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Japan Credit Rating Agency, Ltd. (JCR) announces the following Green bond Framework Evaluation Results.

# Joint Green Bond issuers (Local Governments)

## Joint Local Government Green Bond Framework

## Assignment

| Overall Evaluation | Green Evaluation (Use of Proceeds) | Management, Operation and Transparency Evaluation |
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| Green 1(F) | g1(F) | m1(F) |

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| Issuer | Joint Green Bond issuers (Local Governments)<br>* Joint Green Bond issuers refer to a group that issues Joint Local Government Green Bond. |
| Evaluation Target | Joint Local Government Green Bond Framework |

## Evaluation Overview

### 1. Overview of Joint Green Bond Issuers (Local Governments)

Japanese local governments are broadly divided into ordinary local governments and special local governments in Article 1-3, paragraph (1) of the Local Autonomy Law (Act No. 67 of 1947). Ordinary local governments include prefectures and municipalities, and special local governments have special wards, unions of local governments and property wards. Municipalities are categorized into three: (1) designated cities that are required to be designated by cabinet orders among cities with a population of 500,000 or more; (2) core cities whose requirements are to be designated by cabinet orders from cities with a population of 200,000 or more; (3) special cities at the time of the enforcement (they were actually special cities when the special city system was abolished); (4) other cities that are required to have a population of

50,000 or more or others; and (5) towns and villages[1]. Local bonds can be issued by local governments except for property wards according to budgets stipulated, respectively.

Municipal bonds refer to debts borne by local governments through externally financing proceeds financially required, which are to be repaid for more than one fiscal year[2]. Municipal bonds, in principle, can be issued only in the cases listed in each item of Article 5 of the Local Finance Law (Act No. 109 of 1948), including those when financing financial resources for expenditures of public corporations (transportation, gas or water supply) or construction expenses of public or official facilities. The main characteristics of municipal bonds are: (1) debts borne by local governments; (2) debts borne through financing; (3) debts in the form of loans on deeds or securities issuance; (4) debts whose substantial collateral are taxation rights of local governments; (5) debts are to be repaid beyond one fiscal year; and (6) municipal bonds can be issued for businesses stipulated by law[3].

Among these municipal bonds, joint local government bonds are municipal bonds jointly issued by local governments that issue publicly offered local bonds nationwide and have been issued since April 2003. The joint local government bonds mainly have the following characteristics: (1) they are issued in accordance with Article 5-7[4] of the Local Finance Law through assuming joint and several debts[5] by local governments; (2) measures are taken to supplement liquidity; and (3) they have large issuance lots and high liquidity. As for (1), respective participating organizations are responsible for fully repaying the issuance amount of the joint local government bonds as joint and several obligors and thus the system is extremely robust on the certainty of the repayment. Regarding (2), a fund is established, aiming to supplement liquidity by depositing part of sinking funds of respective organizations in the trustee bank so as to repay the principal and interests without delay even if the participating organizations face unforeseen situations caused by disasters and others. Concerning (3), products are superior with high liquidity as the issuance amount is large, approximately 100 billion yen every month (FY 2023).

## ▶▶▶ 2. Environmental Initiatives of Joint Green Bond Issuers (Local Governments)

Local governments can be a key to implement regional priority strategies and are main promoters on local environmental conservation, which is a core for developing sustainable society and are expected to play a role as a coordinator of local initiatives in the government's "Fifth Basic Environmental Plan." Therefore, local governments are expected to comprehensively deploy environmental conservation measures in their regions, such as presenting targets or directions of regional efforts, setting respective systems or developing bases for social infrastructure or promoting actions of respective bodies according to regional characteristics by cooperating and coordinating with residents, businesses, private organizations, other local governments or government-affiliated institutions while striving to closely cooperate among related divisions.

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[1] Source: Ministry of Internal Affairs and Communications website at https://www.soumu.go.jp/mainsosiki/jichigyousei/bunken/chihou-koukyoudantaikubun.html

[2] Source: Ministry of Finance website https://www.mof.go.jp/policy/filp/summary/filplocal/tihousaiseidonogaiyou.htm

[3] Source: Akane Enatsu (2007) "Local Bond Investment Handbook" published by Zaikei Shoho Sha

[4] Article 5-7 of the Local Finance Law (Joint Issuance of Municipal Securities)
In case of issuing municipal bonds by a method to issue securities, two or more local governments can jointly issue securities through the vote of the Assembly

[5] Joint and several debts: Respective Joint and several debtors shall be accountable for repaying all debts (Article 436 of the Civil Code)

In the national Plan for Global Warming Countermeasures, it has listed two main roles to be played by local governments as follows: "Promoting measures in accordance with natural and social conditions in regions" and "Taking measures on their own affairs and projects." Local governments will promote measures comprehensively and systematically to reduce greenhouse gas (hereinafter referred to as "GHG") emissions according to the natural and social conditions in regions for the former. Prefectures and municipalities will map out/implement plans on measures to reduce GHG emissions and to conserve/strengthen absorption mechanisms for their own affairs and projects (Local Governments' Implementation Plan for Affairs/Businesses) as local governments shall aim to be a model for business operators and residents in the areas by working through efforts initiatively for the latter.

Furthermore, local governments are to strive to consider the plan and to formulate the regional climate change adaptation plan so as to promote measures on climate change adaptation according to regional natural economic and social conditions in the national Climate Change Adaptation Plan. Simultaneously, the local governments actively incorporate climate change adaptation into related measures, including disaster prevention/national resilience, promoting agriculture, forestry and fisheries and preserving biodiversity in cooperation with related departments and strive to promote measures on climate change adaptation in respective categories.

As described above, local governments promote measures for climate change mitigation and adaptation based on Basic Environmental Plan, the Plan for Global Warming Countermeasures and Climate Change Adaptation Plan formulated by the national government or respective local governments.

Joint Local Government Green Bonds (hereinafter referred to as "joint green bonds") has been issued since FY 2023. Mitigation and adaptation measures for climate change can be accelerated nationwide more than ever as utilizing the mechanism of the Joint Local Government Bond enables the local governments that could not handle allocation projects to finance proceeds with green bonds individually.

## ►►► 3. Joint Local Government Green Bond Framework

The evaluation target is "Joint Local Government Green Bond Framework" (hereinafter referred to as "this Framework"), which was jointly established so as to exclusively restrict the proceeds financed through joint green bonds by local governments to uses with environmental benefits. JCR will evaluate whether this Framework has been aligned with the Green Bond Principles[6] and the Green Bond Guidelines[7], which are principles or guidelines and are not regulations legally authorized; however, JCR will evaluate this Framework with reference to the aforementioned Principles and Guidelines as they are domestically and internationally unified standards at the present moment.

Local governments set out eligible criteria for this Framework in accordance with targets and policies formulated in the Basic Environmental Plan, the Plan for Global Warming Countermeasures or the Climate Change Adaptation Plan established by the national government or respective local governments. Specifically, the followings have been identified as

[6] International Capital Market Association (hereinafter referred to as "ICMA") (2021) *Green Bond Principles* https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/green-bond-principles-gbp/

[7] Ministry of the Environment (2022) *Green Bond Guidelines* https://www.env.go.jp/content/000062495.pdf

the use of proceeds: renewable energy, energy conservation, pollution prevention and control, sustainable management of natural resources/land use, biodiversity conservation, clean transportation, sustainable water resource management, climate change adaptation and green buildings. It is also stipulated that appropriate measures shall be taken in consideration of adverse impacts on the environment and society in implementing eligible projects in this Framework. Accordingly, JCR has evaluated that the use of proceeds in this Framework is expected to have environmental benefits.

The project selection process will be carried out with departments having specialized knowledge in local governments. A management system has been established to ensure that the proceeds are certainly allocated to green projects. Items to be disclosed as reporting will present environmental benefits. Accordingly, JCR has evaluated that the management system in the local governments have been appropriate and that transparency has been provided.

Consequently, JCR has assigned "g1(F)" for "Green Evaluation (Use of Proceeds)," "m1(F)" for "Management, Operation, and Transparency Assessment" and "Green 1(F)" for "JCR Green Finance Framework Assessment" based on the JCR Green Finance Assessment Methodology. JCR has also evaluated that this Framework has met the criteria required in the Green Bond Principles and the Green Bond Guidelines.

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## I. Use of Proceeds

### JCR's Key Consideration in This Factor

JCR will initially confirm whether the proceeds are used for green projects that bring about clear environmental benefits in this section. JCR will then confirm whether the impacts are fully examined by internal specialist departments in local governments or external third parties, and whether measures are taken for the avoidance/mitigation required in cases where the use of proceeds is expected to have negatively impacts on the environment/society. JCR will lastly confirm the alignment with the Sustainable Development Goals (hereinafter referred to as "SDGs") of the use of proceeds.

### ▶▶▶ Current Status of Evaluation Targets and JCR Evaluation

The projects for which proceeds will be used by local governments in this Framework are important measures to achieve the goals in the environmental policy for which the national and local governments has aimed in the Basic Environmental Plan, the Plan for Global Warming Countermeasures or the Climate Change Adaptation Plan and are expected to have environmental benefits.

### This Framework for Use of Proceeds

The proceeds procured through the issuance of Joint Local Government Green Bond will be allocated to eligible projects that fall under "green-related businesses."

| No. | Green related Projects | Environmental Benefits |
|---|---|---|
| Major Category | 1. Projects for renewable energy | |
| Subcategory | (1) Projects for development of renewable energy-related facilities/equipment | |
| 1 | Development of solar power generation facilities/equipment | Reduction of $CO_2$ emissions |
| 2 | Development of micro-hydroelectric power generation facilities/equipment | Reduction of $CO_2$ emissions |
| 3 | Renovation of deteriorated hydroelectric power plants | Reduction of $CO_2$ emissions |
| 4 | Development of onshore wind power generation facilities/equipment | Reduction of $CO_2$ emissions |
| 5 | Development of offshore wind power generation facilities/equipment | Reduction of $CO_2$ emissions |
| 6 | Development of facilities for geothermal power generation | Reduction of $CO_2$ emissions |
| 7 | Development of woody biomass power generation facilities/equipment | Reduction of $CO_2$ emissions |
| 8 | Development of sewage sludge and human waste biomass power generation facilities/equipment | Reduction of $CO_2$ emissions |

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| 9 | Development of facilities for effective use of sludge (Generation of biogas/conversion of sewage sludge into solid fuels) | Reduction of $CO_2$ emissions |
| Major category | 2. Projects for energy saving | |
| Subcategory | (1) Convert public facilities into ZEB | |
| 1 | Convert public facilities into ZEB | Reduction of energy consumption |
| 2 | Convert public housing into ZEH | Reduction of energy consumption |
| Subcategory | (2) Introduction of equipment with high energy saving performance into public facilities | |
| 1 | Convert lighting for public facilities or traffic lights into LED | Reduction of energy consumption<br>Reduction of $CO_2$ emissions |
| 2 | Development of air conditioning equipment for public facilities (introduction of air conditioning equipment with high energy efficiency) | Reduction of energy consumption<br>Reduction of $CO_2$ emissions |
| 3 | Improvement of elevators in public facilities (introduction of elevators with high energy efficiency) | Reduction of energy consumption<br>Reduction of $CO_2$ emissions |
| 4 | Energy saving for other public facilities | Reduction of energy consumption<br>Reduction of $CO_2$ emissions |
| Subcategory | (3) Utilization of unused energy | |
| 1 | Development of facilities that utilize unused thermal energy (geothermal/sewage heat) | Reduction of energy consumption |
| Major category | 3. Projects for pollution prevention and control | |
| Subcategory | (1) Development of sewage treatment facilities | |
| 1 | Development of sewerage facilities (related to sewage treatment)<br>(Improvement of sewage treatment facilities/conduits or renovation projects for widening)<br>*Including development of agricultural community effluent treatment facilities | Improvement of water quality<br>Reduction of energy consumption<br>Reduction of $CO_2$ emissions<br>Improvement of sludge recycling rates |
| 2 | Improvement of combined sewage systems | Improvement of water quality |
| 3 | Development of night soil treatment facilities | Improvement of water quality<br>Reduction of energy consumption<br>Reduction of $CO_2$ emissions<br>Improvement of sludge recycling rates |
| Subcategory | (2) Development of waste disposal-related facilities | |
| 1 | Improvement of core equipment in general waste treatment facilities, such as energy recovery type waste | Improvement of energy recovery rates |

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| | treatment/high-efficient refuse-burning power generation facilities (related to energy recovery) | |
| 2 | Improvement of energy recovery type waste treatment facilities/high-efficient refuse-burning power generation facilities (consolidation, reconstruction) | Improvement of energy recovery rates |
| 3 | Development of general waste treatment equipment/facilities, which lead to reduce hazardous substances emissions, and consolidation or reconstruction in case of improving facilities | Reduction of emissions from hazardous substance |
| 4 | Improvement of facilities/equipment for proper reuse, such as used products or of facilities/equipment on recycling of resources (waste) | Increases in recycling/reuse of resources |
| Subcategory | (3) Monitoring/removal of contaminants | |
| 1 | Development of monitoring facilities of water/air pollutants and hazardous chemical substances | Preservation of living environment with preventive measures against water pollution |
| 2 | Projects for reduction of nitrate nitrogen (Improvement of animal excrement treatment facilities (compost centers)) | Increases in processing of animal excrement<br>Reduction of nitrate nitrogen in groundwater |
| 3 | Projects for removal of contaminated soil | Reduction of contaminated soil<br>Reduction of water contaminant, such as water quality derived from contaminated soil |
| 4 | Projects for marine pollution measures | Increases in removal of flotsam on the beach<br>Reduction of water pollutants |
| Major category | 4. Projects for sustainable management of natural resources/land use | |
| Subcategory | (1) Conservation/management of marine resources | |
| 1 | Creation of tidal flats, shallow bottom and seaweed beds | Control, maintenance and increases in declined fishery resources |
| 2 | Development of fish beds | Control, maintenance and increases in declined fishery resources |
| 3 | Creation of breeding grounds | Control, maintenance and increases in declined fishery resources |
| 4 | Improvement of river environment (fish ladder installation) | Control, maintenance and increases in declined fishery resources |

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| 5 | Development of seed production facilities | Control, maintenance and increases in declined fishery resources |
| 6 | Improvement of fisheries technology development facilities | Control, maintenance and increases in declined fishery resources |
| Subcategory | (2) Conservation/management of forest resources | |
| 1 | Development of forest roads | Maintenance of forest sinks<br>Conservation of sustainable forest resources |
| 2 | Improvement of forests, such as thinning or afforestation (excluding opening of forest roads) | Maintenance of forest sinks<br>Conservation of sustainable forest resources |
| 3 | Promote to introduce wooden structure and introduce wooden interior decoration with wood produced by the issuers in public facilities | Promotion of resource recycling forest |
| Subcategory | (3) Improvement of personnel training bases on natural resources management | |
| 1 | Improvement of bases to develop human resources who are responsible for sustainable forests/forestry | Conservation of sustainable forest resources |
| Subcategory | (4) Greening promotion | |
| 1 | Development of parks (creation of green space) | Increases in green areas |
| 2 | Greening public facilities | Increases in green areas |
| Subcategory | (5) National park development | |
| 1 | Improvement of national park facilities | Conservation of natural environment |
| Major category | 5. Projects for biodiversity conservation | |
| Subcategory | (1) Development of wildlife habitat | |
| 1 | Conservation of wetlands or coral reefs | Preservation of wetland flora and fauna or coral reefs |
| 2 | Development of wildlife habitat under conservation | Conservation or breeding of wildlife |
| 3 | Improvement of rare species protection facilities/laboratory | Conservation or breeding of rare species |
| Subcategory | (2) Prevention of damage by wildlife or alien species | |
| 1 | Prevention of damage by wildlife or alien species | Preservation of ecosystem |
| Subcategory | (3) Landscape conservation | |
| 1 | Development of landscape-friendly facilities with the natural river reconstruction method | Conservation of natural landscape |
| 2 | *Satoyama* (community-based forest) conservation | Conservation of natural landscape |
| Major | 6. Projects for clean transportation | |

| category | | |
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| Subcategory | (1) Development of vehicles in public transportation | |
| 1 | Development of vehicles in the railway business (public/quasi-public corporation) | Reduction of $CO_2$ emissions |
| 2 | Improvement of facilities (station buildings) in the railway business (public/quasi-public corporation) | Reduction of $CO_2$ emissions |
| 3 | Development of vehicles in the bus business (public/quasi-public corporation) | Reduction of $CO_2$ emissions |
| Subcategory | (2) Spread and expansion of electric vehicles | |
| 1 | Switch official vehicles from conventional cars to electric vehicles | Reduction of $CO_2$ emissions |
| 2 | Improvement of battery charging facilities for electric vehicles | Reduction of $CO_2$ emissions |
| 3 | Development of hydrogen stations | Reduction of $CO_2$ emissions |
| Subcategory | (3) Promotion of utilizing the clean modes of transport | |
| 1 | Improvement of bicycle running space | Reduction of $CO_2$ emissions |
| 2 | Development of facilities for park and ride | Reduction of $CO_2$ emissions |
| Subcategory | (4) Formation of carbon neutral port (CNP) | |
| 1 | Formation of carbon-neutral port (CNP) | Reduction of energy consumption<br>Reduction of $CO_2$ emissions |
| Major category | 7. Projects for sustainable water management | |
| Subcategory | (1) Development of water supply facilities | |
| 1 | Development of water supply facilities (Improvement of energy efficiency by introducing highly efficient equipment and downsizing equipment) | Reduction of energy consumption |
| 2 | Consolidation/expansion of water supply facilities (Improvement of energy efficiency by Consolidating water supply and utilizing potential energy) | Reduction of energy consumption |
| 3 | Preventive measures against disasters, such as water supply facilities (Development of erosion control (hereinafter referred to as "*SABO*") as floods/landslide preventive measures) | Provision of stable water supply during disasters |
| Major category | 8. Projects for adaptation to climate change | |
| Subcategory | (1) Measures for damage from storms and floods | |
| 1 | Development of river bank protection (improvement of | Reduction of human/property damage |

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| | banks or dams) | caused by floods |
| 2 | Removal of sediment from rivers | Reduction of human/property damage caused by floods |
| 3 | Widening rivers | Reduction of human/property damage caused by floods |
| 4 | Improvement of floodway | Reduction of human/property damage caused by floods |
| 5 | Development of roads (drainage/permeability pavement, roads for emergency transportation) | Reduction of human/property damage caused by floods |
| 6 | Improvement of flood control dams | Reduction of human/property damage caused by floods |
| 7 | Development of agricultural irrigation facilities (drainage pump stations) | Reduction of human/property damage caused by floods |
| 8 | Development of railway bridge replacement at the bottleneck in watercourses | Reduction of human/property damage caused by floods |
| 9 | Extending the life of river management facilities (improvement of switching gears) | Reduction of human/property damage caused by floods |
| 10 | Improvement of flood control facilities (retention/equalizing reservoirs or basins) | Reduction of human/property damage caused by floods |
| 11 | Removal of all power poles on roads (for reducing damage in case of damage from storms and floods) | Reduction of human/property damage caused by storms and floods |
| 12 | Development of additional devices of emergency power supply for traffic lights | Reduction of human/property damage caused by storms and floods |
| 13 | Water level gauge for crisis management, river monitoring camera or river information infrastructure (information gathering/processing devices of precipitation) | Reduction of human/property damage caused by storms and floods |
| 14 | Improvement of wide-area disaster prevention bases that will be evacuation sites in the event of disasters | Reduction of human/property damage caused by storms and floods |
| 15 | Development of sewerage facilities (related to rainwater) (improvement of rainwater drainage/infiltration facilities, expansion of pumps or introduction of high efficient pumps) | Reduction of human/property damage caused by floods |
| Subcategory | (2) Measures for high tide/waves | |
| 1 | Development of facility to protect the coastline (bank protection, embankment, detached breakwaters, groins, floodgates, improvement of drainage pumping stations | Reduction of human/property damage caused by high tide/waves |

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| | or rising breakwater) | |
| 2 | Development of harbor and fishing port facilities (quay walls) | Reduction of human/property damage caused by high tide/waves |
| Subcategory | (3) Measures for landslide | |
| 1 | Development of *SABO* facilities (*SABO* dams or mountain stream maintenance work) | Reduction of human/property damage caused by sediment disasters |
| 2 | Improvement of afforestation facilities (check dams or channel works) | Reduction of human/property damage caused by sediment disasters |
| 3 | Development of protection forests | Reduction of human/property damage caused by sediment disasters |
| 4 | Implementation of projects to prevent landslides at steep slopes (development of retaining wall/ slope work) and to take measures for landslide | Reduction of human/property damage caused by sediment disasters |
| 5 | Implementation of measures for road slopes and projects for stone fall prevention | Reduction of human/property damage caused by sediment disasters |
| 6 | *SABO* information infrastructure (information gathering/processing equipment of precipitation) | Reduction of human/property damage caused by sediment disasters |
| Subcategory | (4) Research and development in preparation for climate change by the agriculture, forestry and fisheries industry | |
| 1 | Improvement of developmental facilities for varieties of agricultural products or agricultural production technology | Maintenance/expansion of agricultural production to be affected by climate change |
| 2 | Development of fisheries research facilities | Maintenance/expansion of fishery production to be affected by climate change |
| 3 | Improvement of seeding production facilities for aquatic plants and animals | Maintenance/expansion of fishery production to be affected by climate change |
| Subcategory | (5) Measures for temperature increase | |
| 1 | Addressing summer heat along with heat island phenomenon (improving heat shielding/water retention on roads) | Improvement of thermal barrier or water retention effects |
| 2 | Creating cool spots in cities | Improvement of thermal barrier or water retention effects |
| Major category | 10. Projects for green buildings | |
| Subcategory | (1) Green buildings | |
| 1 | New construction/renovation of public facilities | Reduction of energy consumption |

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| | (obtaining environmental certification) | |

*The major category and subcategory are based on the Green Bond Guidelines (2022) formulated by the Ministry of the Environment.

