Second-Party Opinion

Mizuho Financial Group, Inc. Green Bond Framework

Evaluation Summary

Sustainalytics is of the opinion that the Mizuho Financial Group, Inc. Green Bond Framework is credible and impactful and aligns with the four core components of the Green Bond Principles 2021. This assessment is based on the following:

USE OF PROCEEDS The eligible categories for the use of proceeds – Renewable Energy, Pollution Prevention and Control, Clean Transportation, Green Buildings, Energy Efficiency, Sustainable Water and Wastewater Management, Environmentally Sustainable Management of Living Natural Resources and Land Use, and Terrestrial and Aquatic Biodiversity Conservation – are aligned with those recognized by the Green Bond Principles. Sustainalytics considers that investments in the eligible categories will lead to positive environmental impacts and advance the UN Sustainable Development Goals, specifically SDG 6, 7, 9, 11, 12, 14 and 15.

PROJECT EVALUATION AND SELECTION Mizuho Financial Group, Inc.'s Global Markets Coordination Department and Financial Planning Department will be responsible for evaluating and selecting eligible projects, in cooperation with various department members such as Mizuho Bank, Ltd.'s Real Estate Finance Department, Project Finance Department and Syndication Department, and Mizuho Financial Group, Inc.'s Global Products Coordination Department. The final allocation decision will be made by Head of Global Markets Company or by CFO. Mizuho Financial Group, Inc. has in place environmental and social risk management processes that are applicable to all allocation decisions made under the Framework. Sustainalytics considers these risk management systems to be adequate and the project selection process to be in line with market practice.

MANAGEMENT OF PROCEEDS Mizuho Financial Group, Inc. will track the proceeds in Mizuho Bank, Ltd.'s internal loan data system on an annual basis. Mizuho Bank, Ltd. will allocate an equivalent amount of the green bond net proceeds to Eligible Green Projects. Pending allocation, the net proceeds will be held in overnight or short-term financial instruments. This is in line with market practice.

REPORTING Mizuho Financial Group, Inc. intends to provide allocation and environmental impact reporting annually on its website until full allocation and as necessary thereafter in the event of new developments. Allocation report will include the amount of allocated and unallocated proceeds along with other information such as brief description of the eligible projects. Impact reporting will provide, to the extent practicable, quantitative and qualitative indicators by eligible categories. This is in line with market practice.

Second-Party Opinion
Reviewed by:
MORNINGSTAR | SUSTAINALYTICS

Evaluation Date	February 20, 2023[1]
Issuer Location	Tokyo, Japan

Report Sections

For inquiries, contact the Sustainable Finance Solutions project team:

Kosuke Kanematsu (Tokyo)
Project Manager
kosuke.kanematsu@sustainalytics.com
(+81) 3 4571 2277

Shigeru Ogawa (Tokyo)
Project Support

Yukie Osari (Tokyo)
Project Support

Sumaiya Waheed (Mumbai)
Project Support

Ayushi Agrawal (Mumbai)
Project Support

Makiko Yamamoto (Tokyo)
Client Relations
susfinance.japan@sustainalytics.com
(+81) 3 4520 2191

[1] This document is an update of the second-party opinion on Mizuho Financial Group, Inc. Green Bond Framework published on September 18, 2020.

Introduction

Mizuho Financial Group, Inc.[2] ("Mizuho FG" or the "Company") is a bank holding company engaged in providing financial services such as general banking, securities brokerage, trust banking, and assets management. The company has an operational presence across various countries in the Americas, Asia and Oceania, and Europe, employing more than 52,000 personnel as of 31st March 2022 (on a consolidated basis). The Company was established in 2003 and is headquartered in Tokyo, Japan. While the issuing entity is Mizuho FG, Mizuho Bank, Ltd. (Mizuho Bank) is the management entity responsible for lending to Eligible Green Projects.

Mizuho FG has developed the Mizuho Financial Group, Inc. Green Bond Framework (the "Framework"), dated February 2023, under which it intends to issue multiple green bonds and use the proceeds to finance and/or refinance, in whole or in part, existing and/or future projects that generate environmental benefits. The Framework defines eligibility criteria in eight areas:

1. Renewable Energy
2. Pollution Prevention and Control
3. Clean Transportation
4. Green Buildings
5. Energy Efficiency
6. Sustainable Water and Wastewater Management
7. Environmentally Sustainable Management of Living Natural Resources and Land Use
8. Terrestrial and Aquatic Biodiversity Conservation

Mizuho FG engaged Sustainalytics to review the Mizuho Financial Group, Inc. Green Bond Framework, dated February 2023, and provide a Second-Party Opinion on the Framework's environmental credentials and its alignment with the Green Bond Principles 2021 (GBP).[3] This Framework has been published in a separate document.[4]

Scope of work and limitations of Sustainalytics' Second-Party Opinion

Sustainalytics' Second-Party Opinion reflects Sustainalytics' independent[5] opinion on the alignment of the reviewed Framework with the current market standards and the extent to which the eligible project categories are credible and impactful.

As part of the Second-Party Opinion, Sustainalytics assessed the following:

- The Framework's alignment with the Green Bond Principles 2021, as administered by International Capital Market Association (ICMA);
- The credibility and anticipated positive impacts of the use of proceeds; and
- The alignment of the issuer's sustainability strategy and performance and sustainability risk management in relation to the use of proceeds.

For the use of proceeds assessment, Sustainalytics relied on its internal taxonomy, version 1.12.2, which is informed by market practice and Sustainalytics' expertise as an ESG research provider.

As part of this engagement, Sustainalytics held conversations with various members of Mizuho FG's management team to understand the sustainability impact of their business processes and planned use of proceeds, as well as management of proceeds and reporting aspects of the Framework. Mizuho FG representatives have confirmed (1) they understand it is the sole responsibility of Mizuho FG to ensure that the information provided is complete, accurate or up to date; (2) that they have provided Sustainalytics with

[2] Sustainalytics notes product quality and safety for customers is a material ESG issue in the banking industry. In January 2022, Mizuho Financial Group, Inc. and Mizuho Bank, Ltd. submitted its business improvement plan to the Financial Services Agency of Japan to address the incidents caused by IT system failures. Mizuho FG and Mizuho Bank are implementing the plan, regularly releasing updates on the progress. https://www.mizuhogroup.com/binaries/content/assets/pdf/mizuhoglobal/investors/financial-information/annual/data2203/06.pdf

[3] The Green Bond Principles are administered by the International Capital Market Association (ICMA) and are available at: https://www.icmagroup.org/green-social-and-sustainability-bonds/green-bond-principles-gbp/.

[4] The Mizuho Financial Group, Inc. Green Bond Framework is available on Mizuho FG's website at: https://www.mizuhogroup.com/sustainability/environment/business/greenbond

[5] When operating multiple lines of business that serve a variety of client types, objective research is a cornerstone of Sustainalytics and ensuring analyst independence is paramount to producing objective, actionable research. Sustainalytics has therefore put in place a robust conflict management framework that specifically addresses the need for analyst independence, consistency of process, structural separation of commercial and research (and engagement) teams, data protection and systems separation. Last but not the least, analyst compensation is not directly tied to specific commercial outcomes. One of Sustainalytics' hallmarks is integrity, another is transparency.

all relevant information and (3) that any provided material information has been duly disclosed in a timely manner. Sustainalytics also reviewed relevant public documents and non-public information.

This document contains Sustainalytics' opinion of the Framework and should be read in conjunction with that Framework.

Any update of the present Second-Party Opinion will be conducted according to the agreed engagement conditions between Sustainalytics and Mizuho FG.

Sustainalytics' Second-Party Opinion, while reflecting on the alignment of the Framework with market standards, is no guarantee of alignment nor warrants any alignment with future versions of relevant market standards. Furthermore, Sustainalytics' Second-Party Opinion addresses the anticipated impacts of eligible projects expected to be financed with bond proceeds but does not measure the actual impact. The measurement and reporting of the impact achieved through projects financed under the Framework is the responsibility of the Framework owner. Upon twenty-four (24) months following the evaluation date set stated herein, Mizuho FG is encouraged to update the Framework, if necessary, and seek an update to the Second-Party Opinion to ensure ongoing alignment of the Framework with market standards and expectations.

In addition, the Second-Party Opinion opines on the potential allocation of proceeds but does not guarantee the realised allocation of the bond proceeds towards eligible activities.

