

## SECOND PARTY OPINION (SPO)

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Sustainability Quality of the Issuer and Green Bond

Tokyo Metropolitan Government (TMG)  
16 July 2019

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## Overall Evaluation of the Green Bond

Tokyo Metropolitan Government (TMG) commissioned ISS-oekom to assist with its third Green Bond by assessing three core elements to determine the sustainability quality of the Framework:

1. TMG's Green Financing Framework – benchmarked against the International Capital Market Association's (ICMA) Green Bond Principles (GBPs).
2. The asset pool – whether the projects aligned with ISS-oekom's issue-specific key performance indicators (KPIs) (See Annex 2).
3. Review and classification of Japan's sustainability performance on the basis of the ISS-oekom Country Rating.

## ISS-oekom ASSESSMENT SUMMARY

SPO SECTION	SUMMARY	EVALUATION <sup>1</sup>
<b>Part 1: Performance against the GBPs</b>	The issuer has defined a formal concept for its Framework regarding use of proceeds, processes for project evaluation and selection, management of proceeds and reporting. This concept is in line with the ICMA GBPs.	<b>Positive</b>
<b>Part 2: Sustainability quality of the asset pool</b>	<p>The overall sustainability quality of the asset pool in terms of sustainability benefits, risk avoidance and minimisation is good based upon the ISS-oekom Green Bond KPIs. The KPIs contain a clear description of eligible asset categories.</p> <p>All assets of the asset pool are located in Japan, where legislative frameworks set minimum standards, which reduce environmental and social risks.</p> <p>However, a controversy was found in the project category “Sustainable timber use in green real estate”, where the timber used in two of their projects was unsustainably sourced.</p>	<b>Positive</b>
<b>Part 3: Issuer sustainability performance</b>	<p>Within the methodology of the ISS-oekom Country Rating, Japan, the country which the issuer forms part of, shows a good sustainability performance and with a ranking of 29<sup>th</sup> out of 60, is classified as “Prime” in the ISS-oekom methodology.</p> <p>Japan has not yet progressed into a greener economy, as the dependence on fossil fuels is still great, and the country’s climate record is correspondingly poor. However, economic efficiency is high, and the welfare state delivers a high level of social justice, good access to healthcare and favorable working conditions. Yet, the rising share of old people in the society, low levels of immigration and birthrates are challenging that model of society already today.</p> <p>The country has strong institutions, uncritical levels of corruption and a clean human rights record, although societal discrimination is prevailing on some grounds. In the medium term, Japan could give up its post-World War II pacifism with regard to tensions in East Asia, entailing greater risks for its political stability.</p> <p>It is rated 29<sup>th</sup> out of 60 countries rated by ISS-oekom as of 10.07.2019.</p>	<p><b>Status:</b> <i>Prime</i></p> <p><b>Rating:</b> <i>B-</i></p> <p><b>Prime threshold:</b> <i>B-</i></p>

<sup>1</sup> The ISS-oekom’s present evaluation will remain valid until any modification of the Green Bond Framework or addition of new assets into the asset pool by the issuer and as long as the issuer’s Country Rating does not change (last modification on the 25.04.2019). The controversy check of the underlying assets has been conducted on the 27.06.2019.










## Contribution of the Green Bond to the UN SDGs

Based on the assessment of the sustainability quality of the Green Bond asset pool and using a proprietary methodology, ISS-oekom assessed the contribution of the TMG's Green Bond to the Sustainable Development Goals defined by the United Nations (UN SDGs).

This assessment is displayed on 5-point scale (see Annex 2 for methodology):

<b>Significant Obstruction</b>	<b>Limited Obstruction</b>	<b>No Net Impact</b>	<b>Limited Contribution</b>	<b>Significant Contribution</b>
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Each of the Green Bond's Use of Proceeds categories has been assessed for its contribution to, or obstruction of, the SDGs:

USE OF PROCEEDS CATEGORY	CONTRIBUTION OR OBSTRUCTION	SUSTAINABLE DEVELOPMENT GOALS
<b>GREEN REAL ESTATE DEVELOPMENT</b>		
Improved energy and resource efficiency in green real estate	Limited contribution	 
Sustainable timber use in green real estate	Limited contribution	
Sustainable plantings in green real estate	Limited contribution	
<b>RENEWABLE ENERGY</b>		
Solar power	Significant contribution	 
Geothermal heating and cooling systems	Significant contribution	 
Hydro power (micro-hydro power systems in water supply infrastructures)	Significant contribution	 

USE OF PROCEEDS CATEGORY	CONTRIBUTION OR OBSTRUCTION	SUSTAINABLE DEVELOPMENT GOALS
<b>POLLUTION PREVENTION AND CONTROL</b>		
Wastewater treatment facility	Significant contribution	6 CLEAN WATER AND SANITATION
<b>PUBLIC TRANSPORT</b>		
Public transport vehicles (diesel buses)	Limited contribution	13 CLIMATE ACTION
<b>ADAPTATION TO CLIMATE CHANGE</b>		
Flood prevention (no dams)	Limited contribution	3 GOOD HEALTH AND WELL-BEING, 11 SUSTAINABLE CITIES AND COMMUNITIES, 13 CLIMATE ACTION
<b>SUSTAINABLE ROAD DEVELOPMENT</b>		
Heat insulation on roads and pedestrian and cycling paths	Limited contribution	13 CLIMATE ACTION

The issuer's Green Bond significantly contributes to the SDGs 6 "Clean water and sanitation", 7 "Affordable and clean energy" and 13 "Climate Action" thanks to its Use of Proceeds categories contributing to sustainable energy use and wastewater treatment. The issuer's Green Bond also have limited contribution on SDGs 3 "Good health and well-being", 11 "Sustainable cities and communities" and 15 "Life on land".

Regarding the public transportation vehicles, diesel-fueled buses have a limited contribution to the SDG 13 "Climate action" thanks to its public transport aspects and has no net impact on the SDG 7 "Affordable and clean energy" as diesel-fueled buses are considered as a neutral technology on this regard.