## [Evaluation by JCR to the Framework]

### 1. Environmental Benefits of Projects

Local governments have been promoting climate change mitigation measures and adaptation measures based on the Basic Environment Plan, the Plan for Global Warming Countermeasures and the Climate Change Adaptation Plan formulated by the national government or respective local governments. The outlines of the Basic Environment Plan, the Plan for Global Warming Countermeasures and the Climate Change Adaptation Plan are as follows:

a. Basic Environment Plan

The national Basic Environment Plan has defined the outline of comprehensive and long-term measures for environmental conservation based on Article 15 of the Basic Environment Law (Law No. 91 of 1993). The Plan has been reviewed approximately every six years, and the current "Fifth Basic Environment Plan" was approved by the Cabinet on April 17, 2018. The Fifth Basic Environment Plan has been formulated in light of not only domestic circumstances but also international trends followed by a series of international agreements involving countries in the world, such as the 2030 Agenda for Sustainable Development, which has set forth the SDGs or the adoption of the Paris Agreement in response to the global environmental crisis since the Fourth Basic Environment Plan formulated in 2012. With such circumstances, the following six priority strategies have been set out: (1) Formulation of a Green Economic System for Realizing Sustainable Production and Consumption; (2)Improvement of Value of National Land as Stock; (3) Sustainable Community Development Using Local Resources; (4) Realization of a Healthy and Prosperous Life; (5) Development and Dissemination of Technologies Supporting Sustainability; and (6) Demonstration of Japan's Leadership through International Contributions and Building Strategic Partnerships.

In the Fifth Basic Environment Plan, local governments can be a key in promoting priority strategies in their regions and play a role as a leading promoter on regional environmental conservation, which is the foundation to build a sustainable society and are expected to assume a role as a coordinator for regional efforts. Local governments are therefore expected to cooperate and collaborate with residents, business operators, private organizations, other local governments and relevant national organizations and to comprehensively take environmental conservation measures in their regions by presenting goals or directions for local initiatives, establishing various systems and building foundations for social capital development or encouraging actions of respective entities in response to characteristics of respective regions while maintaining close cooperation between relevant departments and agencies. Local governments are also expected to widely and proactively incorporate environmental considerations into their own activities.

Accordingly, local governments have formulated their basic environmental plans according to their own circumstances so as to align with the national Basic Environmental Plan where appropriate.

b. Plan for Global Warming Countermeasures

The national Plan for Global Warming Countermeasures has been formulated so as to comprehensively and systematically promote measures against global warming based on Article 8, Paragraph 1 of the Global Warming Countermeasures Promotion Act (Act No. 117 of 1998). The current Plan for Global Warming Countermeasures was revised for the first time in roughly five years and was approved by the cabinet on October 22, 2021. In April 2021, the Japanese government expressed to reduce GHG emissions by 46 percent by FY 2030 compared to FY 2013 level and will continuously strive to achieve an even higher goal of 50 percent. The revised Plan for Global Warming Countermeasures was formulated in light of this new reduction target.

The Plan for Global Warming Countermeasures has listed the following two main roles for local governments:

(1) Promoting measures in responding to the natural and social conditions in regions

Local governments will promote to take comprehensive and systematic measures to reduce GHG emissions according to the natural and social conditions in their respective regions. For instance, local governments will be responsible for promoting the use of renewable energy sources and thorough energy conservation; promoting the development of carbon-free cities and regions; creating a circular society; providing business operators/residents with information; and encouraging these activities. Prefectures, designated cities, core cities and special case cities at the time of enforcement will formulate measures as local governments' action plans (regional policies) to reduce GHG emissions and items on the targets for the implementation depending upon the natural and social conditions in their regions in accordance with the national Plan for Global Warming Countermeasures and then will implement them. Other local governments are also to formulate local governments' action plans (regional policies) and implement them.

(2) Measures on local governments' official works and businesses

Local governments shall aim to be role models for business operators/residents in their regions by taking the lead in these efforts; therefore, prefectures and municipalities will formulate local governments' action plans (official work businesses) for measures to reduce GHG emissions and to protect and enhance GHG sinks in their own official works and businesses in line with the plan and will implement them.

Accordingly, local governments have formulated the Plan for Global Warming Countermeasures in light of the natural and social conditions in their respective regions.

c. Climate Change Adaptation Plan

The national Climate Change Adaptation Plan has been formulated to promote to take comprehensive and systematic measures on climate change adaptation based on Article 7, Paragraph 1 of the Climate Change Adaptation Act (Act No. 50 of 2018). The current Climate Change Adaptation Plan was revised based on the Climate Change Adaptation Plan formulated in November 2018 in accordance with Article 8 of the Climate Change Adaptation Act and was decided by Cabinet on October 22, 2021 and also the partial revision was decided by the cabinet on May 30, 2023. In this Plan, the government has aimed to build a safe, secure, and sustainable society by preventing/mitigating damage caused by climate change; stabilizing national life; ensuring healthy social and economic development; protecting the natural environment; and building national resilience. In the Climate Change Adaptation Plan, the government has set out the following seven basic strategies so as to achieve the goals through comprehensive and systematic implementation based on scientific knowledge.

I. Incorporate climate change adaptation into all relevant measures

II. Promote climate change adaptation based on scientific knowledge
III. Consolidate wisdom of Japanese research institutes and develop information infrastructures
IV. Promote climate change adaptation according to local current conditions
V. Gain deep understanding from public and promote climate change adaptation according to business activities
VI. Contribute to improving adaptive capacities of developing countries
VII. Ensure close cooperation and collaboration structures among relevant government agencies

The Climate Change Adaptation Plan has listed the following three basic roles for local governments:

(1) Promoting climate change adaptation according to the natural, economic and social conditions in their regions

Local governments are to endeavor to take this plan into consideration and to formulate a regional climate change adaptation plan[8]so as to promote climate change adaptation measures in compliance with the natural, economic and social circumstances in their regions. At the same time, local governments, in cooperation with relevant departments, are working to proactively incorporate climate change adaptation into relevant measures, such as those related to: disaster prevention and national resilience; promotion of agriculture, forestry and fisheries; and biodiversity conservation and to promote measures on climate change adaptation in respective sectors.

(2) Promoting climate change adaptation among local stakeholders

Local governments are to strive to foster understanding of climate change adaptation among various stakeholders in their regions, such as business operators or residents by providing information on climate change adaptation measures or specific examples of initiatives and to promote climate change adaptation by respective actors. Local governments are also to endeavor to effectively promote climate change adaptation in their regions in cooperation with parties involved in climate change adaptation in their regions, such as national local government agencies, local governments, business operators or regional climate change adaptation centers through participation in the Regional Councils on Climate Change Adaptation.

(3) Enhancement/utilization of scientific knowledge in regions

Local governments are to strive to keep regional climate change adaptation centers as hubs for collecting, organizing, analyzing and providing information on impacts of climate change and climate change adaptation and offering technical advice; to enhance scientific knowledge in their regions; and to endeavor to utilize these knowledge for measures on climate change adaptation.

Accordingly, local governments have formulated climate change adaptation plans so as to promote climate change adaptation measures in responding to circumstances in their respective regions where appropriate.

Projects that cover the eligibility criteria in this Framework have been defined by local governments after referencing the national or local government's Basic Environmental Plans, Global Warming Countermeasure Plans or Climate Change Adaptation Plans.

[8] In the article-by-article explanation of the Climate Change Act, it is not necessary to formulate independent plans and can be flexibly incorporated into other related plans, including respective local government's basic environmental plans or local government action plans for the Act on Promotion of Global Warming Countermeasures.

*Use of Proceeds 1: Projects for renewable energy (Renewable energy-related facilities/ equipment development projects)*

The use of proceeds 1 refers to a project for renewable energy-related facilities/equipment development and is expected to have environmental benefits as introduction of renewable energy will be promoted. This use of proceeds falls under "Renewable energy" in the Green Bond Principles and "Projects for renewable energy" among the use of proceeds exemplified in the Green Bond Guidelines.

In this Framework, local governments will use the proceeds for the following development: (1) Solar power generation facilities/equipment; (2) micro-hydroelectric power generation facilities/ equipment; (3) deteriorated hydroelectric power plants facilities; (4) onshore wind power generation facilities/equipment; (5) offshore wind power generation facilities/equipment; (6) geothermal power generation facilities; (7) woody biomass power generation facilities/equipment; (8) sewage sludge/human waste biomass power generation facilities/equipment; and (9) facilities with effective use of sludge (production of biogas/ conversion of sewage sludge into solid fuels).

Renewable energy is defined as "it can be sustainably used as energy sources among solar power, wind power and other non-fossil energy sources, which are specified by government ordinance" in the Act to Advance Energy Supply Structures (Act No. 72 of 2009) and solar power, wind power, hydroelectric power, geothermal power, solar heat, heat in the atmosphere, other heat in nature and biomass. JCR has determined that since renewables do not emit GHG during power generation, the introduction/expansion of renewable energy is essential for countermeasures against global warming in the energy conversion sector. Renewables can be also produced domestically; therefore, it is a promising, diverse and important domestic energy sources that can contribute to energy security.

In the Sixth Basic Energy Plan approved by the cabinet in October 2021, the government has aimed to achieve carbon neutrality by 2050 that was expressed in October 2020, a 46 percent reduction by FY 2030 compared to FY 2013 and a new reduction target of an even higher 50 percent (officially announced in April 2021). In the Plan, the government will thoroughly make renewables main power sources, prioritize renewable energy and promote its introduction to the maximum extent possible while minimizing burdens on citizens and coexisting with communities on the premise of S+3E (Safety, Energy Security, Economic Efficiency and the Environment). According to the Agency for Natural Resources and Energy, the proportion of electricity generated from renewable energy sources in Japan was approximately 19.8 percent in FY 2020[9].

A solar power plant directly converts sun light energy into electricity with photovoltaic cells. The introduction of photovoltaic power generation has been expanding as main renewable energy and costs for generating power has been steadily lowered for commercial solar power in Japan with the world's largest installed capacity per level ground. At the same time, the photovoltaic power generation can be developed not only on a large scale but also as a distributed energy resource that can be self-consumed in close proximity to consumers, including individuals and that can be produced locally and consumed locally, which is expected to be utilized from the perspective of resilience.

[9] Agency for Natural Resources and Energy (2022) *"Japan's Energy, '10 questions for understanding the current energy situation'"* https://www.enecho.meti.go.jp/about/pamphlet/energy2022/007/#section2

A hydroelectric plant generates electricity by means of a water turbine driven by the force of water flowing down from a higher elevation to a lower elevation. The principle of micro-hydroelectric power generation is in a similar manner as that of conventional hydroelectric power generation, which uses the force of water flowing down to turn a water turbine to generate electricity and the only difference from the hydroelectric plant is that the micro-hydroelectric power does not require large-scale structures, such as dams, and even if structures are needed, they are smaller. Hydroelectric/micro-hydroelectric power generation is domestically made, with excellent stability that is not affected by weather conditions except for drought, and is an energy source that can be utilized for a long term, and it is also expected to expand its role as a community-based energy source. Of these, general hydraulic power (run-of-river hydroelectricity) needs lower operating costs and is expected to play an important role as a baseload power source, while pumped-storage hydropower is expected to play a key role as regulated power supply that is required to introduce and expand renewables.

Wind power generation uses the force of the wind to turn the blades of a windmill and converts the rotational energy into electrical energy with a generator. The characteristics of wind power include: (1) Energy sources that can generate power both onshore and offshore; (2) Economical energy sources as the generation costs are comparable to those of thermal power generation if the power can be generated on a large scale; (3) Can be highly efficiently converted into electrical energy, which varies depending upon heights of windmills or blades (propellers); and (4) can generate electricity even at night as long as wind blows unlike solar power generation[10]. Prices of wind power generation have internationally fallen as windmills have become larger or offshore wind power has expanded, making it energy sources that may be economically efficient, and wind power generation is expected to be introduced/expanded in Japan hereafter.

Geothermal power generation involves extracting heat from underground reservoirs of hot water or steam. This heat is then used to produce electricity with turbines rotating. The characteristics of geothermal power generation are as follows: (1) high-temperature steam/hot water used to generate electricity can be reused for agricultural greenhouses, fish farming or heating in regions; (2) it can be expected to be supplied over a long term as it uses underground geothermal energy and won't run out like fossil fuels; and (3) Drilled wells can be drilled between 1,000 to 3,000 meters deep, and natural steam is blown out from wells day and night; thus, electricity has been continuously generated[11]. In Japan with the third largest amount of geothermal resources in the world, geothermal power generation is energy sources that can provide a base load power, which can stably supply power and is expected to use energy at multi-stage, such as using hot water after power generation.

Biomass power generation involves the direct combustion or gasification of biological resources derived from fauna and flora. The characteristics of biomass power generation are: (1) power generation using biomass resources as fuels, which grow by absorbing $CO_2$ through photosynthesis shall not emit $CO_2$ under the Kyoto Protocol; (2) biomass power generation using unused waste as fuels leads to reuse or reduction of waste, contributing to building a circular society; (3) the natural circulation environmental functions of agricultural and fishing villages can be maintained and enhanced and their sustainable development can be promoted by utilizing

[10] Agency for Natural Resources and Energy's website
https://www.enecho.meti.go.jp/category/saving_and_new/saiene/renewable/wind/index.html

[11] Agency for Natural Resources and Energy's website
https://www.enecho.meti.go.jp/category/saving_and_new/saiene/renewable/geothermal/index.html

biomass resources in domestic agricultural and fishing villages, such as livestock excrement, rice straw or forest residues; and (4) it can contribute to improving regional environment by utilizing discards as resources, such as livestock excrement or food waste [12]. Biomass power generation/heat utilization, including woody biomass can be energy sources with a variety of value as locally decentralized, locally produced and locally consumed energy sources, which has a large ripple effect on the economy/employment through improving resilience upon disasters and revitalizing local industries.

In the government's Plan for Global Warming Countermeasures, prefectures and municipalities are to work together to promote regional decarbonization with renewables that are local resources toward achievement of carbon neutrality by 2050. Specifically, prefectures and municipalities are to set out targets for implementation of measures, such as promoting the use of renewables that are local resources based on the revised Act on Promotion of Global Warming Countermeasures; to strive to position initiatives that are contributable to conserving the environment in regions or developing local economy/society, which are required by the project concerned as the local governments action plans (Regional Policy) while building regional consensus with the Local Government Action Plan Council; and to promote renewables that contribute to local areas.

Some local governments have set forth expansion of renewables as their goals toward the realization of carbon neutrality in the Plan for Global Warming Countermeasure. JCR has evaluated that this use of proceeds will contribute to the plan of national and local governments to expand renewables.

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*Use of Proceeds 2: Project for Energy Saving (Convert public facilities into ZEB)*

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The use of proceeds 2 refers to convert public facilities into ZEB. Since high energy conservation performance is expected to be achieved in line with the building's use, it is expected to have environmental benefits. The use of proceeds falls under "Energy efficiency" in the Green Bond Principles and "Projects for energy efficiency" among the use of proceeds illustrated in the Green Bond Guidelines.

In this Framework, local governments will use the proceeds to convert public facilities into ZEBs and public housing into ZEHs.

ZEB (Net Zero Energy Building) is defined as (1) ZEB (energy savings of 100 percent or more); (2) Nearly ZEB (energy savings of 75 percent or more and less than 100 percent); and (3) ZEB Ready (no introduction of renewable energy) for buildings that have further reduced energy consumption by introducing renewable energy depending upon the reduction amount after making efforts to save 50 percent or more energy. Additionally, (4) ZEB Oriented is defined as a building of 10,000 square meters or more to achieve energy savings of at least 30 to 40 percent and has adopted technologies that are expected to save energy but are not presently evaluated in the energy conservation calculation program under the Act on Improvement of Energy Consumption Performance of Buildings (Act No. 53 of 2015). The Joint Local Government Green Bond Framework has stipulated that green projects meet one of the aforementioned criteria from (1) to (4) as the eligibility of green projects, and JCR has confirmed that the use of proceeds falls under the criteria above.

[12] Agency for Natural Resources and Energy's website
https://www.enecho.meti.go.jp/category/saving_and_new/saiene/renewable/biomass/index.html

With regard to ZEH (Net Zero Energy House), residences that achieved energy savings of 20 percent or more and then reduced primary energy consumption through introduction of renewable energy sources are defined depending upon the amount of reduction as follows: (1) ZEH (100 percent or more reduction); (2) Nearly ZEH (between 75 percent and 100 percent reduction); (3) ZEH Ready (between 50 percent and 75 percent reduction); and (4) ZEH Oriented (no introduction of renewables). The same standards shall be applied to ZEH-M (Net Zero Energy House Mansion). In this Framework, it stipulates that green projects are eligible if they fall under any of the above-cited (1) to (4).

In the Plan for Global Warming Countermeasures, the government has aimed to ensure that newly constructed architectures have energy saving performance that meets the ZEB standard and that newly constructed residences have energy saving performance that meets the ZEH standard by making maximum use of currently available technical and economical technologies as ideal architectures and residences in 2030 while looking ahead to achieving carbon neutrality in 2050. In the Plan, "Taking the lead in realizing ZEB in public buildings" and "Promoting ZEH in public rental housing" are listed as measures that local governments are expected to take.

In order to achieve carbon neutrality, some local governments have set forth their goals of converting public facilities to ZEBs and public housing to ZEHs in their local governments action plans (administrative work and projects). JCR has evaluated that the use of proceeds will contribute to the plans for national and local governments that have listed to promote ZEB conversion and ZEH conversion.

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*Use of Proceeds 3: Project for Energy Saving (introducing equipment with high energy saving performance to public facilities)*

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The use of proceeds 3 refers to the project to introduce highly energy-efficient equipment to public facilities. Energy efficiency of 30 percent or more is expected be improved, which will have environmental benefits. This use of proceeds falls under "Energy efficiency" in the Green Bond Principles and "Projects for energy efficiency" among the use of proceeds exemplified in the Green Bond Guidelines.

In this Framework, local governments have used the proceeds to: (1) switch lights to LED in public facilities; convert traffic lights to LED; (2) install air conditioning equipment in public facilities (introduce highly energy-efficient air conditioning units); (3) install elevators in public facilities (introduce highly energy-efficient elevators); and (4) make other public facilities more energy conservation.

The project selected under the Joint Local Government Green Bond Framework is expected to improve energy efficiency by 30 percent or more by installing alternatives as the existing equipment. JCR can determine that the project has environmental benefits as the level is favorably compared with the globally required level as energy efficiency reduction rates.

The government has stated to pursue its efforts, such as "thorough energy conservation" to a maximum extent so as to achieve strong growth toward its ambitious targets for FY 2030 in the Plan for Global Warming Countermeasures. In the Plan, local governments will promote comprehensive and systematic measures to reduce GHG emissions according to the natural and social conditions in their respective regions and has listed "the promotion of thorough energy conservation" as a specific example. The concrete measures include converting traffic lights and road lighting to LED and promoting the introduction of highly energy-efficient facilities/equipment.

In order to achieve carbon neutrality, some local governments have set forth measures, such as converting traffic lights and road lighting to LED and promoting the introduction of highly energy-efficient facilities/equipment in their Plans for Global Warming Countermeasures. JCR has evaluated that the proceeds will be used to contribute to the Plans formulated by national and local governments to convert traffic lights and road lighting to LED and promote to introduce highly energy-saving facilities/equipment.

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*Use of Proceeds 4: Project for Energy Saving (utilizing unused energy)*

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The use of proceeds 4 refers to a project related to the utilization of unused energy. It is expected to have environmental benefits as GHG is directly or indirectly reduced with the use of proceeds. This use of proceeds is categorized into "Energy Efficiency" in the Green Bond Principles and "Project for Energy Efficiency" among the use of proceeds exemplified in the Green Bond Guidelines.

Local government will use the proceeds from this bond for developing facilities with unutilized thermal energy (hot spring water or sewage heat energy).

Projects selected based on this Framework are expected to reduce GHG emissions by decreasing electricity consumption through utilization of unused thermal energy and therefore can be determined to have environmental benefits.

Unutilized thermal energy is a generic term to refer to energy that has not been used so far although it has potential to be effectively usable, such as geothermal heat, sewage heat[13], river water/sea water heat[14] or snow and ice heat[15]. The unused energy is characterized into three[16] as follows: (1) widely and shallowly distributed; (2) temporal variation is large; and (3) a long distance between the place energy is generated and the place energy is used. Taking these characteristics into consideration, it is required to develop facilities to utilize unused thermal energy.

In cases where thermal sources or thermal demand are appropriately consolidated due to reduced sizes of cities toward the achievement of compacted urban space with neighboring nature in the Basic Environment Plan, the usability of unused thermal energy, such as geothermal heat or sewage heat increases; therefore, the government is making efforts to use the heat through the support to introduce heat supply facilities. The national government has set forth the maximum introduction and utilization of unused thermal energy and the promotion of thorough energy conservation as measures, which should be taken by local governments in the Plan for Global Warming Countermeasures.

In order to achieve carbon neutrality, some local governments have listed their measures to develop facilities that utilize unused thermal energy as a policy in the Plan for Global Warming Countermeasures. JCR has evaluated that the use of proceeds will contribute to the plans established by national and local governments, aiming to maximize the introduction and utilization of unused thermal energy.

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[13] Sewage treatment water is relatively warmer even in winter; therefore, it is heat sources frequently used.
[14] River water or sea water is efficiently usable as coolant water or heat source water since the temperature of river water or sea water is lower than the external temperature in summer and higher than the external temperature in winter
[15] Coldness of snow and ice is usable as heat sources to store vegetables or use energy for air conditioning in summer by storing snow in winder.
[16] Source: The website of National Institute for Environmental Studies at https://tenbou.nies.go.jp/science/description/detail.php?id=5

*Use of Proceeds 5: Projects for pollution prevention and control (Improvement of sewage treatment facilities)*

The use or proceeds 5 refers to a project to develop sewerage facilities. The development will preserve water qualities in rivers or oceans and is expected to have environmental benefits. The use of proceeds falls under "Pollution prevention and control" in the Green Bond Principles and "Projects for pollution prevention and control" among the use of proceeds illustrated in the Green Bond Guidelines.

