

Tokyo Green Bonds Framework

March 2023
Tokyo Metropolitan Government

Tokyo Green Bonds Framework

1. The Issuance of Tokyo Green Bonds

As interest in the realization of a sustainable society grows worldwide, the situation surrounding the environment has become a major global issue, including the continued aggravation of the climate crisis, the loss of biodiversity, and the changes in the water and air environments.

To address these and other issues, the Paris Agreement, a framework for measures to address climate change after 2020, was established and it set a common goal of keeping the global average temperature rise below 2 °C from before the Industrial Revolution and to make efforts to keep it below 1.5 °C. At COP 26 in 2021, there was a global agreement to pursue efforts to keep the global average temperature below 1.5 °C. Numerous initiatives are underway around the world, including the adoption of the 17 Sustainable Development Goals (SDGs) for the realization of a sustainable world.

Against this background, the Tokyo Metropolitan Government (TMG) has set the goal of realizing “Zero Emission Tokyo” to contribute to the realization of global net zero CO₂ emissions by 2050, which is a responsibility that major cities around the world bear. To create a virtuous circle for the environment and the economy and to strongly promote the Tokyo Metropolitan Environmental Project, the TMG issued Tokyo Green Bonds for the first time as a local government in Japan in October 2017. In March 2021, the TMG established a strategy for Tokyo’s future that clarifies its vision for Tokyo’s bright future and the strategies for realizing this vision. In this strategy, the issuance of green bonds is positioned as one initiative for achieving “Zero Emission Tokyo”.

As the importance of environmental consideration has grown, there has been a global increase in the issuance of green bonds for the procurement of funding for environmental projects undertaken by companies and local governments, etc.

The TMG will continue to issue Tokyo Green Bonds in order to actively works to resolve environmental issues, a matter of concern shared by the international community, to promote a “sustainable recovery” that would enable people to live sustainable lives and to drive the development of the green finance market.

Tokyo Green Bonds are compliant with the International Capital Market Association (ICMA)’s Green Bond Principles (GBP).

The goals of Tokyo Green Bonds are as follows.

1. Assertively promote TMG's environmental measures through the additional support derived from Tokyo residents and enterprises' investment in Tokyo Green Bonds.
2. Create a virtuous cycle between the environmental and the economy by accelerating the trend of utilizing market funds for environmental measures taken in Japan.
3. Aim to realize "Zero Emission Tokyo" and Sustainable Recovery through these efforts and contribute to achieving the SDGs and while promoting understanding of environmental measures among residents and companies in Tokyo, and fostering environmental awareness. and contributing to the achievement of the SDGs.

2. About the Tokyo Green Bonds Framework

The TMG states that its Tokyo Green Bonds Framework for issuing Tokyo Green Bonds compiles with the ICMA's GBP as detailed in the four sections below: (1) Use of Proceeds, (2) Process for Project Evaluation and Selection, (3) Management of Proceeds and (4) Reporting.

(1) Use of Proceeds

Below are examples of the projects under the TMG's environmental categories based on the Tokyo Environmental Master Plan (September 2022) that are funded by Tokyo Green Bonds.

Tokyo Green Bond funds are used to finance new projects or to refinance existing expenditure for projects. When refinancing existing expenditure, the funds are used for capital expenditures (CAPEX) etc. in projects that started to be implemented in the five years before the issue date of the Tokyo Green Bonds.

