



Second-Party Opinion

Japan Bank for International Cooperation Green Bond Framework

Evaluation Summary

Sustainalytics is of the opinion that the Japan Bank for International Cooperation Green Bond Framework is credible and impactful and aligns to 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/Clean Energy, Clean Transportation, Green Buildings – 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 SDGs 7, 9 and 11.



PROJECT EVALUATION / SELECTION Eligible projects will be selected and evaluated by the Treasury Department based on the eligibility criteria and in consultation with the Corporate Planning Department. Japan Bank for International Cooperation has in place a process to prospectively evaluate and monitor environmental and social risks, and this process will be applied to all projects under the Framework. Sustainalytics considers this risk management system to be adequate and that the project selection process in line with market practice.



MANAGEMENT OF PROCEEDS The Treasury Department will track and manage the allocation of proceeds once a year using an internal system. Japan Bank for International Cooperation intends to complete the allocation of proceeds within 36 months after the issuance of the green bond. Pending allocation, unallocated proceeds will be held in cash or cash equivalents. Japan Bank for International Cooperation’s processes for management of proceeds are in line with market practice.



REPORTING Until full allocation of the proceeds, Japan Bank for International Corporation intends to report on the proceeds’ allocation status and positive environmental impacts on its website at least once a year. Allocation reporting will include the amount of allocated and unallocated proceeds. As for positive environmental impacts, impact reporting will provide quantitative and qualitative indicators according to eligible categories to the extent practicable. Sustainalytics views Japan Bank for International Cooperation’s allocation and impact reporting as aligned with market practice.

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Report Sections

Introduction.....	2
Sustainalytics’ Opinion	3
Appendices	10

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Introduction

Japan Bank for International Cooperation (“JBIC”, or the “Bank”) is a policy-based financial institution wholly owned by the Japanese government. It was established in 2012 in accordance with the Japan Bank for International Cooperation Act as a successor of the Export-Import Bank of Japan. While having the objective of supplementing the financial transactions implemented by private-sector financial institutions, the Bank is engaged in export loans, import loans, overseas investment loans, united loans, bridge loans, equity participations, researches and studies, and other operations in the following four fields: (1) Promoting the overseas development and acquisition of natural resources strategically important to Japan; (2) Maintaining and improving the international competitiveness of Japanese industries; (3) Promoting the overseas business for preserving the global environment, such as preventing global warming; and (4) Preventing disruptions to international financial order or taking appropriate measures with respect to damages caused by such disruptions.

JBIC has developed the Japan Bank for International Cooperation Green Bond Framework (the “Framework”) under which it intends to issue green bonds and use the proceeds to finance loans for projects that generate environmentally benefits. The Framework defines eligibility criteria in three areas:

1. Renewable Energy/Clean Energy
2. Clean Transportation
3. Green Buildings

JBIC engaged Sustainalytics to review the Japan Bank for International Cooperation Green Bond Framework, dated October 2021, and provide a Second-Party Opinion on the Framework’s environmental credentials and its alignment with the Green Bond Principles 2021 (GBP).¹ This Framework has been published in a separate document.²

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

Sustainalytics’ Second-Party Opinion reflects Sustainalytics’ independent³ 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 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 1.11.1, 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 JBIC 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. JBIC has confirmed (1) they understand it is the sole responsibility of JBIC to ensure that the information provided is complete, accurate or up to date; (2) that they have provided Sustainalytics with 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 JBIC.

¹ The Green Bond Principles are administered by the International Capital Market Association and are available at <https://www.icmagroup.org/green-social-and-sustainability-bonds/green-bond-principles-gbp/>.

² The Japan Bank for International Cooperation Green Bond Framework is available on JBIC’s website, at: <https://www.jbic.go.jp/en/ir/greenbond.html>

³ 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.

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.

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 JBIC has made available to Sustainalytics for the purpose of this Second-Party Opinion.