In this Framework, local governments will use the proceeds to develop sewerage facilities related to wastewater treatment, improve combined sewer systems and straighten night soil treatment.

Facilities on sewage treatment mainly include: (1) sewer pipes that carry wastewater generated at home and in factories or rainwater that had on roads to sewage treatment facilities; (2) pump pipes that discharge rainwater, which does not naturally flow to rivers into rivers or carry sewage water to treatment facilities; and (3) sewage treatment facilities that treats the wastewater transported with powers of microorganisms and then release it into rivers or oceans. Of sewer pipes, a system in which sewage and rainwater are collected in a single sewer pipe is named a combined sewage system. Night soil plants refer to facilities that treat waste collected primarily from non-flush toilets.

The population of wastewater treatment facilities nationwide at the end of FY 2022 was 116.24 million, and the dissemination rate of wastewater treatment facilities was 92.9 percent, which have improved from 92.6 percent at the end of FY 2021; however, the dissemination rate of wastewater treatment facilities, in particular, in municipalities with populations of less than 50,000 was only 83.4 percent, showing the dissemination has been significantly delayed.

Wastewater treatment facilities that require replacement are expected to largely increase as 25 years or more will have passed in the next few years since its rollout. Continuous use of deteriorated facilities will pose risks to pollute rivers or oceans; therefore, the development of these facilities will help to reduce these risks. Furthermore, heavy rains in recent years have increased risks of floods of internal waters, in particular, in urban areas, and it is necessary to shift to take preventive maintenance that prevents floods by strengthening the functions of sewage treatment facilities so as to minimize the spread of damage caused by disasters.

The government has listed sustainable and attractive urban and regional development as one of the measures that are linked to "Improvement of Value of National Land as Stock" among six key strategies in the Basic Environment Plan. Since the renewal and renovation of sewage treatment facilities and other public facilities will realize to lengthen the service life of facilities, to improve disaster prevention capabilities and energy conservation, which lead to improve their values as stock, this use of proceeds is expected to contribute to such measures.

In the government's Climate Change Adaptation Plan, it is anticipated that inland floods are likely to increase and submersion time gets longer as it is difficult to drain rainwater through sewerage systems due to increases in the frequency of rising river water levels in low-lying areas near rivers or coasts, or rising sea levels. The use of proceeds is expected to contribute to the Climate Change Adaptation Plans as development of sewerage facilities will address vulnerability to floods/inundation, which is a concern especially in urban areas.

*Use of Proceeds 6: Project for Pollution Prevention and Control (developing waste treatment facilities)*

The use of proceeds 6 refers to a project to develop waste treatment facilities. Environmental benefits are prospective since the contribution is made to generate energy and to reduce harmful substances along with waste disposal using this proceeds. This use of proceeds falls under "Pollution Prevention and Control" in the Green Bond Principles and "Projects for Pollution Prevention and Control" among the uses of proceeds exemplified in the Green Bond Guidelines.

Local governments will use the proceeds from this bond for developing facilities/equipment to renew core equipment and reasonably reuse used products in general waste treatment facilities, such as energy recovery type waste treatment facilities or high-efficient refuse-burning power generation facilities or for improving facilities/equipment on recycling resources.

JCR has deemed that the development that has environmental benefits or is contributable to reducing environmental loads is qualified as green characteristics: for instance, there are mechanisms to recover thermal energy generated in the process of waste treatment and reuse it within or outside facilities or to effectively reduce harmful substances generated during normal operations in the development of waste treatment facilities.

The national government has granted subsidies for establishing a sound material-cycle society to projects to be implemented on "Regional Plans for Establishing a Sound Material-Cycle Society" formulated by some local governments. The conditions that shall be satisfied for general waste treatment facilities that are subject to the subsidies are summarized in the "Energy Recovery Waste Treatment Facility Development Manual" and the "Development Manual for High-Efficiency Waste-to-Energy Facilities." These manuals include conditions on energy recovery rates by treatment capacity (the sum of power generation efficiency and thermal utilization rates) as requirements for general waste treatment facilities that are subject to subsidies. JCR has evaluated that environmental benefits of waste treatment facilities with reference to these manuals.

In June 2023, the national government formulated a new Wastes Disposal Facility Development Plan covering the period from 2023 to 2027, based on Article 5-3 of the Waste Disposal and Public Cleansing Act (Act No. 137 of 1970) so as to strive to systematically implement Wastes Disposal Facility Development Plan.

The Wastes Disposal Facility Development Plan was firstly established in 2003 and has been formulated every five years since then. In previous Plans, the government has heavily, effectively and efficiently developed waste treatment facilities by clarifying key goals to be achieved through waste treatment facility development projects and related measures, and the outline of the waste treatment facility development projects to be implemented so as to achieve these goals during the planning period with a view to establishing a Sound Material-Cycle Society.

Of the key targets in the Wastes Disposal Facility Development Plan covering the periods between FY 2018 to FY 2022, the average power generation efficiency of developed waste incineration facilities was increased from 18.6 percent to 20.1 percent, and the proportion of facilities that supplied energy recovery from waste to external parties, including local communities, was increased from 40.2 percent to 40.9 percent; however, it did not reach the initial target set out. Accordingly, to further promote waste recycling and utilization of waste energy is essential. The average power generation efficiency of waste incineration facilities constructed was set at 22 percent during the period in the Waste Treatment Facility Development Plan covering FY 2023 to FY 2027. Having highly energy efficiency in the waste treatment facilities

to be constructed hereafter based on this Framework will contribute to the goals of the national Wastes Disposal Facility Development Plan.

*Use of Proceeds 7: Project for Pollution Prevention and Control (Monitoring/removal of contaminants)*

The use of proceeds 7 refers to a project for monitoring/removal of contaminants, which is anticipated to have environmental benefits as it is expected to prevent the spread of substances that could lead to environmental pollution. This use of proceeds falls under "Pollution prevention and control" in the Green Bond Principles and "Projects for pollution prevention and control" among the use of proceeds illustrated in the Green Bond Guidelines.

In this Framework, local governments will use the proceeds for the development of facilities to monitor water pollutants, air pollutants and hazardous chemicals and projects to reduce nitrate nitrogen, remove contaminated soils and combat marine pollution.

The water that is subject to water pollution can be surface water in rivers/lakes and groundwater.

Prefectures and ordinance-designated cities under the Water Pollution Control Law have measured water qualities in rivers or lakes in accordance with the measurement plans annually established by prefectures, focusing mainly on items for which environmental standards on water pollution have been established (environmental standard items) based on the provisions of the Water Pollution Control Law (Law No. 138 of 1970) since 1971. Environmental standard items are broadly divided into items on the protection of human health (health items), such as cadmium and total cyanide and items related to the conservation of the living environment (living environment items), such as biochemical oxygen demand (BOD) or chemical oxygen demand (COD), which are typical indicators of organic pollution, hydrogen ion concentration (pH), total nitrogen and total phosphorus.

Meanwhile, prefectures have measured groundwater quality based on the provisions of the Water Pollution Control Law, and the Ministry of the Environment have compiled the measurement results for health items and then published. Groundwater contamination is considered to be closely related to soil contamination as it is highly likely to be caused by soil contamination accumulated. Soil is privately owned in many cases; however, local governments can investigate it at the request of residents in cases where there are concerns about damage or contamination. As a result of the investigation, in cases where local governments remove soil contaminants, the proceeds in this Framework will be used for such removal.

The main causes of nitrate nitrogen pollution are fertilizers used on agricultural land, livestock manure and domestic wastewater, of which livestock manure has its management criteria clearly specified and has required regular inspections for structures of management facilities or equipment under the Act on the Appropriate Treatment and Promotion of Utilization of Livestock Manure (Act No. 112 of 1999). Projects to reduce nitrate nitrogen, including the development of livestock waste treatment facilities as stipulated in this Framework, are expected to help to curb runoff of pollutants.

In terms of air pollution, prefectures are required to constantly monitor air pollution in ordinary living spaces, such as residential areas based on Article 22 of the Air Pollution Control Law (Law No. 97 of 1968) and ambient air pollution caused by automobile exhaust gases based on Articles 20 and 22 of the Air Pollution Control Law.

Marine pollution can be caused by plastics as well as domestic and industrial wastewater. Efforts to prevent these causes at the border and to stop them from leaking into the oceans could be eligible for this use of proceeds.

In the Basic Environment Plan, of six key strategies, the government has listed the conservation of diversity of the national land based on coexistence with nature as one of the measures that are linked to "Improvement of Value of National Land as Stock" and also of six key strategies, it has set forth the conservation of good living environment that serves as the foundation for safe and secure lives, one of the measures that are linked to "Realization of a Healthy and Prosperous Life." Maintaining or restoring a healthy water cycle, conserving the marine environment and keeping good atmospheric environment will lead to creation of national land, which cares natural environment and addresses social issues, and therefore this use of proceeds will contribute to such measures.

Accordingly, all of the use of proceeds will have environmental benefits as it will contribute to preventing and controlling the spread of pollutants.

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*Use of Proceeds 8: Project for Sustainable Management of Natural Resources/Land Use (contributing to the conservation/management of fishery resources)*

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The use of proceeds 8 refers to a project for conservation/management of fishery resources, which is expected to have environmental benefits as the efforts toward sustainable fishery will be promoted with the use of proceeds. This use of proceeds is categorized into "Sustainable Management of Living Natural Resources and Land Use" in the Green Bond Principles and "Project for Sustainable Management of Living Natural Resources and Land Use" among the use of proceeds illustrated in the Green Bond Guidelines.

In this Framework, local governments will use the proceeds to: create tidal flats, shallow areas and seaweed beds; develop fish reefs; create breeding grounds; improve river environment (install fish ladders); develop seedling production facilities; and improve fisheries technology development facilities.

In Japan with a wide variety of marine products that have been of significance in the national diet for a long time, and a rich fish-eating culture has been developed, with distinctive dishes and processed foods by region.

As seen in the recent poor catches of squid, saury and salmon, fish that had been caught in the past has not been caught any more, and fish that had not been caught in the past has been caught for several years, which is different from the short-term poor catches experienced before. These changes are likely to be fluctuation in resources caused by global warming or changes in the marine environment and may continue for a long period in the future. In response to these issues, the government established the "Basic Plan for Fisheries" so as to comprehensively and systematically promote measures on fisheries in cooperation with relevant prefectural offices, local governments, producers or consumers.

In the Basic Plan for Fisheries, sustainable fishing is important while maintaining the marine ecosystem, and the conservation and development of seaweed beds or tidal flats have been promoted, which play a major role to nurture ecosystems and increase fishery resources. Similarly, fishery resources have increased due to breeding grounds, such as fish beds in which sea algae necessary for spawning have grown thick, young fish has hidden from enemies or the food required for their growth has increased.

In the Basic Plan for Fisheries, inland water fisheries were stated, promoting the conservation of the habitats and ecosystems of fishery resources in rivers, lakes and reservoirs. There are dams that create large uneven steps for flood control in rivers, which sometimes prevent fish species, such as salmon and sweetfish from going back and forth between upstream and downstream. Fish ladders are installed to improve such cases. The government is also promoting efforts including the conservation/creation of gravel bottoms that serve as spawning grounds or of vegetation and establishment of *Ishikura* Breeding Reef that serves as habitats for a variety of aquatic organisms.

In the Basic Plan for Fisheries, the importance of production of seeds and seedlings and artificial stocking has been mentioned for farming fisheries and aquaculture. Since many eggs and larval fish have died due to feeding damage by natural predators, lack of foods or changes in the environment, they need to be raised to a certain extent in seeds and seedlings production facilities. The government has indicated its policies to proactively and intensively promote to carry out artificial stocking while verifying its effectiveness from it and thoroughly to implement artificial stocking of fish species, which are expected to be effective, to appropriate areas in responding to changes in fishing grounds or fish species due to changes in the marine environment.

Fisheries Research Institutes in prefectures have conducted research on: conservation of the fishery environment; aquaculture; and conservation/recovery of fishery resources, including production/supply of seeds and seedlings and education on fisheries. In the Basic Fisheries Plan, policies for resource management have been indicated and targets for resource management are to be set out in light of resource investigation carried out by Fisheries Research Institutes in prefectures.

In the Basic Environment Plan, the government has aimed to achieve sustainable agriculture, forestry and fisheries. The government, as concrete initiatives, will proactively promote the conservation/maintenance of farm land/water resources and introduction of farming practices that are highly effective in conserving biodiversity. JCR has evaluated that this use of proceeds has been initiatives in line with the Plan.

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*Use of Proceeds 9: Project for Sustainable Management of Natural Resources/Land Use (contributing to the conservation/management of forest resources)*

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The use of proceeds 9 means a project for the conservation and management of forest resources, which is expected to have environmental benefits as it will promote efforts toward sustainable forests and forestry. This use of proceeds falls under "Environmentally Sustainable Management of Living Organism Resources and Land Use" in the Green Bond Principles and "Projects for Sustainable Management of Natural Resources/Land Use" among the use of proceeds illustrated in the Green Bond Guidelines.

Local governments will use the proceeds from this bond for improving forest roads, developing forests, such as thinning or afforestation and promoting to introduce wooden structure and wooden interior decoration in public facilities with wood made by the issuers.

Forests that make up roughly 70 percent of the land in Japan have multiple functions, such as preventing global warming, preserving the natural environment, cultivating water sources or conserving biodiversity. There have been some issues, which can hinder from demonstrating multifaceted functions, including some forests without proper reforestation, in which clear-

cutting is concentrated in areas where is easier to cut down trees or disasters that frequently occurs in mountain regions due to increased heavy rains. In response to these issues, Japanese government has established Forest/Forestry Basic Plan, indicating the perspective and basic direction for future policy development. The Plan aims to achieve prosperous special economy, looking ahead to carbon neutrality in 2050 by appropriately managing forests and developing the forestry/forest industry while increasing its sustainability.

In order to maintain the multiple functions of forests, forest management, such as thinning to promote tree growth or afforestation is required after logging. The purpose of forest roads is to provide access to forests and promote forest improvement. Using wood in prefectures to which respective issuers belong is established as the eligible criteria through introduction of wooden structure and wooden interior decoration in public facilities. The followings are advantages to log trees from forests under proper management and to introduce wooden structure and wooden interior decoration.

- It is contributable to the prevention of global warming due to carbon fixation by trees.
- It is contributable to a sustainable society since wood is a renewable resource.
- Less energy is required for construction.
- Mountains are well cared and forests are kept healthy.

These initiatives are listed as specific efforts in the Basic Plan for Forestry and Forest Industry, and JCR has evaluated that this use of proceeds has been in line with the Plan.

The government is promoting the development and conservation of forests in the Basic Environment Plan. In the Plan, it is essential to promote to create healthy forests so as to multilaterally carry out forestry operations, such as afforestation or thinning in a timely and appropriate manner. JCR has evaluated that the development of healthy forests has been set forth as forest sink measures to which this use of proceeds will be contributable.

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*Use of Proceeds 10: Project for Sustainable Management of Natural Resources/Land Use (improving human resources development bases on natural resource management)*

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The use of proceeds 10 refers to a project to improve human resources development bases on natural resource management, which is expected to have environmental benefits as it will develop human resources toward sustainable forests and forestry. The use of proceeds is categorized into "Environmentally Sustainable Management of Living Organism Resources and Land Use" in the Green Bond Principles and "Projects for Sustainable Management of Natural Resources/Land Use" among the use of proceeds exemplified in the Green Bond Guidelines.

Local governments will use the proceeds to improve human resource development cases for natural resource management in this Framework.

Forestry workers have continuously declined from 126,000 in 1985 to approximately 44,000 in 2020. The aging rate in the forestry industry (a percentage of workers who were aged 65 or older) was 25 percent in 2020, higher than the average of all industries, 15 percent, and aging is also becoming a serious issue. It is essential to continuously ensure new workers and simultaneously to increase the retention through fostering human resources to secure the forestry workforce.

Improving productivity and safety is required in the forestry work in order for forestry workers to be able to continue working for a long time, which makes the industry attractive. In recent

years, prefectures have opened new colleges of forestry as pre-employment education/training institutions nationwide to improve technical skills of forestry workers and to make them work safely and efficiently. The local governments use the proceeds to develop human resources development bases as described above. Securing human resources (supporting new employees and gradually developing human resources) have been also listed in the Forests and Forestry Basic Plan, and JCR has evaluated that this use of proceeds has been aligned with the Plan.

The government is to promote to improve an environment required for human resource development toward establishment of the sustainable agriculture, forestry, and fisheries industry in the Basic Environment Plan to which the use of proceeds will be contributable, which has been evaluated by JCR.

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*Use of Proceeds 11: Project for Sustainable Management of Natural Resources/Land Use (promoting greening)*

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The use of proceeds 11 refers to a project for promoting greening, which is expected to have environmental benefits as increasing greenery space will contribute to improving biodiversity and mitigating heat island phenomena[17]. This use of proceeds falls under "Environmentally Sustainable Management of Living Organism Resources and Land Use" in the Green Bond Principles and "Projects for Sustainable Management of Natural Resources/Land Use" among the use of proceeds illustrated in the Green Bond Guidelines.

Local governments will use the proceeds to develop parks, such as creating green areas and green public facilities in this Framework.

Park development whose purpose is creating green space brings about a variety of effects that improve the urban environment, such as developing urban biodiversity by conserving/regenerating region-specific flora and fauna species or ecosystems, mitigating heat island phenomena through the greenery's evapotranspiration effects, preventing urban areas from spreading, making green belts and creating good landscapes that can become a symbol of the area. Greening of public facilities is expected to include rooftop/wall greening, which will contribute to mitigating the heat island phenomena in the same manner as above.

Many prefectures have formulated their regional open space planning which cover all urban planning areas and they will set out greenery concepts and goals on greenery space which will be frameworks and bases in prefectures, from a broad perspective that goes beyond the boundary of a single city or town and will implement green policies. The Green Basic Plans are formulated in respective municipalities in prefectures, which is defined as conservation of green space and the promotion of greening in the respective municipalities concerned. The regional open space planning serves as the guideline for such Green Basic Plan, and prefectures and municipalities have collaboratively promoted green measures.

Of six key strategies, the government has listed to maintain the diversity of the national land based on coexistence with nature as one of the measures that are linked to "Improvement of Value of National Land as Stock" in the Basic Environment Plan. Appropriately maintaining the

[17] According to the Japan Meteorological Agency, a heat island phenomenon refers to "a phenomenon in which temperatures in cities are higher than their surroundings." The "heat island" phenomenon is named as areas with high temperatures are distributed in a shape of an island focusing on cities in temperature distribution maps. The heat island phenomenon can also be described as "a condition in which temperatures in cities are higher than those if there were no city." https://www.data.jma.go.jp/cpdinfo/himr_faq/01/qa.html

value of natural capital as a stock will not only be environmentally friendly but will also lead to use the national land that addresses economic and social issues; therefore, the use of proceeds is expected to contribute to such measures.

In the national Plan for Global Warming Countermeasures, the government has set forth the goal of "Urban decarbonization by improving thermal environment through heat island countermeasures," and specifically it is to promote efforts, such as securing green space through development of urban parks and greening public space/government facilities. JCR has evaluated that the use of proceeds has been in line with this Plan.

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*Use of Proceeds 12: Project for sustainable management of natural resources/land use (National park development)*

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The use of proceeds 12 means a project for natural parks development, which is expected to have environmental benefits as the development will protect natural resources. The use of proceeds is categorized into "Environmentally Sustainable Management of Living Natural Resources and Land Use" in the Green Bond Principles and "Environmentally Sustainable Management of Living Organism Resources and Land Use" among the use of proceeds exemplified in the Green Bond Guidelines.

In this Framework, local governments will use the proceeds for projects to develop natural park facilities.

Natural parks have been designated based on the Natural Parks Law and classified as national parks, quasi-national parks and prefectural natural parks depending upon their size or landscape, which will be established so as to contribute to the health, recreation and education of citizens and the conservation of biological diversity by protecting areas with outstanding natural scenery and promoting their uses." Natural parks account for approximately 15 percent of the national land areas to which roughly 900 million people annually visit. Some visitors however have recently misbehaved, which may have adverse impacts on natural or usage environment due to diversification of usage styles, such as urinating outdoors, using mountain bikes on hiking trails or bringing pets. Local governments will use the proceeds to prevent visitors from trampling on vegetation by deviating from designated routes or to develop appropriate night soil treatment facilities, minimizing impacts on natural resources and preserving natural parks.

Of six key strategies, the government has listed to maintain the diversity of the national land based on coexistence with nature as one of the measures that are linked to "Improvement of Value of National Land as Stock" in the Basic Environment Plan. As with the Use of Proceeds 11, appropriately maintaining the value of natural capital as a stock will not only be environmentally friendly but will also lead to use the national land that addresses economic and social issues; therefore, the use of proceeds is expected to contribute to such measures.

In the national plan for Global Warming Countermeasures, the government is to appropriately promote management/conservation of protection forests or natural parks as forest sink measures. JCR has evaluated that the use of proceeds has been in line with this Plan.

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*Use of Proceeds 13: Project for biodiversity conservation (Development of wildlife habitat)*

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The use of proceeds 13 refers to a project for development of wildlife habitats, which is expected to have environmental benefits as it will contribute to the conservation of biodiversity, one of the national issues. This use of proceeds is categorized under "Terrestrial and aquatic biodiversity conservation" in the Green Bond Principles and "Projects for terrestrial and aquatic biodiversity conservation" among the use of proceeds illustrated in the Green Bond Guidelines.