## ISS-oekom SPO ASSESSMENT

### PART I: GREEN BOND PRINCIPLES

#### 1. Use of Proceeds

The proceeds of this Green Bond will be used to finance selected eligible projects belonging to the Tokyo Environmental Master Plan issued in 2016. The projects are grouped into TMG's Environmental Categories:

TMG ENVIRONMENTAL CATEGORY <sup>2</sup>		SHARE
<b>Smart Energy &amp; Urban Development</b>		<b>35.02%</b>
1	Reduce greenhouse gas from office buildings	4.50%
2	Promote energy savings and energy management	19.24%
3	Promote advanced transportation technology use and bicycle use	1.50%
4	Enhance utilisation of renewable energy such as solar, geothermal, hydrogen, sewerage heat, etc.	9.78%
<b>Sustainable Resource &amp; Waste Management</b>		<b>1.05%</b>
5	Reduce resource loss and increase eco-material use	1.05%
6	3R (reduce, reuse and recycle) – Promote cyclical use of waste	0.00%
7	Enhance utilisation of materials reducing environmental burden	0.00%
8	Promote harmful waste treatment	0.00%
<b>Natural Environment Conservation</b>		<b>10.93 %</b>
9	Development of parks, planting trees along roads, afforestation, etc.	10.93%
10	Conserve biological diversity (development of tideland in marine park, etc.)	0.00%

<sup>2</sup> Categories and percentages are reported as given by TMG.

TMG ENVIRONMENTAL CATEGORY		SHARE
<b>Improvements of Living Environment</b>		<b>24.00%</b>
11	Improve water quality and groundwater conservation	7.00%
12	Improve air quality	12.00%
13	Promote countermeasures against soil contamination	0.00%
14	Heat island countermeasures (heat insulation and water absorption)	5.00%
<b>Adaptation for Climate Change</b>		<b>29.00%</b>
15	Countermeasures against rising temperatures in urban areas	0.00%
16	Countermeasures against flood and natural disasters	29.00%
<b>Total</b>		<b>100.00%</b>

**Opinion:** ISS-oekom considers the Use of Proceeds description provided by TMG's Green Bond Framework as aligned with the GBPs and with the sustainability strategy of the issuer. Moreover, the distribution of proceeds between project categories is disclosed.

## 2. Process for Project Evaluation and Selection

The project selection for the inclusion in the Green Bond is carried out by TMG. The local government must either consult the Ministry of Internal Affairs and Communications and obtain its approval to issue municipal bonds or report to the Ministry before issuance.

The selection process is based on the Criteria for Evaluation and Selection of Target Projects defined by TMG. Those criteria include environmental, social and governance aspects.

CRITERIA FOR EVALUATION & SELECTION OF PROJECTS	
E1	Clear positive environmental impact
E2	Reduction of negative environmental impact
S1	Clear positive social impact
S2	Reduction of negative social impact
G1	Policy & regulatory compliance
G2	Feasibility / urgency
G3	Sustainable effect

In principle, Local Governments may issue municipal bonds to finance purposes stipulated in Article 5 of the Local Government Finance Act.



Such purposes include:

- Operating local public enterprises
- Investments and loans
- Refunding of existing municipal bonds
- Emergency disaster control projects, disaster recovery projects, disaster-relief projects, and
- Developing and constructing public infrastructure and facilities.

Local Governments must consult with the Ministry of Internal Affairs and Communications and obtain approval for the issuance of bonds.

However, the governments meeting a certain standard can issue municipal bonds (such as publicly offering bonds) by reporting instead of the consultation.

**Opinion:** ISS-oekom finds that the process for Project Evaluation and Selection broadly aligns with the GBPs. The environmental and social criteria for which the projects are selected are also clearly listed. The actors responsible for the selection of the assets are described.

### 3. Management of Proceeds

As the annual expenditure in each fiscal year of the TMG needs to be assigned to its annual revenue<sup>3</sup>, in principle, Tokyo Green Bonds funds are appropriated for target projects within the fiscal year. The Bureau of Finance manages the execution status of target projects to follow up the allotment of Tokyo Green Bonds funds as necessary and discloses the allotment status based on the methods of information disclosure shown in the document.

At the end of each fiscal year, as for all the revenue and expenditure including related to the projects funded by the TMG Bonds, the execution results and the settlement related documents will be created and submitted to the Tokyo Metropolitan Audit and Inspection Commissioners for examination. With the comments of the commissioners, the documents will be submitted to the Tokyo Metropolitan Assembly for certification.

Use of Tokyo Green Bonds appropriated funds will be clarified by classifying the funds into the accounting division based on the TMG accounting system and by doing this, the funds will be managed.

**Opinion:** ISS-oekom finds that the segregation and tracking of funds process aligns with the GBPs. However, the expected allocation period and temporary investments as well as the disclosure of portfolio balance of unallocated proceed could be added to align with best market practices.

<sup>3</sup> This is based on the principle of a one-year budget, Article 208, Local Government Autonomy Act

#### 4. Reporting

TMG will annually disclose a result of the allocation of the Green Bond proceeds on their website<sup>3</sup> including:

- The status of the allocation for the relevant issuance (in millions of yen)
- The environmental impacts
- The potential change of projects within project categories

Additional information on reporting is available in the table below:

NO.	CONTENTS	TIMING
1	Issuance policy	At all times
2	› Environmental project category, evaluation & selection process	At all times
3	Decision of target projects <ul style="list-style-type: none"> <li>– Project name</li> <li>– Environmental category of Tokyo Green Bonds</li> <li>– Amount to be appropriated by the issuance (millions of yen)</li> <li>– Expected environmental impact</li> </ul>	Before issuance
4	Result of the appropriation <ul style="list-style-type: none"> <li>– Project name</li> <li>– TMG Environmental Category</li> <li>– Results of appropriation for the issuance (millions of yen)</li> <li>– Expected environmental impact</li> </ul>	Following fiscal year of the issuance
5	Change of target projects, etc.	If necessary

**Opinion:** ISS-oekom finds that the reporting is aligned to the requirements of the GBPs, but that more information could be disclosed. This includes disclosure on the types of impact indicators, level, scope and duration of reporting, both in terms of allocation and impact.