Sustainalytics' Opinion

Section 1: Sustainalytics' Opinion on the Japan Bank for International Cooperation Green Bond Framework

Sustainalytics is of the opinion that the Japan Bank for International Cooperation Green Bond Framework is credible and impactful, and aligns to the four core components of the GBP. Sustainalytics highlights the following elements of JBIC's Green Bond Framework:

- Use of Proceeds:
 - The eligible categories – Renewable Energy/Clean Energy, Clean Transportation, Green Buildings – are aligned with categories and projects recognized by the GBP. Please see Section 3 for Sustainalytics' assessment on impact of the use of proceeds.
 - JBIC intends to allocate the proceeds to the financing of new projects as well as refinancing of existing projects. For refinancing, JBIC has established a 36 months look-back period, which Sustainalytics views to be in line with market practice.
 - In the Renewable Energy/Clean Energy category, JBIC has defined that the green bond proceeds will be used to provide loans that finance the development, construction, management, operation and/or maintenance of solar power and solar thermal power, wind power (offshore/onshore), geothermal power, hydropower, biomass, hydrogen production, hydrogen power generation, power grids for the purpose of connecting these power sources, and the manufacturing of components exclusively designed for them. In this category, Sustainalytics positively assesses the following points as being aligned with market practice:
 - With regard to the solar thermal power generation projects, the proceeds will be allocated only to those whose power generation using fossil fuel-based backup power sources accounts for 15% or less of the total power generation.
 - Regarding geothermal power projects, the proceeds will be allocated only to projects with direct CO₂ emissions of less than 100gCO₂/kWh.
 - For the hydropower generation projects, the proceeds will be allocated only to those with an installed capacity of 25 MW or less. JBIC made a commitment that, in a new development/construction project, it will confirm that there is no significant negative impact on the environment and society by conducting environmental and social impact assessments.
 - With regard to the biomass power generation projects, the proceeds will be allocated to those fueled by waste-derived materials or wood/wood pellets.
 - Waste-derived materials will be limited to residues from forestry and agriculture, residues of fishery resources, waste from palm oil operations, wastewater and sewage sludge. JBIC has committed to Sustainalytics that fuels derived from fishery resources will be restricted to those from fishery and aquaculture companies that have obtained MSC (Marine Stewardship Council) or ASC (Aquaculture Stewardship Council) certification, and that

- waste derived from palm oil operations will be limited to waste from palm oil suppliers that are certified by RSPO (Roundtable on Sustainable Palm Oil) or RSB (The Roundtable on Sustainable Biomaterials). The Bank has also committed to excluding wastewater and sewage sludge, which are derived from fossil fuel mining and processing processes.
- Wood and wood pellets are limited to those provided by wood suppliers or power generators certified by the Forest Stewardship Council (FSC) or PEFC (Programme for the Endorsement of Forest Certification). In addition, the Bank has committed to Sustainalytics that it limits the allocation of proceeds to the projects with less than 100g CO₂e/kWh of lifecycle GHG emissions.
 - For the hydrogen production projects, the Bank will allocate the green bond proceeds to production of hydrogen using electrolysis powered by 100% renewable energy (“green hydrogen”). With regard to the hydrogen power generation, JBIC will restrict allocation of the proceeds to 100% hydrogen-fired power plants fueled only by green hydrogen.
 - Within the Clean Transportation category, the Bank intends to allocate the proceeds to railways and zero-emission vehicles as well as relevant infrastructure dedicated to rails and vehicles that meet the eligibility criteria.
 - The proceeds will be allocated to projects for the manufacturing, operation and/or maintenance of railway vehicles that use electricity as its power sources or that meet the threshold for direct CO₂ emissions (less than 50g CO₂/km per passenger or less than 25g CO₂/km per ton of cargo). With regard to freight transportation, JBIC has confirmed that it will exclude vehicles intended to carry fossil fuels from the use of proceeds. Sustainalytics considers that this is in line with market practices.
 - The proceeds will also be allocated to construction, extension, upgrade, maintenance and/or operation of railway tracks or transportation systems relating to the railway vehicles above. For rail transport infrastructure such as depots, traffic control centers, and terminals, JBIC has committed to limiting allocation of proceeds to facilities related exclusively to railways that meet the eligibility criteria. Sustainalytics considers such restrictions to be in line with market practice.
 - In respect of zero-emission vehicles, JBIC intends to allocate the proceeds to capital investments and manufacturing costs associated with battery electric vehicles (BEVs), fuel cell vehicles (FCVs), and components exclusively designed for them. The Bank also intends to allocate the proceeds to the development of charging infrastructure for BEVs as well as hydrogen fueling infrastructure for FCVs. Sustainalytics considers that this is aligned with market practices.
 - Within the Green Building category, JBIC will allocate the proceeds to loans that finance the construction and acquisition of residential and commercial properties and logistics facilities certified as a green building by a third party. Certification schemes eligible for the allocation of proceeds include LEED (Gold or above), BREEAM (Excellent or above), and CASBEE (A Rank or above). Sustainalytics considers that the establishment of eligibility criteria that limit the use of proceeds to properties with top two levels of the aforementioned certification schemes is in line with market practice, as it will ensure the allocation of proceeds to green buildings that generate positive environmental impacts. The details of the certification schemes are provided in Appendix 1.
 - JBIC has confirmed that, from the use of proceeds, it will exclude loans for assets, projects, and sectors associated with: the development, refinement, and transportation of fossil fuels (including coal, oil, and gas); fossil fuels power generation; nuclear power generation; weapons and defense; gambling/casinos; and tobacco.
 - Project Evaluation and Selection:
 - JBIC's Treasury Department will select projects based on the eligibility criteria and will make decisions in consultation with the Corporate Planning Department.
 - JBIC has a process for the preliminary evaluation and monitoring on each of its loans' environmental and social impacts as well as considerations, based on the Bank's guideline titled the “Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Considerations” (hereinafter referred to as the “Environmental Guidelines”). This process

