

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

## JCR Assigns Green 1(F) to the Green Bond Framework of OSG Corporation

Issuer : OSG Corporation (security code: 6136)  
Subject of evaluation : Green Bond Framework of OSG Corporation

### < Green Bond Framework Evaluation Result >

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

## Chapter 1: Overview of Evaluation

### 1. Outline of OSG Corporation

OSG Corporation ("OSG" or "the Company") is a major cutting-tool manufacturer established in 1938. The Company's main products include taps for processing internal threads (internal threads in holes,) drills for drilling holes, and end mills for cutting metal. Because of the differences in uses from roughing tools on which major competitors focus, the Company is in a differentiated position in the industry. Others include rolling tools and measuring tools for forming external threads (threads on the bolt side.) These tools are indispensable for making industrial products, and the OSG's products are used in a variety of manufacturing industries, including the automotive industry.

Although cutting tools vary in materials and machining accuracy/performance that can be processed by a combination of materials, edge shapes and coatings, OSG can supply original high-value-added products by self-developing these peripheral technologies. The Company also reduces investment costs by self-developing machine tools related to production. The Company currently has manufacturing and sales bases in 33 countries around the world and is enhancing its after-sales service system, including re-polishing. The breakdown of sales by item in FY22/11 is 35% for threading tools, 19% for milling cutters, 29% for drills and other cutting tools, 7% for rolling tools, 1% for measuring tools and 9% for other products.

## 2. OSG's Sustainability Strategy

The OSG's corporate philosophy is to be a "global company" with the belief that it will expand its business on a global scale and contribute to the global manufacturing industry. Based on this corporate philosophy, the Group aims to contribute to the sustainable development of society as an essential player that contributes to the sustainable manufacturing industry around the world through its unique, high-value-added products and services as its basic sustainability policy. The Group also identified "Materiality," the eight priority issues that the Group should prioritize to realize SDGs. In this context, the priority issues are "Initiatives for Climate Change" and "Sustainable Finance." In the medium-term management plan, "Beyond the Limit 2024" was announced in January, 2022, OSG set forth a policy to promote the ESG management on the group-wide basis and set the medium-to long-term targets to reduce CO<sub>2</sub> emissions (Scope1, Scope2) by 30% by FY 2030 compared to that of FY 2019 and to achieve the carbon neutral by FY 2050.

OSG established Sustainability Committee, chaired by President, to promote the initiatives related to sustainability. In 2021, the Company also endorsed the recommendations of Task Force on Climate-related Financial Disclosures ("TCFD".) Some manufacturing sites and the Group companies received certifications for internal environmental management through ISO14001, an external audit. Furthermore, the Company received an external evaluation, "B" in "CDP Climate-Change 2022," was selected as index components in ESG Index in FTSE, and was awarded by the Japan Machinery and Tool Manufacturers Association. Based on the aforementioned, experts from inside and outside of the Company with specialized knowledge are involved in the sustainability initiatives.

## 3. Green Bond Framework

The subject of this evaluation is Green Bond Framework ("the Framework") established by OSG to limit the proceeds from green bonds to the use of proceeds with environmental benefits. This Evaluation Report evaluates whether the Framework complies with Green Bond Principles and Green Bond Guidelines. These principles or others are those voluntarily published by the International Capital Markets Association ("ICMA") and the Ministry of the Environment ("MOE",) respectively, and do not fall under the category of "regulations" that are legally binding. As the principles and guidelines are currently widely accepted as uniform standards domestically and internationally, JCR refers to those as bases for its evaluation.<sup>12</sup>

Under the Framework, the proceeds from green bonds will be used to any of the followings: (1) proceeds for construction/renovation of green buildings with a certain level or higher of certification of buildings, or refinancing; (2) installing systems and their maintenance costs to achieve the energy efficiency of 30% or more, compared to the previous level by reducing prototypes for in-house development processes; (3) Research and Development ("R&D") to realize energy efficiency of 30% or more compared to the previous level for products for customers, manufacturing-related facilities or costs; and (4) costs of renewable energy power facilities or fees to purchase renewable energy-derived power to convert the energy consumed into the renewable energy in the Company. JCR evaluates that the eligibility criteria stipulated in the Framework by OSG significantly contribute to global and social sustainability. The processes to select projects, cash management systems, and post-issuance reporting systems are appropriately established and the transparency is evaluated as high.