In this Framework, local governments will use proceeds for projects on the conservation of wetlands and coral reefs, developing habitats of wildlife for which they are making conservation efforts, and building protection/research facilities for rare species.

With growing national concern for the decline or degradation of wetlands, such as marshes/tidal flats, the government selected "500 Important Wetlands of Japan" in 2001 so as to set the groundwork toward registration for the Ramsar Convention or preserve wetlands that are important from the perspective of biodiversity based on the Ramsar Convention[18]. Coral reefs have been known to be highly fragile ecosystems and bleaching has been observed since the late 1990s due to rising sea temperatures. In response to such bleaching, the Ministry of the Environment formulated the "Coral Reef Ecosystem Conservation Action Plan" in 2010 and had repeatedly reviewed and revised its goals since then and published the "Coral Reef Ecosystem Conservation Action Plan 2022-2030" in 2022. Projects on the conservation of wetlands or coral reefs are expected to contribute to the national government's efforts.

In March 2023, the National Biodiversity Strategy 2023-2030 was approved by the cabinet. This Strategy is a new basic plan for the conservation and sustainable use of biodiversity in Japan in light of the Kunming-Montreal Biodiversity Framework[19] adopted in the 2022 United Nations Biodiversity Conference of the Parties (COP15) in December 2022.

In the National Biodiversity Strategy 2023-2030, five basic strategies and the state goals (ideal figures) and action targets (action to be taken) per basic strategy were set out as strategies to aim to achieve nature positive (revival of nature[20]) in 2030 and to protect and utilize biodiversity/natural capital, which are the foundation of global sustainability and the basis of human security.

In April 2022, the Ministry of the Environment published the "30by30 Roadmap" compiled in cooperation with respective government ministries and agencies for the "30by30[21]" concept, which is a key point in the "National Biodiversity Strategy 2023-2030." In this roadmap, some initiatives were summarized, including the certification of Other Effective area-based Conservation Measures (hereinafter referred to as "OECM") toward achieving the 30by30 target in Japan in FY 2030. Based on the recognition that cooperation among various stakeholders is inevitable to achieve the goal, and what is expected from each stakeholder has been stated.

[18] International Convention on the Conservation of Wetlands, which was enacted on February 2, 1971 and came into effect on December 21, 1975 so as to protect wetland ecosystems with waterfowls as a top predator.

[19] It is a global goal to be achieved by 2030, which took over the global goal toward the world in harmony with nature by 2020 and the Aichi Targets by 2030, which were stipulated at the 2022 United Nations Biodiversity Conference of the Parties (COP15) held in Montreal, Canada, in December 2022.

[20] Nature Positive (revival of nature) means "halt the loss of biodiversity and putting it on a recovery track." In Japan, achieving Nature Positive by 2030 is a short-term goal toward achieving the 2050 Vision. The government will collaboratively work with measures in various fields, such as climate change or resource recycling in addition to the previous biodiversity conservation measures so as to secure a healthy ecosystem as a foundation for human existence, maintain and restore natural blessings through ecosystems and expand socioeconomic activities to protect and utilize natural capital toward realization of "Nature Positive by 2030."
https://policies.env.go.jp/nature/biodiversity/j-gbf/about/naturepositive/

[21] The goal is to effectively conserve healthy ecosystems including 30 percent or more of the land and sea by 2030 with the goal of halting and restoring biodiversity losses by 2030. In the G7 Summit in June 2021, respective countries pledged to conserve at least 30 percent of their terrestrial and marine areas by 2030, depending upon each country's situation or approach.

Local governments have been required to expand protected areas, improve the quality of their management and properly manage areas organized as OECMs. JCR has determined that improving wildlife habitats and protecting rare species will contribute to 30by30 goal in Japan.

It can be an opportunity to promote initiatives not only biodiversity conservation but also restoration in the areas under jurisdiction of local governments by conducting research on biodiversity by them. Accordingly, development of research and survey facilities can also be efforts that contribute to biodiversity.

In the Basic Environment Plan, of six key strategies, the government has listed to maintain the diversity of the national land based on coexistence with nature as one of the measures that are linked to "Improvement of Value of National Land as Stock." Given that Japan is home to various wildlife, including many rare/endemic species, it leads to use of the national land that addresses not only environmental issues but also economic and social challenges by endeavoring to ensure biodiversity and to harmonize human activities, such as promoting to take measures to conserve habitats, to prevent damage by invasive species or wild bird and mammal; therefore, the use of proceeds will contribute to such measures.

In the Climate Change Adaptation Plan, the government has aimed to further promote conservation activities in light of expected rises in temperatures and impacts on coral reefs, wetlands, wildlife, or rare species, and the use of proceeds will contribute to these efforts.

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*Use of Proceeds 14: Projects for biodiversity conservation (Prevention of damage by wildlife or alien species)*

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The use of proceeds 14 is a project to prevent damage caused by wildlife or alien species, which is expected to have environmental benefits as biodiversity will be conserved with the use of proceeds. The use of proceeds falls under "Terrestrial and aquatic biodiversity conservation" in the Green Bond Principles and "Projects for terrestrial and aquatic biodiversity conservation" among the use of proceeds exemplified in the Green Bond Guidelines.

In this Framework, local governments will use the proceeds for projects on preventing damage caused by birds, animals or invasive species.

Biodiversity hotspots refer to, in particular, biologically rich areas on earth and are expose to threat of destruction at the same time. Thirty-six biodiversity hotspots have been selected around the world, and Japan is one of them. Hotspots mean areas with high biodiversity in which 1,500 or more of endemic species of vascular plants have grown and 70 percent of original habitats have been lost and at risk of destruction.

Roughly one-quarter of the vertebrate species inhabiting in Japan are domestic endemic species, including endangered species, such as Pryer's woodpeckers or Japanese macaques. 75 percent of amphibians are endemic species.

One of the factors that have destroyed natural environment in Japan is invasive species. Invasive species is an organism that is not originally native to a particular area; however, they have been introduced to the area through human activities. Of alien species, there are invasive alien species who may wield significant impacts on the local natural environment and are likely to threaten biodiversity. Specific examples include mongooses who were brought to the main Okinawa Island or Amami Oshima, or green anoles who came to Bonin Islands. Initiatives to protect

regional ecosystems from such invasive alien species have been contribute to the National Biodiversity Strategy 2023-2030 mentioned in the Use of Proceeds 13.

Of six key strategies, the government has listed the conservation of diversity of the national land based on coexistence with nature as one of the measures that are linked to "Improvement of Value of National Land as Stock" in the Basic Environment Plan. Promoting measures to prevent damages from alien species or wild bird and mammal encourages to create the home land that cares the natural environment and can address social issues; therefore, the use of proceeds will contribute to these measures.

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*Use of Proceeds 15: Project for Biodiversity (preservation of natural landscape)*

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The use of proceeds 15 means a project on preservation of natural landscape. It is expected to have environmental benefits with the use of this proceeds since the project contributes to biodiversity. The use of this proceeds falls under Terrestrial and Aquatic Biodiversity Conservation in the Green Bonds Principles and Project for Terrestrial and Aquatic Biodiversity Conservation among the use of proceeds exemplified in the Green Bond Guidelines.

In this Framework, local governments will use proceeds for projects to develop facilities that take landscape into consideration, such as using natural construction methods and to conserve *Satoyama* (community-based forest area).

In order to restore the nature that was lost through human activities, particularly around rivers, an effort, so-called Neo-Natural River Reconstruction Method have been made. The Method is originated from a concept to develop rivers in Switzerland and Germany in the 1970s so as to restore healthy river environments and to recreate the relationship between people and rivers by improving rivers while balancing flood control and the environment. In implementing the Method: to take into consideration the natural workings of the entire river, including its ecosystems with natural characteristics or mechanisms to the extent possible; and to consider not only the preservation/creation of habitats, growth and reproduction environments for living organisms but also the fact that these are linked to local lifestyles, history and culture based on the Basic Guidelines for Nature-oriented River Management[22]. Control measures can be taken without destroying existing natural environments while maintaining/restoring flora and fauna inhabiting in rivers that are subject to development where appropriate through these efforts that are contribute to the conservation of biodiversity.

The government has promoted green infrastructure that addresses local issues while utilizing various functions of the natural environment as described above, such as providing habitats /growth areas for living organisms, creating beautiful landscapes, controlling rising temperatures, preventing/mitigating disasters).

Of the six key strategies, the government has listed sustainable and attractive urban and regional development as one of the measures linked to "Improvement of Value of National Land as Stock" out of six key strategies in the Basic Environment Plan. The promotion of green infrastructure, which aims to conserve biodiversity while caring landscapes, is expected to contribute to such measures.

*Satochi-satoyama* (community-based forest areas and the surrounding countryside) is areas with diverse natural environments, such as farmlands, reservoirs, woodlands or grasslands, which is

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[22] Ministry of Land, Infrastructure, Transport and Tourism (hereinafter referred to as "MLIT"), *The Basic Guidelines for Nature-oriented River Management*
https://www.mlit.go.jp/kisha/kisha06/05/051013/02.pdf

located between nature areas in deep mountains with relatively rich nature and urban areas where human activities are concentrated on and account for roughly 40 percent of the national land. *Satochi-satoyama* is neither completely pristine nature nor fully under human control. With moderate human intervention and management, *Satochi-satoyama* has become habitats for a variety of animals and plants and has played a role in enriching the natural environment in the Japanese archipelago. Meanwhile, *Satoyama* has been increasingly unmanaged due to changes in industrial structures or lifestyles. Without management, *Satoyama* will rapidly be devastated and may lead to risks, such as increasing damages in case of disasters due to the losses of ecosystems and functionalities of nature. The conservation of *Satoyama* for which the proceeds will be used is expected to contribute to the maintenance of biodiversity that will be bring about by *Satoyama* by avoiding/controlling such risks.

*Use of Proceeds 16: Project for Clean Transportation (developing rolling stock of public transportation)*

The use of proceeds 16 refers to a project for developing rolling stock of public transportation. This use of proceeds provides a means of transportation that are highly effective to reduce GHG emissions and thus environmental benefits are prospective. This use of proceeds falls under "Clean Transportation" in the Green Bond Principles and "Projects for Clean Transportation" among the use of proceeds illustrated in the Green Bond Guidelines.

Local governments will use the proceeds from this bond for developing rolling stock in railroad projects (public/quasi-public corporations) and facilities (station buildings).

The development of rolling stock in the railroad projects assumed for this use of proceeds will involve the introduction of new rolling stock by railway companies. Railroads are a means of transportation with low environmental burdens and $CO_2$ emissions per transport volume is 1/5 of private cars for passengers and 1/10 of commercial cargo vehicles for freight.[23] This use of proceeds will be used to further reduce environmental loads by introducing rolling stock with higher energy efficiency than the existing vehicles.

Development of station buildings that are facilities required for operating the railroad business in the eligibility criteria in this Framework, make it a condition that it is likely to reduce $CO_2$ emissions, such as introduction of energy saving equipment. The energy conservation is achievable due to the criteria and in cases where the convenience of railroads is improved through development of their facilities, it can lead to a modal shift from other means of transportation to railroads.

Vehicles are assumed to be replaced in the bus service business. JCR has evaluated that the business will have environmental benefits in cases where it meets the followings: (1) Vehicles to be introduced shall be electric vehicles or fuel cell vehicles; and (2) Vehicles that shall meet the fuel consumption whose $CO_2$ emissions is 50g or less per person/kilometer prior to 2025.

The government announced the final summary of "the ideal figure of carbon neutrality in the railroad sector" in May 2023. The railroads in Japan who is proud of the world's highest passenger transportation volume and simultaneously has larger shares compared to those of other countries have shown the ideal figure and concrete measures considering exerting major impacts on the Japanese society that goes beyond simple quantity, including having impacts on

[23] MLIT, *Study Group on Accelerating Carbon Neutrality in the Railroad Sector*
https://www.mlit.go.jp/sogoseisaku/environment/sosei_environment_tk_000007.html

related industries - the supporting industries, such as rolling stock or equipment, or raising public awareness by promoting further initiatives so as to achieve carbon neutrality in 2050.

Specific measures has listed as follows:

・"Decarbonization of railroads" (Decarbonization of the railroad business itself, including accelerating the introduction of highly efficient rolling stock);

・"Decarbonization through railroads" (Decarbonization with railroads' assets, such as solar power generation in station buildings); and

・"Decarbonization supported by railroads" (Decarbonization through the use of railroads with environmental advantages; after the modal shift for instance).

The use of proceeds will contribute to "decarbonization of railroads" and "decarbonization through railroads."

In the government's Plan for Global Warming Countermeasures, the government has listed initiatives on decarbonization in the transportation sector, including promoting to use public transportation and decarbonize railroads. The government is to aim to reduce the environmental burdens by replacing privately owned cars with public transportation, such as trains or buses as alternatives, or by increasing energy efficiency through introduction of lightweight rolling stocks or energy-efficient vehicles in the railroad sector. This use of proceeds are expected to contribute to these measures.

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*Use of Proceeds 17: Project for Clean Transportation (spreading and expanding electric vehicles)*

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The use of proceeds 17 refers to a project for spreading and expanding electric vehicles. This use of proceeds is expected to have environmental effects as reducing $CO_2$ emissions is achievable. This use of proceeds falls under "Clean Transportation" in the Green Bond Principles and "Projects for Clean Transportation" among the uses of proceeds exemplified in the Green Bond Guidelines.

In this Framework, local governments will use the proceeds to electrify official cars, develop charging facilities for electric vehicles and build hydrogen stations.

Electrifying public vehicles refers to purchasing battery electric vehicles (hereinafter referred to as "BEV"), fuel cell vehicles (hereinafter referred to as "FCV") and hybrid vehicles (hereinafter referred to as "HV") and replacing them with the existing gasoline-powered cars. BEV has high environmental benefits as it does not emit GHG while running. Since BEVs run on electricity, infrastructures to replenish power used as fuels is essential. FCVs can run by filling hydrogen and oxygen, and infrastructure facilities to refuel hydrogen will be hydrogen stations. JCR has evaluated that the development of BEV charging facilities and hydrogen stations is necessary for dissemination of BEVs and FCVs and that this project will greatly contribute to reducing the environmental burdens.

JCR has evaluated that HVs have environmental benefits only if the vehicle meets the fuel efficiency with $CO_2$ emissions of 50 gram or below per person/kilometer by 2025.

In step with the national goals of achieving carbon neutrality in 2050 and aiming to reduce GHG emissions by 46 percent by FY 2030 from FY 2013 levels, many local governments have declared

to achieve net-zero $CO_2$ in 2050[24]. Of $CO_2$ emissions throughout the entire Japan, 17.7 percent or 185 million t-$CO_2$ were emitted from the transportation sector, of which 45.7 percent were from automobiles; thus, it has been of significance to reduce such emissions.

The government has set forth a goal of making the ratio of electric vehicles 100 percent in new passenger car sales by 2035, and the electrification of official vehicles will contribute to realizing this goal. In the Green Growth Strategy revised in June 2021, the government aims to achieve carbon neutrality throughout the entire life cycle of automobiles in 2050 and to strengthen the competitiveness in the battery storage industry as a new energy infrastructure. With respect to the electric vehicle infrastructure, the government declared to install 150,000 charging infrastructures, including 30,000 public fast chargers and to achieve convenience equivalent to that of gasoline-powered vehicles by 2030 at the latest. In the "Hydrogen and Fuel Cell Strategic Roadmap" revised in March 2019, the government has set its target to popularize FCVs to approximately 200,000 units by 2025 and roughly 800,000 units by 2030, and to develop about 320 hydrogen stations by FY 2025. The development of infrastructure on BEVs and FCVs by local governments is expected to contribute to these policies.

Some local governments have listed decarbonization initiatives and reduction targets as their own businesses in the context of their strategies toward achievement of zero carbon in 2050. The proceeds will be used to contribute to reducing GHG emitted by local governments themselves, and they will also be used to contribute to promoting the use and spread of BEVs among people who live and work in the areas concerned.

The government has listed to popularize next-generation vehicles and improve fuel efficiency as one of the initiatives on decarbonization in the transportation sector in the government's Plan for Global Warming Countermeasures. The aim is to reduce the environmental burdens by spreading/expanding the next-generation vehicles (EV, FCV or PHEV that is an abbreviation of Plug-in Hybrid Electric Vehicle) with excellent energy efficiency and by strategically developing EV charging facilities and hydrogen stations that are required for widespread use of the next-generation vehicles. This use of proceeds is considered to be contributable to these measures.

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*Use of Proceeds 18: Project for Clean Transportation (Promoting utilization of clean means of transportation)*

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The use of proceeds 18 means a project to promote utilization of clean means of transportation. The use of the proceeds is expected to improve environmental benefits as a means of transportation with lower environmental impacts can be selected. This use of proceeds falls under "Clean Transportation" in the Green Bond Principles and "Project for Clean Transportation" among the use of proceeds illustrated in the Green Bond Guidelines.

[24] Website of the Ministry of Environment
https://www.env.go.jp/policy/zerocarbon.html

In this Framework, local governments will use proceeds for projects to develop bicycle lanes and park-and-ride facilities[25]. Local governments are to select projects for which the proceeds will be used on the condition that the use of proceeds is expected to promote the use of public transportation.

The Bicycle Use Promotion Act was enforced in 2017 as a basic concept, based on which reducing dependency upon automobiles has economic and social benefits by improving people's health, reducing traffic congestion and expanding the role of bicycle transportation in the transportation system. The national government stipulated a plan for promoting bicycle utilization at cabinet meetings, including targets and necessary legislative and financial measures to be taken, and local governments is obliged to make the best efforts to establish a plan for promoting bicycle utilization depending upon the actual conditions in the areas under their jurisdiction in line with the 14 basic policies that are to be intensively studied and implemented under the Act. The government formulated the Bicycle Use Promotion Plan[26] and many local governments set local versions of their own bicycle use promotion plans.

The latest plan has listed the creation of a favorable urban environment through the expansion of the role of bicycle transportation as one of its targets, and it is designated to increase use of bicycles with the following measures.

・ Promote local governments to formulate bicycle utilization promotion plans and to steadily take measures based on these plans.

・ Promote the systematic development of safe and comfortable bicycle riding space, which is appropriately separated from pedestrians, bicycles and automobiles.

・ Promote to secure bicycle riding space through the development of off-street parking lots or parking spaces for cargo handling.

Park and Ride refers to a transportation method where travelers use their cars to transit from their home to nearest stations, bus stops or the places just before their destinations and park their vehicles and then move to the final destination with public transportation systems. Park and Ride is expected to have environmental benefits by easing traffic congestion and reducing GHG emitted from automobiles through its practice.

Of the six key strategies, the government has set forth sustainable and attractive urban and regional development as one of the measures that are linked to "Improvement of Value of National Land as Stock" in the Basic Environment Plan. Promoting Park and Ride and to use bicycles will contribute to the measures concerned by maintaining public transportation networks and reducing burdens on the environment.

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*Use of Proceeds 19: Projects for clean transportation (Formation of carbon neutral port (CNP))*

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[25] According to MLIT, a park-and-ride method is to alleviate traffic jams by making people use public transportation, such as buses and trains instead of vehicles that are concentrated in suburban areas, business districts or tourist spots; therefore, the attention is needed that topographical suitability, convenience of public transportation or fees will have significant impacts during implementation. The key remarks upon implementation will depend on the realization of door-to-door proximity, convenience of transit and fostering awareness of public transportation use. The key to success is to increase convenience and provide benefits and incentives to users of the park-and-ride system.
https://www.mlit.go.jp/seisakutokatsu/soukou/ppg/ppg7/parkride.pdf

[26] The latest version (the 2nd the Bicycle Utilization Promotion Act) was decided in the cabinet in May, 2021.

The use of proceeds 19 means a project on the formation of a Carbon Neutral Port (hereinafter referred to as "CNP"), which is expected to have environmental benefits as transportation methods with lower environmental burdens is selectable with the use of proceeds. The use of proceeds falls under "Clean transportation" in the Green Bond Principles and "Projects for clean transportation" among the use of proceeds illustrated in the Green Bond Guidelines.

In this Framework, local governments will use the proceeds for projects on formation of CNPs.

Ports in Japan are hubs in the international supply chain through which 99.6 percent of import and export cargo goes. These harbors are also centers for the oceanfront industry where many power plants, iron & steel or chemical factories are located, which account for roughly 60 percent of $CO_2$ emissions and are major energy consumption bases or equivalently, port areas will be hubs to import decarbonized energy sources, such as hydrogen or fuel ammonia with which there is also a significant room for $CO_2$ reduction. Therefore, heavily making leading efforts toward decarbonization in port areas is deemed to effectively and efficiently achieve the governmental target of carbon neutrality in 2050, and the Ministry of Land, Infrastructure, Transport and Tourism (hereinafter referred to as "MLIT") is promoting the formation of CNP. CNP has aimed to reduce GHG emissions to zero as a whole through improving environment for acceptance that enables stably, largely and reasonably to import hydrogen or fuel ammonia or store them at ports, which serve as international logistics hubs and industrial bases; enhancing functions at ports in consideration of decarbonization and collaborating with the oceanfront industry to be accumulated.

Local governments have defined transportation equipment without fossil fuels as the eligibility criteria, which have highly environmental benefits with no $CO_2$ emissions during use. Specific projects include hydrogen fuels/electrification of cargo handling machinery/vehicles or hydrogen stations derived from renewables. CNP has also promoted projects other than clean transportation, such as solar/hydrogen power generation or conversion of lighting to LED at factories. In cases where allocation is required for such projects, local governments will appropriate proceeds to such projects in accordance with the adequate project classification in this Framework.

In the national Plan for Global Warming Countermeasures, the government will promote the formation of CNP as advancement to decarbonize logistics. JCR has evaluated that the use of proceeds has been in line with this Plan.