#### External review

##### 1. Second Party Opinion

ISS-oekom has reviewed TMG's Green Bond and has certified its alignment with ICMA's Green Bond Principles 2018. The SPO will be made available on TMG's website. This is the third SPO received by TMG from ISS-oekom.

## PART II: SUSTAINABILITY QUALITY OF THE GREEN BOND ASSET POOL

### Relevant ISS-oekom KPI sets for TMG's Green Bond Use of Proceeds categories

ISS-oekom assessed the ESG risk management in place at an asset level for the project categories of this Green Bond. To conduct the assessment, ISS-oekom defined ESG KPI sets capturing the key ESG challenges faced by those projects categories.

ISS-OEKOM PROJECT CATEGORIES		TMG ENVIRONMENTAL CATEGORIES <sup>4</sup>
<b>A</b>	<b>Green real estate development</b>	
A.1	Improved energy and resource efficiency in green real estate	1 & 2
A.2	Sustainable timber use in green real estate	5
A.3	Sustainable plantings in green real estate	9
<b>B</b>	<b>Renewable energy</b>	
B.1	Solar power	4
B.2	Geothermal heating and cooling systems	4
B.3	Hydro power (micro-hydro systems in water supply infrastructures)	2 & 4
<b>C</b>	<b>Pollution prevention and control</b>	
C.1.	Wastewater treatment facility	11
<b>D</b>	<b>Public transport</b>	
D.1.	Public transport vehicles	12
<b>E.</b>	<b>Adaptation to climate change</b>	
E.1.	Flood prevention (no dams)	16
<b>F</b>	<b>Sustainable road development</b>	
F.1.	Heat insulation on roads and pedestrian and cycling paths	3, 14

<sup>4</sup> See pp. 7 and 8 for details.

## Evaluation of the assets

### A. Green real estate development

#### A.1. Improved energy and resource efficiency in green real estate

As a Use of Proceeds category, improvement of energy and resource efficiency in green real estate has a limited contribution to the SDGs 7 “Affordable and clean energy” and 13 “Climate Action”. Additionally, when considering the deeper ESG management, improvement of energy and resource efficiency in green real estate can be associated to other SDGs.

The table below presents the findings of an ISS-oekom assessment of the assets (re-) financed against KPIs and the association with SDGs based on a mapping methodology.

ASSESSMENT AGAINST ISS-OEKOM ESG KPI	ASSOCIATION WITH THE SDGS
<b>Percentage improvement of energy and resource efficiency</b>	
<ul style="list-style-type: none"> <li>✓ According to TMG, most of the financed projects are expected to achieve a percentage improvement of more than 50% once completed.</li> </ul>	
<b>Working conditions during construction and maintenance work</b>	
<ul style="list-style-type: none"> <li>✓ 100% of financed projects are located in Japan where high standards regarding labour rights (e.g. ILO core conventions) and health and safety are in place for construction and maintenance work conducted by own employees and contractors.</li> </ul>	
<b>Social standards in the supply chain</b>	
<ul style="list-style-type: none"> <li>✓ One major supplier provides for high labour and health and safety standards (e.g. ILO core conventions).</li> </ul>	
<ul style="list-style-type: none"> <li>○ For the other suppliers, no information is available on where the electronic equipment will be sourced from. Therefore, it cannot be determined whether high labour standards will be applied in the supply chain (e.g. ILO core conventions).</li> </ul>	
<b>Environmental aspects of installed electronic equipment</b>	
<ul style="list-style-type: none"> <li>✓ 100% of financed projects meet high environmental standards regarding take-back and recycling of electronic equipment at end-of-life stage.</li> </ul>	
<ul style="list-style-type: none"> <li>✓ For 100% of financed projects the use of certain hazardous substances (e.g. lead, mercury, cadmium) is restricted in electrical equipment by the Japanese law for promotion of effective utilisation of resources (J-MOSS).</li> </ul>	

**Controversy assessment**

A controversy assessment on the assets did not reveal any controversies that can be attributed to TMG.

**Impact indicators for the projects within this project category according to TMG\***

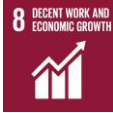



- Energy consumption reduced in 5 out of 6 projects: 7,443,097 kWh/year
- GHG emissions avoided in 1 out of 6 projects: 19,000 tonnes of CO<sub>2</sub> (until the end of FY2020)

*\*ISS-oekom does not provide impact calculations, nor checks the plausibility of the data provided by the issuer.*

**A.2. Sustainable timber use in green real estate**

As a Use of Proceeds category, sustainable timber use in green real estate has a limited contribution to the SDG 15 “Life on land”. Additionally, when considering the deeper ESG management, sustainable timber use in green real estate can be associated to other SDGs.

The table below presents the findings of an ISS-oekom assessment of the assets (re-) financed against KPIs and the association with SDGs based on a mapping methodology.

ASSESSMENT AGAINST ISS-OEKOM ESG KPI	ASSOCIATION WITH THE SDGS
<p><b>Working conditions on construction sites</b></p> <p>✓ 100% of financed projects are located in Japan where high standards regarding labour rights (e.g. ILO core conventions) and health and safety are in place for construction and maintenance work conducted by own employees and contractors.</p>	
<p><b>Environmental standards in the supply chain</b></p> <p>✓ For 100% of financed projects timber originates from sources that are not located in regions with high levels of water stress or that conducted water impact assessments.</p>	
<p>✓ For 100% of financed projects timber originates from sources that ensure conservation of natural habitat and wildlife (e.g. no logging of primary forest, ecologically significant secondary forest or protected areas such as Ramsar sites, UNESCO Natural World Heritage, IUCN protected areas I-IV, Intact Forest Landscape).</p>	
<p>✓ For 100% of financed projects timber originates from sources that provide for measures to protect biodiversity (e.g. biodiversity assessment, creation of corridors between biodiversity hotspots, training of workers and managers).</p>	

- ✓ For 100% financed projects timber originates from sources that exclude genetically modified organisms.