is applicable to all projects under the Framework. Sustainalytics considers that the Bank's environmental and social risk management systems are adequate and in line with market expectations. The details are provided in Section 2.

- Sustainalytics considers the Bank's process for project evaluation and selection to be in line with market practice.
- Management of Proceeds:
 - JBIC's Treasury Department will track and manage the allocation of proceeds once a year using an internal system.
 - The Bank intends to complete the allocation of proceeds within 36 months after the issuance of the green bond. Pending allocation, unallocated proceeds will be held in cash or cash equivalents.
 - Sustainalytics considers the Bank's process for the management of proceeds to be in line with market practice.
- Reporting:
 - JBIC will report on the allocation of proceeds and positive environmental impacts annually on its website, until the full allocation of proceeds.
 - Allocation reporting will include the amount of proceeds allocated (total amount and amount by each eligible project category) and unallocated, and the ratio of new financing and refinancing projects.
 - Impact reporting will provide, to the extent practicable, quantitative and qualitative indicators including the estimated power generation capacity for renewable energy/clean energy (MW), estimated reduction in CO₂ emissions (CO₂t), operating distance or volume of passenger transported of clean transportation (trains) and estimated production volume of Zero-emission vehicles ("ZEV"), the number of properties and total amount per green building certification scheme, and positive environmental impact of major properties.
 - Based on the allocation and impact reporting on an annual basis, Sustainalytics considers the Bank's reporting to be in line with market practice.

Alignment with Green Bond Principles 2021

Sustainalytics has determined that the Japan Bank for International Cooperation Green Bond Framework aligns to the four core components of the GBP. For detailed information please refer to Appendix 2: Green Bond/Green Bond Programme External Review Form.

Section 2: Sustainability Strategy of JBIC

Contribution of framework to Japan Bank for International Cooperation's sustainability strategy

Sustainalytics is of the opinion that JBIC has integrated its sustainability efforts into its management strategy by formulating its ESG Policy⁴ as well as its Medium-term Business Plan⁵, setting the following policies and targets, and has articulated its commitment to ensuring sustainability through its business activities:

- In its 4th Medium-term Business Plan (FY2021-FY2023), JBIC has set out six key focus areas and 17 action plans based on the theme "navigator in an era of transformation," in the context of objectives such as innovation towards the realization of the SDGs and a decarbonized society, and the irreversible advancements in energy transformation and digital transformation. In particular, as one of the six key focus areas, the Bank identified "Address global issues toward realizing sustainable development for the global economy and society," and developed the following two action plans within the area: (1) Respond to energy transformation toward the realization of a decarbonized society; and (2) Support projects that contribute toward resolving social issues. To implement the Action Plan (1), the Bank will provide: a) green finance that support the efforts to reduce greenhouse gases and popularize green innovation; and b) transition finance that provide support for initiatives toward global energy transition. To implement the Action Plan (2), JBIC will provide support for projects through social impact finance that contribute toward the resolution of social issues in host countries for the realization of sustainable growth, such as efforts to improve health, welfare and hygiene, create employment, and develop sustainable cities and living spaces.
- As its response to climate change issues, toward the global implementation of the Paris Agreement, JBIC announced in October 2021 its commitment to pursuing efforts to reduce its operational GHG

⁴ JBIC, "ESG Policy", at: <https://www.jbic.go.jp/en/information/sustainability.html>

⁵ JBIC, "Fourth Medium-term Business Plan (FY2021-FY2023) Overview", at: https://www.jbic.go.jp/en/about/images/business_plan_en.pdf

emissions to net zero by 2030, and to achieve net zero GHG emissions in its finance portfolio by 2050. To achieve this goal, JBIC has declared that it will strengthen climate change-related financing to promote green innovation and accelerate the energy transitions of emerging and developing countries. JBIC has also announced that it will end the provision of financing for unabated international thermal coal power generation as agreed at the G7 Summit in June 2021 and support initiatives that contribute to the transition to clean energy generation using new technologies.⁶

