

Tokyo Green Bonds Framework

March 2021
Tokyo Metropolitan Government

Tokyo Green Bonds Framework

1. The Issuance of Tokyo Green Bonds

Economic development since the industrial revolution has enriched people's standard of living in many ways. Meanwhile, environmental and other issues threaten people's livelihoods globally and the world currently faces significant economic, social, and environmental risks.

To address these issues and work towards a world as it should be, the Sustainable Development Goals (SDGs), which clearly outline global priority issues to be addressed by 2030 including economic, social and environmental issues such as the need to eradicate poverty, were adopted at the United Nations Sustainable Development Summit in 2015. The SDGs were developed from the previously established Millennium Development Goals (MDGs).

The Paris Agreement was adopted at COP 21 in France in December 2015. The Paris Agreement went into force in November 2016 as a new framework for climate change measures after 2020 with all nations agreeing to participate out of a shared understanding of the impending climate crisis.

Against this background, the Tokyo Metropolitan Government (TMG) issued Tokyo Green Bonds for the first time as a local government in Japan in October 2017. The TMG issues green bonds as a part of its Action Plan for 2020 which lays out specific policies for the creation of a new Tokyo. 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 a Zero Emission Tokyo contributing to the world's achievement of net-zero carbon emissions by 2050.

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. Particularly in Europe, a trend toward a "green recovery" from the COVID-19 pandemic that addresses climate change has been emerging and interest in ESG investing, including investments in green bonds, is increasing.

The TMG actively works to resolve environmental issues, a matter of concern shared by the international community and promote a "sustainable recovery" that would enable people to live sustainable lives. The TMG's issuance of Tokyo Green Bonds and its support of the domestic green bonds market are a part of its efforts to achieve the SDGs through the financial sector.

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 new environmental measures in addition to the environmental measures currently being implemented by the TMG for the realization of a smart city, through the additional support derived from Tokyo residents and enterprises' investment in Tokyo Green Bonds.
2. By issuing Tokyo Green Bonds, create a flow that utilizes valuable domestic funds to address domestic environmental issues, invigorates the green bond market and encourages the participation of other issuing bodies.
3. Awaken Tokyo residents' sense of ownership through an understanding of the TMG's environmental projects by offering private investors investment opportunities to become proactively involved in these projects.
4. Contribute to the cultivation of corporate environmental consideration and awareness and promote the development of an environment of social appraisal, by providing investment opportunities to institutional investors that enable them to fulfil their social responsibilities.
5. Diversify the investor base by issuing TMG bonds as Tokyo Green Bonds which enable the TMG to access new investors.

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 that are funded by Tokyo Green Bonds.

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

| No. | Environmental Category | Example projects | Expected Environmental Impact |
|-----|---|--|--|
| 1 | Smart Energy & Urban Development | <ul style="list-style-type: none"> ■ Reduce greenhouse gases emitted by office buildings ■ Promote the conservation of energy and energy management ■ Promote advanced transportation technology and the use of bicycles ■ Increase the utilization of renewable energy, i.e., solar, geothermal, hydrogen, sewerage heat. | <ul style="list-style-type: none"> ■ Reduce CO₂ emissions ■ Reduce energy consumption ■ Increase renewable energy use |
| 2 | Sustainable Resource & Waste Management | <ul style="list-style-type: none"> ■ Reduce resource loss and increase the use of environmentally friendly materials ■ The 3 Rs (reduce, reuse and recycle), Promote the recycling of waste ■ Increase the utilization of materials reducing environmental burdens ■ Promote the treatment of harmful waste | <ul style="list-style-type: none"> ■ Reduce CO₂ emissions ■ Reduce the amount of waste ■ Increase the amount of recyclable waste |
| 3 | Natural Environment Conservation | <ul style="list-style-type: none"> ■ Grow and conserve plants through the development of parks, greening in urban areas, the development of forests, etc. ■ Conserve biological diversity (Develop tidelands in marine parks, etc.) | <ul style="list-style-type: none"> ■ Expand green areas ■ Expand developed areas |
| 4 | Improvement of Living Environment | <ul style="list-style-type: none"> ■ Improve water quality and groundwater conservation ■ Improve air quality ■ Promote measures to prevent/remediate soil contamination ■ Road improvement (heat insulation and water absorption) | <ul style="list-style-type: none"> ■ Improve air/water/soil quality ■ Improve heat insulation and water absorption |