No information provided by Sustainalytics under the present Second-Party Opinion shall be considered as being a statement, representation, warrant or argument, either in favour or against, the truthfulness, reliability or completeness of any facts or statements and related surrounding circumstances that Mizuho FG has made available to Sustainalytics for the purpose of this Second-Party Opinion.

Sustainalytics' Opinion

Section 1: Sustainalytics' Opinion on the Mizuho Financial Group, Inc. Green Bond Framework

Sustainalytics is of the opinion that the Mizuho Financial Group, Inc. Green Bond Framework is credible and impactful, and aligns with the four core components of the GBP. Sustainalytics highlights the following elements of Mizuho FG's Green Bond Framework:

- Use of Proceeds:
  - The eligible categories – Renewable Energy, Pollution Prevention and Control, Clean Transportation, Green Buildings, Energy Efficiency, Sustainable Water and Wastewater Management, Environmentally Sustainable Management of Living Natural Resources and Land Use, Terrestrial and Aquatic Biodiversity Conservation – are aligned with those recognized by the GBP.
  - Mizuho FG intends to allocate the net proceeds to the financing of new projects as well as refinancing of existing projects. Mizuho FG has established a look-back period of 24 months for refinancing activities, which Sustainalytics considers to be in line with market practice.
  - Under the Renewable Energy category, Mizuho FG has defined that the net proceeds of green bonds will be used to finance the development, construction and operation of facilities that generate renewable energy, including wind, solar, solar thermal, biomass energy, geothermal energy, and small hydro facilities. Furthermore, the proceeds also cover development and production of technology and equipment used for the above projects, and transmission and distribution of renewable energy. Sustainalytics considers the criteria for financing renewable energy projects to be aligned with market practice and notes the following:
    - Financing of solar and wind energy projects.
    - For solar thermal projects, Mizuho FG confirms that the large majority of electricity (more than 85%) generated from facility is derived from solar energy sources.
    - For biomass energy projects using waste-derived materials, the feedstock will be limited to residues from forestry and agriculture, residues of fishery resources, waste from palm oil operations, wastewater and sewage sludge. Mizuho FG has confirmed that residues derived from fishery resources will be restricted to those from fishery and

aquaculture companies that have obtained the Marine Stewardship Council (MSC)[6], the Aquaculture Stewardship Council (ASC)[7] certification, and Marine Eco-Label Japan (MEL).[8] The Company has also confirmed to Sustainalytics that waste derived from palm oil operations will be limited to waste from palm oil suppliers that are certified by the Roundtable on Sustainable Palm Oil (RSPO)[9] or the Roundtable on Sustainable Biomaterials (RSB).[10] Mizuho FG has also committed to excluding wastewater and sewage sludge which are derived from fossil fuel operations.

- For biomass energy projects using non-waste materials, Mizuho FG will limit the allocation of proceeds to projects that use feedstock with life-cycle GHG emissions intensity less than 100 gCO_2e/kWh. For projects that use wood and wood pellets, the feedstock will be limited to those provided by wood suppliers or power generators certified by the Forest Stewardship Council (FSC)[11] or the Programme for the Endorsement of Forest Certification (PEFC).[12] For projects that use non-wood crops, Mizuho FG has confirmed to Sustainalytics that the feedstock meets the following requirements:
  - The production of feedstock does not take place on land with high biodiversity that has been converted to produce feedstock in the last 10-15 years.
  - Land with a high amount of carbon has not been converted for feedstock production.
  - Feedstock does not compete with food production.

  Mizuho FG will also exclude palm oil, peat, uncertified materials, or materials sourced from unknown suppliers.
- Regarding geothermal power projects, the proceeds will be allocated only to projects with direct CO_2 emissions of less than 100 gCO_2/kWh.
- For the hydropower generation projects, Mizuho confirmed that projects will be limited to: i) run-of-river without artificial reservoir or low storage capacity; ii) ones with life-cycle carbon emissions intensity less than 50 gCO_{2e}/kWh (less than 100 gCO_{2e}/kWh for the facilities that became operational before the end of 2019); or iii) ones with power density greater than 10 W/m^2 (greater than 5 W/m^2 for the facilities that became operational before the end of 2019). For all new hydropower projects, the Company has confirmed that an environmental and social impact assessment by a credible body is required per project and the absence of significant risks and controversies associated with the projects needs to be ensured.
- Development and production of technology and equipment, including Information and Communication Technology (ICT), used for the above projects is wholly dedicated to components for renewables.
- For transmission and distribution of renewable energy, the projects of development and construction of commercial power grids are limited to a project for connecting renewable energy to power grids, or where renewable power accounts for 90% or more of the power supported or integrated by the project.

– In the Pollution Prevention and Control category, Mizuho FG may allocate the proceeds to the projects related to development, construction and operation of pollution prevention and control facilities such as waste recycling facilities, GHG control, and wastewater treatment. Eligible projects may include:
  - Waste recycling facilities that include collection, sorting, cleaning, refurbishment, reconditioning and repair of products for reuse. Mizuho FG has confirmed that the waste recycling will exclude chemical recycling of plastics and waste from electrical or electronic equipment.
  - Waste-to-energy power plants that produce biogas, power or heat from incineration of mixed residual waste such as biogenic and non-biogenic waste as source of energy. Sustainalytics notes that the source of energy for the waste-to-energy plant will not include plastics, rubber, tire-derived fuel (TDFs), gas capture from operational landfills,

[6] Marine Stewardship Council (MSC), at: https://www.msc.org/
[7] Aquaculture Stewardship Council (ASC), at: https://www.asc-aqua.org/
[8] Marine Eco-Label Japan (MEL), at: https://melj.jp/eng/about_us
[9] The Roundtable on Sustainable Palm Oil (RSPO), at: https://rspo.org/
[10] The Roundtable on Sustainable Biomaterials (RSB), at: https://rsb.org/
[11] Forest Stewardship Council (FSC), at: https://fsc.org/en
[12] Programme for the Endorsement of Forest Certification (PEFC), at: https://www.pefc.org/

and landfill gas capture for flaring. Sustainalytics recognizes that energy from waste could take out of circulation potentially recyclable materials and undermine the objectives of zero-waste circular economy, i.e. waste prevention and recycling. Additionally, in order to have low emissions intensity of such projects, the composition of residual waste, particularly fossil carbon content, is a crucial consideration. However, Sustainalytics also notes that, due to current constraints of recycling in many parts of the world, energy from waste can offer better residual waste management option than landfills in many cases. Sustainalytics recommends Mizuho FG to promote the removal of increasing amounts of recyclables, especially plastics and metals, and the monitoring of thermal efficiency of the financed facilities.

- Projects related to prevention of air pollutions such as equipment and technology to prevent diffusion of dust, or leakage and volatilization of hazardous chemical substances. Sustainalytics notes that technologies, components or systems do not depend on fossil fuels. Mizuho FG has also confirmed to Sustainalytics that it will exclude i) air pollution prevention from fossil fuel production, ii) prevention of air pollution that results directly from technologies that are inherently reliant on fossil fuels as an energy source.
- ICT solutions that contribute to the prevention and management of GHG emissions.
- Projects that prevent plastics, chemicals, or pollutants runoff from flowing into ocean, river, and coastal areas, such as development, manufacturing, or installment of oil fences, silt fences, and wastewater treatment facilities. Mizuho FG has confirmed to Sustainalytics that it will exclude projects for oil spill by fossil fuel producers.
- Under the shipping and port logistics category, Mizuho FG may finance investments in the research, design, development and application of management and reduction measures for contaminated water, waste and discharge from ships, shipyards and ports, including:
    - Water treatment systems and noise pollution reduction equipment below. Mizuho FG has confirmed that it will limit the allocation of green bonds to the expenditure on the measures for low-carbon or zero-carbon vessels powered by electricity, biofuels or hydrogen. Sustainalytics is of the opinion that these financed maritime wastewater treatment and pollution control projects may provide positive environmental impacts and contribute to a reduction in the shipping sector's environmental footprint.
        - Investments in ballast water treatment systems on ships to comply with the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention) to prevent the spread of invasive alien species (ISO 11711).
        - Investments in membrane bioreactor-type water treatment equipment and facilities for all black and gray water generated from ports and shipping and cruise ships.
        - Investments in bilge water treatment in shipping vessels.
        - Investments to reduce maritime air and noise pollution.
    - Investment in oil (fuel) spill prevention, risk avoidance, and improved recovery facilities, products, or technologies, such as magnetic soap, autonomous cleaning robots, absorbent sponges, to be deployed by specialized cleaning companies.
    - Solid waste collection facilities at ports and terminals that facilitate the source separation of recyclable materials.