- In the environment area, JBIC contributes to the efforts to address global environmental problems through financial programs such as “Global action for Reconciling Economic growth and ENvironmental preservation” (“GREEN”) and the “Post-COVID-19 Growth Facility.” GREEN projects include development of photovoltaic generation facilities using advanced environmental technologies and highly energy-efficient power plants, as well as installation of energy-saving equipment which are intended to help protect the global environment.⁷ Under the GREEN operations, JBIC provides support for environmental projects in the form of loans, guarantees and equity financing, while mobilizing private-sector funds. In January 2021, JBIC newly established the “Post-COVID-19 Growth Facility” with the “Facility Window for Promoting Overseas Business Activities toward a Decarbonized Society (Decarbonization Promotion Window)” to take over the “Facility Window for the Development of Quality Infrastructure for Environmental Preservation and Sustainable Growth of the “Growth Investment Facility”.⁸ The window is intended to support Japanese companies in the overseas expansion of high-quality infrastructure and overseas business activities toward a decarbonized society. Eligible projects include those expected to reduce greenhouse gases or contribute to protecting the global environment (e.g. projects related to renewable energy, energy savings, green mobility solutions, air pollution prevention, water supply, water pollution prevention, and waste disposal).⁹

Considering the above, Sustainalytics is of the opinion that the Framework is aligned with the Bank’s ESG policy, goals, and initiatives, and will contribute to the Bank’s efforts to address climate change issues and “respond to energy transformation toward the realization of a decarbonized society.”

Well-positioned to address common environmental and social risks associated with the projects

Sustainalytics recognizes that, while the proceeds of green bonds issued according to the Framework will be allocated to eligible projects that are recognized by the GBP to have positive environmental impacts, these eligible projects may incur environmental and social risks and thereby expose JBIC, the fund provider, to reputation risk. Major environmental and social risks associated with eligible projects include those related to: biodiversity; changes in the use of lands; water, soil, and air pollution; noise and vibration; workers’ safety and health; and relationships with local community caused by the construction of large-scale infrastructure.

JBIC has a process to confirm whether consideration for local communities and the natural environment has been made in all the JBIC-financed projects based on the Environmental Guidelines.¹⁰

- The Environmental Guidelines set out the procedures, criteria and requirements that JBIC-financed projects must meet in confirming environmental and social considerations. When JBIC judges that the project proponents have not made appropriate environmental and social considerations, it will encourage them to take remedial measures. If appropriate environmental and social considerations have not been taken, JBIC may decide not to extend funding or ask the borrower for early redemption.
- Environmental impact to be investigated and examined in the process of confirming environmental and social considerations includes impact on human health and safety as well as the natural environment through air, water, soil, waste, accidents, water usage, ecosystem and biota; social concerns including respect for human rights, such as involuntary resettlement, indigenous people, cultural heritage, landscape, gender, children’s rights, communicable diseases such as HIV/AIDS, working conditions (including occupational safety) and community health, safety, and security; and impact that may lead to trans-boundary and global environmental problems. JBIC confirms appropriateness of its environmental and social considerations based on the environmental laws

⁶ JBIC, “ESG Policy”, at: <https://www.jbic.go.jp/en/information/sustainability.html>

⁷ JBIC, “Business Performance of the GREEN Operations”, at: <https://www.jbic.go.jp/en/business-areas/result-green.html>

⁸ JBIC, “Establishment and Launch of the Post-COVID-19 Growth Facility”, at: <https://www.jbic.go.jp/en/information/news/news-2020/0129-014228.html>

⁹ JBIC, “Post-COVID-19 Growth Facility (Facility Window for Promoting Overseas Business Activities toward a Decarbonized Society (“Decarbonization Promotion Window”)) Main Points of the Financing Conditions”, at: https://www.jbic.go.jp/en/information/news/news-2020/pdf/0129-014228_2.pdf

¹⁰ JBIC, “Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Considerations”, at: https://www.jbic.go.jp/wp-content/uploads/page/2013/08/36442/Environemtal_Guidelines2015.pdf

and regulations and standards of the host nation and local governments concerned, as well as the World Bank Safeguard Policies¹¹ and International Finance Corporation Performance Standards.¹²

- Prospective projects are screened prior to funding and classified into categories according to the degree of potential environmental impact (Step 1). An Environmental Review is then conducted to verify that the environmental and social impacts have been considered in a proper manner (Step 2). After funding has been approved, projects are monitored to assess the actual impact (Step 3). JBIC makes available to the public information on environmental and social considerations in regard of a project proposed for JBIC financing, including category classification of the project when it is in the screening process and results of its environmental review.^{13 14}

Considering the policies and procedures described above, Sustainalytics is of the opinion that JBIC is well positioned to manage and reduce environmental and social risks associated with eligible projects by implementing adequate measures.