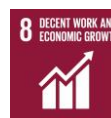


- ✓ For 1 of the 2 financed projects timber originates from sources that provide for high standards regarding use of chemicals and fertilizers (e.g. exclusion of certain fertilizers, reduction targets). No information is available for the other project.



### Social standards in the supply chain

- ✓ According to TMG, timber is to be sourced from Japan and thus, high standards regarding labour rights (e.g. ILO core conventions) and health and safety are applied in the supply chain.



- ✓ According to TMG, affected communities are to be informed, grievance mechanisms and compensation schemes need to be in place and violations of human rights shall be avoided.



- ✓ For 1 of the 2 financed projects, further standards regarding human rights and consideration of impacts on local communities (e.g. respect for internationally recognised human rights, commitment to seek free, prior and informed consent) are in place. No information is available for the other project.



### Controversy assessment

A controversy assessment on the underlying assets revealed a controversy for the two stadiums where timber installations took place.

A petition with more than 110,000 signatures has been launched by the NGO “Rainforest Action Network”, saying the procurement policy regarding the timber used in the two venues is not transparent and rigorous enough and that the timber has been sourced unsustainably from countries such as Indonesia and Malaysia.

The Olympic organisers on the other side, keep claiming the timber used in the facilities are sustainably sourced following the Sustainable Sourcing Code for Timber.

### Impact indicator for the projects within this project category according to TMG\*

- Timber used in the 2 projects: more than 740m<sup>3</sup>

*\*ISS-oekom does not provide impact calculations, nor checks the plausibility of the data provided by the issuer.*

### A.3. Sustainable plantings in green real estate

As a Use of Proceeds category, sustainable planting in green real estate has a limited contribution to the SDG 11 “Sustainable cities and communities”. Additionally, when considering the deeper ESG management, sustainable planting in green real estate can be associated to other SDGs.

The table below presents the findings of an ISS-oekom assessment of the assets (re-) financed against KPIs and the association with SDGs based on a mapping methodology.

ASSESSMENT AGAINST ISS-OEKOM ESG KPI	ASSOCIATION WITH THE SDGS
<b>Environmental aspects of plantings</b>	
<ul style="list-style-type: none"> <li>✓ According to TMG, 100% of financed projects use native species or select plants in line with characteristics of the region and have a reduced need of irrigation.</li> </ul>	 
<ul style="list-style-type: none"> <li>○ However, no information is available on whether a high capacity of CO<sub>2</sub> absorption and storage are taken into consideration.</li> </ul>	
<b>Working conditions at building sites</b>	
<ul style="list-style-type: none"> <li>✓ 100% of financed projects are located in Japan where high standards regarding labour rights (e.g. ILO core conventions) and health and safety are in place for construction and maintenance work conducted by own employees and contractors.</li> </ul>	
<b>Environmental aspects in the supply chain</b>	
<ul style="list-style-type: none"> <li>✓ According to TMG, plants originate from sources that provide for sustainable soil and biodiversity management along the whole value chain (e.g. strong position on pesticide and chemical fertiliser use, deforestation, soil degradation, biodiversity).</li> </ul>	
<ul style="list-style-type: none"> <li>○ For 100% of financed projects, plants originate from sources that regulate the use of genetically modified organisms, however the use is not prohibited.</li> </ul>	
<ul style="list-style-type: none"> <li>✓ According to TMG, plants originate from sources that are not located in regions with high levels of water stress or sources that were subject to a water impact assessment.</li> </ul>	
<b>Social standards in the supply chain</b>	
<ul style="list-style-type: none"> <li>✓ According to TMG, plants are to be sourced from Japan and thus, high standards regarding labour rights (e.g. ILO core conventions) and health and safety are applied in the supply chain.</li> </ul>	

- ✓ According to TMG, affected communities are to be informed, grievance mechanisms and compensation schemes need to be in place and violations of human rights shall be avoided.



### Controversy assessment

A controversy assessment on the assets did not reveal any controversies that can be attributed to TMG.

### Impact indicators for the projects within this project category according to TMG\*

- Area of greenings in 1 out of 3 projects: more than 4,569m<sup>2</sup>
- Area of park development in 2 out of 3 projects: 33,250m<sup>2</sup>

\*ISS-oekom does not provide impact calculations, nor checks the plausibility of the data provided by the issuer.

## B. Renewable energy

### B.1. Solar power

As a Use of Proceeds category, solar power has a significant contribution to the SDGs 7 “Affordable and clean energy” and 13 “Climate Action”. Additionally, when considering the deeper ESG management, solar power can be associated to other SDGs.

The table below presents the findings of an ISS-oekom assessment of the assets (re-) financed against KPIs and the association with SDGs based on a mapping methodology.

#### ASSESSMENT AGAINST ISS-OEKOM ESG KPI

#### ASSOCIATION WITH THE SDGS

##### Site Selection (not applicable for PV roof systems)

- Not applicable as all solar systems are PV roof systems

##### Supply chain standards

- ✓ Most of the projects provide for high labour and health and safety standards in the supply chain of solar modules (e.g. ILO core conventions).



##### Environmental aspects of PV plants

- ✓ According to TMG, approximately 97.8% of financed projects reach a conversion efficiency of at least 15%.





✓ According to TMG, 100% of financed projects meet high environmental standards regarding take-back and recycling of PV modules at end-of-life stage.

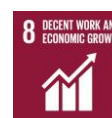


✓ According to TMG, in 100% of financed projects the use of certain hazardous substances (e.g. lead, mercury, cadmium) is restricted.



**Working conditions during construction and maintenance work**

✓ 100% of financed projects are located in Japan where high standards regarding labour rights (e.g. ILO core conventions) and health and safety are in place for construction and maintenance work conducted by own employees and contractors.



**Controversy assessment**

A controversy assessment on the assets did not reveal any controversies that can be attributed to TMG.

**Impact indicator for the projects within this project category according to TMG\***

- Renewable energy consumption for 6 out of 6 projects: 855,385 kWh/year

*\*ISS-oekom does not provide impact calculations, nor checks the plausibility of the data provided by the issuer.*

**B.2. Geothermal heating and cooling systems**

As a Use of Proceeds category, geothermal heating and cooling systems has a significant contribution to the SDGs 7 “Affordable and clean energy” and 13 “Climate Action”. Additionally, when considering the deeper ESG management, geothermal heating and cooling systems can be associated to other SDGs. The table below presents the findings of an ISS-oekom assessment of the assets (re-) financed against KPIs and the association with SDGs based on a mapping methodology.