– Under the Clean Transportation category, Mizuho FG may finance investments in various modes of transportation. Sustainalytics considers investments in this category as aligned with market practices, noting the following:
    - Development and manufacturing of zero-emission passenger cars such as battery electric vehicles (BEV) and hydrogen and fuel cell vehicles (FCV).
    - Development, operation and upgrade of public mass transport such as BEV or FCV buses, minibuses, and Bus Rapid Transit (BRT) as well as related infrastructure.
    - Development, operation, upgrade, expansion, and improvement of rail transport including electrified locomotives, electric multiple units and carriages, metro, intercity and high-speed rails, mass rapid transit, light rail transit, passenger rails with universal direct emissions threshold below 50 gCO_2/pkm, and freight rails with emission

threshold is below 25 gCO_2/tkm. Mizuho FG has committed to limiting allocation of proceeds to infrastructure and facilities related exclusively to railways that meet the eligibility criteria. The Company has also confirmed that it will exclude rail lines and operations where fossil fuels account for more than 50% of total freight (by tkm).

- Development, operation, and upgradation of non-motorized transport such as bicycles.
- Maritime transport and port logistics including as follows:
  - Production of low-carbon or zero-carbon vessels.
  - Conversion of existing passenger and cargo vessels to vessels using the low-carbon fuels.
  - Alternative maritime power (AMP) including outlets, electricity distribution and control systems.

  Sustainalytics notes that the produced and/ or converted low-carbon or zero carbon vessels under these expenditures are powered by electricity, biofuels or hydrogen. Mizuho FG has also confirmed that fossil fuel transportation is not included in these proceeds. In terms of AMP, Mizuho FG has confirmed that it will limit the allocation of green bonds to the expenditure on the systems for low-carbon or zero carbon vessels powered by electricity, biofuels or hydrogen.
- Multi-modal transport, which is mix of rails, ships, and heavy-duty trucks. Mizuho FG confirms that ships will be powered by electricity, low-carbon biofuels or hydrogen. In terms of heavy-duty trucks, the emission threshold is below 25 gCO_2/tkm.

– In the Green Buildings category, Mizuho FG may allocate the proceeds to acquisition and/or upgrade of buildings:
  - In terms of acquisition, development, and construction of residential and commercial properties, and logistics facilities, Mizuho FG will allocate the proceeds to properties which meet any of the below criteria:
    - Buildings that have obtained or are expected to obtain one of the following green building certifications at the following minimum levels: LEED[13] (Gold or above), BREEAM[14] (Excellent or above), CASBEE[15] (A Rank or above), DBJ Green Building Certification[16] (4 Star or above), BELS[17] (4 Star or above), or Zero Emission Building (ZEB) or Zero Emission House (ZEH) related certification, which represents the same or higher level of performance compared to BELS 5 star with the Building Energy Index of 0.8 or lower.
    - Buildings that align with a local proxy (numerical scale) specified by the Climate Bonds Initiative (CBI).

    Sustainalytics considers that the establishment of eligibility criteria that limit the use of proceeds to properties with the levels of the aforementioned certification schemes or ones that align with CBI-proxy is in line with market practice, as it will ensure the allocation of proceeds to green buildings that generate positive environmental impacts. Mizuho FG has also confirmed that logistic facilities designed for the purpose of storage, or transportation of fossil fuels will be excluded.
  - For the case of loans to the Japanese Real Estate Investment Trusts (J-REITs), Mizuho FG has confirmed that it will limit the allocation of proceeds to dedicated loans, which aim at acquiring specific eligible green buildings. It is an allocation approach that is aligned with market expectation.
  - In terms of upgrades/refurbishment of existing buildings, Mizuho FG will allocate the proceeds to assets/projects that aim to achieve at least 30% reduction of CO_2 emissions relative to the baseline, which will be in line with a low-carbon trajectory, as specified in the CBI Low Carbon Building Criteria. This is aligned with market practice.

– Under the Energy Efficiency category, Mizuho FG may finance projects with energy efficient technologies, products or equipment such as LED, smart lighting solutions, sunlight control, building management systems (BMS), district heating and cooling, and high-efficient Heating, Ventilation, and Air Conditioning (HVAC) for the purpose of increasing energy efficiency, and/or certified with third-party certifications such as ENERGY STAR.[18] Sustainalytics notes that the Company will refrain from financing fossil fuel powered products and equipment. Sustainalytics views the expenditures under this category to be aligned with the market practice and

[13] Leadership in Energy and Environmental Design (LEED), at: https://www.usgbc.org/leed
[14] Building Research Establishment Environmental Assessment Method (BREEAM), at: https://bregroup.com/products/breeam/
[15] Comprehensive Assessment System for Built Environment Efficiency (CASBEE), at: https://www.ibec.or.jp/CASBEE/english/
[16] Development of Bank of Japan (DBJ) Green Building Certification, at: https://www.dbj.jp/en/service/program/g_building/
[17] Building-Housing Energy-efficiency Labelling System (BELS) (Japanese Only), at: https://www.bcj.or.jp/assessment/bels/
[18] ENERGY STAR, at: https://www.energystar.gov/

encourages Mizuho FG to report on estimated or achieved energy efficiency gains, where feasible.

- Under the Sustainable Water and Wastewater Management Category, Mizuho FG may allocate the proceeds to expenditures related to the activities described in the following bullet points. Sustainalytics considers the investments under this category to be aligned with market practice.
  - Development, construction, acquisition, operation and upgrading of water supply infrastructure with water-saving effects such as water storage, water pipes and water supply equipment. Mizuho FG has confirmed to Sustainalytics that infrastructure will not be dependent on fossil fuels and will not provide water for fossil fuel operations, fracking, nuclear or mining activities. Additionally, applications to hard-to-abate industries will be excluded.
  - Development, construction, acquisition, operation and renovation of desalination plants. Mizuho FG has confirmed to Sustainalytics that these facilities will have an appropriate waste management plan in place for brine disposal at the time of project commencement, the desalination plants will be powered by renewable energy or having an average carbon intensity of electricity at or below 100 gCO_2e/kWh, and Integrated Water and Power Plant (IWPP) with fossil fuel power will be excluded.
  - Development, manufacturing and trading of products and technologies to increase the supply and access to drinking water.
  - Development, manufacturing and trading of technologies, equipment and systems that reduce and/or monitor water footprints such as drip irrigation, water-saving devices and water circulation solutions such as recycling systems for industrial and agricultural water. Mizuho FG has confirmed to Sustainalytics that technologies, equipment and systems will not be dependent on fossil fuels and will not provide water for fossil fuel operations, fracking, nuclear or mining activities. Additionally, applications to hard-to-abate industries will be excluded.
  - In terms of water sanitation projects, Mizuho FG may allocate its green bond proceeds to the development, construction, operation and upgrading of water treatment infrastructure such as water recycling systems and sewage works, as well as development and manufacture of technologies, products and systems that promote the effective utilization of sewage sludge and sewage heat. Mizuho FG has confirmed to Sustainalytics that the activities will not include the treatment of wastewater from any fossil fuel operations.
- Under the Environmentally Sustainable Management of Living Natural Resources and Land Use category, Mizuho FG may finance forestry, forest products, agriculture, and agricultural products. In addition, Mizuho FG may finance land preservation projects through preservation and/or restoration of forests that are native or have high conservation value, and soil remediations. Mizuho FG also may finance fisheries, aquaculture, and aquatic products. Sustainalytics views the expenditures under this category to be in line with market practices.
  - Forestry and forest products.
    - Projects for sustainable forest management and procurement of woods, certified with FSC or PEFC.
    - Production and/or purchase of forest products certified with FSC or PEFC such as construction materials, paper packaging materials.
  - Agriculture and agricultural products.
    - Agricultural production certified with Rainforest Alliance[19], or USDA Organic[20].
    - Purchase of agricultural products certified with Rainforest Alliance, or USDA Organic.
  - Preservation and/or restoration of native forests and high-conservation value forests under FSC or PEFC certification. Mizuho FG has confirmed to Sustainalytics that reforestation/afforestation will entail plantation of tree species that are well-adapted to the local site conditions.
  - Soil remediation. Mizuho FG has confirmed that remediation of soil is not related to contamination or negative externality of the Company's own or its loan borrowers' own activities.
  - Fisheries, aquaculture, and seafood products.