Table: Example projects and expected environmental impact of Tokyo Green Bonds

No.	Environmental Category	Example projects	Expected Environmental Impact
1	Realization of Zero Emissions through Energy Decarbonization and the Sustainable Use of Resources	<ul style="list-style-type: none"> ■ Reduce the greenhouse gas emissions of office buildings ■ Promote energy conservation and management ■ Promote the use of zero emission vehicles ■ Promote advanced transportation technology and the use of bicycles ■ Increase the utilization of renewable energy sources such as solar, geothermal, hydrogen, sewerage heat, etc. ■ Reduce resource loss and increase the use of environmentally friendly materials ■ The 3 Rs (reduce, reuse and recycle), Promote the recyclable use of waste ■ Increase the utilization of materials that reduce environmental burdens ■ Measures to counteract rising temperatures in urban areas ■ Measures addressing floods and natural disasters ■ Road improvement (heat insulation and water absorption) ■ Improve water quality and conserve groundwater 	<ul style="list-style-type: none"> ■ Reduce CO₂ emissions ■ Reduce energy consumption ■ Increase renewable energy use ■ Reduce amount of waste ■ Increase amount of recyclable waste ■ Improve adaptability to rising temperatures ■ Improve adaptability to natural disasters such as floods, tsunamis, etc. ■ Improve heat insulation and water absorption ■ Improve water quality
2	Realization of a Prosperous Society in Harmony with the Environment that Continues to Benefit from Biodiversity	<ul style="list-style-type: none"> ■ Plant and protect plants through the development of parks, street trees, forests, etc. ■ Conserve biological diversity (Develop tidelands in marine parks, etc.) 	<ul style="list-style-type: none"> ■ Expand green areas ■ Expand developed areas
3	Realization of a Better Urban Environment that Ensures the Safety and Health of	<ul style="list-style-type: none"> ■ Improve air quality ■ Promote measures to prevent/remediate soil contamination ■ Promote the treatment of hazardous waste 	<ul style="list-style-type: none"> ■ Improve air/soil quality ■ Reduce CO₂ emissions ■ Increase amount of recyclable waste

No.	Environmental Category	Example projects	Expected Environmental Impact
	Tokyo Residents		

(2) Process for Project Evaluation and Selection

The projects that are eligible for Tokyo Green Bond funding in a fiscal year will be selected based on an evaluation using the Environmental, Social and Governance eligibility criteria in the table below. Tokyo Green Bond funds will be allocated to selected projects. Among the criteria below, the environmental aspects in section E-1 of the chart below should be given priority. Example evaluation methods are described in Appendix 1, Example of the method for evaluating the environmental impact of Tokyo Green Bond projects (by environmental category).

It is confirmed that the following have been addressed to reduce environmental and social risks associated with the implementation of the projects.

- Compliance with environmental laws and regulations and, where necessary, implementation of environmental impact assessments
- Provision of adequate explanations to local residents
- Implementation of the environmentally friendly procurement of materials, measures for handling environmentally hazardous substances, waste management and occupational safety considerations

Table: Criteria for the Evaluation & Selection of Eligible Projects

No.	Evaluation Aspects	Evaluation Items	Perspective
E-1	Eligibility of Environmental Aspects	Clarity of positive impact	Environmental effects of projects can be measured quantitatively, or projects have clear positive impact from an environmental perspective.
E-2	Eligibility of Environmental Aspects	Reduction of negative impact	Efforts to reduce negative environmental impacts are planned or underway.
S-1	Eligibility of Social Aspects	Clarity of positive impact	Social effects of projects can be clarified.
S-2	Eligibility of	Reduction of	Efforts to reduce negative impacts are

	Social Aspects	negative impact	planned or underway.
G-1	Eligibility of Governance	Policy & regulatory compliance	Project plans comply with a strategy for Tokyo's future, the Japanese Local Government Finance Act, etc.
G-2	Eligibility of Governance	Feasibility /urgency	Special consideration regarding significant feasibility or urgency of projects
G-3	Eligibility of Governance	Effect sustainability	Effects generated by environmental & social aspects of projects will be sustainable.

(3) Management of Proceeds

Local governments must be able to correlate expenditures in each fiscal year to their annual revenue.¹ Therefore, in principle, Tokyo Green Bonds funds are appropriated for target projects within the fiscal year. The Bureau of Finance manages the execution of target projects to follow up on the allotment of Tokyo Green Bonds funds as necessary and discloses the allotment status based on the methods for disclosing information in (4) Reporting.

After Tokyo Green Bonds are issued, the Tokyo Green Bond funds will be clarified by classifying the funds into accounting categories based on the TMG's budget rules. Until the Tokyo Green Bond funds are appropriated, they will be managed in accordance with the Tokyo Metropolitan Public Money Management Policy.²

At the end of each fiscal year, for all revenue and expenditures related to projects funded by Tokyo Green Bonds, the results of execution and settlement-related documents will be created and submitted to the Tokyo Metropolitan Audit and Inspection Commissioners for inspection. The documents will be submitted together with the comments of the commissioners to the Tokyo Metropolitan Assembly for certification.