ASSESSMENT AGAINST ISS-OEKOM ESG KPI	ASSOCIATION WITH THE SDGS
<b>Site selection</b>	

✓ According to TMG, none of the projects are located in key biodiversity areas (Ramsar sites, IUCN protected areas I-IV).



✓ According to TMG, all financed projects underwent environmental impact assessments at the planning stage.



- ✓ According to TMG, none of the projects are located in the proximity to major fault lines



### Community dialogue

- ✓ According to TMG, all projects feature community dialogue as an integral part of the planning process (e.g. sound information of communities, community advisory panels and committees, surveys and dialogue platforms, grievance mechanisms and compensation schemes).



### Consideration of environmental aspects during planning and construction

- ✓ According to TMG, all financed projects meet high environmental standards during the construction phase (e.g. noise mitigation, minimisation of environmental impact during construction work).



- ✓ According to TMG, all financed projects provide for measures to avoid contamination of soil and groundwater (e.g. well casing, management of waste streams, measures for the disposal of flowback and production water).



- No information is available on projects that provide for seismic monitoring



### Working conditions during construction

- ✓ 100% of financed projects are located in Japan where high standards regarding labour rights (e.g. ILO core conventions) and health and safety are in place for construction work conducted by own employees and contractors.



### Controversy assessment

A controversy assessment on the assets did not reveal any controversies that can be attributed to TMG.

### Impact indicator for the projects within this project category according to TMG\*


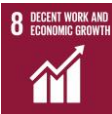

- Renewable energy installed system capacity for 2 out of 2 projects: 550 kW and 600 kW

\*ISS-oekom does not provide impact calculations, nor checks the plausibility of the data provided by the issuer.

### B.3. Hydro power (micro-hydro systems in water supply infrastructures)

As a Use of Proceeds category, micro-hydro power systems have a significant contribution to the SDGs 7 “Affordable and clean energy” and 13 “Climate Action”. Additionally, when considering the deeper ESG management, micro-hydro power systems can be associated to other SDGs.

The table below presents the findings of an ISS-oekom assessment of the assets (re-) financed against KPIs and the association with SDGs based on a mapping methodology.

ASSESSMENT AGAINST ISS-OEKOM ESG KPI	ASSOCIATION WITH THE SDGS
<b>Consideration of environmental aspects during planning and construction</b>	
<p>✓ According to TMG, all financed projects meet high environmental standards and requirements during the construction phase (e.g. noise mitigation, minimisation of environmental impact during construction work).</p>	
<b>Working conditions during construction and maintenance work</b>	
<p>✓ 100% of financed projects are located in Japan where high standards regarding labour rights (e.g. ILO core conventions) and health and safety are in place for construction and maintenance work conducted by own employees and contractors.</p>	
<b>Environmental aspects of micro-hydro systems in water supply infrastructures</b>	
<p>✓ According to TMG, 100% of financed projects feature measures to reduce nuisances from the water distribution system (e.g. earthquake resistance measures, trouble monitoring).</p>	
<b>Controversy assessment</b>	
<p>A controversy assessment on the assets did not reveal any controversies that can be attributed to TMG.</p>	
<b>Impact indicators for the projects within this project category according to TMG*</b>	
<ul style="list-style-type: none"> <li>• Energy production (including electricity sales) for 1 out of 2 projects: 386,000 kWh / year</li> <li>• Energy consumption reduced in 1 out of 2 projects: 6,148,000 kWh / year</li> </ul>	







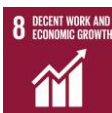
\*ISS-oekom does not provide impact calculations, nor checks the plausibility of the data provided by the issuer.

## C. Pollution prevention and control

### C.1. Wastewater treatment facility

As a Use of Proceeds category, wastewater treatment facilities have a significant contribution to the SDG 6 “Clean water and sanitation”. Additionally, when considering the deeper ESG management, wastewater treatment facilities can be associated to other SDGs.

The table below presents the findings of an ISS-oekom assessment of the assets (re-) financed against KPIs and the association with SDGs based on a mapping methodology.

ASSESSMENT AGAINST ISS-OEKOM ESG KPI	ASSOCIATION WITH THE SDGS
<b>Site selection</b>	
<ul style="list-style-type: none"> <li>✓ According to TMG, the financed projects are not located in key biodiversity areas (Ramsar sites, IUCN protected areas I-IV).</li> <li>- As the financed projects are add-ons to existing facilities, an environmental impact assessment is not required.</li> </ul>	
<b>Community dialogue</b>	
<ul style="list-style-type: none"> <li>✓ According to TMG, all the financed projects feature community dialogue as an integral part of the planning process (e.g. sound information of communities, community advisory panels and committees, surveys and dialogue platforms, grievance mechanisms and compensation schemes).</li> </ul>	 
<b>Environmental aspects of construction and operation</b>	
<ul style="list-style-type: none"> <li>✓ According to TMG, 100% of financed projects feature measures to reduce nuisances from the water distribution system (e.g. earthquake resistance measures, trouble monitoring).</li> </ul>	
<ul style="list-style-type: none"> <li>✓ According to TMG, 100% of financed projects feature measures to reduce the environmental impacts of sewage sludge disposal (e.g. exclusion of introduction into waterways and landfill, exclusion or standards for agricultural use, utilisation of energy).</li> </ul>	
<ul style="list-style-type: none"> <li>✓ 100% of the financed project follow high standards regarding the quality of treated water.</li> </ul>	
<b>Working conditions during construction and operation</b>	
<ul style="list-style-type: none"> <li>✓ 100% of financed projects are located in Japan where high standards regarding labour rights (e.g. ILO core conventions) and health and safety are in place for construction and operational work conducted by own employees and contractors</li> </ul>	

**Controversy assessment**

A controversy assessment on the assets did not reveal any controversies that can be attributed to TMG.