[19] Rainforest Alliance Certification, at: https://www.rainforest-alliance.org/for-business/2020-certification-program/
[20] U.S. Department of Agriculture, "USDA Organic", at: https://www.usda.gov/topics/organic

- Land-based aquaculture production such as Recirculating Aquaculture Systems (RAS) with ASC or MEL. Mizuho FG has confirmed that it will not allocate green bond proceeds to the financing of equipment running on fossil fuels.
- Research, development, operation and trading related to cultivation businesses of algae and marine microbes, which will be edible use or biofuel use. For the case of biofuels from algae, Mizuho FG has confirmed to Sustainalytics that it will limit the allocation of proceeds to algae cultivated on land in ponds or photobioreactors.
- Fisheries, aquaculture, or production and trading of marine products such as fresh fish, processed seafood, canned and frozen foods certified under MSC, ASC, or MEL.
- Distribution, processing or retailing businesses that meet the Chain of Custody (CoC) certification standard of MSC, ASC, or MEL certification.

– Under the Terrestrial and Aquatic Biodiversity Conservation, Mizuho FG may finance the activities described in the following bullet points. Sustainalytics considers expenditure under this category to be aligned with market practice.
  - Conservation and restoration of biodiversity and nature such as projects for removal of invasive alien plant species by mowing or weeding.
  - Improvement of water quality of rivers, lakes, swamps, or wetlands. To cope with lack of oxygen and increasing dioxin levels in rivers, measures such as development and maintenance of sewerage system, promotion and management of combined treatment septic tank, will be implemented. To cope with eutrophication in lakes, swamps, or wetlands, measures including water purification of influent rivers by adsorption method, soil treatment method or vegetation for water purification, improvement of water quality through the development and maintenance of vegetation zones, will be conducted. Mizuho FG has confirmed that the activities to improve water quality do not include dredging of swamps and wetlands.
  - Conservation and/ or restoration of biodiversity in urban areas by creating i) parks with green space on land such as former factory sites and reclaimed lands, ii) urban or riverside parks with biotopes.
  - Development, operation, and trading of services, technologies, and systems for conservation, improvement, and restoration of marine and other ecosystems such as:
    - Projects related to wetlands and coral reefs conservation including research, monitoring, instalment and maintenance of septic tanks, restoration of natural purification functions, and transplantation of coral fragments and juvenile corals using asexual reproduction.
    - Projects for restoration of riverbanks to a natural state (close to their native environment). Mizuho FG has confirmed that restoration of riverbanks is not related to the negative environmental externality from the Company's own or its loan borrowers' own activities.
    - Biodiversity data analysis for planning biodiversity conservation, using large amount of data (e.g. species, high resolution mapping).
    - Nature conservation and restoration projects related to protected areas and Other Effective area-based Conservation Measures (OECMs) in the oceans.

- Project Evaluation and Selection:
  – The eligible projects are identified and selected by representatives from various departments such as Mizuho Bank's Real Estate Finance Department, Project Finance Department and Syndication Department, and Mizuho FG's Global Products Coordination Department, Global Markets Coordination Department and Financial Planning Department. Mizuho FG's Global Markets Coordination Department and Financial Planning Department will be responsible for evaluating and selecting eligible assets in line with the Framework's eligibility criteria. The final allocation decision will be made by Head of Global Markets Company for the cases of senior bonds, and by CFO for the cases of subordinated bonds.
  – To identify and manage environmental and social risks associated with investments in eligible projects, the Sustainable Development Office of Mizuho Bank's Project Finance Department

conducts the required due diligence as per the Equator Principles and, where applicable and appropriate, International Finance Corporation (IFC) Performance Standards on Environmental and Social Sustainability (Performance Standards) as well as the World Bank Group Environmental, Health, and Safety Guidelines (EHS Guidelines). Following this procedure, the Company categorizes projects as Category A, B or C based on its internal environmental and social risk assessment process.
  - Based on the process for project selection and the presence of risk management systems, Sustainalytics considers this process to be in line with market practice.

- Management of Proceeds:
  - Mizuho FG will loan an amount equal to the net proceeds of green bonds to Mizuho Bank. Mizuho Bank will then allocate the proceeds to eligible green projects as identified under the Framework. Mizuho FG will track the proceeds based on Mizuho Bank's internal loan data system. Mizuho FG will review and update the eligible green projects against the net proceeds on an annual basis.
  - Mizuho FG intends to allocate net proceeds within 36 months of issuance. Pending full allocation, unallocated net proceeds will be invested on temporary basis in overnight deposits or short-term financial instruments (e.g. treasury bills, deposits with the central bank).
  - Based on the presence of an internal tracking system, allocation timeframe and disclosure on temporary allocation, Sustainalytics considers this process to be in line with market practice.

- Reporting:
  - Mizuho FG is committed to reporting on the allocation and impact of proceeds on its website[21] at least annually until full allocation.
    - Allocation reporting will include information on the amount of net proceeds allocated to eligible green projects, brief description of the eligible green project funded, current funded amount, and funding dates. In addition, the Company will issue assertions by management to confirm that the net proceeds are invested in eligible green projects or in overnight or short-term financial instruments.
    - Where practically feasible, impact reporting may include the quantitative and qualitative impact metrics on aggregate basis per Eligible Project Category.
  - Based on the commitment to allocation and impact reporting, Sustainalytics considers the Mizuho FG's reporting to be in line with market practice.

Alignment with Green Bond Principles 2021

Sustainalytics has determined that the Mizuho Financial Group, Inc. Green Bond Framework aligns with the four core components of the GBP. For detailed information please refer to Appendix 1: Green Bond/Green Bond Programme External Review Form.

Section 2: Sustainability Strategy of Mizuho Financial Group, Inc.

Contribution of Framework to Mizuho FG's sustainability strategy

Mizuho FG takes an integrated view on sustainability and business strategy to contribute to achieving the Sustainable Development Goals (SDGs), and defines sustainability as environmental conservation, the sustainable development and prosperity of the economy, industry, and society both in Japan and around the world, and Mizuho's sustainable and steady growth.[22] To tackle sustainability issues, the Company demonstrates a commitment to sustainability through its following objectives as the key sustainability areas (Materiality): (i) Declining birthrate and aging population, plus good health and lengthening lifespans, (ii) Industry development & innovation, (iii) Sound economic growth, (iv) Environment & society, (v) Personnel, and (ix) Governance.

For the main initiative of (iv) Environment & society, Mizuho FG focuses on promoting measures to address climate change and support the transition to a low-carbon society through dialogue.[23] With regard to climate change response, Mizuho FG formulated the 'Mizuho's Approach to Achieving Net Zero by 2050', which

[21] Mizuho Financial Group "Environment", at: https://www.mizuhogroup.com/sustainability/environment
[22] Mizuho Financial Group "Integrated Report, Annual Review, April 2021 - Mach 2022" (2022), at: https://www.mizuhogroup.com/binaries/content/assets/pdf/mizuhoglobal/investors/financial-information/annual/data2203/data2203_all.pdf
[23] Mizuho Financial Group "materiality (Key sustainability areas)", at: https://www.mizuhogroup.com/sustainability/mizuhocsr/management/focus_closeup01

demonstrates its aims and actions towards achieving a low-carbon society, and the 'Net Zero Transition Plan', which outlines the initiatives. Under these initiatives, Mizuho FG aims at achieving carbon neutrality of scope 1 and 2 by FY2030, and scope 3 by FY2050.[24] In addition, Mizuho FG has set an electric power sector mid-term carbon intensity target for its scope 3 emissions, which is 138-232 $kgCO_2$/MWh in FY2030 (compared with 388 $kgCO_2$/MWh in FY2020), and will continue to move forward with setting mid-term targets for other priority sectors by September 2024.[25]

To support such decarbonization strategy as well as the achievement of SDGs, Mizuho FG is active in sustainable finance. Mizuho FG set its sustainable finance target as JPY 25 trillion (of which JPY 12 trillion in environmental finance) from FY2019 to FY2030, compared with JPY 13.1 trillion of which JPY 4.6 trillion in environmental finance) from FY2019 to FY2021.[26] In addition, Mizuho FG is a signatory to various local and international sustainability initiatives to accelerate sustainable issues, such as the UN Global Compact, UNEP Finance Initiative (UNEP FI), Responsible investment Principles (PRI), Principle of Responsible Banks (PRB), Cross Sector Biodiversity Initiative (CSBI) and so on. Furthermore, Mizuho FG has newly joined the Net-zero Banking Alliance (NZBA), Partnership for Carbon Accounting Financials (PCAF), Taskforce on Nature-related Financial Disclosures (TNFD) and 30% Club Japan in 2021 and beyond.[27] Mizuho FG was the first Japanese financial institution to join the PCAF, and was appointed as a chair of the PCAF Japan coalition in November 2021.