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*Use of Proceeds 20: Projects for sustainable water management (development of water supply facilities)*

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The use of proceeds 20 refers to a project on development of water supply facilities, which is expected to have environmental benefits as the use of proceeds will be contributed to sustainable water supply. The use of proceeds is categorized into "Sustainable water and wastewater management" in the Green Bond Principles and "Projects for sustainable water management" among the use of proceeds exemplified in the Green Bond Guidelines.

In this Framework, local governments will use the proceeds for development of water supply facilities, such as improving energy efficiency by introducing highly efficient facilities and downsizing equipment; consolidation/expansion of water supply facilities, including enhancing energy efficiency by consolidating water supply and utilizing potential energy); and disaster

prevention measures for water supply facilities, such as developing *SABO* dams as countermeasures against flood control and landslides.

The nationwide coverage of water supply systems was 98.2 percent as of FY 2021. Meanwhile, the domestic paid water is projected to decrease by roughly 40 percent from its peak in 2065 due to the rapid population decline with which water fee revenues, which have been already on the decline, will be put downward pressure to decline, making the business environment for water supply more severe. As water supply systems have continuously deteriorated, investment amounts and renewal rates for conduits have also decreased, resulting in increases in conduits that have exceeded their useful lives. The Ministry of Internal Affairs and Communications (hereinafter referred to as "MIC") is taking local financial measures to expand water supply businesses and ensure investments for steady renewal so as to address these issues. In order for respective prefectures to promote to expand a variety of water supply businesses that go beyond the boundaries of municipalities, they are required to prepare promotion policies to widen areas or "Promotion Plan to Widen Water Supply[27]" that is to set out detailed specific initiatives for the moment based on such policies.

The necessary measures shall be taken, which is stipulated under the Water Supply Act (Act No. 177 of 1957) so as to address current issues for water systems, such as declines in water demand due to a falling population, deteriorating water facilities and growing personnel shortage and to strengthen foundations for water systems. The national government, prefectures and municipalities have the following roles under the Act above.

1. Clarify responsibilities of parties concerned

(1) The national government, prefectures and municipalities shall endeavor to formulate, promote or implement measures to strengthen infrastructures for the foundation for water systems.

(2) Prefectures shall strive to promote to have broad-based cooperation among water providers who are water suppliers or wholesale water suppliers. The same shall apply hereinafter.

(3) Water providers shall seek to strengthen their business bases.

2. Promote wide-range cooperation

(1) The national government shall stipulate basic policies so as to strengthen the foundations for water systems, including promotion of extensive cooperation.

(2) Prefectures shall be able to formulate plans to strengthen water infrastructures based on the basic policy with the consent of relevant municipalities and water providers.

(3) In order for prefectures to promote wide-range cooperation, they shall be able to establish councils that consist of relevant municipalities and water providers as members.

[27] Ministry of Health, Labour and Welfare's Website
https://www.mhlw.go.jp/stf/seisakunitsuite/bunya/0000087512_00001.html

In the government's Plan for Global Warming Countermeasures, the government has listed a target to reduce $CO_2$ emissions from the water supply business, which is to cut back 216,000 t-$CO_2$ in FY 2030 (approximately 5 percent compared to that of FY 2013) as "Energy conservation/introduction of renewable energy in water and sewerage systems (promotion of energy conservation/renewable energy measures in the water systems)." The water supply business has also aspects of the energy-consuming industry who emits $CO_2$, consuming approximately 1 percent of the electricity used nationwide, which is required to promote to take measures; energy saving toward reduction of energy consumption for instance, and to shift the used energy to renewables with which the government has introduced/renovated renewable energy equipment, such as micro-hydroelectric power generation facilities and energy conservation equipment, including highly efficient facilities or inverters in the water supply facilities in the "Project to support renovation to reduce $CO_2$ from water supply and sewage/dam facilities among projects to promote net zero energy buildings (ZEB)/$CO_2$ reduction in commercial facilities (a project collaboratively with the Ministry of Health, Labor, and Welfare and the Ministry of the Environment)." Disaster prevention projects in preparation for intensification of natural disasters in recent years have been essential use to stably supply water.

JCR has evaluated that the proceeds will be allocated to projects to be implemented by local governments in accordance with the aforementioned national policies, which will contribute to sustainable water supply in this Framework.

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*Use of Proceeds 21: Projects for Climate Change Adaptation (measures for disasters caused by storms and floods)*

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The use of proceeds 21 refers to civil engineering projects on rivers and climate monitoring systems implemented as countermeasures against storms and floods damage by local governments among climate change adaptation plans, which are anticipated to have environmental benefits as these projects are expected to reduce damage caused by wind and floods. The use of proceeds falls under "Climate change adaptation" in the Green Bond Principles and "Projects for adaptation to climate change" among the use of proceeds illustrated in the Green Bond Guidelines.

In this Framework, local governments will use proceeds for projects for river improvement as measures against storms and floods damage as follows: (1) to reduce submersion damage caused by river/internal waters floods by developing rivers, diversion channels, agricultural irrigation facilities, flood-control dams, flood control facilities, including retention reservoirs, balancing reservoirs or basins) and sewerage facilities related to rainwater; (2) projects to prevent landslides on roads, fallen telephone poles, traffic light outages or street closures and to secure transportation routes for supplies and people in case of emergencies; (3) to secure evacuation centers in case of disasters; and (4) disaster prevention and forecast information systems.

In the national Climate Change Adaptation Plan, it is predicted to increase in heavy rainfall that could cause floods due to rising temperatures with which it is anticipated to increase in river/internal waters floods or inundation damage based on the current and future analyses. The government has indicated basic concepts as adaptation measures against these situations as follows:

- It is required to evaluate future climate change and to start taking measures in advance as new forms of large-scale disasters may occur due to complex factors, such as landslide/flooding, high tide/flooding as well as frequent/serious water disasters along with

increases in the frequency and intensity of short-term heavy/massive rain, increases in total precipitation, rises in average sea levels, sea level anomaly or increases in extreme values.

- In response to more frequent and severe water disasters caused by climate change, the government will review its plans to take climate change into account, and simultaneously all parties concerned, including the national government, prefectures, municipalities, local businesses or residents will collaboratively promote "River Basin Disaster Resilience and Sustainability by All[28]" and advance a combination of structural and non-structural measures for comprehensive disaster prevention/mitigation measures.
- It is to promote its efforts of River Basin Disaster Resilience and Sustainability by All so as to reduce damage in the entire basins, such as catchment areas/rivers and floodplain areas by all stakeholders in any kind of places around basins, including those who were not involved before in order to view the flow of water as one system.
- Everyone around river basins shall take the following three measures in a comprehensive and multi-layered manner according to characteristics of river basins, taking into account the occurrence of all types of floods including the maximum scale floods assumable as "River Basin Disaster Resilience and Sustainability by All":

  ✧ Measures to prevent/reduce floods as much as possible (response to hazards)

  Promote the development of floods control facilities to prevent floods whenever possible.

  ✧ Measures to reduce damage (response to exposures)

  Take measures to reduce damage through town development or devising ways of living, including restrictions on land use so as to avoid damage by having concepts, "not to live in dangerous areas" on the assumption that heavy floods that exceed capacities of flood control facilities occur.

  ✧ Measures to reduce damage, early recover and reconstruct (response to vulnerabilities)

  Take measures to mitigate damage, such as fulfilling structures that enables people to adequately and appropriately evacuate in case of floods and measures for early recovery and reconstruction in disaster-stricken areas.

- Relevant ministries and agencies, related local governments and public and private sectors will collaboratively work to promote to take integrated structural and non-structural measures in addition to take flood control countermeasures against increases in rainfall and risen tides due to climate change mainly implemented by managers as follows:

  ✧ Strengthen flood control functions of existing dams or reservoirs, including water utilization dams

[28] According to MLIT, a river basin management refers to “a concept in which all parties involved in a drainage basin, including catchment areas where rainwater flows into rivers and flood areas in which it is expected to be submerged due to floods from rivers) cooperatively take measures against flood disasters while further accelerating measures, such as improvements of levees or construction and rehabilitation of dams in light of increasingly severe and frequent occurrence of flood disasters caused by influence of climate change.
https://www.mlit.go.jp/river/kasen/suisin/pdf/01_kangaekata.pdf

- ✧ Utilize rain water storing and filtering functions, such as rice paddy fields or reservoirs
- ✧ Fill a gap in flood risk information
- ✧ Impose regulations on land use that is linked with several local governments or develop town for disaster prevention, including residential guidance or devising ways of living in cooperation with departments and agencies in charge of urban development/construction
- ✧ Improve preparation for emergency activities or business continuity

Strengthening non-structural measures (software measures), such as utilizing green infrastructure with various functions of the natural environment or enforcing observation systems/improving prediction accuracy for concentrated downpours or typhoons caused by linear precipitation zones when promoting River Basin Disaster Resilience and Sustainability by All.

The proceeds will be used for projects that have been aligned with the Climate Change Adaptation Plan established by the national government as previously described and will be allocated to projects in consideration of geographical/climatic characteristics in respective regions in the Climate Change Adaptation Plan formulated by respective local governments; therefore, it is expected to have damage reduction effects caused by storms and floods disasters.

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*Use of Proceeds 22: Projects for Climate Change Adaptation (measures for high tide/high wave)*

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The use of proceeds 22 refers to projects to be implemented by respective local governments as measures against tidal waves/surge, which is anticipated to have environmental benefits as the effects to reduce damage from tidal waves/surge are expected. This use of proceeds falls under "Climate Change Adaptation" in the Green Bond Principles and "Projects for Climate Change Adaptation" among the use of proceeds exemplified in the Green Bond Guidelines.

In this Framework, the proceeds will be used to take countermeasures against tidal waves/surge as follows: (1) constructing coastal protection facilities, such as revetments, levees, detached breakwaters, groins, sluice gates, developing drainage pumping stations or raising seawalls; and (2) bank protection, including ports & harbors/fishing ports.

Sea levels around Japan are on an upward trend (rising 2.8 (1.7 to 4.0) millimeters per year from 1993 to 2015, rising 4.19 (- 1.10 to +8.20) millimeters per year from 2004 to 2019) based on the analyses of sea level observation records according to the government's Regional Climate Change Adaptation Plan. No concrete events or research results have been confirmed regarding the relationship between high waves/tides and the effects of climate change at the current moment. On the other hand, the average global sea level will definitely rise between 2081 and 2100, based on the average between 1986 and 2005 even through the GHG emissions will be reduced in both RCP2.6 and RCP8.5 scenarios. In cases where the sea level rises by 80 centimeters, the zero-meter area in the three major bays (Tokyo Bay, Ise Bay and Osaka Bay) increases by 1.6 times and accordingly, the impacts are extended to coasts across Japan. In the event that sea levels rise, disaster risks of damage from high tides, high waves or tsunamis or coastal erosion increase compared to the current situation even if there is neither typhoon nor powerful low-

pressure systems. In particular, anticipated impacts are as follows: river water intake facilities, coastal disaster prevention facilities or ports and harbors/fishing port facilities may be functionally degraded or damaged, coastal areas may be submerged/flooded, coastal erosion may be accelerated, ports and harbors/fishing port operations may be hindered and the ecosystems in the tidal areas of tidal flats or rivers may be impacted.

In the Plan, neither specific events nor research results have been confirmed for impacts on high tides/waves by rising sea levels or increases in typhoon strength caused by climate change or damage that is accompanying with such natural phenomena in terms of high tides/waves. Meanwhile, it is highly likely to rise sea levels due to climate change as future impacts forecasted by which submersion risks increase caused by storm surge will increase. Storm surge is mainly caused by typhoons, and technological development has been recently and vigorously promoted to predict behaviors of typhoons, such as paths or scales caused by climate change and to reflect these predictions in future changes in storm surge based on which many findings after examination have supported increases in storm surge deviation due to climate change. The main causes of high waves are typhoons and low pressure developed in winter, and technological development has been recently and vigorously promoted to predict behaviors of typhoons, such as paths or scales caused by climate change, which is to be reflected in these predictions. It is predicted that risks of high waves increase due to changes in typhoons' strength and paths. Predictions are made to increase risks from tidal waves due to a typhoon's strength or its changed paths. It is predicted that when storm surge deviations or wave heights increase as sea levels rise or low pressure developed in typhoons or winters are more intense in buildings, such as intake facilities in rivers, disaster-prevention facilities in coasts, facilities in ports & harbors/fishing ports, safety cannot be sufficiently secured in many areas.

Local governments where high tides/waves are predicted have prepared hazard maps and taken measures depending upon damage assumed.

The proceeds will be used for projects that have been aligned with the Climate Change Adaptation Plan established by the national government as described earlier and will be allocated to projects in consideration of geographical/climatic characteristics in respective regions in the Climate Change Adaptation Plan formulated by respective local governments; therefore, it is expected to have effects to mitigate damage caused by storms and floods disasters.

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*Use of Proceeds 23: Projects for Climate Change Adaptation (measures for sediment disaster)*

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The use of proceeds 23 refers to projects for sediment disasters as these measures to be taken by respective local governments among climate change adaptation plans, which is expected to have environmental benefits as these projects are anticipated to reduce sediment disasters. The use of proceeds is categorized into "Climate change adaptation" in the Green Bond Principles and "Projects for Climate Change Adaptation" among the use of proceeds illustrated in the Green Bond Guidelines.

In this Framework, the proceeds will be used to take countermeasures against sediment disasters, including development of *SABO* facilities, afforestation facilities and protection forests, measures to prevent landslides at steep slopes, countermeasures against slope collapse and measures for face of slope and prevention for stone fall.

There have been not many research that clearly shows the cause-effect relationship between landslide disasters and climate change according to the government's Climate Change Adaptation Plan. Meanwhile, the situation will be changed on the presupposition that rainfall conditions become severe as future predictions as follows: (severe rainfall conditions refer to heavy rain with extremely high rainfall intensity and prolonged high rainfall intensity, heavy rain with extremely high precipitation or heavy rain in wide areas).

- Frequent occurrence of intensive collapse, landslides and debris flow, and impacts on social life in mountains or areas surrounding slopes
- Relatively declines in effective structural or non-structural measures and expansion of damage
- Increases in frequency of landslides/floods
- Prolonged direct/indirect impacts due to increases in large-scale phenomena, such as deep-seated collapse
- Expanding damage in areas other than existing landslide warning zones as phenomena are getting larger and new sediment movement phenomena are becoming apparent .
- Falls in flood control/water utilization functions by increasing sediment supply to rivers
- Increases in damage caused by driftwood due to extremely heavy rainfall in forested areas
- Impacts on operations due to floods in airports

Both of the structural and non-structural aspects are considered to be effective since landslides often occur due to a combination of complicated factors. Several concrete measures are listed in the Climate Change Adaptation Plan as specific countermeasures against landslides, including increases in the frequency, short-time warning/evacuation and deep-seated landslides.

Local governments have prepared hazard maps in implementing respective projects and has started projects in areas with higher level of urgency.

JCR has evaluated that the use of proceeds will be effective to reduce landslides where frequency of occurrence has been on the increase in local governments.

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*Use of Proceeds 24 Projects for Climate Change Adaptation (R&D in agriculture, forestry and fisheries in preparation for climate change)*

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The use of proceeds 24 means research and development in agriculture, forestry and fisheries to be implemented by respective local governments as measures for damage from storms and floods among Climate Change Adaptation Plans, which is anticipated to have environmental benefits as the implementation of this project is expected to mitigate declines in quality and yields in the agriculture, forestry and fisheries industry. The use of proceeds falls under "Climate change adaptation" in the Green Bond Principles and "Projects for Climate Change Adaptation" among the use of proceeds exemplified in the Green Bond Guidelines.

In this Framework, the proceeds will be used to improve facilities to develop the followings: agricultural product varieties or production technologies for agricultural crops; fishery research facilities; and seeds and seedlings production facilities for aquatic plant and animals.

According to the national Climate Change Adaptation Plan, among the causes of changes in global natural ecosystems for the past 50 years, climate change is the third largest factor after changes in the use of land/sea areas and direct harvesting, such as deforestation or fishing, and it is also reported that climate change has been worsening impacts made by other direct factors. Predictable impacts in future include the followings: climate change will cause changes in distribution ranges or life cycles, changes in interspecific interaction through migration/local extinction of species will cause adverse impacts or species may be extinct as they cannot migrate in the distribution ranges that follow climate change due to fragmentation of habitats. It is predicted that 30 percent or more species worldwide will be at risk of extinction if temperature rises by 2 degrees Celsius or higher by 2050.

In the Climate Change Adaptation Plans prepared by local governments, damage caused by climate change of agricultural, forestry, and fisheries and future damage prediction may be made by product and research and development issues may be set out, respectively.

JCR has evaluated that the use of proceeds is expected to mitigate damage, such as declines in quality or yields in the agriculture, forestry and fisheries industry.

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*Use of Proceeds 25: Projects for Climate Change Adaptation (Measures for temperature increase)*

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The use of proceeds 25 refers to projects to be implemented by respective local governments as measures for rises in temperatures among Climate Change Adaptation Plans. It is expected to have mitigation effects, such as increases in mortality rates due to rising temperatures through implementation of this project. The use of proceeds falls under "Climate change adaptation" in the Green Bond Principles and "Projects for climate change adaptation" among the use of proceeds illustrated in the Green Bond Guidelines.

In this Framework, the proceeds will be used to combat heat along with heat island phenomena by improving heat insulation/water retention of roads and to create cool spots in cities.

In the government's Climate Change Adaptation Plan, it has confirmed that people who were transported to hospitals by ambulance due to heatstroke, persons who visited medical institutions/died from thermic fever have been on the increase nationwide and it is also predicted to increase risks of heatstroke hereafter; therefore, it is necessary to raise awareness about heat illness or disseminate the aforementioned facts and predictions to related organizations. The effective is to implement schemes combining with awareness-raising about measures that individuals shall take when communicating information.

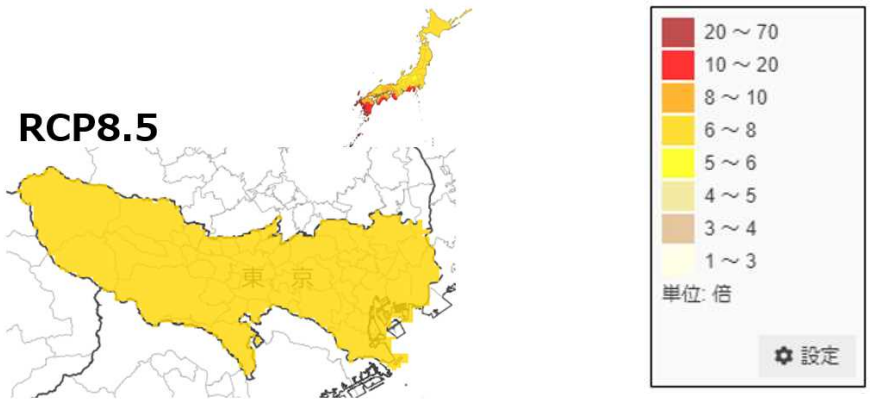


**Figure 1: Impacts[29]on the dealth tall with excessive heat stress at the end of the 21st century[30]**

The Plan has indicated that a rate of increase in temperature in small- and medium-sized cities in Japan per centenarian is 1.5 degrees Celsius while a rate of rise in temperature in major cities is 2.6 to 3.2 degrees Celsius, and it has been confirmed that temperature has risen due to climate change and simultaneously heat island phenomena in large cities. Occurrence of heat island phenomena has been also confirmed in small- and medium-sized cities. According to a report, short-term precipitation increases through generating ascending current due to heat island phenomena in urban areas while inhibiting cloud formation in surrounding areas could result in precipitation decrease in the short term. Another report has stated that people have increasingly had heat stress due to rising temperatures in large cities and many citizens have taken to the emergency room due to fever, vomiting and weakness in addition to increases in heat stroke. It is highly likely to continuously increase in temperatures in heat island phenomena in domestic larger cities. In order to mitigate heat island phenomena, it is recommended to continuously promote to take feasible measures, such as maintaining greenery areas or green planting and simultaneously to take non-structural measures that are likely to have short-term effects hereafter. It is assumed to monitor actual heat island phenomena or conduct technological investigative research in light of that to mitigate heat island phenomena takes a long time.

Some local governments have independently analyzed effects of heat islands and rising temperatures and separately formulated countermeasures against heat islands.

JCR has evaluated that the use of proceeds is expected to control heat islands and reduce heat stroke risks by mitigating heat stress, especially in larger cities.

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*Use of Proceeds 26: Project for Green Buildings (green buildings)*

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The use of proceeds 26 refers to projects for green buildings, which is expected to have environmental benefits as it covers buildings with high environmental performance. The use of proceeds falls under "Green buildings which meet regional, national or internationally recognized standards or certifications" in the Green Bond Principles and "Projects for green buildings" among the use of proceeds illustrated in the Green Bond Guidelines.

In this Framework, local governments will use the proceeds for projects for green buildings. As specific criteria, facilities to be developed are required to expect to obtain environmental

[29] Source: Climate Change Adaptation Information Platform
https://adaptation-platform.nies.go.jp/materials/e-learning/study/el-06_05_03.html?prefecture=Tokyo&model=MIROC5&period=End&font=standard

[30] The effects of exposure to heat, such as heat stroke, are called heat stress, and the number of deaths that increases when the temperature rises above the temperature at which the number of deaths is at its lowest is called excess heat stress deaths.

certification, including CASBEE certification (B+ or higher), LEED certification (SILVER or higher) or BELS certification (three stars or more) in this Framework. JCR has evaluated that the type and rank of certification are given to real estate with environmental performance; therefore, these real properties have environmental benefits.

CASBEE (Comprehensive Assessment System for Built Environment Efficiency) is a tool to reconfigure predetermined evaluation factors from the perspective of the environmental quality of buildings (Q refers to quality) and the environmental loads (L means load) of architectural work, and BEE (Building's Environmental Efficiency) value is an indicator and is calculated with L as a denominator and Q as a numerator. High quality of overall buildings is required to be highly rated, and consideration should be given to the indoor comfort and landscape as well as the environment, such as utilizing equipment with energy conservation or low environmental burdens.