Consequently, based on its JCR Green Finance Evaluation Methodology, JCR assigned "g1 (F)" for "Greenness Evaluation (the Use of Proceeds)" and "m1(F)" for "Management, Operation, and Transparency Evaluation." Consequently, JCR assigned "Green 1 (F)" for the overall "JCR Green Bond Framework Evaluation." The evaluation

<sup>1</sup> Green Bond Principles 2021 Edition  
<https://www.icmagroup.org/assets/documents/Sustainable-finance/2021-updates/Green-Bond-Principles-June-2021-140621.pdf>

<sup>2</sup> Green Bond Guidelines 2022 <https://www.env.go.jp/content/000062495.pdf>

results are detailed in the next chapter. JCR evaluates that the Framework meets the standards for the items required in Green Bond Principles and Green Bond Guidelines.

## Chapter 2: Current Status of The Project on Each Evaluation Factor and JCR's Evaluation

### Evaluation Phase 1: Greenness Evaluation

Based on the current status described below and JCR's evaluation of the subject, JCR evaluated that the use of proceeds of Green Bond issued by the Framework was 100% for green projects and assigned the highest rank of "g1(F)" for Phase 1: Greenness Evaluation.

### (1) JCR's Key Consideration in This Factor

In this section, JCR first confirms whether the proceeds are used for green projects that have clear environmental benefits. Next, in cases where the use of proceeds is expected to have negative impacts on the environment, JCR confirms whether these impacts are fully examined by an internal specialty department or an external third party, and whether necessary measures are taken for the avoidance and mitigation. Finally, JCR confirms the consistency with the Sustainable Development Goals (SDGs.)

### (2) Current Status of Evaluation Target and JCR's Evaluation

#### a. Environmental Benefits on the Projects

<The Framework for the Use of Proceeds>

OSG determined the use of proceeds in the Framework as follows: An amount equivalent to the total amount of issuance of each Green Bond will be allocated to finance or refinance new or existing eligible projects. In cases where an allocation is made to existing projects, it shall be regarded as the allocation made within two years from the issuance.

Qualified Business Category	GBP Category	Eligible Criteria and Project
Energy efficient	<ul style="list-style-type: none"> <li>Green Building</li> </ul>	<ul style="list-style-type: none"> <li>Building of which environment building certification was acquired or renewed prior to 24 months of issuance of Green Bond. Or, such building of which certification will be acquired or renewed in the future               <ul style="list-style-type: none"> <li>CASBEE Construction (New, Existing and Renovated,) CASBEE Real Estate Certification: Rank B+, A and S</li> <li>ZEB, Nearly ZEB, ZEB Ready and ZEB Oriented under ZEB Certification</li> <li>BELS: 3 stars, 4 stars and 5 stars</li> <li>DBJ Green Building Certification: 3 stars, 4 stars and 5 stars</li> </ul> </li> <li>&lt;Project example&gt;               <ul style="list-style-type: none"> <li>Costs for the Oike Factory renovation (CASBEE Certification: Rank B+(Expected))</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>■ Energy Efficiency in product development processes</li> </ul>	<ul style="list-style-type: none"> <li>■ Costs for installation and maintenance of systems which realize improvement of energy efficiency by 30% or more compared to the current efficiency by reducing prototypes.</li> <li>&lt;Project example&gt;</li> <li>■ Cutting simulating by the CAE analysis</li> </ul>
Eco-efficient Products	<ul style="list-style-type: none"> <li>■ Eco-efficient Products, and Production Technologies, and Processes that consider the environment and/or eco-efficient products with certifications</li> </ul>	<ul style="list-style-type: none"> <li>■ Costs for R&amp;D and installation of related production equipment to realize improvement of energy efficiency by 30% or more compared to the current efficiency</li> <li>&lt;Project example&gt;</li> <li>■ Eco-efficient products that save energy (drills)</li> <li>■ Products that save energy and reduce waste by streamlining manufacturing process (PDZ)</li> </ul>
Energy consumption	<ul style="list-style-type: none"> <li>■ Renewable Energy</li> </ul>	<ul style="list-style-type: none"> <li>■ Costs to install equipment of renewable energy plants</li> <li>■ Costs to purchase electric power from renewable sources</li> </ul>