Section 3: Impact of Use of Proceeds

All three use of proceeds categories are aligned with those recognized by the GBP as projects that deliver environmental benefits. Sustainalytics explains why those project categories produces positive environmental impacts as follows:

Importance of renewable energy and clean energy

In 2019, the amount of CO₂ emissions from the global electricity sector was 13.6 Gt, which accounted for 41% of energy-related CO₂ emissions.¹⁵ According to the “Sustainable Development Scenario (SDS),”¹⁶ which was published by the International Energy Agency (IEA) to depict the steps to achieve the Paris Agreement climate goals, the electricity sector needs to reduce CO₂ emissions by an average of 4% per year by 2030. However, the amount of CO₂ emissions from the sector decreased by 1.3% in 2019, far below the level set by the SDS.¹⁷ Furthermore, in the SDS, the sector is required to increase the ratio of renewable energy significantly, from 27% of electric power production in 2019 to approximately 50% by 2030.¹⁸

Hydrogen is considered to be a clean energy that does not emit CO₂ at the utilization stage, and is expected to contribute to the decarbonization of the electric power sector by being used as fuel for thermal power generation. While certain types of hydrogen emit CO₂ at the time of production, green hydrogen can be produced free from CO₂ emissions, using electricity derived from renewable energy.¹⁹ Moreover, in light of its high ability to adjust the level of power generation, hydrogen is also expected to play a role in introducing renewable energies in a large scale, as a flexible power source that complements renewable energy sources whose levels of power generation vary depending on the weather conditions.²⁰ According to the IEA, to achieve the goal of net zero emissions by 2050, the amount of electricity generated from hydrogen must be increased to 900 TWh in 2030 and 1,700 TWh in 2050 (both are about 2.5% of the world's electricity generation).²¹

In the Renewable Energy/Clean Energy category, JBIC will allocate the green bond proceeds to projects worldwide that are associated with solar and solar thermal, wind, geothermal, hydro, biomass and hydrogen power generation. Given the above, Sustainalytics considers that JBIC's use of proceeds in the Renewable

¹¹ The World Bank, “Safeguard Policies”, at: <https://www.worldbank.org/en/projects-operations/environmental-and-social-policies#safeguards>

¹² International Finance Corporation, “Performance Standards”, at:

https://www.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/Sustainability-At-IFC/Policies-Standards/Performance-Standards

¹³ JBIC, “Projects Already Classified into One of the Environmental Categories and Currently under Screening Process”, at:

<https://www.jbic.go.jp/en/business-areas/environment/projects/project.html>

¹⁴ JBIC, “Results of JBIC's Environmental Review”, at: https://www.jbic.go.jp/ja/business-areas/environment/projects/review_monitoring_2015.html

¹⁵ International Energy Agency (IEA), “Tracking Power 2020”, at: <https://www.iea.org/reports/tracking-power-2020>

¹⁶ International Energy Agency (IEA), “Report extract Sustainable Development Scenario”, at: <https://www.iea.org/reports/world-energy-model/sustainable-development-scenario>

¹⁷ International Energy Agency (IEA), “Tracking Power 2020”, at: <https://www.iea.org/reports/tracking-power-2020>

¹⁸ International Energy Agency (IEA), “Renewable power”, at: <https://www.iea.org/reports/tracking-power-2020/renewable-power>

¹⁹ International Energy Agency (IEA), “The Future of Hydrogen”, at: https://iea.blob.core.windows.net/assets/9e3a3493-b9a6-4b7d-b499-7ca48e357561/The_Future_of_Hydrogen.pdf

²⁰ International Renewable Energy Agency (IRENA), “Hydrogen from Renewable Power”, at: https://www.irena.org/-/media/files/irena/agency/publication/2018/sep/irena_hydrogen_from_renewable_power_2018.pdf

²¹ 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

Energy/Clean Energy category will contribute to the reduction of CO₂ emissions from the global electricity sector and the mitigation of climate change.