| No. | Environmental Category | Example projects | Expected Environmental Impact |
|-----|-------------------------------|--|---|
| 5 | Adaptation for Climate Change | <ul style="list-style-type: none"> ■ Measures addressing rising temperatures in urban areas ■ Measures to prevent flooding and prepare for other natural disasters | <ul style="list-style-type: none"> ■ Improve ability to adapt to increasing temperatures ■ Improve preparedness for natural disasters, i.e., floods and tsunamis. |

(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 evaluations method are described in the attachment, "Example of the method for evaluating the environmental impact of Tokyo Green Bond projects (by environmental category)."

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 Social Aspects | Reduction of negative impact | Efforts to reduce negative impacts are 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 appropriation of Tokyo Green Bonds funds will be clarified by classifying the funds into accounting categories based on the TMG's budget rules.

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.

(4) Reporting

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

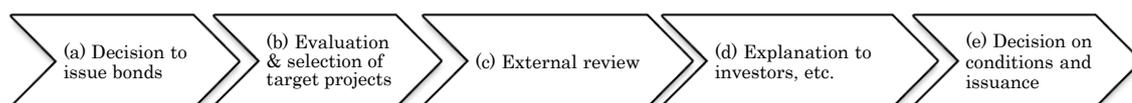
¹ The principle of a one-year budget, Article 208, Local Government Autonomy Act

| No. | Content | Timing |
|-----|---|--------------------------------|
| 1 | Tokyo Green Bonds Framework | At all times |
| 2 | Decision on target projects (Appendix: Form 1) <ul style="list-style-type: none"> - Project name - Tokyo Green Bond environmental category - Amount appropriated (millions of yen) - Expected environmental impact | Before issuance |
| 3 | Results of the appropriation (Appendix: Form 2) <ul style="list-style-type: none"> - Project name - Tokyo Green Bond environmental category - Results of appropriation (millions of yen) - Expected environmental impact | Fiscal year following issuance |
| 4 | Change of target projects, etc. | If necessary |

(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

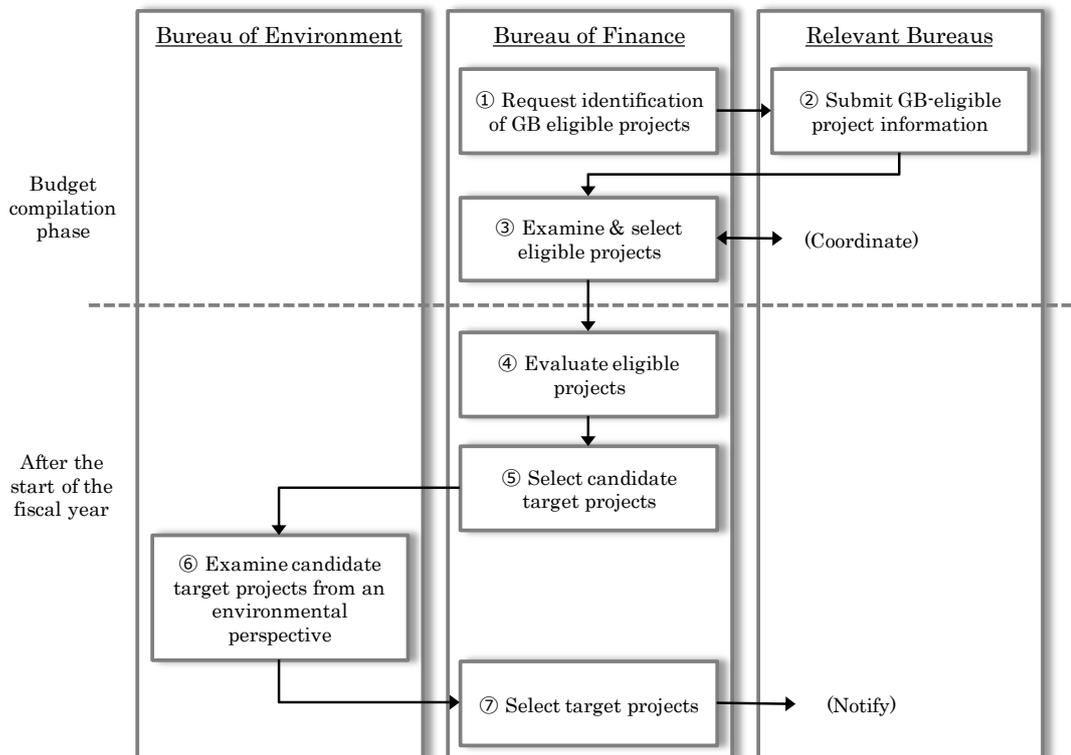
eligible to the Bureau of Finance.