(Source: Green Bond Framework)

< Evaluation by JCR to the Framework >

### Category A-1: Green Building

Category A-1 of the Use of Proceeds is new investments or refinancing for acquiring buildings (Green Building), which have already acquired or are planned to acquire certifications that meet regionally, nationally or internationally recognized standards with the certifications' level up to the top three categories, and is expected to have high environmental benefits. This use of the proceeds falls under "Green Building" in Green Bond Principles and "Green Building-related Projects" among the use of proceeds exemplified in Green Bond Guidelines of Ministry of the Environment ("MOE").

The types of environmental certification for green buildings, the OSG's use of proceeds is as follows:

#### Comprehensive Assessment System for Built Environment Efficiency ("CASBEE")

CASBEE is an acronym standing for Comprehensive Assessment System for Built Environment Efficiency and is a methodology to evaluate and assign a grade of the environmental performance of buildings. In April 2001, the Comprehensive Environmental Evaluation Research Committee for buildings was established as a joint project between industries, governments, and academia with the support by the Housing Bureau of the Ministry of Land, Infrastructure. Since then, development and maintenance have been continuously carried out. The evaluation tool

includes CASBEE-construction, CASBEE-districts and CASBEE-real estate that was developed to easily show environmental performance for the real estate markets.

The CASBEE-building (new construction) is evaluated by the BEE (Built Environment Efficiency) value with L as a denominator and Q as a numerator, after reconstruction from the viewpoint of environmental quality (Q = Quality) of buildings and environmental load (L = Load) hereof with regard to the evaluation items in four classes, including energy consumption, resource circulation, regional environment, and indoor environment. Evaluation results are categorized as five ranks: S (excellent); A (very good); B + (good); B (slightly inferior) and C (inferior,) and CASBEE-real estate falls under four ranks: S (excellent); A (very good); B + (good) and B (satisfies the essential items.) It requires environmental considerations such as energy efficiency and the use of materials and equipment with low environmental impacts, and comfort indoors and considerations to landscape for high evaluation, and accordingly, a comprehensive high level of building quality is required.

Buildings with B+ or higher, which OSG stipulated as eligible criteria, have BEE of 1.0 or higher for CASBEE-construction (new construction), and the environmental quality shall be clearly superior to environmental burdens. JCR evaluates that CASBEE-real estate also has environmental benefits since it is equivalent to B+ in the conventional CASBEE-construction, etc. although the measurement criterion is not for BEE.

### **Net Zero Energy Building ("ZEB")**

ZEB is a building aiming to reduce primary energy consumed in buildings by improving energy efficiency in buildings and facilities, utilizing area energy networks, renewable energy on-site, etc., and to reduce it to zero (net.) ZEB is categorized under four stages: 1. ZEB (buildings with energy efficiency (50% or more) and energy creation that reduces primary energy consumption by 100% or more; 2. Nearly ZEB (buildings with energy efficiency (50% or more) and energy creation that reduces primary energy consumption by 75% or more); 3. ZEB Ready (buildings with energy efficiency that reduces primary energy consumption by 50% or more); and 4. ZEB Oriented (buildings with a total area of 10,000 m<sup>2</sup> that reduce primary energy consumption by 40% or more for offices, schools, factories, etc. and by 30% or more for hotels, hospitals, department stores, restaurants, meeting places, etc.) All of the energy efficiency at these stages falls under BELS' five stars described below.

JCR evaluates that buildings, including ZEB, Nearly ZEB, ZEB ready, and ZEB Oriented under the ZEB certificates set as eligible criteria by OSG have environmental benefits since their environmental qualities are clearly superior to environmental burdens.