LEED (Leadership in Energy and Environmental Design) is an environmental performance evaluation system for buildings or cities in which evaluation is made from comprehensive perspectives, such as locations and transportation, land selection, water use, energy and air, materials and resources, indoor environment or innovation. In order to be certified, it is required to meet essential requirements that shall be satisfied as green buildings.

BELS (Building-Housing Energy-efficiency Labeling System) refers to a system in which a third-party assessment organization evaluates and certifies energy saving performance in new and existing buildings. The exterior performance and primary energy consumption will be evaluated, and buildings are required to have excellent energy saving performance to be highly rated.

In the government's Plan for Global Warming Countermeasures, energy conservation of buildings has been listed as one of the measures to reduce GHG emissions in the industrial sector, the transportation sector and other sectors, including commercial, service or business offices, and it is currently required to make maximum use of technically and economically available technologies as ideal buildings toward 2030 with a view to realize carbon neutrality in 2050. The use of proceeds is expected to contribute to the Plan for Global Warming Countermeasures.

In local governments action plans - administrative work and projects, some local governments have set forth their goals to newly build/renovate facilities owned by local governments on the premise of meeting a certain level of energy conservation or obtaining environmental certification along with such energy saving level. The use of proceeds will also contribute to the goals formulated by these local governments.

## 2. Negative Impacts on the Environment and Society

Local governments have been aware of negative impacts of the projects assumed as targets for the use of proceeds and are examining the potential environmental/social effects when projects are carried out. As a result of verification by the local governments, projects with less negative impacts on the environment and society will be selected as eligible projects for the use of proceeds.

As per the attachment, JCR has confirmed that appropriate consideration will be given to negative effects on the environment and society of the projects for which the proceeds will be used and has evaluated that appropriate avoidance/mitigation measures will be taken per project.

## 3. Alignment with SDGs

JCR has evaluated that the use of proceeds in this Framework will contribute to the goals and targets of the SDGs with reference to ICMA's SDG mapping as shown in the Appendix.

# Evaluation Phase 2: Management, Operation and Transparency Evaluation

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## I. Criteria and Processes for Selecting the Use of Proceeds

### JCR's Key Consideration in This Factor

In this section, JCR will confirm the objectives to be achieved through this evaluation target, the adequacy of the criteria and processes for selecting green projects, and whether a series of processes will be appropriately disclosed to investors.

### ▶▶▶ Current Status of Evaluation Targets and JCR Evaluation

JCR has determined that the departments and executives with specialized knowledge are appropriately involved in the goals in this Framework and the criteria and processes for selecting green projects.

### 1. Goals

The climate change caused by global warming is an urgent issue that none of all creatures living on the earth is avoidable. It is unveiled that the relationship between cumulative $CO_2$ emissions that are anthropogenic sources and the changes in the global average temperature projected is almost proportional according to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (hereinafter referred to as "IPCC"). It is therefore necessary to keep the cumulative emissions below a certain level, taking sinks into account, and continuously reducing GHG emissions is of significance in Japan. As global warming progresses, it causes not only abnormal weather events and rises in sea levels but also a wide range of impacts, including economic impacts on agriculture, forestry and fisheries, disasters or health effects.

Japan as a whole is facing a full-fledged decline in the birthrate combined with an aging population/depopulated society. While a decline in the total population is inevitable for the next several decades, the population has been unevenly distributed at an accelerated rate, and the young/working-age population in rural areas are decreasing with continuous excess inflows into cities from rural areas especially by the young. These demographic changes undermine local communities, impede the performance of local governments' administrative functions and have serious consequences on various local administrative areas as well as local environmental conservation efforts. For instance, abandoned farmland or poorly maintained forests have increased due to the decline in people who will take over agriculture and forestry, and the damage caused by wild birds and mammals has worsened because of declines in hunters. In such areas, the vulnerability to natural disasters is increasing while rich natural habitats, such as *Satochi-Satoyama* (community-based forest areas and the surrounding countryside) are being lost, and biodiversity are endangered.

There are also issues on the environmental pollution of air, water and soil. Marine pollution has been worsened due to marine debris, such as microplastics, and global pollution also has been aggravated, including anthropogenic mercury emissions or persistent/highly bioaccumulative chemical substances, and consequently there are concerns about health effects or impacts on ecosystems through water, air or food chains. In Japan, although the achievement of environmental standards has been on the increase in the medium to long term, there are still negative impacts, such as soil contamination due to heavy metals, asbestos in buildings and polychlorinated biphenyls (PCBs) that are not detoxified, and also issues remain in the atmospheric environment, such as dealing with fine particulate matter (PM2.5) or photochemical

oxidants, and there are still problems in the environmental water quality, including eutrophication in enclosed water areas.

In this way, the government is facing complex environmental challenges; therefore, it has established six priority strategies in the Fifth Basic Environmental Plan to deal with various environmental issues that are closely related to each other.

Priority Strategy 1: Building green economic systems to realize sustainable production and consumption

The aim is to achieve innovation in economic and social systems and to improve resources/carbon productivity (to realize economic growth while reducing inputs of natural resources or GHG emissions) so as to ensure sustainable production and consumption patterns. Specific measures include accelerating green purchasing/environmentally friendly contracts, promoting thorough energy conservation, introducing the maximum renewable energy, expanding the use of hydrogen and utilizing biomass as energy/recyclable resources.

Priority Strategy 2: Improving the values of national land through stock effects

The important is to promote various measures for sustainable national land management in light of a variety of issues, such as apparent effects of climate change, energy problems, aging infrastructure and increases in land that is difficult to continuously manage properly. National land development needs to consider the environment in both structural and non-structural aspects, such as social infrastructure improvements or land use and to address economic/social issues in order to handle these problems. Specific measures include developing/conserving forests, building ecosystem networks, preserving the marine environment, maintaining or restoring healthy water cycles and promoting adaptation to the effects on climate change.

Priority Strategy 3: Sustainable regional development with local resources

Local economic and social activities are generated based on a variety of local resources, such as local energy, natural resources, urban infrastructure or industry accumulation. It is important to lead to progressing economic and social activities by improving quality of local resources and maximizing the use of natural/physically produced/human capital in regions in a sustainable manner. Measures will be taken to sustainably optimize the use of local resources from the standpoint above. Specific measures include the introduction of renewable energy utilizing local resources, regional development with unused biomass resources and the promotion of resources circulation in regions, such as the use of waste biomass.

Priority Strategy 4: Realizing healthy and fulfilling life

People's life is supported by various nature's blessings (ecosystem services) provided by forests, villages, rivers or seas. It is essential to create diverse and attractive local recycling networks utilizing regional uniqueness to maintain/improve Japanese vitality. There is a need to reaffirm values of unique nature, including forests, villages, rivers or seas in respective regions and to rebuild the connections between people and nature and among people. Concrete measures contain promoting low-carbon and healthy housing, creating new demand for wood, maintaining/restoring the healthy and rich water environment, promoting proper waste disposal, accelerating measures for marine debris, including microplastics or taking measures for heat islands.

Priority Strategy 5: Developing/disseminating technologies to support sustainability

In Japan, it is required to have technologies that can contribute not only to Japan but also to the world, such as achieving the 2 degrees Celsius target of the Paris Agreement and adapting to the effects of climate change and that can address issues, including decreasing population/declining birthrate and aging society in advance of the rest of the world, high dependence on overseas resources/energy, regional revitalization or disasters, and it is important to develop/disseminate environmental technologies that can help solve these issues. Specific measures contain developing technologies that contribute to climate change adaptation, biodiversity conservation/restoration and the disaster prevention/mitigation with ecosystems.

Priority Strategy 6: Demonstrating Japan's leadership through international contributions and building strategic partnerships

Japanese excellent environmental technologies/infrastructure and their supportive ideas, systems or human resources can greatly contribute to improving the world's environmental problems while global environmental problems are becoming more serious. In order for the aforementioned to be widely adopted globally, the ideal way of international rules, such as multilateral environmental treaties or various guidelines under respective treaties is crucially important including which positive participation in formulating fair and effective international rules is required.

Local governments can be a key in promoting these priority strategies in their regions, and they play a role as a leading promoter of local environmental conservation, which is a basis to build sustainable society and simultaneously serve as a coordinator of local initiatives. In response to which, local governments are working closely with related departments to comprehensively deploy environmental conservation measures in regions in cooperation and collaboration with residents, business operators, private organizations, other local governments or related national organizations, such as presenting goals or directions for local initiatives, establishing various systems, developing social infrastructure or promoting activities of respective entities depending upon local characteristics. Local governments play extremely important roles in taking environmental conservation measures widely, comprehensively and exhaustively even in the environmental areas in which private business operators are not involved from the perspective of economic rationality.

Local governments formulated some plans for the basic environment, global warming measures and climate change adaptation in accordance with the circumstances of respective organizations so as to play a role to promote the critical strategies mentioned above. "Net Zero Emission of $CO_2$ by 2050" aimed by local governments or so-called zero-carbon cities include only four local governments as of September 2019; however, the zero-carbon cities have rapidly increased to 1,013 local governments as of December 28, 2023 due to a rising sense of crises against intense weather disasters.

The national government aims to reduce GHG emissions by 46 percent in FY 2030 from FY 2013 in its Plan for Global Warming Countermeasures. The local governments that formulated plans for global warming measures established GHG reduction targets in line with the circumstances of respective organizations.

The national/local governments aim to create a secure, safe and sustainable society while striving to prevent/mitigate damage caused by effects of climate change, stabilize the livelihood of people/residents, soundly develop society/economy, preserve the natural environment and

strengthen the national land by comprehensively and systematically promoting measures on climate change adaptation based on scientific knowledge in their climate change adaptation plans.

JCR has evaluated that the use of proceeds indicated in the Joint Local Government Green Bond Framework is consistent with the plans for global warming measures or climate change adaptation plans formulated by the national or local governments.

Consequently, JCR has evaluated that the purpose of issuing the joint local government green bond is consistent with the goals or plans presented by the local governments.

## 2. Selection Criteria

The eligibility criteria in this Framework are as described in the Evaluation Phase 1 in this evaluation report. JCR has evaluated that the project selection criteria have been adequate.

## 3. Processes

**This Framework for Process**

**[Process for Project Evaluation and Selection]**

Each specific project to be appropriated with proceeds financed through the issuance of joint green bonds will be selected in accordance with the following procedures and will be externally evaluated whether it has been aligned with the Green Bond Principles 2021 and the Green Bond Guidelines 2022.

1. MIC will present lists of target projects or measures against potential negative impacts (attached sheets) to an organization who will issue joint green bonds (hereinafter referred to as "Joint Green Bond issuers").

2. Finance Dept. and project-related departments, including Environment Dept. or Civil Engineering Dept. in respective Joint Green Bond issuers will cooperatively select candidate projects and submit these projects selected with materials that indicate such projects are suitable as target projects to MIC and Japan Local Government Bond Association.

3. MIC and Japan Local Government Bond Association will confirm that these candidate projects are expected to bring about environmental benefits through the documents submitted in 2 above and interviews with respective Joint Green Bond issuers where appropriate.

4. After completing the confirmation process in 3 above, MIC will send lists of candidate projects finally selected by respective Joint Green Bond issuers and related materials to an external evaluation organization selected by Joint Green Bond issuers and will obtain the evaluation of the target projects in which these candidate projects are expected to properly have environmental benefits in each issue number of joint green bonds.

In selecting and evaluating projects from the aforementioned 2 to 4, MIC and Japan Local Government Bond Association have confirmed that respective Joint Green Bond issuers plan to take countermeasures against adverse environmental and social impacts that are assumed to make through the implementation of projects (see the attached sheets, "Potential Negative Impacts and Measures").

## [Evaluation by JCR to the Framework]

The projects will be determined after candidate projects will be cooperatively selected by financial departments of respective local governments and relevant project departments.

The projects to which proceeds raised through Joint Local Government Green Bond will be allocated will be also collaboratively selected by financial departments of respective local governments and project-related departments and will be decided.

The green characteristics of projects will be determined by the relevant departments of respective local governments, and the projects for which proceeds are to be used will be determined through the processes of respective local governments and thereby JCR has evaluated that the selection processes have been adequate.

The goals, criteria and processes for Joint Local Government Green Bond will be explained to investors by publishing this Framework on the website of Japan Local Government Bond Association - general incorporated association, which has been evaluated by JCR that a high level of transparency has been provided.

## II. Management of Proceeds

### JCR's Key Consideration in This Factor

It is generally assumed that how to manage proceeds widely varies depending on finance raisers. JCR will confirm that proceeds financed based on this evaluation target are certainly allocated to green projects or whether the mechanisms and internal systems are in place to easily track and manage the allocation.

JCR will also give importance to whether the proceeds financed through this evaluation target will be allocated to green projects promptly and also to the evaluation of managing/operating methods for unallocated proceeds.

**▶▶▶ Current status of Evaluation Target and JCR Evaluation**

JCR has evaluated that the transparency is high since the financial management system of local governments is appropriately in place and that the method of managing proceeds financed is disclosed in this evaluation report and on the website.

**This Framework for Proceeds Management**

**[Management of Proceeds]**

Respective Joint Green Bond issuers will manage their own share of the proceeds raised through joint green bonds in the following manner:

Pursuant to Article 208 of the Local Autonomy Act (Act No. 67 of 1947), local governments are required to appropriate their revenues for each fiscal year to their expenditures for the same fiscal year. Therefore, the proceeds procured through the issuance of joint green bonds will be promptly transferred to accounts designated by respective Joint Green Bond Issuers via the trustee bank every time and will be, in principle, allocated to the target projects within the fiscal year in which the proceeds are raised. In cases where any target project is not closed within the fiscal year due to its progress, the proceeds will be allocated to target projects that are carried over to the following fiscal year in accordance with the provisions of Article 213-3 of the Local Autonomy Act.

The proceeds financed through respective Joint Green Bond Issuers will be managed in cash or highly secured financial assets in a designated account until the proceeds are determined to be allocated.

Finance Departments in respective Joint Green Bond Issuers will monitor the appropriation for the proceeds raised through joint green bonds in cooperation with departments related to the target projects. In particular, respective Joint Green Bond Issuers will manage the proceeds procured through joint green bonds so as not to exceed their allocated amounts to the local bond with management tables that record business expenses or allocations to issue bonds by project.

Respective Joint Green Bond Issuers will prepare performance results and financial statements for all revenues and expenditures, including target projects, which will be audited in the Audit Committee at the end of the fiscal year. The financial statements with opinions provided by inspection commissioners will then be submitted to the assembly for approval.

## [Evaluation by JCR to the Framework]

The proceeds financed through the Joint Local Government Green Bond will be promptly transferred to the account designated by respective local governments via the trustee bank. Respective local governments, in principle, will allocate the proceeds financed through the Joint Local Government Green Bond to projects that meet the eligibility criteria during the fiscal year in which the proceeds are financed. The proceeds to eligible projects are allocated by the finance departments of respective local governments, and the amount financed is to be managed in order not to exceed the allocation of the Joint Local Government Green Bond in the target projects with the bond management table that records the business expenses or the bond issuance amounts per project. In cases where the project originally scheduled for appropriation is delayed or interrupted, the proceeds of respective local governments will be appropriated to cash or highly safe financial assets until the appropriation of the proceeds is fixed.

Performance results and financial statements are prepared for all revenues and expenditures in each local government and are audited by the Audit Committee at the end of each fiscal year. Thereafter, the financial statements are submitted to the assembly of each local government for approval, with the opinions of the audit committee members attached. It is therefore considered to be appropriately controlled.

Unallocated proceeds will be managed in cash or highly safe financial assets among the proceeds financed with the Joint Local Government Green Bond. Documents related to the joint local government green bond financed are stored until the repayment based on document management rules, and thereby the document management is adequate.

Accordingly, JCR has evaluated the financial management by respective local governments as appropriate.

## III. Reporting

### JCR's Key Consideration in This Factor

JCR will evaluate whether the disclosure systems to investors before and after financing based on this evaluation target is planned in a detailed and effective manner in this section.

### ▶▶▶ Current status of Evaluation Target and JCR Evaluation

JCR has evaluated local governments' reporting as a plan in which both of the appropriation of proceeds and environmental benefits are adequately disclosed to investors.

**This Framework for Reporting**

**[Reporting]**

In terms of joint green bonds issued in respective fiscal years, Allocation Reporting and Impact Reporting will be annually disclosed until the proceeds will be fully allocated in and after the following year of the issuance on homepages of Japan Local Government Bond Association or Joint Green Bond issuers.

In cases where there are any significant change in the allocation plan for proceeds or the plans for target projects after the allocation of proceeds is made, the change will be disclosed in a timely manner on their homepages.

(1) Allocation Reporting

The following items on the allocation of proceeds will be disclosed:

・The amount raised (the total amount financed and the amount procured by respective Joint Green Bond issuers)

・The amount allocated to target projects

(2) Impact Reporting

"Reporting items on environmental benefits" stated in the Appendix with regard to environmental benefits of target projects will be disclosed to the extent practicable.

### [Evaluation by JCR to the Framework]

#### Reporting on the appropriation of proceeds

The use of the proceeds financed through the Joint Local Government Green Bond will be disclosed on the JLGBA's website and will be explained to investors ahead of time. JLGBA plans to annually disclose the appropriation of the use of proceeds related entirely to the Joint Local Government Green Bond on its website. Some local governments may disclose the appropriation of their own group's proceeds as well as the appropriation of the proceeds related totally to the Joint Local Government Green Bond on their websites. In cases where any major change is made in the plan to appropriate the use of proceeds, that effect will be disclosed on the website.

## Reporting on environmental benefits

JLGBA will annually disclose contents specified in the Joint Local Government Green Bond Framework as reporting on the environmental benefits of the eligible projects of the Joint Local Government Green Bond as a whole on its website. Some local governments may disclose their own group's environmental benefits as well as the environmental benefits of the eligible projects of the Joint Local Government Green Bond as a whole on their websites. Reporting on environmental benefits include the details by which the benefits are quantitatively recognizable.

Consequently, JCR has evaluated the reporting system by local governments as adequate.

## IV. Organizational Environmental Initiatives

### JCR's Key Consideration in This Factor

JCR will evaluate whether the management of finance raisers regards sustainability issues as high-priority management issues or whether sustainable finance policies/processes or selection criteria for green projects are clearly positioned by establishing departments that specialize in sustainability categories or in cooperation with external organizations in this section.

### ▶▶▶ Current Status of Evaluation Target and JCR Evaluation

JCR has evaluated that local governments regard sustainability issues as important issues of policies and are promoting sustainability initiatives by widely incorporating the knowledge of outside experts.

The 2030 Agenda for Sustainable Development (hereinafter referred to as "The 2030 Agenda") adopted by the United Nations General Assembly in September 2015 presents 17 goals and 169 targets as Sustainable Development Goals (hereinafter referred to as "SDGs.") The 2030 Agenda includes many goals for issues related to the global environment itself and challenges closely related to the global environment, such as water/sanitation, energy, sustainable cities, sustainable production and consumption, climate change, terrestrial ecosystems or marine resources, which signify the international sense of crisis for the sustainability of the global environment. In particular, serious, wide-ranging and irreversible effects of climate change can unexceptionally reach Japan, and thus increasing risks of natural disasters is concerned. The climate systems are undoubtedly warming, and it is apparent that the relationship between cumulative $CO_2$ emissions that are anthropogenic sources and the changes in global average temperature projected is almost proportional by 2100 according to the Fifth Assessment Report of the IPCC.

On the other hand, while Japan as a whole is facing a full-fledged decline in the birthrate combined with an aging population, the population has been unevenly distributed at an accelerated rate and the young/working-age population in rural areas are decreasing due to continuous excess inflows into cities from local regions especially by the young as issues surrounding local governments mentioned above. These demographic changes undermine local communities, impede the performance of local governments' administrative functions and have serious consequences on local environmental conservation efforts in addition to frequency/severity of natural disasters in recent years.

After recognizing these environmental issues, the government formulated Fifth Basic Environmental Plan (Cabinet decision in April 2018) in light of the fact that environmental and social issues (e.g., low birthrate/aging population, a declining population, a reform of work style practices or preparation for large-scale disasters) and economic issues (e.g., battered regional economy or addressing technological innovation, such as IoT) are interconnected and complicated. The plan is designed to focus on the environmental issues and measures while simultaneously solving economic and regional issues, making maximum use of local resources in a sustainable manner and improving economic/social activities.

The government has formulated plans for global warming measures and climate change adaptation to respond to various environmental issues. The current plans for global warming measures cover all GHGs, including those other than carbon dioxide, in order to achieve the goal of reducing GHGs by 46 percent in FY 2030 (from FY 2013) and include the measures and policies

that support the targets. The government aims to prevent/reduce damage caused by the effects of climate change, stabilize people's living, soundly develop society/economy, preserve the natural environment and strengthen the national land in a safe, secure and sustainable manner in the current climate change adaptation plan. The roles in which local governments should play are described in the Plan for Global Warming Countermeasures and the Climate Change Adaptation Plan, respectively.

The government, in response to the adoption of the 2030 Agenda with SDGs at its core, established the Sustainable Development Goals Promotion Headquarters in May, 2016 and determined Sustainable Development Goals Implementation Guidelines, a mid- to long-term national strategies to achieve the SDGs in December, 2016. The Implementation Guidelines were revised in December 2019 in which local governments are expected to further accelerate efforts to achieve the SDGs, proactively disseminate/share local best practices domestically and internationally and approach diverse stakeholders with the aim of disseminating the SDGs still more. In the Guidelines, local governments are required to create "Regional Circular and Symbiotic Spheres" (a concept for local vitality to be exercised to a maximum extent by forming self-reliant/decentralized society per region with various regional resources, including natural resources, such as renewable energy as well as human resources or proceeds by complementing and supporting regions each other depending upon their characteristics) proposed in the government's "Fifth Basic Environmental Plan."