Contribution to CO₂ reduction by promoting clean transportation

In 2018, the amount of CO₂ emissions from the global transportation sector was approximately 8.2 Gt, which accounted for around 24% of energy-related CO₂ emissions.²² By means of transportation, road vehicles (passengers and freight) account for nearly three-quarters of CO₂ emissions from the sector.²³ According to the International Transport Forum (ITF), CO₂ emissions from the transportation sector will increase by 16% from the 2015 level by 2050, even if existing commitments by countries to the transportation-related decarbonization efforts is completely fulfilled.²⁴ The ITF requires that, in order to limit the global average temperature rise to 1.5°C, CO₂ emissions from the transportation sector be reduced by 70% from the 2015 level by 2050.²⁵ 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 electric vehicles and fuel cell vehicles, must be increased from 5% in 2020 to 64% by 2030 and 100% by 2050.²⁶ It also states that the railway transportation with the lowest energy consumption and CO₂ emission consumption among all motorized means of passenger transportation and therefore its share should be increased to 20% of all passenger transportation by 2050 toward the achievement of net zero emissions by 2050.²⁷

In the Clean Transportation category, JBIC will allocate the green bond proceeds to projects related to zero-emission vehicles and railways. Based on the above, Sustainalytics is of the opinion that JBIC'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.

Importance of green buildings

During 2010-2019, the world's final energy consumption by buildings rose by around 8% and reached 128 exajoule (EJ). As a result, CO₂ emissions from buildings (indirect emissions from power generation are considered) reached a record high of 10 Gt in 2019, accounting for 28% of the world's total emissions.²⁸ The floor area of the world's buildings has been increasing at an annual rate of around 2.5% since 2010. On the other hand, energy consumption per unit of building floor (final energy consumption per square meter) has been decreasing at an annual rate of 0.5% to 1%, meaning that the improvement of buildings' energy efficiency has been below the rate of increase in floor area.²⁹ In the SDS,³⁰ the IEA explained that energy consumption per unit must be reduced by at least 2.5% annually to limit the temperature rise up to 1.5°C. It is therefore 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 the climate change.

Under the Green Building category, JBIC intends to allocate green bond proceeds to green buildings that have received a green building certification from a third-party institution. Evaluation items under the certification schemes specified in the Framework's eligibility criteria include energy efficiency and other environmental features such as water use and waste discharge. Sustainalytics considers that JBIC's use of proceeds is expected to generate positive environmental impacts by supporting measures to combat climate change and through the reduction of environmental burdens such as the increasing energy demand from buildings worldwide as well as CO₂ emissions.

Alignment with/contribution to SDGs

The Sustainable Development Goals (SDGs) were set in September 2015 by the United Nations General Assembly and form an agenda for achieving sustainable development by the year 2030. The bonds issued

²² International Energy Agency (IEA), "Tracking Transport 2020", at: <https://www.iea.org/reports/tracking-transport-2020>

²³ International Energy Agency (IEA), "Transport", at: <https://www.iea.org/topics/transport>

²⁴ International Transport Forum, "Executive Summary ITF Transport Outlook 2021" at: <https://www.itf-oecd.org/sites/default/files/transport-outlook-executive-summary-2021-english.pdf>

²⁵ International Transport Forum, "Executive Summary ITF Transport Outlook 2021" at: <https://www.itf-oecd.org/sites/default/files/transport-outlook-executive-summary-2021-english.pdf>

²⁶ 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

²⁷ 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

²⁸ International Energy Agency (IEA), "Tracking Buildings 2020", at: <https://www.iea.org/reports/tracking-buildings-2020>

²⁹ International Energy Agency (IEA), "Tracking Buildings 2020", at: <https://www.iea.org/reports/tracking-buildings-2020>

³⁰ International Energy Agency (IEA), "Report extract Sustainable Development Scenario", at: <https://www.iea.org/reports/world-energy-model/sustainable-development-scenario>

under the Japan Bank for International Cooperation Green Bond Framework advances the following SDGs and targets:

Use of Proceeds Category	SDG	SDG target
Renewable Energy/Clean Energy	7. Affordable and clean energy	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix
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

Conclusion

JBIC has developed the Japan Bank for International Cooperation Green Bond Framework under which it may issue green bonds and use the proceeds to finance and/or refinance projects related to Renewable Energy/Clean Energy, Clean Transportation, and Green Buildings. Sustainalytics considers that the projects funded by the green bond proceeds are expected to have provide positive environmental impact.