Figure 1. Definitions of ZEB

Please refer the website of Ministry of Economy, Trade and Industry, Agency for Natural Resources and Energy<sup>3</sup> (Japanese)

### **Building-Housing Energy-efficiency Labeling System ("BELS")**

BELS is an acronym standing for Building-Housing Energy-efficiency Labeling System and is a system by which a third-party evaluation organization evaluates and certifies energy efficiency for new and existing buildings. Hull performance and primary energy consumption are subject to evaluation, and excellent energy efficiency is required for high evaluation. The evaluation results are expressed with the number of stars and are ranked from one to five according to Building Energy Index ("BEL".) BEI is a scale to measure energy efficiency that is comparing to the threshold, with designed primary energy consumption as a numerator and standard primary energy consumption as a denominator. One-star meets the existing energy efficiency standard, and two-star meets the energy efficiency

<sup>3</sup> "ZEB Roadmap Follow-up Committee Report in Fiscal 2018" (March 2019) of Ministry of Economy, Trade and Industry, Agency for Natural Resources and Energy

standard.

JCR evaluates that buildings with three stars or higher in BELS that is determined as eligible by OSG has energy efficiency performance (non-residential: BEI of 0.8 or less) and have environmental benefits.

### **DBJ Green Building Certification**

DBJ Green Building Certification is a certification system provided by the Development Bank of Japan ("DBJ") to evaluate a real property whether it gives considerations to the environment/society. The evaluation results are expressed with the number of stars, and the evaluation point is based on "buildings with considerations for the environment and society." DBJ evaluates three major categories: "Ecology (environmental)," "Amenity (comfort) & Risk Management (crime/disaster prevention)" and "Community (local and landscape) & Partnership (collaboration with stakeholders)," which are represented with five stars (excellent in the domestic classes,) four stars (excellent,) three stars (outstanding,) two stars (superior,) and one star (sufficient.) Although the aforementioned is not a specialized evaluation for environmental performance, JCR evaluates that this certification is equivalent to the standards or certification regionally, nationally or internationally recognized in the green project category as defined under "Green Bond Principles" since it is highly recognized in Japan and has certain evaluation items for environmental performance. However, it is desirable to individually confirm the evaluation of environmental performance since this certification is not limited to the environmental performance.

DBJ Green Building certification is based on not only the environmental performance of properties to be evaluated, but also the comprehensive evaluation, including tenant users' comfort, risk management such as disaster/crime prevention, considerations for the surrounding environment/communities and collaboration with stakeholders. The system is designed with scores by integrating specific "outstanding efforts" for the environment and society, and there are many properties not subject to evaluation in the real estate market. Buildings are required to appropriately give considerations to not only the environment but also all stakeholders involved in buildings for high evaluation.

The certification level for the DBJ Green Building certification is assumed to be the top 20% of all domestic income-producing properties in terms of "environmental and social considerations." In addition, each evaluation up to three stars covers the aggregate of the top 10% (five stars,) the top 30% (four stars) and the top 60% (three stars) of the properties that exceed the certification level. Accordingly, JCR evaluates that OSG's Category A-1 of the Use or Proceeds is focused on properties with high environmental performance among buildings that aim to acquire certification.<sup>4</sup>

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#### **Category A-2: Energy Efficiency**

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**Category A-2 of the Use of Proceeds refers to costs to implement and maintain systems that achieve 30% or more of energy efficiency comparing to the conventional figure by reducing prototypes in in-house development processes. Category A-2 of the Use of Proceeds falls under "Energy Efficiency" in Green Bond Principles and "Projects for energy efficiency" among the use of proceeds exemplified in Green Bond Guidelines.**

This use of proceeds is to improve energy efficiency in in-house development processes. OSG quantitatively limits the products subject to the use of proceeds to only development processes that contribute to energy efficiency by 30% compared to the conventional method. Cutting tools, the main products of OSG, are developed with prototypes by repeating manufacturing them. As the number of trial manufacture increases, the amount of

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<sup>4</sup> Revision and Publication of DBJ Green Building Certification Evaluation Items (on the DBJ Green Building Certification Website in February 2019)

energy used increases since the energy is used during manufacturing/using prototypes. Since once a prototype is used, the prototype is disposed, so waste also increases as the number of prototypes increases. Therefore, OSG aims to reduce the number of trial production, energy consumption and waste.