¹ The principle of a one-year budget, Article 208, Local Government Autonomy Act

² <https://www.kaikeikanri.metro.tokyo.lg.jp/koukinkanri.htm>

(4) Reporting

.In principle, the information about Tokyo Green Bonds below is disclosed on the TMG website.

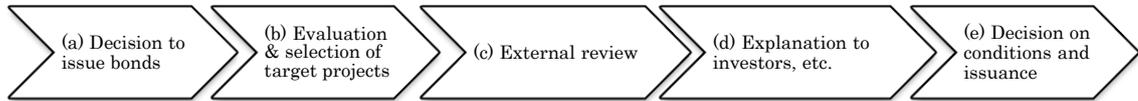
No.	Content	Timing
1	Tokyo Green Bonds Framework	At all times
2	Decisions regarding target projects - Project name (including refinanced projects) - Tokyo Green Bond environmental category - Amount appropriated (amount refinanced) - Expected environmental impact *When refinancing - Age of assets - Remaining durable years (Remaining permitted years*) of assets	Before issuance
3	Results of the appropriation and impact report - Project name (including refinanced projects) - Tokyo Green Bond environmental category - Results of appropriation (amount refinanced) - Environmental impact *When refinancing - Age of assets - Remaining durable years (Remaining permitted years*) of assets	Fiscal year following issuance
4	Change of target projects, etc.	If necessary

* The remaining permitted years are the difference between the permitted (redemption) years as stated in the notification submitted to the Ministry of Internal Affairs and Communications at the time of the issuance of the local government bonds and the age of assets.

(5) Issuance procedure (from pre-issuance to issuance)

In principle, Tokyo Green Bonds are to be issued following the process in the chart below. (The similar procedures for regular TMG bonds are not included.) Details of each procedure are described below.

Chart: Green Bond Issuance Procedure



(a) Decision to issue bonds (timing, amount, etc.)

- ① The TMG decides to issue Tokyo Green Bonds, and on the timing, amount, etc. in the TMG bond issuance plan for the next fiscal year.