**Impact indicator for the projects within this project category according to TMG\***

- Water stored for 1 out of 1 project: 1.5 million m<sup>3</sup> (until the end of FY2020)


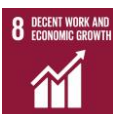


*\*ISS-oekom does not provide impact calculations, nor checks the plausibility of the data provided by the issuer.*

**D. Public transport**

**D.1. Public transport vehicles (buses)**

As a Use of Proceeds category, diesel-fueled buses have a limited contribution to the SDG 13 “Climate action” thanks to its public transport aspects and has no net impact on the SDG 7 “Affordable and clean energy” as diesel-fueled buses are considered as a neutral technology on this regard. Additionally, when considering the deeper ESG management, public transport vehicles including diesel-fueled buses can be associated to other SDGs.

The table below presents the findings of an ISS-oekom assessment of the assets (re-) financed against KPIs and the association with SDGs based on a mapping methodology.

ASSESSMENT AGAINST ISS-OEKOM ESG KPI	ASSOCIATION WITH THE SDGS
<b>Productions standards</b>	
<ul style="list-style-type: none"> <li>✓ 100% of financed project provide for a comprehensive environmental management system at the manufacturing sites of trains/buses.</li> </ul>	
<ul style="list-style-type: none"> <li>✓ Most vehicles are produced at manufacturing sites that provide for high labour and health and safety standards (e.g. ILO core conventions).</li> </ul>	
<b>Environmental aspects of buses</b>	
<ul style="list-style-type: none"> <li>✓ 100% of financed vehicles are sourced from a supplier who conducts life-cycle-assessments.</li> </ul>	
<ul style="list-style-type: none"> <li>○ All financed buses are equipped with diesel engines which are not as energy efficient as electric motors and are more polluting.</li> </ul>	

**Social aspects of buses**

- ✓ 100% of the financed buses ensure health and safety for both passengers and operators (fire protection, minimisation of noise exposure, accessibility).



**Controversy assessment**

A controversy assessment on the assets did not reveal any controversies that can be attributed to TMG.

**Impact indicator for the projects within this project category according to TMG\***

- Percentage of NOx (Nitrogen oxide) emissions reduced for 1 out of 1 project: 91%/year
- Percentage of PM (Particulate matter) emissions reduced in 1 out of 1 project: 96%/year (reduction from exchanged old buses).

*\*ISS-oekom does not provide impact calculations, nor checks the plausibility of the data provided by the issuer.*

## E. Adaptation to climate change

### E.1. Flood prevention (no dams)

As a Use of Proceeds category, flood prevention assets have a limited contribution to the SDG 3 “Good health and well-being”, 11 “Sustainable cities and communities” and 13 “Climate action. Additionally, when considering the deeper ESG management, flood prevention assets can be associated to other SDGs.

The table below presents the findings of an ISS-oekom assessment of the assets (re-) financed against KPIs and the association with SDGs based on a mapping methodology.

**ASSESSMENT AGAINST ISS-OEKOM ESG KPI**

**ASSOCIATION WITH THE SDGS**

**Consideration of environmental aspects during planning and construction**

- ✓ According to TMG, 100% of financed projects underwent assessments at the planning stage similar to environmental impact assessments.



- ✓ According to TMG, all financed projects meet high environmental standards and requirements during the construction phase (e.g. noise mitigation, minimisation of environmental impact during construction work).



### Working conditions during construction and operation

- ✓ 100% of financed projects are located in Japan where high standards regarding labour rights (e.g. ILO core conventions) and health and safety are in place for construction and operational work conducted by own employees and contractors.



### Modelling on natural state of water bodies, scientific monitoring, structural quality mapping

- ✓ According to TMG, for 2 of the 3 financed projects the relevant plans are scientifically monitored.
- Due to the densely built-up environment within Tokyo, water bodies are generally not modelled on the natural state of the water body.



### Community dialogue

- ✓ According to TMG, financed projects feature community dialogue as an integral part of the planning process and construction phase (e.g. information of communities, grievance mechanisms and compensation schemes).



### Social standards in the supply chain

- ✓ In all projects high labour standards are applied in the supply chain (e.g. ILO core conventions).



### Controversy assessment

A controversy assessment on the assets did not reveal any controversies that can be attributed to TMG.

### Impact indicators for the projects within this project category according to TMG\*




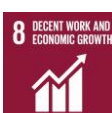
- Percentage of rivers with countermeasures in 1 out of 5 projects: 67.8%
- Water storage amount in 1 out of 5 projects: 1,056,300m<sup>3</sup> (until the end of FY2025)
- Length of development in 1 out of 5 projects: 0.16 km (seawall and shore protection)
- Development size in 2 out of 5 projects: 105.3 km (seawall, internal shore protection, and offshore breakwater (until the of FY2021))
- Development number in 1 out of 5 projects: 23 (water gates and drainage pump station (until the end of FY2021))

*\*ISS-oekom does not provide impact calculations, nor checks the plausibility of the data provided by the issuer.*

## F. Sustainable road development

### F.1. Heat insulation on roads and pedestrian and cycling paths

As a Use of Proceeds category, heat insulation on roads and pedestrian and cycling paths have a limited contribution to the SDG 13 “Climate action”. Additionally, when considering the deeper ESG management, heat insulation on roads and pedestrian and cycling paths can be associated to other SDGs. The table below presents the findings of an ISS-oekom assessment of the assets (re-) financed against KPIs and the association with SDGs based on a mapping methodology.