As an example of the projects in Category A-2 of the Use of Proceeds, OSG refers to cutting-simulation using CAE analyses. With regard to the simulation of software similar to that introduced in the past, OSG is to allocate the proceeds funded via green bonds to installation/maintenance costs only if the Company can confirm that it achieved energy efficiency by 30% or more from the previous level upon installation. In case of refinancing, projects shall be conducted within the past two years<sup>5</sup> as mentioned above.

JCR confirms calculation methodologies for environmental benefits by the cutting-simulation and it is expected to have energy efficiency improvement by 30% or more compared with the conventional one. In cases where proceeds are allocated to developmental processes not listed in the project example, JCR confirms that the energy efficiency can be calculated following the case listed in the project example. Based on the above, JCR evaluates that the use of proceeds is limited to eco-efficient products that contribute to energy efficiency.

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**Category B: Circular economy adapted products, production technologies and processes and/or certified eco-efficient products**

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**Category B of the Use of Proceeds refers to installation of facilities or costs related to R&D and manufacturing to realize energy efficiency of 30% or more compared to that of the previous year for products for customers. Category B of the Use of Proceeds falls under "Circular economy adapted products, production technologies and processes and/or certified eco-efficient products," in Green Bond Principles, and "Projects concerning eco-efficient products, production technologies, and processes" among the use of proceeds illustrated in Green Bond Guidelines of MOE.**

OSG is actively working to reduce environmental footprint through developing and utilizing products and expanding developmental processes for the achievement to save resources and shorten production processes of such products. In the Framework, the products subject to the use of proceeds are quantitatively limited to those that improve energy efficiency by 30% compared with the conventional products as is the case with Category A-2 of the Use of Proceeds. Examples of projects list drilling that contributes to electric power saving and PDZ that contributes to electric power saving/waste reduction by integrating processes.

- Drill that contributes to power saving by devising hole shapes  
When drilling, high-pressure coolant that ejects cutting oil pressurized by a pump from a high-pressure nozzle and removes chips entangled with work materials and tools is needed for stable drilling. Based on the customer's needs for reducing oil/electric power consumption, the Company developed a drill with holes, which enables efficient oil supply. The new drill is able to reduce power consumption by 56% compared to the conventional products.
  
- PDZ that contributes to power saving and waste reduction by integrating processes  
Previously, four tools were required to produce products with holes with different inner diameters, as shown in the figure below. When multiple tools are used, it takes time to replace those tools with others, which

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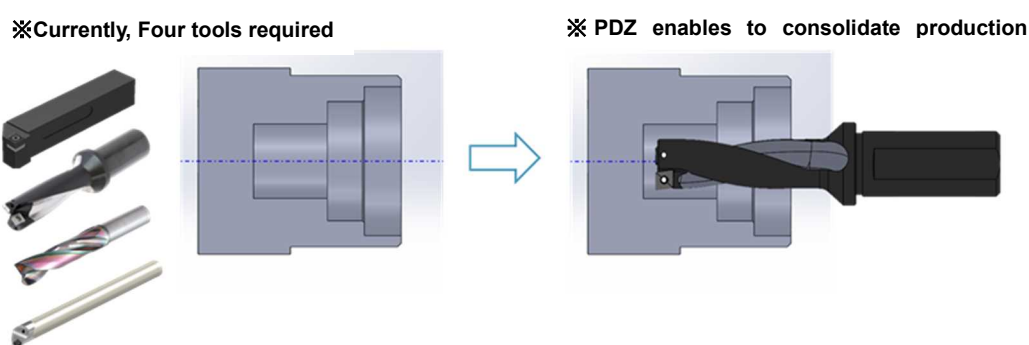
<sup>5</sup> CAE analyses: CAE is an abbreviation standing for Computer Aided Engineering and is an analytical methodology for verifying products by conducting all kinds of simulations on a computer. Architectural analyses, including stress/distortion, deformation, vibration and fatigue analyses, fluid analyses for fluids (gas and liquid), electric heat analyses considering heat transfer by heat conduction, convection and radiation, and electromagnetic field analyses to analyze interaction of electric/magnetic fields are utilized in many fields.



increases the cycle time. As the cycle-time gets longer since the time to consume power to rotate a main shaft gets longer, and then the power consumption increases. The Company developed PDZ that enabled production with only one tool and realized the shorter cycle-time to reduce power consumption by approximately 40 % compared to that of the conventional products.