- 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.
- 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) External Review
 - ① Consider the necessity of an external review² 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. based on Appendix Form 1 on the TMG website.
 - ③ Also disclose the results of any external reviews.
 - 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 about 1 year after issuance)

The final appropriation of the funds raised through Tokyo Green Bonds to each project is disclosed 1 year after the Tokyo Green Bonds are issued (or 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.

² The GBP recommend that issuers use external review(s) which are categorized as second party opinions, verifications, certifications, and ratings.

- (c) The results of the appropriation are compiled into Appendix Form 2 and then disclosed on the TMG website.
- (d) 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. Smart Energy & Urban Development

(1) Reduce greenhouse gas emissions emitted by 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 the conservation of energy and energy 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) Increase the utilization renewable energy sources, i.e., solar, geothermal, hydrogen, sewage heat

| Expected environmental impact | Example evaluation method |
|----------------------------------|--|
| Increase use of renewable energy | <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 |

| | |
|--|---|
| | <p>factor, system capacity and number of annual generation days</p> <p>Calculation: Average annual solar radiation per day of the installed surface location × loss factor × system capacity × number of annual generation days</p> <p>■ Installation of hydroelectric power system</p> <ul style="list-style-type: none"> · 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> |
|--|---|

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

| Expected environmental impact | Example evaluation method |
|-------------------------------|---|
| Reduce energy consumption | <p>■ Adoption of energy efficient subway cars</p> <ul style="list-style-type: none"> · 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> |

2. Sustainable Resource & Waste Management

(1) 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 | <p>■ Utilization of sustainable materials when building walls to reduce resource loss</p> <ul style="list-style-type: none"> · Areas for using environmentally friendly materials being planned |

(2) The 3 Rs (reduce, reuse and recycle), promote the circular 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 |

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

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

(4) Promote the treatment of hazardous waste

| Expected environmental impact | Example evaluation method |
|---|--|
| Reduce CO ₂ emissions Increase amount of recyclable waste | <ul style="list-style-type: none"> ■ Treat hazardous waste · Amount of hazardous waste to be treated being planned |

3. Natural Environment Conservation

(1) Grow and conserve plants through the development of parks, greening in urban areas, development of 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 |

| | |
|--|--|
| | <ul style="list-style-type: none"> ■ 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 |

4. Improvement of Living Environment

(1) Improve water quality and groundwater conservation

| 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) 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 |

(3) Promote measures to prevent/remediate soil contamination

| Expected environmental impact | Example evaluation method |
|-------------------------------|--|
| Improve soil quality | <ul style="list-style-type: none"> ■ Measures to prevent/remediate soil contamination |

| | |
|--|---|
| | <ul style="list-style-type: none"> Developed areas being planned |
|--|---|

(4) 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 |

5. Adaptation for Climate Change

(1) Measures addressing 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 |

(2) Measures to prevent flooding and prepare for other natural disasters

| Expected environmental impact | Example evaluation method |
|---|---|
| Improve adaptability for 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 |

(Remarks)

- The above examples and evaluation methods are described in the Japanese Ministry of Environment's 2020 Green Bond Guidelines
- When using calculation methods, use information provided by external organizations as needed (e.g., information provided by equipment manufacturers).

