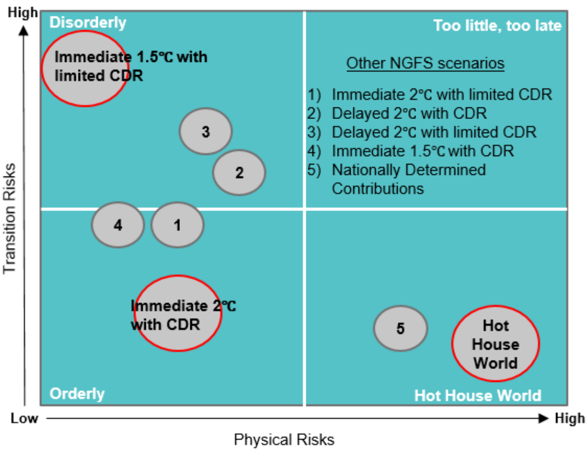
In response to climate change risks, Nomura has begun to explore climate change scenarios and evaluate the impact on Nomura's portfolio in terms of Transition Risk and Physical Risk.

#### Scenario Analysis Approach

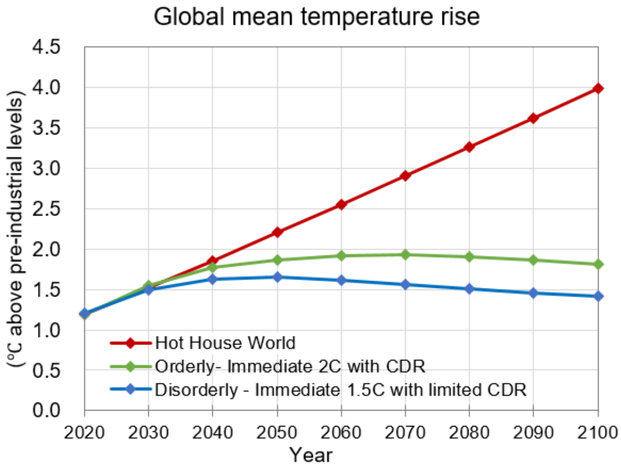
In fiscal 2020, Nomura utilized the Intergovernmental Panel on Climate Change's (IPCC) RCP scenarios and the Network for Greening the Financial Systems' (NGFS) Transition scenarios to explore the potential impact from climate change. Nomura views climate risk as a longer term risk and so the initial focus was on the impact to the firm's counterparty creditworthiness.

The scenarios chosen were the NGFS "Orderly" (Immediate 2°C with CDR), "Disorderly (Alt)" (Immediate 1.5°C with limited CDR) and the "Hot House World" / IPCC (RCP 8.5) as these three scenarios provided a range of assumptions across Transition and Physical Risk.

| | **Orderly scenario**<br>- Immediate 2℃ with CDR | **Disorderly scenario**<br>- Immediate 1.5℃ with limited CDR | **Hot House World**<br>- Current policies (IPCC RCP8.5) |
|---|---|---|---|
| Assumption **Climate policy** | Climate policies are introduced early and become gradually more stringent | Climate policies are introduced early. There are low levels of $CO_2$ removal (CDR) techonology deployed, either limited by innovation or investment bottlenecks | • Only currently implemented poclies are preserved.<br>• Nationally determined contributions (NDCs) are not met |
| **$CO_2$ Emission** | Net zero by 2070 | Net zero by 2050 | Grow until 2080 |
| **Global Warming** | 67% chance of limiting to +2℃ | 67% chance of limiting to +1.5℃ | +3℃ in 2080 |
| **Physical risk** | Medium | Low | High |
| **Transition risk** | Medium | High | Low |
| Likelihood | | | Baseline with current policies |
| Approach | Analyzing as transition risk sceanrios.<br>Calculated Credit costs from Nomura's portfolio counterparties (Corporate only) in 2030 and 2050. | | Analyzing as Physical risk scenario.<br>Investigating the impact in 2050. |




Source : Nomura created from NGFS Scenario Database (2020)




Source : Nomura created from NGFS Scenario Database (2020)

## Transition risk scenario analysis

The approach is based on the UNEP FI Banking pilot project's transition heatmap and assessment model, to consider the impact on the counterparty's costs and revenues from transitioning to a low carbon economy.

The credit ratings of counterparties (Corporate) are reviewed for the 2030 and 2050 points of the "Immediate 2℃ with CDR (Orderly)" and "Immediate 1.5℃ with limited CDR (Disorderly)" scenarios, with the "Hot House World" used as a baseline for reference. Expected losses are estimated based on the credit ratings, referring to the credit risk model in the capital adequacy assessment.

For the review of the credit ratings, Transition heatmaps, NGFS scenario variables (e.g. carbon price), company disclosures, and ESG data from Bloomberg and Moody's are utilized.

The approach and results are being discussed with senior management aiming for further improvement of the analysis and process.

### Physical risk scenario analysis

For Physical Risk, the focus is on a "Hot House World / IPCC RCP 8.5" scenario at mid-century. At mid-century, due to the latent effects of climate change, regardless of transition the Physical impacts will be similar. Given the granular nature of both physical hazard and asset locations, the approach is top down based on a country by sector heatmap.

Utilising the GDP projections from the American Geophysical Union's 2018 paper[20], which is based on the RCP 8.5 scenario, countries are assigned a score based on the distribution of the forecasted growth rates of income per capita, and sectors are scored, leveraging the Physical Risk sector heatmap. The distribution of the combined scores is used to provide a country by sector rating overlay.

Nomura looks to expand on the approach as more detailed data is collected.

### Next Steps

We intend to improve the calibration of the scenario analysis from the perspective of counterparty credit worthiness and regularly report it to senior management to be utilized in decision making. We will also plan to consider scenario analysis methods from the viewpoint of market risk.