In general, when cutting tools are used for production, the part to cut the work materials (cutting edge) is worn so re-polishing is required; however, re-polishing is either disposable or is limited the use for only ten times or so, which leave a large amount of disposal behind. PDZ enables production with only one tool instead of four tools, which lead to reduce waste.

Figure 2. Outline of PDZ



(Source: Green Bond Framework)

JCR confirms that the methodology for calculating environmental benefits for the projects illustrated above, and checks that energy-efficiency is expected to increase to 30% or more, compared to that of the conventional one. In cases where proceeds are allocated to products not listed in the project's example, JCR confirms that the energy efficiency is calculated following products listed in the project's example. Based on the above, JCR evaluates that the use of proceeds is limited to eco-efficient products that contribute to improving energy efficiency for customers.

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### Category C: Energy Efficient

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**Category C of the Use of Proceeds refers to capital expenditures to convert electricity used in the Company's business activities into clean energy or costs to purchase electricity in order to promote its efforts to reduce CO<sub>2</sub> emissions toward the achievement of carbon neutrality. Category C of the Use of Proceed falls under "Renewable Energy" in Green Bond Principles and "Projects for Renewable Energy" among the use of proceeds illustrated in Green Bond Guidelines.**

This use of proceeds is to fund costs of renewable energy-derived electricity (renewable power) intended for reducing CO<sub>2</sub> discharged from the Company's factories and expenses to install renewable energy facilities in its plants. OSG consumes 90% or more of energy-derived electricity, and the Company expects to reduce a significant amount of emissions by converting the method of obtaining power sources into renewable energy or by installing renewable power generating facilities such as solar power in its factories. OSG has purchased renewable power from Chubu Electric Power Miraiz Co., Inc. and used the power in its head office and office buildings since FY 2022. However, the above-mentioned purchased renewable power is expected to be only 1.2%

of the total electricity consumption (FY 2022,) and the following two initiatives are planned to further increase the renewable energy.

- On-site PPA in the NEO Shinjo Plant<sup>6</sup>

Solar panels were installed on the roof of the plants and in parking space in the NEO Shinjo Plant, which was completed its construction in October, 2020. The electricity generated is used for battery charges for factories and electric vehicles. With these efforts, OSG is expected to reduce CO<sub>2</sub> emissions by about 350 ton per year, which is scheduled to start its operation in January 2024.

- Farm-typed off-site PPA

The Company concluded an agreement with Agri-gascom co,ltd. and Chubu Electric Power Co., Inc. for implementing farming-typed off-site PPA services in December 2022. Based on the Agreement, Chubu Electric Power Miraiz Co., Inc. obtains electricity from 10 solar power plants (six of which are agricultural solar power plants) established by Agri-gascom co,ltd., which is exclusively for OSG and supplies electricity to its four plants for 20 years. With these initiatives, OSG is expected to reduce CO<sub>2</sub> emissions by about 2,000 ton per year, which is scheduled to start its operation in February 2023.<sup>7</sup>

OSG sets an in-house target of approximately 30% of its total electricity consumption to be renewable electricity by FY 2030, and is considering to introduce and obtain more renewable energy in order to reduce its CO<sub>2</sub> emissions. The Company is also internally discussing to purchase renewable electricity from electric power companies with the intension to additionally secure and use its CO<sub>2</sub>-free power to be adaptive to rapidly increasing natural disasters and balancing agricultural outputs. The aforementioned farm-typed off-site PPA is the first initiative in the Chubu area, which combines agricultural production with solar power. This is an example that enables to secure a stable supply of additional CO<sub>2</sub>-free power. JCR evaluates that OSG shows not only its willingness but also is accompanied with concrete actions.

Based on the aforementioned, JCR evaluates that the use of proceeds stipulated by OSG is measures that contribute to achieve environmental targets set by OSG, and it is expected to have high environmental benefits.

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<sup>6</sup> PPA: Power Purchase Agreement (electricity sales contracts)

A mechanism whereby electricity generated by a solar power generation system installed by a company (PPA Operator) that owns and manages solar power generation facilities in spaces such as in premises and on roofs of facilities, etc. provided by facilities' owners is sold to electricity users of the facilities.