Sustainalytics is of the opinion that the Mizuho Financial Group, Inc. Green Bond Framework is aligned with the company's overall sustainability strategy and initiatives and will further the Company's action on its key environmental priorities.

Approach to managing environmental and social risks associated with the projects

Sustainalytics recognizes that the proceeds from the instruments issued under the Framework will be directed towards eligible projects that are expected to have positive environmental impact. However, Sustainalytics is aware that such eligible projects could also lead to negative environmental and social outcomes. Some key environmental and social risks possibly associated with the eligible projects may include issues involving effluents and waste, land use and biodiversity issues associated with large-scale infrastructure development, occupational health and safety, community relations and stakeholder participation, environmental and social issues through financing activities, etc. In addition, as some of the eligible projects under the Framework may be located in Saudi Arabia, Qatar, and the United Arab Emirates (UAE), there might be risks associated with human rights issues.

Sustainalytics is of the opinion that Mizuho FG is able to manage and mitigate potential environmental and social risks associated with eligible projects through the following policies and measures:

- As a basic framework to mitigate and avoid adverse influences on the environment and society through its business activities, Mizuho FG has set out the Environmental and Social Management Policy for Financing and Investment Activity. The company updated it in 2022 to enhance its response to climate change, conservation of biodiversity and respect for human rights.[28] Before proceeding with the transactions in certain sectors with a high possibility of having negative environmental or social impacts, the Policies on Specific Industrial Sectors require specific practices in each sector to ensure the consideration of the client's response to environmental and social issues such as biodiversity and human rights. The specific sectors include large-scale hydropower, large-scale agriculture and lumber and pulp.[29] Additionally, based on Mizuho's Credit Code which establishes the basic approach, guidelines and criteria for lending, Mizuho FG's decision-making process includes the examinations of the recognized risks based on its Environmental and Social Management Policy for Financing and Investment Activity.[30]

[24] Mizuho Financial Group "Integrated Report, Annual Review, April 2021 - Mach 2022" (2022), at: https://www.mizuhogroup.com/binaries/content/assets/pdf/mizuhoglobal/investors/financial-information/annual/data2203/data2203_all.pdf
[25] Mizuho Financial Group "TCFD Report 2022" (2022), at: https://www.mizuhogroup.com/binaries/content/assets/pdf/mizuhoglobal/sustainability/overview/report/tcfd_report_2022.pdf
[26] Ibid.
[27] Mizuho Financial Group "Integrated Report, Annual Review, April 2021 - Mach 2022" (2022), at: https://www.mizuhogroup.com/binaries/content/assets/pdf/mizuhoglobal/investors/financial-information/annual/data2203/data2203_all.pdf
[28] Mizuho Financial Group, Inc., "Responsible financing and investment", at: https://www.mizuhogroup.com/sustainability/business-activities/investment
[29] Mizuho Financial Group, Inc., "Overview of our Environmental and Social Management Policy for Financing and Investment Activity", at: https://www.mizuhogroup.com/binaries/content/assets/pdf/mizuhoglobal/sustainability/business-activities/investment/environment_202207.pdf
[30] Mizuho Financial Group, Inc., "Responsible financing and investment", at: https://www.mizuhogroup.com/sustainability/business-activities/investment

- Mizuho Bank has adopted the Equator Principles since 2003 as the first Asian signatory bank. The Equator Principles are intended to serve as a common baseline and risk management framework for financial institutions to identify, assess and manage environmental and social risks when financing large-scale development projects.[31] The Sustainable Development Office in Mizuho Bank's Project Finance Department is responsible for the implementation of the Equator Principles by applying Mizuho's in-house Equator Principles Implementation Manual to all its projects under the scope of the Equator Principles.[32]
- To address negative impacts on biodiversity through its business, Mizuho FG has implemented policies based on domestic and international initiatives such as the Keidanren Biodiversity Declaration Initiative and the Taskforce on Nature-related Financial Disclosures (TNFD). In particular, Mizuho Bank contributed to establishing Cross Sector Biodiversity Initiative (CSBI) in cooperation with the Equator Principles Association and other global partners to reduce the impact of large–scale development projects on biodiversity.[33]
- To manage occupational health and safety, Mizuho FG has various initiatives in place such as medical checkups and health management by industrial physicians.[34] The Health Promotion Desk oversees the operation to promote employee health, identify health issues and implement policies in cooperation with full-time occupational health physicians as well as the Mizuho Health Insurance Society. Mizuho FG regularly discusses and examines the issues about occupational safety and sanitation management conditions at bi-monthly health management planning meetings and the Mental Health/Stress Check Project Team meetings.[35]
- Regarding community relations and stakeholder participation, the Environmental and Social Management Policy for Financing and Investment emphasizes engagement with stakeholders to ensure that Mizuho FG's initiatives meet social standards and expectations.[36] Based on Mizuho's Credit Code, the company engages in dialogue with its customers about medium-and-long-term environmental and social issues.[37] Moreover, when Mizuho FG makes decisions on financing and investment for projects which have adverse impacts on indigenous peoples' local communities or land expropriation that causes forced relocation of residents, the company takes a cautious and considered approach by ensuring additional due diligence to check the clients' responses to avoid or mitigate risks.[38]
- To respect human rights in accordance with international standards, Mizuho FG established a Human Rights Policy in 2018. The Company updated it in 2022 to establish a value chain respecting human rights, strengthen mutual understanding with employees, clients and suppliers through engagement, and enhance human rights due diligence.[39] Mizuho FG's approach to human rights is based on the International Bill of Human Rights, the International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work, the UN Guiding Principles on Business and Human Rights, the UN Global Compact's Principles, the Organisation for Economic Co-operation and Development (OECD) Due Diligence Guidance for Responsible Business Conduct, and the social responsibility guidance standard ISO 26000.[40]

Based on these policies, standards and assessments, Sustainalytics is of the opinion that Mizuho FG has implemented adequate measures and is well positioned to manage and mitigate environmental and social risks commonly associated with the eligible categories.

Section 3: Impact of Use of Proceeds

All eight use of proceeds categories are aligned with those recognized by the GBP. Sustainalytics has focused on three below where the impact is specifically relevant in the local and global context.

[31] Mizuho Financial Group, Inc., "Equator Principles", at: https://www.mizuhogroup.com/sustainability/business-activities/investment/equator
[32] Mizuho Financial Group, Inc., "Mizuho and the Equator Principles", at: https://www.mizuhogroup.com/sustainability/business-activities/investment/equator/principles
[33] Mizuho Financial Group, Inc., "Biodiversity", at: https://www.mizuhogroup.com/sustainability/environment/biodiversity
[34] Mizuho Financial Group, Inc., "Creating a safe, comfortable workplace", at: https://www.mizuhogroup.com/sustainability/employees/success/environment
[35] Mizuho Financial Group, Inc., "Mizuho's commitment to promoting and improving employee health", at: https://www.mizuhogroup.com/binaries/content/assets/pdf/mizuhoglobal/sustainability/employees/success/environment/healthpromotion.pdf
[36] Mizuho Financial Group, Inc., "Overview of our Environmental and Social Management Policy for Financing and Investment Activity", at: https://www.mizuhogroup.com/binaries/content/assets/pdf/mizuhoglobal/sustainability/business-activities/investment/environment_202207.pdf
[37] Mizuho Financial Group, Inc., "Responsible financing and investment", at: https://www.mizuhogroup.com/sustainability/business-activities/investment
[38] Mizuho Financial Group, Inc., "Overview of our Environmental and Social Management Policy for Financing and Investment Activity", at: https://www.mizuhogroup.com/binaries/content/assets/pdf/mizuhoglobal/sustainability/business-activities/investment/environment_202207.pdf
[39] Mizuho Financial Group, Inc., "Human Rights", at: https://www.mizuhogroup.com/sustainability/human-rights
[40] Mizuho Financial Group, Inc., "Human Rights Policy", at: https://www.mizuhogroup.com/sustainability/human-rights/respect

Importance of promoting renewable energy

In 2021, global energy-related CO_2 emissions rose by 6% to 36.3 billion tonnes.[41] According to the International Energy Agency's (IEA)'s Net Zero Emissions by 2050 Scenario (NZE),[42] a scenario in line with 1.5°C commitment under the Paris Agreement, the power sector needs to reduce CO_2 emissions by 7.6% annually on average by 2030. The NZE also requires the sector to increase the proportion of renewable energy in power generation from 29% in 2020 to more than 60% by 2030.[43] In 2050, renewable energy is expected to reach approximately 90% share in global power generation, with wind power and solar power together accounting for nearly 70%.[44]

In Japan, in FY2020, while the proportion of renewable energy from total power generation was 19.8%, fossil fuel-based thermal power accounted for 76.3%.[45] In April 2021, the Japanese government has committed to reduce GHG emissions by 46% by FY2030 with the baseline of FY2013.[46] In line with the commitment, the government aims to raise the proportion of renewable energy to 36-38% by FY2030 in Japanese energy mix.[47] Furthermore, the government pledged to achieve net-zero GHG emissions by 2050 and has formulated the Green Growth Strategy through Achieving Carbon Neutrality in 2050 which describes the policy directions and action plans toward achieving carbon neutrality in 2050.[48] In the strategy, the government states that it will promote renewable energy installation, with the reference goal of achieving approximately 50-60% of power generation by renewable energy in 2050.