## 4.2 Non-Financial Risk Management

Nomura Group's approach to non-financial risk includes Operational Risk including in its definition Compliance, Legal, IT and Cyber Security, Fraud, Third Party, Business Resilience and other non-financial risks, and Reputational Risk.

Non-financial risks exist in daily activities and processes and can result in a financial loss or significant adverse impact on Nomura Group, our clients and financial markets. It is therefore the responsibility of all executives and employees of Nomura Group to manage non-financial risks.

Operational risk does not include strategic risk and reputational risk, however, some operational risks can lead to reputational issues and as such operational and reputational risks may be closely linked.

### 4.2.1 Operational Risk Management

Operational risk is the risk of financial loss or non-financial impact arising from inadequate or failed internal processes, people and systems, or from external events.

Operational risk includes in its definition Compliance, Legal, IT and Cyber Security, Fraud, Third Party and other non-financial risks. Operational risk does not include strategic risk and reputational risk. However, some

[20] *Hirabayashi Y, Mahendran R, Koirala S, Konoshima L, Yamazaki D, Watanabe S, Kim H and Kanae S (2013) Global flood risk under climate change. Nat Clim Chang., 3(9), 816-821. doi:10.1038/nclimate1911.*

operational risks can lead to reputational issues and as such operational and reputational risks may be closely linked.

We have established an Operational Risk Management Framework to allow Nomura to identify, assess, manage, monitor and report on operational risk. The GIRMC, with delegated authority from the EMB has formal oversight over the management of operational risk.

The impacts of climate change risks are considered as part of scenario analysis (Process of assessing and quantifying the potential for low likelihood, large losses and enhancing the controls environment as necessary).

### 4.2.2 Crisis Management / Business Continuity Plan

The Group Crisis Management Committee is tasked with preparing for crises, and under the Committee's leadership the Group has been continually strengthening the crisis management program and the business continuity framework both in Japan and overseas. While crises include human disasters such as natural disasters and terrorism, system failures, infectious diseases, and leaks of information assets, we view disasters resulting from the impact of climate change as one of the crises in our Group. We have established a global business continuity framework and work on a wide range of measures, including educating our people about our disaster response measures.

The Group Crisis Management Committee is chaired by a senior officer appointed by the Group CEO, and comprises senior officers from Group companies. Resolutions passed by the Committee are reported to the Executive Management Board. In the event of a major disaster, the Committee functions as the Command Center to lead the Group's response. Based on the resolutions passed by the Committee, the Crisis Management Committee Office in Japan regularly conducts employee safety confirmation drills, disaster prevention drills, and business continuity drills to ensure that we are able to respond quickly should a crisis occur. At overseas offices, these exercises are carried out by the Business Continuity Management Team in each location. Through these and other efforts, we aim to become more proficient at handling crises and strengthen our systems for managing them.

In addition, we have established backup offices and remote backup data centers at our major domestic and overseas offices, and we have put in place infrastructure to continue our important business operations.

## 5. Metrics and Targets

There is increasing demand for sustainable financing in the financial and capital markets. Nomura is increasing resources provided towards the underwriting of sustainable finance projects to meet the financing needs of corporate clients and contribute to market growth. We offer financing-related services to help clients raise funds for short and medium term projects such as infrastructure, as well as hedging solutions. To support the transition to a decarbonized society, we are expanding our solution offering for projects related to key decarbonization themes.

In May 2020, we signed the Principles for Responsible Banking (PRB). We are looking into areas where we can contribute including setting targets for advisory and arranger businesses, as well as finance, while aligning our business strategy in accordance with the PRB principles.

## 5.1 Capital directed to Sustainability

As a global financial institution, Nomura provides a wide range of financial services. We facilitated approximately $80 billion in sustainable financing in FY20/21. This is equivalent to $23billion in line with the methodology[21] in the UN PRB guidance. This $80 billion in financing includes our performance with respect to Nomura Greentech's sustainable finance targets set last year[22]. In FY20/21, Nomura Greentech had already achieved $2.5 billion, exceeding the 60% target. We will look to baseline these results for considering future targets. Nomura does not operate the lending book of many broader commercial banks, and as such has not committed to a specific lending target.

## 5.2 Reducing $CO_2$ emissions

In December 2018, Nomura established Group-wide $CO_2$ emission reduction targets for the medium and long-term. We have set direct (Scope 1) and indirect (Scope 2) monitoring indicators for $CO_2$ emissions as part of our ongoing commitment to lower emissions across the firm through strategies that include the use of green energy in Japan and our international offices. As of March 2021, we had already achieved a 54.8% reduction in $CO_2$ emissions, which exceeds our medium-term target level. We will further review the emissions reduction target and consider raising our emission reduction target even further, including a review and consideration of Scope 3 categories and 15 targets that we should cover, based on the final SBT (Science Based Targets) guidance to be released in the future for the financial sector, the Japanese government's announced target of reducing greenhouse gas (GHG) emissions by 46% from fiscal 2013 levels by fiscal 2030.

**Nomura Group medium/ long-term CO2 emission reduction target (global)**
(Established in 2018)

| Area | Target type | Base year | Target year | | Level of reduction |
|---|---|---|---|---|---|
| Global | Absolute | FY2012/13 | Medium term | FY2030/31 | 32%(Achieved) |
| | | | Long term | FY2050/51 | 65% |

*[21] Total bond amount over the full bond period is divided by the number of Mandated Lead Arrangers (MLAs).*
*[22] Greentech has completed more Clean Energy and Energy Smart M&A transactions than any other advisor, and has raised $4 billion of growth capital for private innovation companies over the past 10 years. Now as part of Nomura, Greentech has been seeking to help clients raise capital equal to or greater than this amount over the next 5 years since 2020.*

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