The 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 Framework is aligned with the Bank's ESG Policy and that the green use of proceeds categories will contribute to the advancement of the UN Sustainable Development Goals 7, 9, and 11. Additionally, Sustainalytics is of the opinion that JBIC 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 Japan Bank for International Cooperation is well-positioned to issue green bonds and that the Framework is robust, transparent, and in alignment with the four core components of the GBP.

Appendices

Appendix 1: Overview and Comparison of Green Building Certification Schemes

	LEED ³¹	BREEAM ³²	CASBEE Certification ³³
Background	Leadership in Energy and Environmental Design (LEED) is a US Certification System for residential and commercial buildings used worldwide. LEED was developed by the non-profit U.S. Green Building Council (USGBC) and covers the design, construction, maintenance and operation of buildings.	BREEAM (Building Research Establishment Environmental Assessment Method) was first published by the Building Research Establishment (BRE) in 1990. Based in the UK. Used for new, refurbished and extension of existing buildings.	The Comprehensive Assessment System for Built Environment Efficiency (CASBEE) Certification is a green building certification scheme in Japan, which a third party certifies the environmental performance of buildings. The certification scheme includes, based on types of buildings: CASBEE for Buildings, CASBEE for Real Estate, and CASBEE for Housing.
Certification levels	Certified Silver Gold Platinum	Pass Good Very Good Excellent Outstanding	C (Poor) B- (Slightly Poor) B+ (Good) A (Very Good) S (Excellent) * 4-grade evaluation for CASBEE for Real Estate excluding C rank
Areas of Assessment: Environmental Project Management		Management (Man) addresses various aspects: project management, deployment, minimal environmental disturbance worksite and stakeholder engagement.	CASBEE assesses two main factors: inside and outside the building site, which translate into Q (Built Environment Quality) and, L (Built Environment Load), respectively. * The above are not applied to CASBEE for Real Estate
Areas of Assessment: Environmental Performance of the Building	<ul style="list-style-type: none"> • Energy and atmosphere • Sustainable Sites • Location and Transportation • Materials and resources • Water efficiency • Indoor environmental quality • Innovation in Design • Regional Priority 	<ul style="list-style-type: none"> • Energy • Land Use and Ecology • Pollution • Transport • Materials • Water • Waste • Health and Wellbeing Innovation	<ul style="list-style-type: none"> • Energy Efficiency • Resource efficiency • Local environment • Indoor environment * Areas for assessment of CASBEE for Real Estate are energy/GHG, water, resource, biodiversity, indoor environment

³¹ U.S. Green Building Council (USGBC), "LEED rating system", at: <https://new.usgbc.org/leed>

³² BREEAM, "What is BREEAM?", at: <https://www.breeam.com/>

³³ Institute for Building Environment and Energy Conservation, "CASBEE certification scheme (Japanese only)", at: <http://www.ibec.or.jp/CASBEE/certification/certification.html>

<p>Requirements</p>	<p>Prerequisites (independent of level of certification) + Credits with associated points.</p> <p>These points are then added together to obtain the LEED level of certification.</p> <p>There are several different rating systems within LEED. Each rating system is designed to apply to a specific sector (e.g. New Construction, Major Renovation, Core and Shell Development, Schools- /Retail-/Healthcare New Construction and Major Renovations, Existing Buildings: Operation and Maintenance).</p>	<p>Prerequisites depending on the levels of certification + Credits with associated points</p> <p>This number of points is then weighted by item³⁴ and gives a BREEAM level of certification, which is based on the overall score obtained (expressed as a percentage). Majority of BREEAM issues are flexible, meaning that the client can choose which to comply with to build their BREEAM performance score.</p> <p>BREEAM has two stages/ audit reports: a 'BREEAM Design Stage' and a 'Post Construction Stage', with different assessment criteria.</p>	<p>Score-based performance level.</p> <p>CASBEE uses the BEE (Built Environment Efficiency) as its assessment indicator, which is calculated from Q (Built Environment Quality) as the numerator and L (Built Environment Load) as the denominator. Q and L are obtained through the classification and rearrangement of the four areas of assessment.</p> <p>* CASBEE for Real Estate does not use BEE, additional point system. Certification will not be given, if required item are not met.</p>
<p>Performance display</p>	 <p>Platinum 80+ points earned 35</p>	 <p>Pass Outstanding 36</p>	 <p>37</p>
<p>Qualitative considerations</p>	<p>Worldwide recognition and application</p>	<p>Worldwide recognition and application</p>	<p>CASBEE is continuously developed based on industry-government-academia collaboration under the support of Ministry of Land, Infrastructure, Transport and Tourism. In Japan, many local governments have made CASBEE assessment results mandatory for building permits.</p>