(b) Evaluation & selection of target projects

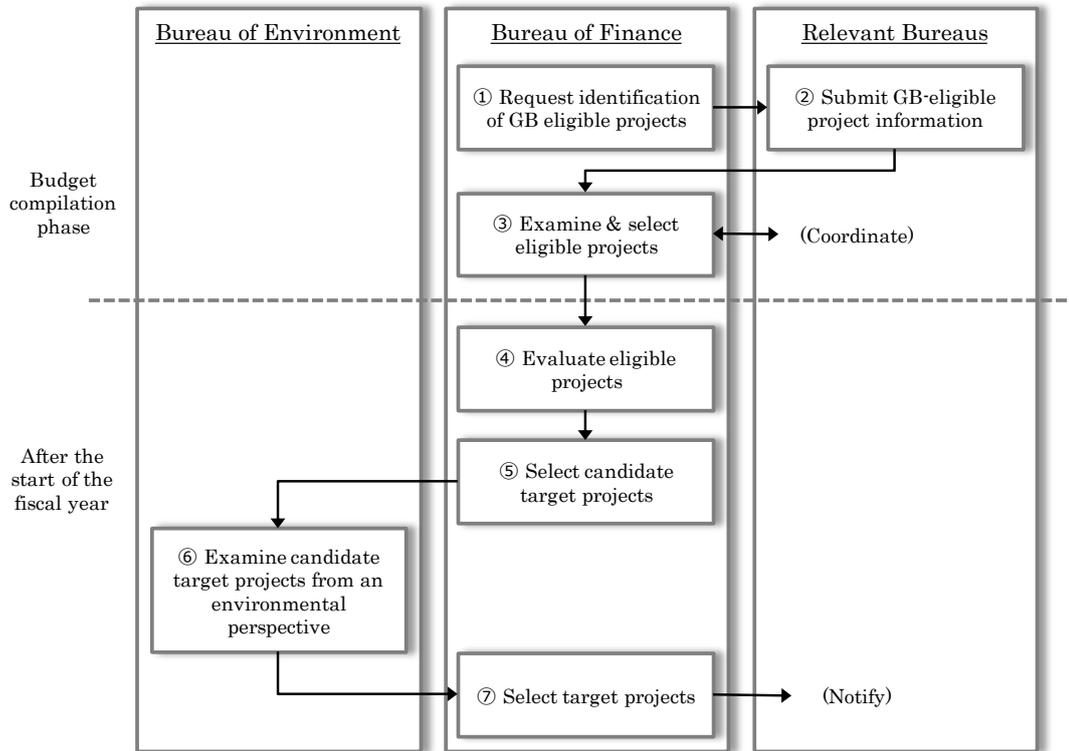
Budget compilation phase

- ① The Bureau of Finance requests that bureaus involved identify any projects eligible for Tokyo Green Bonds funds.
- ② The bureaus list the projects that are potentially eligible for Tokyo Green Bonds funds and then submit information about the projects that may be eligible to the Bureau of Finance.
- ③ The Bureau of Finance examines the content of the projects and selects eligible projects.

After the start of the fiscal year

- ① The Bureau of Finance evaluates the eligible projects. In the evaluation, it is confirmed that each project is within the scope of the TMG environmental project categories and the projects are evaluated using the ESG eligibility criteria, etc., based on the information submitted by the involved bureaus. The measures implemented to reduce environmental and social risks associated with the implementation of the project are confirmed.
- ② The Bureau of Finance selects candidate target projects.
- ③ The Bureau of Environment examines the candidate target projects from an environmental perspective
- ④ The Bureau of Finance selects target projects. (Notifies the bureaus of their decision)

Chart: Target Project Evaluation & Selection Procedure



(c) Pre-issuance External Review

- ① Consider the necessity of an external review³ before issuing Tokyo Green Bonds.
- ② (When an external review will be conducted) Select research institutes to conduct the review.
- ③ Before issuing Tokyo Green Bonds, conduct an external review and examine the information provided by the research institutes selected in step ②.

(d) Explanation to investors, etc.

- ① Create documents to present Tokyo Green Bonds information to investors. (Documents should include content related to the TMG environmental policy, target projects, outlines of external review results, etc.)
- ② Disclose information about the target projects, the costs, expected impact, etc. on the TMG website.
- ③ Also disclose the results of any external reviews.

³ The GBP recommend that issuers use external review(s) which are categorized as second party opinions, verifications, certifications, and ratings.

- ④ Hold investor briefings or workshops, etc. to explain the documents.
- (e) Decision on conditions and issuance
 - ① Set interest rate and maturity date conditions with a financial institution.
(Details of procedure are omitted as it is the same procedure as regular TMG bonds.)

(6) Issuance procedure (from issuance to the next fiscal year after issuance)

The final appropriation of the funds raised through Tokyo Green Bonds to each project etc. is disclosed at the first fiscal-year-end following the fiscal year the Tokyo Green Bonds were issued. The procedure below will be used to compile information from the bureaus and it will be disclosed on the TMG website.

- (a) The Bureau of Finance confirms target project expenditures status with the bureaus.
- (b) The Bureau of Finance determines the breakdown of the appropriated Tokyo Green Bond funds.
- (c) The results of the appropriation are compiled and the impact report is prepared.
- (d) Post-Issuance External Review
 - ① Consider the necessity of an external review after issuing Tokyo Green Bonds.
 - ② (When an external review will be conducted) Select the research institutes to conduct the review.
 - ③ Conduct an external review and examine the information provided by the research institutes selected in step 2.
- (e) (c) and (d) are disclosed on the TMG website.
- (f) If Tokyo Green Bond funds are to be appropriated to a single project over multiple years, it must be stated.