Local governments that are required to create such "Regional Circular and Symbiotic Spheres" have formulated a basic environmental plan, aiming to simultaneously solve environmental, social and economic issues in regions in harmony with the circumstances of respective organizations. Local governments also formulated plans for global warming measures and climate change adaptation as necessary and promoted to take measure to migrate and adopt climate change based on the specific environmental issues in respective regions. Prefectures and municipalities work together to formulate/promote these plans, taking the situation of each local government into consideration.

Local governments collaboratively work with external institutions; for instance, collaboration is made between MIC and JLGBA.

Ministry of Internal Affairs and Communications (hereinafter referred to as "MIC") has provided local governments with information on issuance of green bonds since FY 2017 when the Tokyo Metropolitan Government issued a green bond as a local government for the first time in collaboration with JLGBA. In recent years, MIC is considering issuing green bonds utilizing the joint bond framework in order for local governments to stably finance proceeds to meet the investors' need in light of the growing need for ESG investments in the domestic markets or the expansion of issuance of green bonds by individual local governments. MIC contributes to solving issues, such as ensuring issuance lots (a financing amount that is enough to issue green bonds) or labor-saving of local governments.

JLGBA that is supporting to formulate green bond frameworks has established a working group in the "Research and Study Committee on Local Bonds" as the Secretariat to organize challenges when issuing green bonds and to investigate/consider concrete measures in order to promote issuing, including jointly issued green bonds. JLGBA provides local governments that issue joint local government green bonds with the knowledge obtained through the Research and Study Committee on Local Bonds.

Consequently, JCR has evaluated that the local governments regard issues on sustainability as significant challenges and are considering policies/initiatives on sustainability by widely incorporating the knowledge of outside experts.

## Evaluation Phase 3: Evaluation Results (Conclusion)

**Green 1**

JCR assigned "g1(F)" to the "Green Evaluation (Use of Proceeds,) "m1(F)" to the "Management, Operation and Transparency Evaluation" and "Green 1(F)" to the "JCR Green Finance Framework Evaluation" based on JCR Green Finance Evaluation Methodology. JCR has evaluated that this bond meets the criteria for the factors required in the Green Bond Principle and the Green Bond Guidelines.

**<JCR Green Bond Evaluation Matrix>**

| | | Management, Operation and Transparency Evaluation | | | | |
|---|---|---|---|---|---|---|
| | | m1 | m2 | m3 | m4 | m5 |
| Green Evaluation | g1 | **Green 1** | Green 2 | Green 3 | Green 4 | Green 5 |
| | g2 | Green 2 | Green 2 | Green 3 | Green 4 | Green 5 |
| | g3 | Green 3 | Green 3 | Green 4 | Green 5 | N/A |
| | g4 | Green 4 | Green 4 | Green 5 | N/A | N/A |
| | g5 | Green 5 | Green 5 | N/A | N/A | N/A |

(Responsible analysts for this evaluation) Atsuko Kajiwara, Rieko Kikuchi, Shintaro Arai, Takuto Touda

【Attachment】

| No. | Green-related Project | Related SDGs | Potential Negative Impacts and Measures | Reporting Items on Environmental Benefits |
|---|---|---|---|---|
| Major Category | 1. Projects for renewable energy | | | |
| Subcategory | (1) Projects for development of renewable energy-related facilities/equipment | | | |
| 1 | Development of solar power generation facilities/equipment | 7.Affordable and clean energy<br>9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>13.Climate action | a. Appropriate environmental conservation measures shall be taken and post-evaluation shall be made for projects that are subject to environmental impact assessment.<br>b. Thorough explanations on adverse effects on landscape shall be made to local residents.<br>c. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>d. Safety construction measures shall be specified by contractors. | ・Maintenance records (names of facilities introduced, numbers of locations and start dates of operations)<br>・(Estimated) power generation amounts (kWh)<br>・Reduction of $CO_2$ emissions (t-$CO_2$/year) |
| 2 | Development of micro-hydroelectric power | 7.Affordable and clean energy | a. Appropriate environmental | ・Maintenance records (names of |

| | | | | |
|---|---|---|---|---|
| | generation facilities/equipment | 9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>13.Climate action | conservation measures shall be taken and post-evaluation shall be made for projects that are subject to environmental impact assessment.<br>b. Water rights shall be adjusted.<br>c. Approval/permits and licenses required for facilities shall be obtained, and sufficient explanations shall be made to local residents regarding soil contamination, water pollution, air pollution, noise and vibrations caused by construction work.<br>d. Safety construction measures shall be specified by contractors. | facilities introduced, numbers of locations and start dates of operations)<br>・(Estimated) power generation amounts (kWh)<br>・Reduction of $CO_2$ emissions (t-$CO_2$/year) |
| 3 | Renovation of deteriorated hydroelectric power plants | 7.Affordable and clean energy<br>9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>13.Climate action | a. Appropriate environmental conservation measures shall be taken and post-evaluation shall be made for projects that are subject to environmental impact assessment.<br>b. Approval/permits and licenses required for facilities shall be obtained, and sufficient explanations shall be made to local residents regarding soil contamination, water pollution, air pollution, noise and vibrations caused by | ・Maintenance records (names of facilities introduced, numbers of locations and start dates of operations)<br>・(Estimated) power generation amounts (kWh)<br>・Reduction of $CO_2$ emissions (t-$CO_2$/year) |

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| | | | construction work.<br>c. Safety construction measures shall be specified by contractors. | |
| 4 | Development of onshore wind power generation facilities/equipment | 7.Affordable and clean energy<br>9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>13.Climate action | a. Appropriate environmental conservation measures shall be taken and post-evaluation shall be made for projects that are subject to environmental impact assessment.<br>b. Thorough explanations shall be made to local residents concerning adverse effects on landscape or ecosystems.<br>c. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>d. Safety construction measures shall be specified by contractors. | ・Maintenance records (names of facilities introduced, numbers of locations and start dates of operations)<br>・(Estimated) power generation amounts (kWh)<br>・Reduction of $CO_2$ emissions (t-$CO_2$/year) |
| 5 | Development of offshore wind power generation facilities/equipment | 7.Affordable and clean energy<br>9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities | a. Appropriate environmental conservation measures, including impacts and measures on marine ecosystems shall be taken and post-evaluation shall be made for projects that are subject to | ・Maintenance records (names of facilities introduced, numbers of locations and start dates of operations)<br>・(Estimated) power generation |

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| | | 13.Climate action | environmental impact assessment.<br>b. Sufficient explanations shall be made to local residents concerning adverse effects on landscape or ecosystems.<br>c. Consideration shall be made to safety for workers with offshore operations. | amounts (kWh)<br>・Reduction of CO2 emissions (t-$CO_2$/year) |
| 6 | Development of facilities for geothermal power generation | 7.Affordable and clean energy<br>9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>13.Climate action | a. Appropriate environmental conservation measures shall be taken and post-evaluation shall be made for projects that are subject to environmental impact assessment.<br>b. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>c. In cases where there are hot springs in target areas, thorough explanations shall be made to stakeholders in hot spring towns, and impacts on hot springs shall be sufficiently confirmed.<br>d. Safety construction measures shall be specified by contractors. | ・Maintenance records (names of facilities introduced, numbers of locations and start dates of operations)<br>・(Estimated) power generation amounts (kWh)<br>・Reduction of CO2 emissions (t-$CO_2$/year) |

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| 7 | Development of woody biomass power generation facilities/equipment | 7.Affordable and clean energy<br>9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>13.Climate action | a. Appropriate environmental conservation measures shall be taken and post-evaluation shall be made for projects that are subject to environmental impact assessment.<br>b. Approval/permits and licenses required for facilities shall be obtained, and sufficient explanations shall be made to local residents regarding soil contamination, water pollution, air pollution, noise and vibrations caused by construction work.<br>c. Fuels shall be unused materials.<br>(In case of imported wood, forest certification shall be obtained.)<br>d. Safety construction measures shall be specified by contractors. | ・Maintenance records (names of facilities introduced, numbers of locations and start dates of operations)<br>・(Estimated) power generation amounts (kWh)<br>・Reduction of CO2 emissions (t-$CO_2$/year) |
| 8 | Development of sewage sludge and human waste biomass power generation facilities/equipment | 7.Affordable and clean energy<br>9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>13.Climate action | a. Appropriate environmental conservation measures shall be taken and post-evaluation shall be made for projects that are subject to environmental impact assessment.<br>b. Approval/permits and licenses required for facilities shall be obtained, and sufficient explanations shall be made to | ・Maintenance records (names of facilities introduced, numbers of locations and start dates of operations)<br>・(Estimated) power generation amounts (kWh)<br>・Reduction of $CO_2$ emissions (t-$CO_2$/year) |

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| | | | local residents regarding soil contamination, water pollution, air pollution, noise and vibrations caused by construction work.<br>c. Safety construction measures shall be specified by contractors. | |
| 9 | Development of facilities for effective use of sludge<br>(Generation of biogas/conversion of sewage sludge into solid fuels) | 6.Clean water and sanitation<br>7.Affordable and clean energy<br>9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>12.Responsible consumption and production | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent water pollution or dispersal of hazardous wastes, such as asbestos.<br>c. No adverse effect shall be made due to improper disposal of devices or equipment before replacement.<br>d. Safety construction measures shall be specified by contractors. | ・Maintenance records<br>・Annual reduction in sludge incineration volume (kg)<br>・Annual biogas production (kg)<br>・Estimated amount of electricity generated from biogas (kWh)<br>・Annual amount of solid fuels (kg)<br>・$CO_2$ emission reduction from uses of fuels generated (t-$CO_2$/year) |
| Major Category | 2. Projects for energy saving | | | |
| Subcategory | (1) Convert public facilities into ZEB | | | |
| 1 | Convert public facilities into ZEB | 7.Affordable and clean energy | a. Projects shall be carried out by | ・Maintenance records (including |

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| | | 13.Climate action | complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Safety construction measures shall be specified by contractors. | names of maintenance facilities)<br>・Obtain status and type of certification<br>・Primary energy consumption reduction (GJ/year) or rates (%) |
| 2 | Convert public housing into ZEH | 7.Affordable and clean energy<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Safety construction measures shall be specified by contractors. | ・Maintenance records (including names of maintenance facilities)<br>・Obtain status and type of certification<br>・Primary energy consumption reduction (GJ/year) or rates (%) |
| Subcategory | (2) Introduction of equipment with high energy saving performance into public facilities | | | |
| 1 | Convert lighting for public facilities or traffic lights into LED | 7.Affordable and clean energy<br>9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>12.Responsible consumption and production | a. No adverse effect shall be made due to improper disposal of devices or equipment before replacement.<br>b. Safety construction measures shall be specified by contractors. | ・Maintenance records (number of locations)<br>・Power consumption reduction amount (kWh) or rates (%)<br>・$CO_2$ emission reduction (t-$CO_2$/year) |

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| | | 13.Climate action | | |
| 2 | Development of air conditioning equipment for public facilities (introduction of air conditioning equipment with high energy efficiency) | 7.Affordable and clean energy<br>9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>12.Responsible consumption and production<br>13.Climate action | a. No adverse effect shall be made due to improper disposal of devices or equipment before replacement, especially disposal of fluorocarbons.<br>b. Safety construction measures shall be specified by contractors. | ・Maintenance records (number of locations)<br>・Power consumption reduction amount (kWh) or rates (%)<br>・$CO_2$ emission reduction (t-$CO_2$/year) |
| 3 | Improvement of elevators in public facilities (introduction of elevators with high energy efficiency) | 7.Affordable and clean energy<br>9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>12.Responsible consumption and production<br>13.Climate action | a. No adverse effect shall be made due to improper disposal of devices or equipment before replacement.<br>b. Safety construction measures shall be specified by contractors. | ・Maintenance records (number of locations)<br>・Power consumption reduction amount (kWh) or rates (%)<br>・$CO_2$ emission reduction (t-$CO_2$/year) |
| 4 | Energy saving for other public facilities | 7.Affordable and clean energy<br>9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>12.Responsible consumption and production<br>13.Climate action | a. No adverse effect shall be made due to improper disposal of devices or equipment before replacement.<br>b. Safety construction measures shall be specified by contractors. | ・Maintenance records (number of locations)<br>・Power consumption reduction amount (kWh) or rates (%)<br>・$CO_2$ emission reduction (t-$CO_2$/year) |

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| Subcategory | (3) Utilization of unused energy | | | |
| 1 | Development of facilities that utilize unused thermal energy (geothermal/sewage heat) | 7.Affordable and clean energy<br>9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>12.Responsible consumption and production<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent water pollution or dispersal of hazardous wastes, such as asbestos.<br>c. No adverse effect shall be made due to improper disposal of devices or equipment before replacement.<br>d. Safety construction measures shall be specified by contractors. | ・Maintenance records<br>・Power consumption reduction amount (kWh) or rates (%)<br>・Amount of unused thermal energy utilized |
| Major Category | 3. Projects for pollution prevention and control | | | |
| Subcategory | (1) Development of sewage treatment facilities | | | |
| 1 | Development of sewerage facilities (related to sewage treatment)<br>(improvement of sewage treatment facilities/conduits or renovation projects for widening)<br>*Including development of agricultural | 6.Clean water and sanitation<br>7.Affordable and clean energy<br>9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by | ・Maintenance records (number of maintenance locations, extension of maintenance)<br>・Population of in-service areas<br>・Disposal volume<br>・Annual average value of BOD |

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| | community effluent treatment facilities | 12.Responsible consumption and production | construction work.<br>b. Measures shall be taken to prevent water pollution or dispersal of hazardous wastes, such as asbestos.<br>c. No adverse effect shall be made due to improper disposal of devices or equipment before replacement.<br>d. Safety construction measures shall be specified by contractors. | |
| 2 | Improvement of combined sewage systems | 6.Clean water and sanitation<br>7.Affordable and clean energy<br>9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>12.Responsible consumption and production | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent water pollution or dispersal of hazardous wastes, such as asbestos.<br>c. No adverse effect shall be made due to improper disposal of devices or equipment before replacement.<br>d. Safety construction measures shall be specified by contractors. | ・Maintenance records (number of maintenance locations, extension of maintenance)<br>・Population of in-service areas<br>・Annual average value of BOD |
| 3 | Development of night soil treatment facilities | 6.Clean water and sanitation | a. Projects shall be carried out by | ・Maintenance records (number of |

| | | | | |
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| | | 7.Affordable and clean energy<br>9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>12.Responsible consumption and production | complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent water pollution or dispersal of hazardous wastes, such as asbestos.<br>c. No adverse effect shall be made due to improper disposal of devices or equipment before replacement.<br>d. Safety construction measures shall be specified by contractors. | maintenance locations)<br>・Population of disposal<br>・Disposal volume<br>・Annual average value of BOD |
| Subcategory | (2) Development of waste disposal-related facilities | | | |
| 1 | Improvement of core equipment in general waste treatment facilities, such as energy recovery type waste treatment/high-efficient refuse-burning power generation facilities (related to energy recovery) | 7.Affordable and clean energy<br>9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>12.Responsible consumption and production<br>13.Climate action | a. The amount of incineration ash discharged from waste treatment facilities shall be reduced compared to that of previous facilities (it shall be effectively utilized, such as recycling after collection if possible.)<br>b. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and | ・Maintenance records (names of facilities introduced, numbers of locations and start dates of operations)<br>・(Estimated) Power generation amount (kWh) |

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| | | | obtaining their understanding with regard to noise and vibration caused by construction work.<br>c. Measures shall be taken to prevent soil contamination and dispersal of hazardous waste, such as asbestos.<br>d. No adverse effect shall be made due to improper disposal of devices or equipment before replacement.<br>e. Safety construction measures shall be specified by contractors. | |
| 2 | Improvement of energy recovery type waste treatment facilities/high-efficient refuse-burning power generation facilities (consolidation, reconstruction) | 7.Affordable and clean energy<br>9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>12.Responsible consumption and production<br>13.Climate action | a. The amount of incineration ash discharged from waste treatment facilities shall be reduced compared to those of from previous facilities (it shall be effectively utilized, such as recycling after collection if possible.)<br>b. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>c. Measures shall be taken to prevent soil | - Maintenance records (names of facilities introduced, numbers of locations and start dates of operations)<br>- (Estimated) power generation amount (kWh) |

| | | | | |
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| | | | contamination and dispersal of hazardous waste, such as asbestos.<br>d. No adverse effect shall be made due to improper disposal of devices or equipment before replacement.<br>e. Safety construction measures shall be specified by contractors. | |
| 3 | Development of general waste treatment equipment/facilities, which lead to reduce hazardous substances emissions, and consolidation or reconstruction in case of improving facilities | 7.Affordable and clean energy<br>9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>12.Responsible consumption and production<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent soil contamination and dispersal of hazardous waste, such as asbestos.<br>c. No adverse effect shall be made due to improper disposal of devices or equipment before replacement.<br>d. Safety construction measures shall be specified by contractors. | ・Maintenance records<br>・Reduction in emissions of harmful substances (kg) |
| 4 | Improvement of facilities/equipment for proper reuse, such as used products or of facilities/equipment on recycling of resources | 7.Affordable and clean energy<br>9.Industry, innovation and infrastructure | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, | ・Maintenance records<br>・Recycling amount (t) |

| | | | | |
|---|---|---|---|---|
| | (waste) | 11.Sustainable cities and communities<br>12.Responsible consumption and production<br>13.Climate action | thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent soil contamination and dispersal of hazardous waste, such as asbestos.<br>c. No adverse effect shall be made due to improper disposal of devices or equipment before replacement.<br>d. Safety construction measures shall be specified by contractors. | |
| Subcategory | (3) Monitoring/removal of contaminants | | | |
| 1 | Development of monitoring facilities of water/air pollutants and hazardous chemical substances | 3.Good health and well-being<br>11.Sustainable cities and communities<br>14.Life below water<br>15.Life on land | a. No adverse effect shall be made due to improper disposal of devices or equipment before replacement. | ・Introduction records of measurement equipment |
| 2 | Projects for reduction of nitrate nitrogen (Improvement of animal excrement treatment facilities (compost centers)) | 3.Good health and well-being<br>11.Sustainable cities and communities<br>14.Life below water<br>15.Life on land | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work. | ・Maintenance records<br>・Increases in livestock waste disposal volume (t)<br>・Reduction in nitrate nitrogen concentration in groundwater (mg/L) |

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| | | | b. Measures shall be taken to prevent soil contamination and dispersal of hazardous waste, such as asbestos.<br>c. Measures for offensive odor shall be taken: e.g., installation of offensive odor equipment<br>d. Safety construction measures shall be specified by contractors. | |
| 3 | Projects for removal of contaminated soil | 3.Good health and well-being<br>11.Sustainable cities and communities<br>14.Life below water<br>15.Life on land | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures against soil contamination shall be taken.<br>c. Safety construction measures shall be specified by contractors. | ・Amount of contaminated soil removed (t)<br>・Reduction in water/air pollutants derived from contaminated soil (t) |
| 4 | Projects for marine pollution measures | 3.Good health and well-being<br>11.Sustainable cities and communities<br>14.Life below water<br>15.Life on land | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by | ・Amount of beach debris removed (t)<br>・Reduction in water pollutants (t) |

| | | | | |
|---|---|---|---|---|
| | | | construction work.<br>b. Safety construction measures shall be specified by contractors. | |
| Major Category | 4. Projects for the sustainable management of natural resources/land use | | | |
| Subcategory | (1) Conservation/management of marine resources | | | |
| 1 | Creation of tidal flats, shallow bottom and seaweed beds | 13.Climate action<br>14.Life below water<br>15.Life on land | a. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>b. Safety construction measures shall be specified by contractors. | ・Maintenance areas (ha)<br>・Types of fishery resources to be maintained and amounts of fishery resources (t) |
| 2 | Development of fish beds | 14.Life below water<br>15.Life on land | a. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>b. Safety construction measures shall be specified by contractors. | ・Maintenance records<br>・Types of fishery resources to be maintained and amounts of fishery resources (t) |
| 3 | Creation of breeding grounds | 14.Life below water<br>15.Life on land | a. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>b. Safety construction measures shall be specified by contractors. | ・Maintenance areas (ha)<br>・Types of fishery resources to be maintained and amounts of fishery resources (t) |
| 4 | Improvement of river environment (fish ladder installation) | 14.Life below water<br>15.Life on land | a. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>b. Safety construction measures shall be | ・Maintenance records<br>・Types of fishery resources to be maintained and amounts of fishery resources (t) |

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| | | | specified by contractors. | |
| 5 | Development of seed production facilities | 14.Life below water | a. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>b. Safety construction measures shall be specified by contractors. | ・Maintenance records<br>・Production of seeds and seedlings (fish) |
| 6 | Improvement of fisheries technology development facilities | 14.Life below water | a. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>b. Safety construction measures shall be specified by contractors. | ・Achievements in fisheries technology development<br>・Types of fishery resources to be maintained and amounts of fishery resources (t) |
| Subcategory | (2) Conservation/management of forest resources | | | |
| 1 | Development of forest roads | 13.Climate action<br>15.Life on land | a. Appropriate environmental conservation measures shall be taken and post-evaluation shall be made for projects that are subject to environmental impact assessment.<br>b. Safety construction measures shall be specified by contractors. | ・Extension of improvement of forest trail (km)<br>・Forest areas managed with forest trail improved (ha) |
| 2 | Improvement of forests, such as thinning or afforestation (excluding opening of forest roads) | 13.Climate action<br>15.Life on land | a. Appropriate environmental conservation measures shall be taken and post-evaluation shall be made for projects that are subject to environmental impact assessment.<br>b. Safety construction measures shall be | ・Maintenance records (number of locations, maintenance area (ha)) |