Under the Renewable Energy category, Mizuho FG intends to allocate green finance proceeds to projects related to wind, solar, solar thermal, biomass energy, geothermal, and hydropower. Considering the above, Sustainalytics is of the opinion that Mizuho FG's use of proceeds will contribute to reducing CO_2 emissions in the power sector globally and to the achievement of Japan's medium- to long-term climate goals.

Importance of green buildings

In 2021, global building energy demand increased by almost 20% and reached 135 EJ (compared to 115 EJ in 2010).[49] The operation of buildings in 2021 accounted for 30% of global final energy consumption and 27% of total energy sector CO_2 emissions.[50] As per the IEA, carbon emissions from buildings operations should reduce by more than half by 2030 compared to 2021, to align with the Net Zero Scenario.[51] Therefore, it is indispensable for not only developed countries but also for emerging and developing countries to improve new and existing buildings' energy efficiency as a measure to address climate change.

In Japan, the building sector was responsible for 30% of CO_2 emissions in 2019 with final energy consumption by buildings having increased by 20% in 2019 when compared to 1990.[52,53] In its Nationally Determined Contribution (NDC) submitted to the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC) in 2021, Japan committed to increasing its GHG emissions reduction target from 26% to 46% of the 2013 level and to achieving net zero emissions by 2050.[54] Regarding the building sector, it is estimated that the reduction of CO_2 emissions by approximately 50-65% is required by 2030 (compared to 2013) based on the reduction targets of residential, commercial and others sectors.[55] Given the significant contribution of buildings to Japan's total CO_2 emissions, the Japanese government has been working to

[41] International Energy Agency (IEA), "Global Energy Review: CO2 Emissions in 2021", at: https://iea.blob.core.windows.net/assets/c3086240-732b-4f6a-89d7-db01be018f5e/GlobalEnergyReviewCO2Emissionsin2021.pdf
[42] International Energy Agency (IEA), "Net Zero Emissions by 2050 Scenario (NZE)", at: https://www.iea.org/reports/world-energy-model/net-zero-emissions-by-2050-scenario-nze
[43] International Energy Agency (IEA), "Renewable Power", at: https://www.iea.org/reports/renewable-power
[44] International Energy Agency (IEA), "Net Zero by 2050 A Roadmap for the Global Energy Sector", (2021), at: https://www.iea.org/reports/net-zero-by-2050
[45] "Agency for Natural Resources and Energy (ANRE), "FY2020 Energy Supply and Demand Report (Final Figures) (Japanese only)", at: https://www.meti.go.jp/press/2022/04/20220415003/20220415003-1.pdf
[46] Ministry of the Environment (MoE), "Japan's Nationally Determined Contribution (NDC)", at: https://www.env.go.jp/earth/ndc/JAPAN_NDC.pdf
[47] Agency for Natural Resources and Energy (ANRE), " Outline of Strategic Energy Plan", at: https://www.enecho.meti.go.jp/en/category/others/basic_plan/pdf/6th_outline.pdf
[48] Ministry of Economy, Trade and Industry (METI), "Green Growth Strategy through Achieving Carbon Neutrality in 2050", at: https://www.meti.go.jp/english/policy/energy_environment/global_warming/pdf/ggs_full_en.pdf
[49] International Energy Agency (IEA), "Buildings Sectoral Overview", (2022), at: https://www.iea.org/reports/buildings
[50] Ibid.
[51] Ibid.
[52] Ministry of the Environment (MoE), "Greenhouse Gas Emissions in Fiscal Year 2019 (Final Figures) (Japanese only)", at: https://www.env.go.jp/press/files/jp/116118.pdf
[53] Ministry of Land, Infrastructure, Transport and Tourism (MLIT), "Overview of the Act on the Improvement of Energy Consumption Performance of Buildings", at: http://www.mlit.go.jp/common/001134876.pdf
[54] Government of Japan, "Japan's Nationally Determined Contribution (NDC)", (2021), at: https://unfccc.int/sites/default/files/NDC/2022-06/JAPAN_FIRST%20NDC%20%28UPDATED%20SUBMISSION%29.pdf
[55] Ibid.

strengthen energy-saving measures in buildings. Japan's Building Energy Efficiency Act of 2015 sets mandatory energy efficiency standards for large-scale non-residential buildings (2,000m^2 or more).[56] In 2019, the Act was amended also mandating compliance with the energy efficiency standards for medium-size non-residential buildings (300m^2 or more).[57] The 2022 amendment of the Act mandates new construction after 2025 of both non-residential and residential, irrespective of size, to comply with the energy efficiency standards and sets incentive measures toward the zero-energy building or zero-energy house level.[58] These measures are expected to reduce building energy consumption by 8.89 million kL (kilolitres of fuel oil equivalent), which means approximately 100TWh by 2030 from 2013 levels.[59] Furthermore, in the "approach to achieve carbon neutrality in the housing and building sector[60]" jointly announced by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), the Ministry of Economy, Trade and Industry (METI), and the Ministry of the Environment (MoE) in 2021, it is mentioned that the energy-saving performance of the ZEH/ZEB standard level will be secured on a stock average, and the introduction of renewable energy such as solar power generation equipment will be common in houses and buildings where the introduction is reasonable in 2050.

Based on the above, Sustainalytics is of the opinion that financing green buildings under the Framework is expected to create positive environmental impacts while supporting Japan's goals for reducing GHG emissions and increasing energy efficiency in buildings.

Contribution to CO_2 reduction by promoting clean transportation

In 2021, the amount of CO_2 emissions from the global transportation sector was approximately 7.7Gt, which accounted for around 37% of CO_2 emissions from end-use sectors.[61] According to the International Transport Forum (ITF), even if existing commitments by countries to decarbonizing transport are completely fulfilled, CO_2 emissions from the transportation sector are expected to increase by 16% by 2050 from the 2015 level due to an increase in transport demand.[62] The ITF requires that, in order to limit the global average temperature rise to 1.5°C, CO_2 emissions from the transportation sector be reduced by 70% from the 2015 level by 2050.[63] In addition, the IEA's "Net Zero by 2050—A Roadmap for the Global Energy Sector" states that to achieve the goal of net-zero emissions by 2050 on a global level, the market share of zero-emission vehicles, including EVs and FCVs, needs to be increased from 5% in 2020 to 64% by 2030 and 100% by 2050.[64] It also states that railway transportation has the lowest energy consumption and CO_2 emission consumption among all motorized means of passenger transportation. Therefore, its share should be increased to 20% of all passenger transportation by 2050 toward achieving net zero emissions by 2050.[65]

In FY2020, Japan's transportation sector emitted 185 Mt of CO_2, accounting for 18% of the country's total emissions.[66] In conjunction with its latest NDC in 2021, Japan set a goal to reduce the CO_2 emissions in the transportation sector by 35% by FY2030 compared to the FY2013 levels.[67] For the vehicles, within the Green Growth Strategy, the government has announced to replace all new cars in the market with electrified models, such as EVs, Hybrid Vehicles (HVs), Plug-in Hybrid Vehicles (PHVs), or FCVs by 2035, and apply the electrification policy to commercial vehicles in a phased manner. To accelerate the popularity of EVs the government is providing subsidies for the purchase of EVs and FCVs and the installation of charging infrastructure as well as by introducing tax breaks.[68] With regard to rail transportation, as railways emit less