Example of the method for evaluating the environmental impact of Tokyo Green Bond projects (by environmental category)

1. Realization of Zero Emissions through Energy Decarbonization and the Sustainable Use of Resources

(1) Reduce greenhouse gas emissions of office buildings

Expected environmental impact	Example evaluation method
Reduce CO ₂ emissions	<ul style="list-style-type: none"> ■ Installation of energy efficient equipment · Calculate CO₂ reduction by comparing the energy consumption of conventional equipment and the newly installed energy efficient equipment

(2) Promote energy conservation and management

Expected environmental impact	Example evaluation method
Reduce energy consumption	<ul style="list-style-type: none"> ■ Installation of LEDs · Calculate by comparing energy consumption of conventional lights and LEDs <p>Calculation: Number of LED lights × reduction of energy consumption per a LED light(kW) × hours used in one year</p> <ul style="list-style-type: none"> ■ Achievement of ZEB (Zero emission building) · Calculate reduction of energy consumption and, in some cases, energy creation

(3) Promote the use of zero emission vehicles

Expected environmental impact	Example evaluation method
Reduce CO ₂ emissions	<ul style="list-style-type: none"> ■ Installation of zero emission vehicles · Calculate CO₂ reduction by comparing the CO₂ emissions of conventional vehicles and new vehicles

(4) Promote advanced transportation technology and the use of bicycles

Expected environmental impact	Example evaluation method
Reduce energy consumption	<ul style="list-style-type: none"> ■ Adoption of energy efficient subway cars · Calculate energy reduction by comparing the fuel consumption of conventional vehicles and new vehicles <p>Calculation: Annual electricity consumption of current vehicles (Number of trains × number of cars per train × total operating distance × energy consumption per km) Amount of annual electricity consumption of new vehicles</p>

(5) Increase the utilization of renewable energy sources such as solar, geothermal, hydrogen, sewerage heat, etc.

Expected environmental impact	Example evaluation method
Increase renewable energy use	<ul style="list-style-type: none"> ■ Installation of solar power system · Calculate power generated by new renewable energy facilities from the average annual solar radiation, loss factor, system capacity and number of annual generation days <p>Calculation: Average annual solar radiation per day of the installed surface location × loss factor × system capacity × number of annual generation days</p> <ul style="list-style-type: none"> ■ Installation of hydroelectric power system · Calculate power generated by new renewable energy facilities from the installed capacity, utilization factor and annual generation hours <p>Calculation: Installed capacity (kW) × utilization factor (%) × annual generation hours</p> <ul style="list-style-type: none"> ■ Installation of storage batteries · Installed capacity and output of storage batteries

(6) Reduce resource loss and increase the use of environmentally friendly materials

Expected environmental impact	Example evaluation method
Reduce CO ₂ emissions Increase amount of recyclable waste	<ul style="list-style-type: none"> ■ Utilization of sustainable materials when building walls to reduce resource loss · Areas for using environmentally friendly materials being planned

(7) The 3 Rs (reduce, reuse and recycle), promote the recyclable use of waste

Expected environmental impact	Example evaluation method
Reduce CO ₂ emissions Increase amount of recyclable waste	<ul style="list-style-type: none"> ■ The 3 Rs (reduce, reuse and recycle), circular use of waste · Amount of recycled waste being planned

(8) Increase the utilization of materials that reduce environmental burdens

Expected environmental impact	Example evaluation method
Reduce CO ₂ emissions Reduce amount of waste	<ul style="list-style-type: none"> ■ Utilization of materials that reduce environmental burdens · Amount of environmental resources used being planned

(9) Measures to counteract rising temperatures in urban areas

Expected environmental impact	Example evaluation method
Improve adaptability to rising temperatures	<ul style="list-style-type: none"> ■ Installation of cooling mists and sunshades along streets · Developed areas being planned

(10) Measures addressing floods and natural disasters

Expected environmental impact	Example evaluation method
Improve adaptability to natural disasters such as floods, tsunamis, etc.	<ul style="list-style-type: none"> ■ Development of facilities for storms, tsunamis and earthquakes · Developed areas being planned · Length of developed areas being planned · Completion percentage of developed areas being planned · Storage after improvement being planned · Number of developed areas being planned

(11) Road improvement (heat insulation and water absorption)

Expected environmental impact	Example evaluation method
Improve heat insulation and water absorption	<ul style="list-style-type: none"> · Pavement that is heat insulated and water absorbing · Developed areas being planned · Developed and extended length being planned

(12) Improve water quality and conserve groundwater

Expected environmental impact	Example evaluation method
Improve water quality	<ul style="list-style-type: none"> ■ Installation of rainwater storage facilities · Storage after improvement under planning ■ Installation of advanced sewage treatment facilities · Capacity of facilities under planning

2. Realization of a Prosperous Society in Harmony with the Environment that Continues to Benefit from Biodiversity

(1) Plant and protect plants through the development of parks, street trees, forests, etc.