³⁴ BREEAM weighting: Management 12%, Health and wellbeing 15%, Energy 19%, Transport 8%, Water 6%, Materials 12.5%, Waste 7.5%, Land Use and ecology 10%, Pollution 10% and Innovation 10%. One point scored in the Energy item is therefore worth twice as much in the overall score as one point scored in the Pollution item

³⁵ U.S. Green Building Council, "Green building leadership is LEED", at: <https://new.usgbc.org/leed>

³⁶ BREEAM, "What is BREEAM?", at: <https://www.breeam.com/>

³⁷ Institute for Building Environment and Energy Conservation, "Method of Evaluation and Built Environment Efficiency (BEE)", at: http://www.ibec.or.jp/CASBEE/CASBEE_outline/method.html

Appendix 2: Green Bond / Green Bond Programme - External Review Form

Section 1. Basic Information

Issuer name:	Japan Bank for International Cooperation
Green Bond ISIN or Issuer Green Bond Framework Name, if applicable:	Japan Bank for International Cooperation Green Bond Framework
Review provider's name:	Sustainalytics
Completion date of this form:	October 28, 2021
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:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Use of Proceeds | <input checked="" type="checkbox"/> Process for Project Evaluation and Selection |
| <input checked="" type="checkbox"/> Management of Proceeds | <input checked="" type="checkbox"/> Reporting |

ROLE(S) OF REVIEW PROVIDER

- | | |
|---|--|
| <input checked="" type="checkbox"/> Consultancy (incl. 2 nd opinion) | <input type="checkbox"/> Certification |
| <input type="checkbox"/> Verification | <input type="checkbox"/> Rating |
| <input type="checkbox"/> Other (<i>please specify</i>): | |

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

Overall comment on section (*if applicable*):

Japan Bank for International Cooperation Green Bond Framework

The eligible categories for the use of proceeds – Renewable Energy/Clean Energy, Clean Transportation, Green Buildings – 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 SDG7, 9 and 11.

Use of proceeds categories as per GBP:

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

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

2. PROCESS FOR PROJECT EVALUATION AND SELECTION

Overall comment on section (if applicable):

Eligible projects will be selected and evaluated by the Treasury Department based on the eligibility criteria and in consultation with the Corporate Planning Department. Japan Bank for International Cooperation has in place a process to prospectively evaluate and monitor environmental and social risks, and this process will be applied to all projects under the Framework. Sustainalytics considers this risk management system to be adequate and that the project selection process in line with market practice.

Evaluation and selection

- | | |
|--|---|
| <input checked="" type="checkbox"/> Credentials on the issuer's environmental sustainability objectives | <input checked="" type="checkbox"/> Documented process to determine that projects fit within defined categories |
| <input checked="" type="checkbox"/> Defined and transparent criteria for projects eligible for Green Bond proceeds | <input checked="" type="checkbox"/> Documented process to identify and manage potential ESG risks associated with the project |
| <input checked="" type="checkbox"/> Summary criteria for project evaluation and selection publicly available | <input type="checkbox"/> Other (<i>please specify</i>): |

Information on Responsibilities and Accountability

- Evaluation / Selection criteria subject to external advice or verification
 In-house assessment
- Other (please specify):

3. MANAGEMENT OF PROCEEDS

Overall comment on section (if applicable):

The Treasury Department will track and manage the allocation of proceeds once a year using an internal system. Japan Bank for International Cooperation intends to complete the allocation of proceeds within 36 months after the issuance of the green bond. Pending allocation, unallocated proceeds will be held in cash or cash equivalents. Japan Bank for International Cooperation's processes for management of proceeds 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

Overall comment on section (if applicable):

Until full allocation of the proceeds, Japan Bank for International Corporation intends to report on the proceeds' allocation status and positive environmental impacts on its website at least once a year. Allocation reporting will include the amount of allocated and unallocated proceeds. As for positive environmental impacts, impact reporting will provide quantitative and qualitative indicators according to eligible categories to the extent practicable. Sustainalytics views Japan Bank for International Cooperation's allocation and impact reporting as aligned 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): The amount of proceeds unallocated, and the ratio of new financing and refinancing projects

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): Estimated power generation capacity (MW) for Renewable Energy/Clean Energy projects, operating distance or volume of passenger transported by Clean Transportation (Trains), estimated production volume of Clean Transportation (Zero-emission vehicles "ZEV"), the number of properties and total amount per green building certification scheme, and positive environmental impact of major properties.

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):
Japan Bank for International Cooperation'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.

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