ASSESSMENT AGAINST ISS-OEKOM ESG KPI	ASSOCIATION WITH THE SDGS
<b>Site selection</b>	
<ul style="list-style-type: none"> <li>✓ According to TMG, none of the projects are located in key biodiversity areas (Ramsar sites, IUCN protected areas I-IV).</li> </ul>	
<b>Environmental aspects of construction</b>	
<ul style="list-style-type: none"> <li>✓ According to TMG, all financed projects meet high environmental standards during the construction phase.</li> <li>✓ For the financed projects, measures to effectively minimise the environmental impact during the construction phase are in place.</li> </ul>	
<b>Sustainable materials</b>	
<ul style="list-style-type: none"> <li>✓ For all financed projects, measures for the use of sustainable construction materials are in place (e.g recycled/green asphalt, water retentive/heat insulating pavement).</li> </ul>	
<b>Working conditions during construction and maintenance work</b>	
<ul style="list-style-type: none"> <li>✓ 100% of financed projects are located in Japan where high standards regarding labour rights (e.g. ILO core conventions) and health and safety are in place for construction and operational work conducted by own employees and contractors</li> </ul>	
<b>Controversy assessment</b>	
<p>A controversy assessment on the assets did not reveal any controversies that can be attributed to TMG.</p>	
<b>Impact indicators for the projects within this project category according to TMG*</b>	

- Length of development in 1 out of 2 projects: 15.7km cycling paths (until the end of FY2019)
- Development area of heat insulating pavement in 1 out of 2 projects: 21.3km

\*ISS-oekom does not provide impact calculations, nor checks the plausibility of the data provided by the issuer.



## PART III: ASSESSMENT OF JAPAN'S ESG PERFORMANCE

The ISS-oekom Country Rating comprises a rating scale from A+ (excellent) to D- (poor).

Country	RATING	STATUS
Japan	B -	PRIME

This means that the country performed well in terms of sustainability, compared against other countries of the ISS-oekom universe. In ISS-oekom's view, the securities issued by the country therefore meet the basic requirements for sustainable investments.

As of 10.07.2019, this rating places Japan 29<sup>th</sup> out of 60 countries rated by ISS-oekom.

The ISS-oekom Country Rating evaluates the following six areas in order to determine the sustainability performance of a country:

### Social Rating

- Political System and Governance
- Human Rights and Fundamental Freedoms
- Social Conditions

### Environmental Rating

- Natural Resources
- Climate Change and Energy
- Production and Consumption

Besides the area "Human Rights and Fundamental Freedoms", Japan achieved a rating that was above average compared to all rated countries in the social part of the rating.

In the environmental part, the country shows a below average performance compared to all rated countries, apart from the "Production and Consumption" area, where it outperforms the other countries.

Japan violates the exclusion criteria death penalty, climate protection and whaling screened by ISS-oekom.

Details on the rating of the issuer can be found in Annex 1.



Robert Hassler, Head of ISS-oekom  
London/Munich/Rockville/Zurich

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1. Validity of the SPO: For TMG's issuance following the SPO release date.
2. ISS-oekom uses a scientifically based rating concept to analyse and evaluate the environmental and social performance of companies and countries. In doing so, we adhere to the highest quality standards which are customary in responsibility research worldwide. In addition, we create a Second Party Opinion (SPO) on bonds based on data from the issuer.
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## ANNEX 1: ISS-oekom Country Rating

The following pages contain extracts from Japan's 2019 ISS-oekom Country Rating.

# ISS-oekom Country Rating

## Japan

Status **Prime**  
 Rating **B-**  
 Prime Threshold **B-**

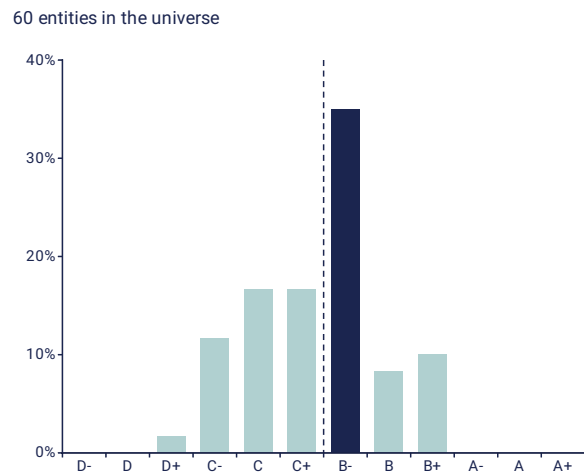


### Country Leaders

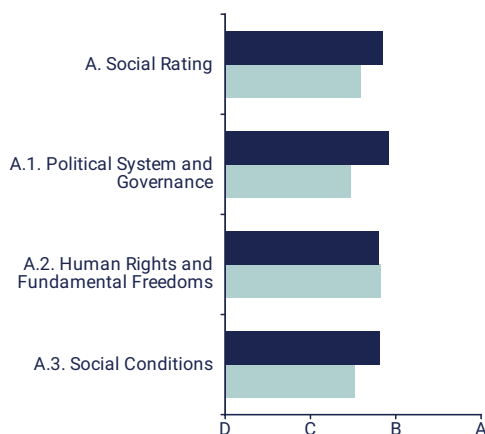
Country (in alphabetical order)	Grade
Finland	B+
Sweden	B+
Switzerland	B+

Legend:  Universe  Country  Prime

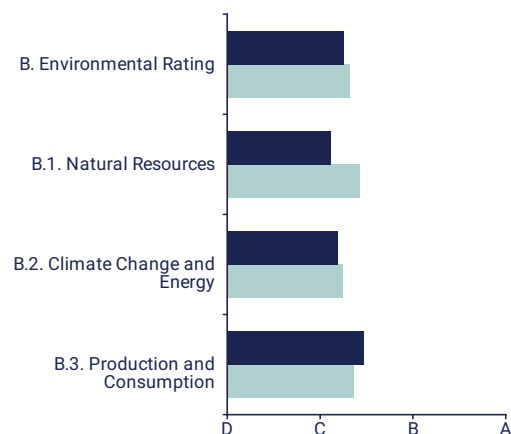
### Distribution of Ratings



### Governance and Social Performance



### Environment Performance



# Japan

## Additional Country Information

### Country Profile

#### Politics and Geography

National territory (2017):	377962 [km2]
Capital (2018):	Tokyo
Climate (2018):	mostly warm oceanic / continental
Government type (2018):	parliamentary constitutional monarchy

#### Population

National population (2017):	126451000 [people]
Population change (2016):	-0.12 [in %]
Population density (2017):	334.56 [persons per km2]
Urban population (2016):	93.9 [as % of total]

#### Economy and Society

GDP per capita (2016):	38343 [in USD (PPP)]
Income group (2017):	high income
Real GDP growth (2016):	1 [in %]
Consumer prices (2016):	0.3 [in %]
Current account balance (2016):	3.8 [as % of GDP]
General government gross debt (2016):	239.3 [as % of GDP]
Budget deficit (2016):	-4.2 [in %]
Unemployment rate (2016):	3.1 [as % of labour force]
Human Development Index (2015):	17 [index rank]

# Japan

## Methodology - Overview

**ISS-oekom Country Rating** – The ISS-oekom country Universe comprises 58 countries, as well as Hong Kong and the European Union, representing 96 per cent of global outstanding sovereign debt (as of June 2018).