Expected environmental impact	Example evaluation method
Expand green areas Expand developed areas	<ul style="list-style-type: none"> ■ Greening of surface locations, parks, etc. · Green areas being planned · Developed areas being planned ■ Street tree planting · Developed areas being planned · Developed and extended length being planned

(2) Conserve biological diversity (Develop tidelands in marine parks, etc.)

Expected environmental impact	Example evaluation method
Expand developed area	<ul style="list-style-type: none"> ■ Development of tidelands in marine park · Developed areas being planned

3. Realization of a Better Urban Environment that Ensures the Safety and Health of Tokyo Residents

(1) Improve air quality

Expected environmental impact	Example evaluation method
Improve air quality	<ul style="list-style-type: none"> ■ Purchases of low pollution non-step buses reducing air pollutants such as NO_x and CO · Calculate by comparing the emission control regulatory caps of the previous vehicle (long-term) and the new vehicle

(2) Promote measures to prevent/remediate soil contamination

Expected environmental impact	Example evaluation method
Improve soil quality	■ Measures to prevent/remediate soil contamination · Developed areas being planned

(3) Promote the treatment of hazardous waste

Expected environmental impact	Example evaluation method
Reduce CO ₂ emissions Increase amount of recyclable waste	■ Treat hazardous waste · Amount of hazardous waste to be treated being planned

(Remarks)

- The above examples and evaluation methods are described in the Japanese Ministry of Environment's Green Bond Guidelines etc.
- When using calculation methods, use information provided by external organizations as needed (e.g., information provided by equipment manufacturers).

Tokyo Green Bond Environmental Categories

Below are the environmental categories from the Tokyo Environmental Master Plan (September 2022), example Tokyo Green Bond target projects, and expected environmental impacts.

No.	Environmental Category	Example projects	Expected Environmental Impact
1	Realization of Zero Emissions through Energy Decarbonization and the Sustainable Use of Resources	<ul style="list-style-type: none"> ■ Reduce the greenhouse gas emissions of office buildings ■ Promote energy conservation and management ■ Promote the use of zero emission vehicles ■ Promote advanced transportation technology and the use of bicycles ■ Increase the utilization of renewable energy sources such as solar, geothermal, hydrogen, sewerage heat, etc. ■ Reduce resource loss and increase the use of environmentally friendly materials ■ The 3 Rs (reduce, reuse and recycle), Promote the recyclable use of waste ■ Increase the utilization of materials that reduce environmental burdens ■ Measures to counteract rising temperatures in urban areas ■ Measures addressing floods and natural disasters ■ Road improvement (heat insulation and water absorption) ■ Improve water quality and conserve groundwater 	<ul style="list-style-type: none"> ■ Reduce CO₂ emissions ■ Reduce energy consumption ■ Increase renewable energy use ■ Reduce amount of waste ■ Increase amount of recyclable waste ■ Improve adaptability to rising temperatures ■ Improve adaptability to natural disasters such as floods, tsunamis, etc. ■ Improve heat insulation and water absorption ■ Improve water quality
2	Realization of a Prosperous Society in Harmony with the Environment that Continues to Benefit from	<ul style="list-style-type: none"> ■ Plant and protect plants through the development of parks, street trees, forests, etc. ■ Conserve biological diversity (Develop tidelands in marine parks, etc.) 	<ul style="list-style-type: none"> ■ Expand green areas ■ Expand developed areas

No.	Environmental Category	Example projects	Expected Environmental Impact
	Biodiversity		
3	Realization of a Better Urban Environment that Ensures the Safety and Health of Tokyo Residents	<ul style="list-style-type: none"> ■ Improve air quality ■ Promote measures to prevent/remediate soil contamination ■ Promote the treatment of hazardous waste 	<ul style="list-style-type: none"> ■ Improve air/soil quality ■ Reduce CO₂ emissions ■ Increase amount of recyclable waste