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| | | | specified by contractors. | |
| 3 | Promote to introduce wooden structure and introduce wooden interior decoration with wood produced by the issuers in public facilities | 13.Climate action<br>15.Life on land | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent soil contamination and dispersal of hazardous waste, such as asbestos.<br>c. Safety construction measures shall be specified by contractors. | ・Maintenance records, including the number of locations<br>・Results to use wood produced by the issuers concerned |
| Subcategory | (3) Improvement of personnel training bases on natural resources management | | | |
| 1 | Improvement of bases to develop human resources who are responsible for sustainable forests/forestry | 12.Responsible consumption and production<br>15.Life on land | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent soil contamination and dispersal of hazardous waste, such as asbestos.<br>c. Consideration shall be given to | ・Maintenance records<br>・Number of participants in programs for forestry human resource development<br>・Number of forestry workers |

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| | | | sustainable forestry not to lead to over-cutting in terms of training contents at the base concerned.<br>d. Safety construction measures shall be specified by contractors. | |
| Subcategory | (4) Greening promotion | | | |
| 1 | Development of parks (creation of green space) | 11.Sustainable cities and communities<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Safety construction measures shall be specified by contractors. | ・Green areas (ha)<br>・Maintenance areas (ha) |
| 2 | Greening public facilities. | 11.Sustainable cities and communities<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Safety construction measures shall be specified by contractors. | ・Green areas (ha) |
| Subcategory | (5) National park development | | | |

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| 1 | Improvement of national park facilities | 11.Sustainable cities and communities<br>15.Life on land | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>c. Safety construction measures shall be specified by contractors. | ・Maintenance areas (ha), extension (km)<br>・Species and population of fauna and flora to be conserved by projects |
| Major Category | 5. Projects for biodiversity conservation | | | |
| Subcategory | (1) Development of wildlife habitat | | | |
| 1 | Conservation of wetlands or coral reefs | 11.Sustainable cities and communities<br>14.Life below water<br>15.Life on land | a. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>b. Safety construction measures shall be specified by contractors. | ・Maintenance records<br>・Species and population of fauna and flora to be conserved |
| 2 | Development of wildlife habitat under conservation | 14.Life below water<br>15.Life on land | a. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>b. Safety construction measures shall be specified by contractors. | ・Maintenance records<br>・Records of protection/ proliferation of wildlife |

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| 3 | Improvement of rare species protection facilities/laboratory | 14.Life below water<br>15.Life on land | a. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>b. Safety construction measures shall be specified by contractors. | ・Maintenance records<br>・Records of protection/proliferation of rare species |
| Subcategory | (2) Prevention of damage by wildlife or alien species | | | |
| 1 | Prevention of damage by wildlife or alien species | 11.Sustainable cities and communities<br>14.Life below water<br>15.Life on land | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>c. Safety construction measures shall be specified by contractors. | ・Maintenance records<br>・Species and population of fauna and flora to be conserved by projects |
| Subcategory | (3) Landscape conservation | | | |
| 1 | Development of landscape-friendly facilities with the natural river reconstruction method | 11.Sustainable cities and communities<br>14.Life below water<br>15.Life on land | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by | ・Maintenance records<br>・Maintenance, protection and increased areas of natural environment ($km^2$, ha) |

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| | | | construction work.<br>b. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>c. Safety construction measures shall be specified by contractors. | |
| 2 | *Satoyama* (community-based forest) conservation | 11.Sustainable cities and communities<br>14.Life below water<br>15.Life on land | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>c. Safety construction measures shall be specified by contractors. | ・Maintenance records<br>・Maintenance, protection and increased areas of natural environment ($km^2$, ha) |
| Major Category | 6. Projects for clean transportation | | | |
| Subcategory | (1) Development of vehicles in public transportation | | | |
| 1 | Development of vehicles in the railway business (public/quasi-public corporation) | 9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities | a. No adverse effect shall be made due to improper disposal of devices or equipment before replacement. | ・Maintenance records<br>・$CO_2$ emission reduction (t-$CO_2$/year) |

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| | | 13.Climate action | | |
| 2 | Improvement of facilities (station buildings) in the railway business (public/quasi-public corporation) | 9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Safety construction measures shall be specified by contractors. | ・Maintenance records<br>・$CO_2$ emission reduction (t-$CO_2$/year) |
| 3 | Development of vehicles in the bus business (public/quasi-public corporation) | 9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>13.Climate action | a. No adverse effect shall be made due to improper disposal of devices or equipment before replacement. | ・Number of units installed<br>・$CO_2$ emission reduction (t-$CO_2$/year) |
| Subcategory | (2) Spread and expansion of electric vehicles | | | |
| 1 | Switch official vehicles from conventional cars to electric vehicles | 9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>12.Responsible consumption and production<br>13.Climate action | a. No adverse effect shall be made due to improper disposal of devices or equipment before replacement. | ・Number of units installed<br>・$CO_2$ emission reduction (t-$CO_2$/year) |
| 2 | Improvement of battery charging facilities for electric vehicles | 9.Industry, innovation and infrastructure | a. Projects shall be carried out by complying with the Noise Regulation Act | ・Maintenance records<br>・Projected number of electric |

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| | | 11.Sustainable cities and communities<br>12.Responsible consumption and production<br>13.Climate action | or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Safety construction measures shall be specified by contractors. | vehicles (units)<br>・$CO_2$ emission reduction (t-$CO_2$/year) |
| 3 | Development of hydrogen stations | 9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>12.Responsible consumption and production<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Safety construction measures shall be specified by contractors. | ・Maintenance records<br>・Projected number of widespread use of fuel cell vehicles (units)<br>・$CO_2$ emission reduction (t-$CO_2$/year) |
| Subcategory | (3) Promotion of utilizing the clean modes of transport | | | |
| 1 | Improvement of bicycle running space | 11.Sustainable cities and communities<br>13.Climate action | a. Consideration shall be given to safe bicycle riding and avoid accidents.<br>b. Safety construction measures shall be specified by contractors. | ・Extension of maintenance (km) |
| 2 | Development of facilities for park and ride | 11.Sustainable cities and communities<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and | ・Maintenance records |

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| | | | obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Safety construction measures shall be specified by contractors. | |
| Subcategory | (4) Formation of carbon neutral port (CNP) | | | |
| 1 | Formation of carbon-neutral port (CNP) | 7.Affordable and clean energy<br>9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>12.Responsible consumption and production | a. Appropriate environmental conservation measures shall be taken and post-evaluation shall be made for projects that are subject to environmental impact assessment.<br>b. Measures shall be taken to prevent water pollution or dispersal of hazardous wastes, such as asbestos.<br>c. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>d. Safety construction measures shall be specified by contractors. | ・Maintenance records<br>・Energy reduction (kWh)<br>・$CO_2$ emission reduction (t-$CO_2$/year) |
| Major Category | 7. Projects for sustainable water management | | | |

| Subcategory | (1) Development of water supply facilities | | | |
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| 1 | Development of water supply facilities<br>(Improvement of energy efficiency by introducing highly efficient equipment and downsizing equipment) | 6.Clean water and sanitation<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent water and soil pollution.<br>c. Safety construction measures shall be specified by contractors. | ・Maintenance records<br>・Population of in-service areas<br>・Power consumption reduction (kWh) |
| 2 | Consolidation/expansion of water supply facilities<br>(Improvement of energy efficiency by Consolidating water supply and utilizing potential energy) | 6.Clean water and sanitation<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent water and soil pollution.<br>c. Safety construction measures shall be specified by contractors. | ・Maintenance records<br>・Population of in-service areas<br>・Power consumption reduction (kWh) |
| 3 | Preventive measures against disasters, such as water supply facilities | 6.Clean water and sanitation<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act | ・Maintenance records, including number of locations |

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| | (Development of erosion control (hereinafter referred to as "*SABO*") as floods/landslide preventive measures) | | or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures against water pollution shall be taken.<br>c. Safety construction measures shall be specified by contractors. | ・Types and levels of disasters that can be handled, such as precipitation |
| Major Category | 8. Projects for adaptation to climate change | | | |
| Subcategory | (1) Measures for damage from storms and floods | | | |
| 1 | Development of river bank protection (improvement of banks or dams) | 11.Sustainable cities and communities<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent water and soil pollution.<br>c. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>d. Safety construction measures shall be | ・Maintenance records, including number of locations<br>・Maintenance distance (km)<br>・Maintenance areas (ha)<br>・Reduction in areas assumed to be submerged |

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| | | | specified by contractors. | |
| 2 | Removal of sediment from rivers | 11.Sustainable cities and communities<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent water and soil pollution.<br>c. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>d. Safety construction measures shall be specified by contractors. | ・Maintenance records, including number of locations<br>・Maintenance distance (km)<br>・Maintenance areas (ha)<br>・Volume of soil that needs to take measures ($m^3$)<br>・Reduction in areas assumed to be submerged |
| 3 | Widening rivers | 11.Sustainable cities and communities<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent water and soil pollution.<br>c. Consideration shall be given not to | ・Maintenance records, including number of locations<br>・Maintenance distance (km)<br>・Maintenance areas (ha)<br>・Reduction in areas assumed to be submerged. |

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| | | | have impacts on ecosystems of other flora and fauna by projects.<br>d. Safety construction measures shall be specified by contractors. | |
| 4 | Improvement of floodway | 11.Sustainable cities and communities<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent water and soil pollution.<br>c. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>d. Safety construction measures shall be specified by contractors. | ・Maintenance records, including number of locations<br>・Maintenance distance (km)<br>・Maintenance areas (ha)<br>・Reduction in areas assumed to be submerged. |
| 5 | Development of roads | 11.Sustainable cities and | a. Projects shall be carried out by | ・Maintenance records, including |

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| | (drainage/permeability pavement, roads for emergency transportation) | communities<br>13.Climate action | complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent water and soil pollution.<br>c. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>d. Safety construction measures shall be specified by contractors. | number of locations<br>・Maintenance distance (km)<br>・Maintenance areas (ha)<br>・Infiltrated water volume ($m^3$/hr.) |
| 6 | Improvement of flood control dams | 11.Sustainable cities and communities<br>13.Climate action | a. Appropriate environmental conservation measures shall be taken and post-evaluation shall be made for projects that are subject to environmental impact assessment.<br>b. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work. | ・Maintenance records, including number of locations<br>・Reduction in areas assumed to be submerged |

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| | | | c. Measures shall be taken against water and soil pollution.<br>d. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>e. Safety construction measures shall be specified by contractors. | |
| 7 | Development of agricultural irrigation facilities (drainage pump stations) | 11.Sustainable cities and communities<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent water and soil pollution.<br>c. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>d. Safety construction measures shall be specified by contractors. | ・Maintenance records, including number of locations<br>・Maintenance distance (km)<br>・Maintenance areas (ha)<br>・Infiltrated water volume ($m^3$/hr.) |
| 8 | Development of railway bridge replacement at the bottleneck in watercourses | 11.Sustainable cities and communities<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and | ・Maintenance records, including number of locations<br>・Reduction in areas assumed to be submerged |

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| | | | obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent water and soil pollution.<br>c. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>d. Safety construction measures shall be specified by contractors. | |
| 9 | Extending the life of river management facilities (improvement of switching gears) | 11.Sustainable cities and communities<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent water and soil pollution.<br>c. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>d. Safety construction measures shall be specified by contractors. | ・Maintenance records, including number of locations<br>・Reduction in areas assumed to be submerged |
| 10 | Improvement of flood control facilities | 11.Sustainable cities and | a. Projects shall be carried out by | ・Maintenance records, including |

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| | (retention/equalizing reservoirs or basins) | communities<br>13.Climate action | complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent water and soil pollution.<br>c. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>d. Safety construction measures shall be specified by contractors. | number of locations<br>・Reduction in areas assumed to be submerged |
| 11 | Removal of all power poles on roads (for reducing damage in case of damages from storms and floods) | 11.Sustainable cities and communities<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. No adverse effect shall be made due to improper disposal of devices or equipment before replacement.<br>c. Safety construction measures shall be specified by contractors. | ・Maintenance records, including number of locations<br>・Maintenance distance (km) |

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| 12 | Development of additional devices of emergency power supply for traffic lights | 11.Sustainable cities and communities<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. No adverse effect shall be made due to improper disposal of devices or equipment before replacement.<br>c. Safety construction measures shall be specified by contractors. | ・Maintenance records, including number of locations |
| 13 | Water level gauge for crisis management, river monitoring camera or river information infrastructure (information gathering/processing devices of precipitation) | 11.Sustainable cities and communities<br>13.Climate action | a. No adverse effect shall be made due to improper disposal of devices or equipment before replacement. | ・Maintenance records, including number of locations |
| 14 | Improvement of wide-area disaster prevention bases that will be evacuation sites in the event of disasters | 11.Sustainable cities and communities<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Safety construction measures shall be | ・Maintenance areas (ha)<br>・Capacity (people or areas covered) |

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| | | | specified by contractors. | |
| 15 | Development of sewerage facilities (related to rainwater) (improvement of rainwater drainage/infiltration facilities, expansion of pumps or introduction of high efficient pumps) | 11.Sustainable cities and communities<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent water and soil pollution.<br>c. Safety construction measures shall be specified by contractors. | ・Maintenance records, including number of locations |
| Subcategory | (2) Measures for high tide/wave | | | |
| 1 | Development of facility to protect the coastline (bank protection, embankment, detached breakwaters, groins, floodgates, improvement of drainage pumping stations or rising breakwater) | 11.Sustainable cities and communities<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent water and soil pollution.<br>c. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects. | ・Maintenance records, including number of locations<br>・Maintenance distance (km)<br>・Maintenance areas (ha)<br>・(Projected) disaster prevention effects, such as reduction in flooded areas or number of damaged houses |

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| | | | d. Safety construction measures shall be specified by contractors. | |
| 2 | Development of harbor and fishing port facilities (quay walls) | 11.Sustainable cities and communities<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent water and soil pollution.<br>c. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>d. Safety construction measures shall be specified by contractors. | ・Maintenance records, including number of locations<br>・Maintenance distance (km)<br>・Maintenance areas (ha)<br>・(Projected) disaster prevention effects, such as reduction in flooded area or number of damaged houses |
| Subcategory | (3) Measures for landslide | | | |
| 1 | Development of *SABO* facilities (*SABO* dams or mountain stream maintenance work) | 11.Sustainable cities and communities<br>13.Climate action | a. Measures shall be taken to prevent water and soil pollution.<br>b. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>c. Safety construction measures shall be specified by contractors. | ・Maintenance records, including number of locations |
| 2 | Improvement of afforestation facilities (check | 11.Sustainable cities and | a. Appropriate environmental | ・Maintenance records, including |

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| | dams or channel works) | communities<br>13.Climate action | conservation measures shall be taken and post-evaluation shall be made for projects that are subject to environmental impact assessment.<br>b. Measures shall be taken to prevent water and soil pollution.<br>c. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>d. Safety construction measures shall be specified by contractors. | number of locations |
| 3 | Development of protection forests | 11.Sustainable cities and communities<br>13.Climate action | a. Appropriate environmental conservation measures shall be taken and post-evaluation shall be made for projects that are subject to environmental impact assessment.<br>b. Safety construction measures shall be specified by contractors. | ・Maintenance records, including number of locations |
| 4 | Implementation of projects to prevent landslides at steep slopes (development of retaining wall/ slope work) and to take measures for landslide | 11.Sustainable cities and communities<br>13.Climate action | a. Measures shall be taken to prevent water and soil pollution.<br>b. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>c. Safety construction measures shall be specified by contractors. | ・Maintenance records, including number of locations |

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| 5 | Implementation of measures for road slopes and projects for stone fall prevention | 11.Sustainable cities and communities<br>13.Climate action | a. Measures shall be taken to prevent water and soil pollution.<br>b. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>c. Safety construction measures shall be specified by contractors. | ・Maintenance records, including number of locations |
| 6 | *SABO* information infrastructure (information gathering/processing equipment of precipitation) | 11.Sustainable cities and communities<br>13.Climate action | a. No adverse effect shall be made due to improper disposal of devices or equipment before replacement. | ・Maintenance records, including number of locations |
| Subcategory | (4) Research and development in preparation for climate change by the agriculture, forestry and fisheries industry | | | |
| 1 | Improvement of developmental facilities for varieties of agricultural products or agricultural production technology | 13.Climate action<br>15.Life on land | a. Measures shall be taken to prevent water and soil pollution.<br>b. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>c. Safety construction measures shall be specified by contractors. | ・Number of facilities/equipment maintenance projects<br>・Number of breed varieties developed<br>・Number of agricultural production technology development studies |
| 2 | Development of fisheries research facilities | 13.Climate action<br>14.Life below water | a. Measures shall be taken to prevent water and soil pollution.<br>b. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>c. Safety construction measures shall be specified by contractors. | ・Number of facilities/equipment maintenance<br>・Types of fishery products that can be sustainably produced |

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| 3 | Improvement of seeding production facilities for aquatic plants and animals | 13.Climate action<br>14.Life below water | a. Measures shall be taken to prevent water and soil pollution.<br>b. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>c. Safety construction measures shall be specified by contractors. | ・Number of facilities and equipment maintenance projects<br>・Species of aquatic plants and animals for which seed production has been sustainable |
| Subcategory | (5) Measures for temperature increase | | | |
| 1 | Addressing summer heat along with heat island phenomenon (improving heat shielding/water retention on roads) | 11.Sustainable cities and communities<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent water and soil pollution.<br>c. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>d. Safety construction measures shall be specified by contractors. | ・Maintenance records, including number of locations<br>・Extension of maintenance (km) |
| 2 | Creating cool spots in cities | 11.Sustainable cities and communities<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, | ・Maintenance records, including number of locations<br>・Extension of maintenance (km) |

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| | | | thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Measures shall be taken to prevent water and soil pollution.<br>c. Consideration shall be given not to have impacts on ecosystems of other flora and fauna by projects.<br>d. Safety construction measures shall be specified by contractors. | |
| Major Category | 10. Projects for green buildings | | | |
| Subcategory | (1) Green buildings | | | |
| 1 | New construction/renovation of public facilities (obtaining environmental certification) | 7.Affordable and clean energy<br>9.Industry, innovation and infrastructure<br>11.Sustainable cities and communities<br>13.Climate action | a. Projects shall be carried out by complying with the Noise Regulation Act or the Vibration Regulation Act, thoroughly informing neighbors and obtaining their understanding with regard to noise and vibration caused by construction work.<br>b. Safety construction measures shall be specified by contractors. | ・Names of maintenance facilities<br>・Acquisition of environmental certification for buildings (CASBEE or LEED)<br>・Annual primary energy consumption |

*The major and minor categories are based on the Green Bond Guidelines (2022 edition) formulated by the Ministry of the Environment.

## Important explanations of this Evaluation

1. **Assumptions, Significance and Limitations of JCR Green Finance Framework Evaluation**

   JCR Green Finance Framework Evaluation, which is determined and provided by Japan Credit Rating Agency, Ltd. (JCR), covers the policies set out in the Green Finance Framework, and expresses JCR's comprehensive opinion at this time regarding the appropriateness of the Green Project as defined by JCR and the extent of management, operation and transparency initiatives related to the use of funds and other matters. Therefore, JCR Green Finance Framework Evaluation is not intended to evaluate the effects of specific environmental improvements and the management, operation and transparency of individual bonds and borrowings, etc. to be implemented based on these policies. In the event an individual bond or individual borrowing based on this Framework is subject to a green finance evaluation, a separate evaluation is needed. JCR Green Finance Framework Evaluation does not prove the environmental improvement effects of individual bonds or borrowings implemented under this Framework, and does not assume responsibility for their environmental improvement effects. JCR confirms the environmental improvement effects of funds procured under the Green Finance Framework measured quantitatively and qualitatively by the issuer/borrower or by a third party nominated by the issuer/borrower, but in principle it does not directly measure such effects.

2. **Methodology Used in this Evaluation**

   The methodology used to make this evaluation is posted as JCR Green Finance Evaluation Methodology in the Sustainable Finance/ESG section on the JCR's website at https://www.jcr.co.jp/

3. **Relations with Conduct for Credit Rating Business**

   The conduct of assigning and providing JCR Green Finance evaluation is performed by JCR as its related business and is different from the conduct for the credit rating business.

4. **Relations with Credit Rating**

   This evaluation is different from a credit rating and does not commit to providing a predetermined credit rating or make available for inspection.

5. **Impartiality when Evaluating JCR Green Finance**

   There are no capital or personnel relationships that could create a conflict of interest between this evaluation target and JCR.



■**Glossary**

JCR Green Finance Evaluation: This evaluates the extent to which the funds procured from the green bonds are allocated to green projects as defined by JCR, and the degree to which the management, operation and transparency of the green bonds are ensured. Evaluations based on a 5-point scale are given from top to bottom using the Green1, Green2, and Green3, Green4, and Green5 symbols.

■**Status of registration as an external assessor of green finance**

- Ministry of the Environment: Registered as External Reviewer of Green Finance
- ICMA (observer registration as an external evaluator with the International Capital Market Association)
- UNEP FI Positive Impact Financial Principles Working Group Member
- Climate Bonds Initiative Approved Verifier

■**Status of registration as a credit rating agency, etc.**

- Credit Rating Agency: the Commissioner of the Financial Services Agency (Rating) No.1
- EU Certified Credit Rating Agency
- NRSRO: JCR has registered with the following four of the five credit rating classes of the U.S. Securities and Exchange Commission's Nationally Recognized Statistical Rating Organization NRSRO: (1) financial institutions, broker-dealers, (2) insurance companies, (3) general business corporations and (4) government and municipalities. If the disclosure is subject to Section 17g-7 (a) of the Securities and Exchange Commission Rule, such disclosure is attached to the news releases posted on the JCR website (https://www.jcr.co.jp/en/).

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