The assessment of a country's sustainability performance is based on approximately 100 environmental, social and governance criteria with equal weight assigned to the social and environmental dimension. All criteria are individually weighted and evaluated and the results are aggregated to yield an overall score (rating). The selection of criteria is derived from ISS-oekom's understanding of sustainability and reflects various global challenges that are embodied in the Sustainable Development Goals. Criteria are selected according to their relevance (materiality) and the quality of data regarding availability, up-to-dateness and consistency for all the countries rated.

**Country controversies** – In addition to the rating, ISS-oekom conducts a comprehensive analysis of relevant controversies. Thereby, our clients have the possibility to consider, either separately or in addition to the rating, circumstances in areas they view as especially critical. The country controversy assessment is either directly derived from information provided by credible and acknowledged external sources, such as indices or blacklists, or it is based on the country's performance in the respective rating section. In the latter cases, underperformance in a specific set of indicators constitutes a controversy. Some controversy issues are delineated on different levels of severity.

**Country leaders** - List (in alphabetical order) of the top three countries from the ISS-oekom Universe at the time of generation of this report.

**Criteria design** – The rating comprises both qualitative and quantitative criteria. For instance, the safeguarding of fundamental freedoms by a country's government is mostly assessed in qualitative terms, while a country's consumption of resources is quantified. Qualitative criteria are evaluated against absolute targets and/or best practices, the assessment of quantitative indicators is based on thresholds. Those either reflect normative considerations and/or relative performance in a given area. In order to ensure their validity, some quantitative indicators are normalised against eligible denominators. To assess the quality of government policy in a specific area, we use indicators measuring input, such as spending on education as a proportion of GDP, as well as criteria measuring output, such as female participation in education.

**Distribution of Ratings** - Overview of the distribution of the ratings of all countries that are included in the ISS-oekom Universe (country portrayed in this report: dark blue).

**Rating Scale** – countries are rated on a twelve-point scale from A+ to D-:

A+: the country shows excellent performance

D-: the country shows poor performance

Overview of the range of scores achieved in the ISS-oekom country Universe (light blue) and indication of the grade of the country evaluated in this report (dark blue).

**Sources of Information** - The sources we draw on include international institutions such as the World Bank, the International Energy Agency (IEA) and the World Health Organisation (WHO), as well as respected non-governmental organisations such as Amnesty International, Transparency International and the Stockholm International Peace Research Institute (SIPRI).

**Status & Prime Threshold** – Countries are categorised as Prime if they achieve/exceed the minimum sustainability performance requirements (Prime threshold) defined by ISS-oekom for the Country Rating.

**Update cycle** - The vast majority of rating criteria is updated annually, only single indicators receive event-driven updates. The exact timing is determined by the publication dates of major sources of information.

## ANNEX 2: Methodology

### ISS-oekom Green Bond KPIs

The ISS-oekom Green Bond KPIs serves as a structure for evaluating the sustainability quality – i.e. the social and environmental added value – of the use of proceeds of TMG’s Green Bond.

It comprises firstly the definition of the use of proceeds category offering added social and/or environmental value, and secondly the specific sustainability criteria by means of which this added value and therefore the sustainability performance of the assets can be clearly identified and described.

The sustainability criteria are complemented by specific indicators, which enable quantitative measurement of the sustainability performance of the assets and which can also be used for reporting.

To review the KPIs used in this SPO, please contact Federico Pezzolato (details below) who will send them directly to you.

### Asset evaluation methodology

ISS-oekom evaluates whether the assets included in the asset pool match the eligible project category and criteria listed in the Green Bond KPIs.

All percentages refer to the amount of assets within one category (e.g. wind power). Additionally, the assessment “no or limited information is available” either indicates that no information was made available to ISS-oekom or that the information provided did not fulfil the requirements of the ISS-oekom Green Bond KPIs.

The evaluation was carried out using information and documents provided to ISS-oekom on a confidential basis by TMG (e.g. Due Diligence Reports). Further, national legislation and standards, depending on the asset location, were drawn on to complement the information provided by the issuer.

### Assessment of the contribution and association to the SDG

The 17 Sustainable Development Goals (SDGs) were endorsed in September 2015 by the United Nations and provide a benchmark for key opportunities and challenges toward a more sustainable future. Using a proprietary method, ISS-oekom identifies the extent to which TMG’s Green Bond contributes to related SDGs and has a positive association with their respective sub-targets.

The contribution assessment is split into two Levels:

1. **Level 1:** Contribution and/or obstruction of the Use of Proceeds categories to be financed through the bond to the UN SDGs
2. **Level 2:** Association of the assets’ ESG performance with further SDGs

## About ISS-oekom SPO

ISS-oekom is one of the world's leading rating agencies in the field of sustainable investment. The agency analyses companies and countries regarding their environmental and social performance.

As part of our Sustainable (Green & Social) Bond Services, we provide support for companies and institutions issuing sustainable bonds, advise them on the selection of categories of projects to be financed and help them to define ambitious criteria.

We assess alignment with external principles (e.g. the ICMA Green / Social Bond Principles), analyse the sustainability quality of the assets and review the sustainability performance of the issuer themselves. Following these three steps, we draw up an independent SPO so that investors are as well informed as possible about the quality of the bond / loan from a sustainability perspective.

Learn more: <https://www.isscorporatesolutions.com/solutions/esg-solutions/green-bond-services/>

For Information about SPO services, and this Green/Social Bond, contact:

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