[56] Ministry of Land, Infrastructure, Transport and Tourism (MLIT), "Overview of the Act on the Improvement of Energy Consumption Performance of Buildings", (2016), at: http://www.mlit.go.jp/common/001134876.pdf
[57] International Energy Agency (IEA), "Japan's Roadmap to Carbon Neutrality in the Building and Housing Sectors", (2021), at: https://iea.blob.core.windows.net/assets/993f67a2-054e-41ba-9adb-f782358a4e73/3.JapansRoadmaptoCarbonNeutralityintheBuildingandHousingSectors.pdf
[58] Rethink Tokyo, 'Energy conservation architecture to be mandatory for Japan real estate from 2025', at: https://www.rethinktokyo.com/news/2022/04/25/energy-conservation-architecture-be-mandatory-japan-real-estate-2025/1650839788
[59] Ibid.
[60] Ministry of Land, Infrastructure, Transport and Tourism (MILT), " Approach to achieve carbon neutrality in the housing and building sector (Japanese Only)", at: https://www.mlit.go.jp/jutakukentiku/house/jutakukentiku_house_tk4_000188.html
[61] International Energy Agency (IEA), "Transport", at: https://www.iea.org/topics/transport
[62] International Transport Forum (ITF), "Executive Summary ITF Transport Outlook 2021" at: https://www.itf-oecd.org/sites/default/files/transport-outlook-executive-summary-2021-english.pdf
[63] Ibid.
[64] International Energy Agency (IEA), "Net Zero by 2050 A Roadmap for the Global Energy Sector", at: https://iea.blob.core.windows.net/assets/beceb956-0dcf-4d73-89fe-1310e3046d68/NetZeroby2050-ARoadmapfortheGlobalEnergySector_CORR.pdf
[65] Ibid.
[66] "Greenhouse Gas Emissions in Fiscal Year 2020 (Final Figures) (Japanese only)", at: https://www.nies.go.jp/whatsnew/GHG2020_Final_Main(J).pdf
[67] Government of Japan, "Japan's Nationally Determined Contribution (NDC)", (2021), at: https://unfccc.int/sites/default/files/NDC/2022-06/JAPAN_FIRST%20NDC%20%28UPDATED%20SUBMISSION%29.pdf
[68] Ministry of Economy, Trade and Industry, "Subsidy for the promotion of introduction of clean energy vehicles and infrastructure" in the supplementary budget for FY2021 and "Subsidy for the promotion of introduction of clean energy vehicles" in the budget for FY2022." (Japanese only), at: https://www.meti.go.jp/policy/mono_info_service/mono/automobile/cev/cevr3/cevinfrastructure.html

CO_2 than other transportation means, the Japanese government plans to achieve the sector's FY2030 reduction target by curbing automobile use through a modal shift to railways as well as improving the energy efficiency of railways. In terms of the CO_2 emission intensity, the CO_2 emissions per passenger of railways are about 87% less compared to automobiles and about 81.3% less than airplanes, and CO_2 emissions per ton of freight of railways are about 91% less than freight cars and about 43.6% less than vessels.[69] For the shipping sector, Green Growth Strategy through Achieving Carbon Neutrality in 2050 stipulates Japanese main future effort for 2050 in the shipping industry as follows; promoting technology development for the practical use of zero-emission ships, developing frameworks to promote low-carbon ships, and promoting technology development to improve energy efficiency of LNG-fueled ships.[70] Besides, the Japanese Shipowners' Association (JSA) as an industrial group, pledged the challenge for GHG net zero in 2050.[71]

In the Clean Transportation category, Mizuho FG will allocate the green finance proceeds to projects related to zero-emission vehicles, railways, maritime, and other low-carbon transport. Based on the above, Sustainalytics is of the opinion that Mizuho FG's use of proceeds is expected to support the penetration of low carbon means of transportation and contribute to the emission reduction in the global transportation sector.

Contribution to SDGs

The Sustainable Development Goals were adopted in September 2015 by the United Nations General Assembly and form part of an agenda for achieving sustainable development by 2030. The instruments issued under the Mizuho Financial Group, Inc. Green Bond Framework are expected to help advance the following SDGs and targets:

Use of Proceeds Category	SDG	SDG target
Renewable Energy	7. Affordable and Clean Energy	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix
Pollution Prevention and Control	12. Responsible consumption and production	12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment
Clean Transportation	11. Sustainable Cities and Communities	11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons
Green Buildings	9. Industry, Innovation and Infrastructure	9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities
Energy Efficiency	7. Affordable and Clean Energy	7.3 By 2030, double the global rate of improvement in energy efficiency

[69] Ministry of Land, Infrastructure, Transport and Tourism (MLIT), "Carbon dioxide emissions in the transport sector", at: https://www.mlit.go.jp/sogoseisaku/environment/sosei_environment_tk_000007.html
[70] Ministry of Economy, Trade and Industry (METI), "Green Growth Strategy Through Achieving Carbon Neutrality in 2050, 7. Shipping Industry", at: https://www.meti.go.jp/english/policy/energy_environment/global_warming/ggs2050/pdf/07_shipping.pdf
[71] The Japanese Shipowners' Association (JSA), "Japanese Shipping Industry Announces "Challenge of 2050 Net Zero GHG.", at: https://www.jsanet.or.jp/e/pressrelease_e/2021/pdf/20211026e.pdf

Sustainable Water and Wastewater Management	6. Clean water and sanitation	6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally
Environmentally Sustainable Management of Living Natural Resources and Land Use	14. Life below water	14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics
	15. Life on land	15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally
Terrestrial and Aquatic Biodiversity Conservation	14. Life below water	14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans
	15. Life on land	15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species

Conclusion

Mizuho Financial Group, Inc. has developed the Mizuho Financial Group, Inc. Green Bond Framework under which it may issue green bonds and use the proceeds to finance projects related to Renewable Energy, Pollution Prevention and Control, Clean Transportation, Green Buildings, Energy Efficiency, Sustainable Water and Wastewater Management, Environmentally Sustainable Management of Living Natural Resources and Land Use, and Terrestrial and Aquatic Biodiversity Conservation. Sustainalytics considers that the projects funded by the green bond proceeds are expected to provide positive environmental impact.

The Mizuho Financial Group, Inc. Green Bond Framework outlines a process by which proceeds will be tracked, allocated, and managed, and commitments have been made for reporting on the allocation and impact of the use of proceeds. Furthermore, Sustainalytics believes that the Mizuho Financial Group, Inc. Green Bond Framework is aligned with the overall sustainability strategy of the Company and that the green use of proceeds categories will contribute to the advancement of the UN Sustainable Development Goals 6, 7, 9, 11, 12, 14 and 15. Additionally, Sustainalytics is of the opinion that Mizuho FG has adequate measures to identify, manage and mitigate environmental and social risks commonly associated with the eligible projects funded by the proceeds.

Based on the above, Sustainalytics is confident that Mizuho Financial Group, Inc. is well positioned to issue green bonds and that the Mizuho Financial Group, Inc. Green Bond Framework is robust, transparent, and in alignment with the four core components of the Green Bond Principles 2021.

Appendix

Appendix 1: Green Bond / Green Bond Programme - External Review Form

Section 1. Basic Information

Issuer name:	Mizuho Financial Group, Inc.
Green Bond ISIN or Issuer Green Bond Framework Name, if applicable:	Mizuho Financial Group, Inc. Green Bond Framework
Review provider's name:	Sustainalytics
Completion date of this form:	February 20, 2023
Publication date of review publication:	

Section 2. Review overview

SCOPE OF REVIEW

The following may be used or adapted, where appropriate, to summarise the scope of the review.

The review assessed the following elements and confirmed their alignment with the GBP:

☒	Use of Proceeds	☒	Process for Project Evaluation and Selection
☒	Management of Proceeds	☒	Reporting

ROLE(S) OF REVIEW PROVIDER

☒	Consultancy (incl. 2nd opinion)	☐	Certification
☐	Verification	☐	Rating

☐ Other *(please specify)*:

Note: In case of multiple reviews / different providers, please provide separate forms for each review.

EXECUTIVE SUMMARY OF REVIEW and/or LINK TO FULL REVIEW *(if applicable)*

Please refer to Evaluation Summary above.

Section 3. Detailed review

Reviewers are encouraged to provide the information below to the extent possible and use the comment section to explain the scope of their review.

1. USE OF PROCEEDS

The eligible categories for the use of proceeds – Renewable Energy, Pollution Prevention and Control, Clean Transportation, Green Buildings, Energy Efficiency, Sustainable Water and Wastewater Management, Environmentally Sustainable Management of Living Natural Resources and Land Use, and Terrestrial and Aquatic Biodiversity Conservation – are aligned with those recognized by the Green Bond Principles. Sustainalytics considers that investments in the eligible categories will lead to positive environmental impacts and advance the UN Sustainable Development Goals, specifically SDG 6, 7, 9, 11, 12, 14 and 15.