Decisions Regarding FYxxxx Tokyo Green Bonds Target Projects

Below are the target projects that will receive funds from the total xx billion yen raised through the Tokyo Green Bonds issued on mmm dd, yyyy.

| No. | Project Name | Tokyo Green Bond Environmental Category (See attachment) | Amount to be appropriated (millions of yen) | Expected environmental impact |
|-------|--------------|---|--|---|
| 1 | ●●● | 1. Smart Energy & Urban Development | X,000 | <ul style="list-style-type: none"> ■ Reduce CO₂ emissions by XX ■ Reduce energy consumption by XX ■ Increase renewable energy use by XX |
| 2 | ●●● | 4. Improvement of Living Environment | X,000 | <ul style="list-style-type: none"> ■ Improve heat insulation and water absorption by XX |
| 3 | | | | |
| Total | | | XX,000 | |

Attachment: Tokyo Green Bond Environmental Categories

FYxxxx Tokyo Green Bonds Appropriations

Below are the amounts appropriated to target projects from the total of xx billion yen raised through the Tokyo Green Bonds issued on mmm dd, yyyy.

| No. | Project Name | Tokyo Green Bond Environmental Category (See attachment) | Amount appropriated (millions of yen) | Expected environmental impact |
|-------|--------------|---|--|---|
| 1 | ●●● | 1. Smart Energy & Urban Development | X,000 | <ul style="list-style-type: none"> ■ Reduce CO₂ emissions by XX ■ Reduce energy consumption by XX ■ Increase renewable energy use by XX |
| 2 | ●●● | 4. Improvement of Living Environment | X,000 | <ul style="list-style-type: none"> ■ Improve heat insulation and water absorption by XX |
| 3 | | | | |
| 4 | | | | |
| Total | | | XX,000 | |

Attachment: Tokyo Green Bond Environmental Categories

Tokyo Green Bond Environmental Categories

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

| No. | Environmental Category | Project examples | Expected Environmental Impact |
|-----|---|--|--|
| 1 | Smart Energy & Urban Development | <ul style="list-style-type: none"> ■ Reduce the greenhouse gas emissions of office buildings ■ Promote energy conservation and management ■ Promote advanced transportation technology and the use of bicycles ■ Increase the utilization of renewable energy sources such as solar, geothermal, hydrogen, sewerage heat, etc. | <ul style="list-style-type: none"> ■ Reduce CO₂ emissions ■ Reduce energy consumption ■ Increase renewable energy use |
| 2 | Sustainable Resource & Waste Management | <ul style="list-style-type: none"> ■ 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 ■ Promote the treatment of hazardous waste | <ul style="list-style-type: none"> ■ Reduce CO₂ emissions ■ Reduce amount of waste ■ Increase amount of recyclable waste |
| 3 | Conservation of the Natural Environment | <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 |
| 4 | Improvement of Living Environment | <ul style="list-style-type: none"> ■ Improve water quality and conserve groundwater ■ Improve air quality | <ul style="list-style-type: none"> ■ Improve air/water/soil quality |

| No. | Environmental Category | Project examples | Expected Environmental Impact |
|-----|-------------------------------|---|---|
| | | <ul style="list-style-type: none"> ■ Promote measures to prevent/remediate soil contamination ■ Road improvement (heat insulation and water absorption) | <ul style="list-style-type: none"> ■ Improve heat insulation and water absorption |
| 5 | Adaptation for Climate Change | <ul style="list-style-type: none"> ■ Measures to counteract rising temperatures in urban areas ■ Measures addressing floods and natural disasters | <ul style="list-style-type: none"> ■ Improve adaptability to rising temperatures ■ Improve adaptability to natural disasters such as floods, tsunamis, etc. |