Use of proceeds categories as per GBP:

☒	Renewable energy	☒	Energy efficiency
☒	Pollution prevention and control	☒	Environmentally sustainable management of living natural resources and land use
☒	Terrestrial and aquatic biodiversity conservation	☒	Clean transportation
☒	Sustainable water and wastewater management	☐	Climate change adaptation
☐	Eco-efficient and/or circular economy adapted products, production technologies and processes	☒	Green buildings
☐	Unknown at issuance but currently expected to conform with GBP categories, or other eligible areas not yet stated in GBP	☐	Other *(please specify)*:

If applicable please specify the environmental taxonomy, if other than GBP:

2. PROCESS FOR PROJECT EVALUATION AND SELECTION

Mizuho Financial Group, Inc.'s Global Markets Coordination Department and Financial Planning Department will be responsible for evaluating and selecting eligible projects, in cooperation with various department members such as Mizuho Bank, Ltd.'s Real Estate Finance Department, Project Finance Department and Syndication Department, and Mizuho Financial Group, Inc.'s Global Products Coordination Department. The final allocation decision will be made by Head of Global Markets Company or by CFO. Mizuho Financial Group, Inc. has in place environmental and social risk management processes that are applicable to all allocation decisions made under the Framework. Sustainalytics considers these risk management systems to be adequate and the project selection process to be in line with market practice.

Evaluation and selection

☒	Credentials on the issuer's environmental sustainability objectives	☒	Documented process to determine that projects fit within defined categories
☒	Defined and transparent criteria for projects eligible for Green Bond proceeds	☒	Documented process to identify and manage potential ESG risks associated with the project
☒	Summary criteria for project evaluation and selection publicly available	☐	Other *(please specify)*:

Information on Responsibilities and Accountability

☒ Evaluation / Selection criteria subject to external advice or verification

☒ In-house assessment

☐ Other (please specify):

3. MANAGEMENT OF PROCEEDS

Mizuho Financial Group, Inc. will track the proceeds in Mizuho Bank, Ltd.'s internal loan data system on an annual basis. Mizuho Bank, Ltd. will allocate an equivalent amount of the green bond net proceeds to Eligible Green Projects. Pending allocation, the net proceeds will be held in overnight or short-term financial instruments. This is in line with market practice.

Tracking of proceeds:

☒ Green Bond proceeds segregated or tracked by the issuer in an appropriate manner

☒ Disclosure of intended types of temporary investment instruments for unallocated proceeds

☐ Other *(please specify)*:

Additional disclosure:

☐ Allocations to future investments only

☒ Allocations to both existing and future investments

☐ Allocation to individual disbursements

☒ Allocation to a portfolio of disbursements

☒ Disclosure of portfolio balance of unallocated proceeds

☐ Other *(please specify)*:

4. REPORTING

Mizuho Financial Group, Inc. intends to provide allocation and environmental impact reporting annually on its website until full allocation and as necessary thereafter in the event of new developments. Allocation report will include the amount of allocated and unallocated proceeds along with other information such as brief description of the eligible projects. Impact reporting will provide, to the extent practicable, quantitative and qualitative indicators by eligible categories. This is in line with market practice.

Use of proceeds reporting:

☐ Project-by-project

☒ On a project portfolio basis

☐ Linkage to individual bond(s)

☐ Other *(please specify):*

Information reported:

☒ Allocated amounts

☐ Green Bond financed share of total investment

☒ Other *(please specify):*
Brief description of the Eligible Green Projects, current funded amount, funding dates, and, assertions by management that the net proceeds of those bonds are invested either in qualifying Eligible Green Projects or in overnight or other short-term financial instruments.

Frequency:

☒ Annual

☐ Semi-annual

☐ Other (please specify):

Impact reporting:

☐ Project-by-project

☒ On a project portfolio basis

☐ Linkage to individual bond(s)

☐ Other (please specify):

Information reported (expected or ex-post):

☒ GHG Emissions / Savings

☒ Energy Savings

☒ Decrease in water use

☒ Other ESG indicators (please specify):
Renewable Energy
- Annual energy generation

Pollution Prevention and Control
- Amount of waste recovered, reduced or, recycled
- Reuse and recycling rates
- Percentage of change in the amount of waste generated
- Water pollution abatement in m^3 and %
- Air pollution abatement in m^3 and %

Clean Transportation
- Amount of air pollutants reduced
- Total distance of infrastructure

Green Buildings
- Number and level of green building certifications acquired

Energy Efficiency
- Number and types of environmental certifications obtained
- Number of energy-saving equipment and products installed

Sustainable Water and Wastewater Management

- The number of people benefiting from water management

Environmentally Sustainable Management of Living Natural Resources and Land Use
- Number and types of environmental certifications obtained

Terrestrial and Aquatic Biodiversity Conservation
- Number and types of environmental certifications obtained
- The area of land covered by the project and the rate of increase in the area of conservation

Frequency

☒ Annual ☐ Semi-annual

☐ Other (please specify):

Means of Disclosure

☐ Information published in financial report ☐ Information published in sustainability report

☐ Information published in ad hoc documents ☒ Other (please specify): Mizuho FG's website

☐ Reporting reviewed (if yes, please specify which parts of the reporting are subject to external review):

Where appropriate, please specify name and date of publication in the useful links section.

USEFUL LINKS (e.g. to review provider methodology or credentials, to issuer's documentation, etc.)

SPECIFY OTHER EXTERNAL REVIEWS AVAILABLE, IF APPROPRIATE

Type(s) of Review provided:

☐ Consultancy (incl. 2nd opinion) ☐ Certification

☐ Verification / Audit ☐ Rating

☐ Other *(please specify):*

Review provider(s): **Date of publication:**

ABOUT ROLE(S) OF INDEPENDENT REVIEW PROVIDERS AS DEFINED BY THE GBP

i. Second-Party Opinion: An institution with environmental expertise, that is independent from the issuer may issue a Second-Party Opinion. The institution should be independent from the issuer's adviser for its Green Bond framework, or appropriate procedures, such as information barriers, will have been implemented within the institution to ensure the independence of the Second-Party Opinion. It normally entails an assessment of the alignment with the Green Bond Principles. In particular, it can include an assessment of the issuer's overarching objectives, strategy, policy and/or processes relating to environmental sustainability, and an evaluation of the environmental features of the type of projects intended for the Use of Proceeds.

ii. Verification: An issuer can obtain independent verification against a designated set of criteria, typically pertaining to business processes and/or environmental criteria. Verification may focus on alignment with internal or external standards or claims made by the issuer. Also, evaluation of the environmentally sustainable features of underlying assets may be termed verification and may reference external criteria. Assurance or attestation regarding an issuer's internal tracking method for use of proceeds, allocation of funds from Green Bond proceeds, statement of environmental impact or alignment of reporting with the GBP, may also be termed verification.

iii. Certification: An issuer can have its Green Bond or associated Green Bond framework or Use of Proceeds certified against a recognised external green standard or label. A standard or label defines specific criteria, and alignment with such criteria is normally tested by qualified, accredited third parties, which may verify consistency with the certification criteria.

iv. Green Bond Scoring/Rating: An issuer can have its Green Bond, associated Green Bond framework or a key feature such as Use of Proceeds evaluated or assessed by qualified third parties, such as specialised research providers or rating agencies, according to an established scoring/rating methodology. The output may include a focus on environmental performance data, the process relative to the GBP, or another benchmark, such as a 2-degree climate change scenario. Such scoring/rating is distinct from credit ratings, which may nonetheless reflect material environmental risks.

Disclaimer

About Sustainalytics, a Morningstar Company

Sustainalytics, a Morningstar Company, is a leading ESG research, ratings and data firm that supports investors around the world with the development and implementation of responsible investment strategies. For more than 30 years, the firm has been at the forefront of developing high-quality, innovative solutions to meet the evolving needs of global investors. Today, Sustainalytics works with hundreds of the world's leading asset managers and pension funds who incorporate ESG and corporate governance information and assessments into their investment processes. Sustainalytics also works with hundreds of companies and their financial intermediaries to help them consider sustainability in policies, practices and capital projects. With 17 offices globally, Sustainalytics has more than 1500 staff members, including more than 500 analysts with varied multidisciplinary expertise across more than 40 industry groups.

For more information, visit www.sustainalytics.com

Or contact us contact@sustainalytics.com