On-site PPA is a model in which generation facilities are placed in own premises where require electricity and consume the electricity for own while off-site PPA is a model in which generation facilities are placed off-site, and electricity is supplied to locations where electricity is needed.

<sup>7</sup> Initiatives to share solar power with agricultural production and power generation. In addition to incomes from selling crops, incomes from selling electricity and private use of electric power generation can be expected to further expand the scale of agricultural management and promote the 6th industrialization by the income expansion by farmers.

## b. Negative Impacts on the Environment

OSG specifies that all eligible candidate business shall confirm that the Company addresses the followings for the environmental and social risk reduction in its Framework:

- To comply with environment-related laws and regulations required by the local governments where the national government is located or a project is implemented and to conduct surveys for environmental impacts as necessary
- To sufficiently explain to local residents in implementing business
- Procure materials, prevent environmental pollution, and consider working environments and human rights in accordance with its Group's sustainable procurement guidelines

Specifically, OSG assumes the following environmental/social risks and their responses in respective green projects.

Green project	Environmental and social risks assumed	Whether environmental assessment is conducted or not
Green Building	<ul style="list-style-type: none"> <li>• Adverse effects on surrounding areas such as noise, vibration and light pollution caused by construction</li> <li>• Scatter of hazardous waste including asbestos, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• To sufficiently explain to local residents in implementing business</li> <li>• To comply with environmental laws and regulations required by local governments where the national government is located or a project is implemented, and to conduct surveys for environmental impacts as necessary</li> </ul>
Energy efficiency	<ul style="list-style-type: none"> <li>• Adverse effects by improper handling of equipment or facilities before the replacement</li> </ul>	<ul style="list-style-type: none"> <li>• Outsourcing to specialized processing and recycling companies</li> </ul>
Eco-efficient products	<ul style="list-style-type: none"> <li>• Leakage of hazardous substances used in manufacturing processes of products</li> </ul>	<ul style="list-style-type: none"> <li>• To comply with environmental laws and regulations required by local governments where business is conducted</li> </ul>
Renewable Energy	<ul style="list-style-type: none"> <li>• Noise and vibration from related facilities</li> <li>• Impacts on the living environment of neighboring residents with reflective light from solar panels</li> </ul>	<p>&lt;For installation on the roofs of its own facilities, etc.&gt;</p> <ul style="list-style-type: none"> <li>• To preliminarily explain the impacts on neighboring residents by reflections, etc.</li> </ul> <p>&lt;For PPA&gt;</p> <ul style="list-style-type: none"> <li>• To check the status of the implementation of land historical/soil contamination surveys for the land as stipulated by laws and regulations</li> </ul>

Based on the aforementioned, JCR evaluates that OSG is appropriately addressing negative impacts on the environment.

### c. Consistency with SDGs

JCR evaluates that the projects to be realized through the Framework contribute to the following SDGs goals and targets while referring to the SDGs mapping of ICMA.



#### Goal 7: Affordable and Clean Energy

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**Target 7.2** By 2030, increase substantially the share of renewable energy in the global energy mix

**Target 7.3** By 2030, double the global rate of improvement in energy efficiency



#### Goal 9: Industry, Innovation and Infrastructure

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**Target 9.4** By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.



#### Target 12: Responsible Consumption and Production

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**Target 12.2** By 2030, achieve the sustainable management and efficient use of natural resources.



#### Goal 13: Climate Action

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**Target 13.3** Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.

## Evaluation Phase 2: Management, Operation, and Transparency Evaluation

Based on the current situation described below and JCR's evaluation of the subject, JCR evaluated that the management and operation systems have been well developed, that transparency is very high and that it can be fully expected for the project to be implemented as planned and for the proceeds to be adequately allocated. In Phase 2, JCR evaluated that management, operation and transparency to be the highest level of "m1(F)."

### 1. Appropriateness and Transparency Concerning Selection Standards and Processes for Use of Proceeds

#### (1) JCR's Key Consideration in This Factor

In this section, JCR confirms the objectives to be achieved through the Framework, the appropriateness of green project selection standards and processes, and whether or not a series of processes are properly disclosed to lenders and others.

#### (2) Current Status of Evaluation Targets and JCR's Evaluation

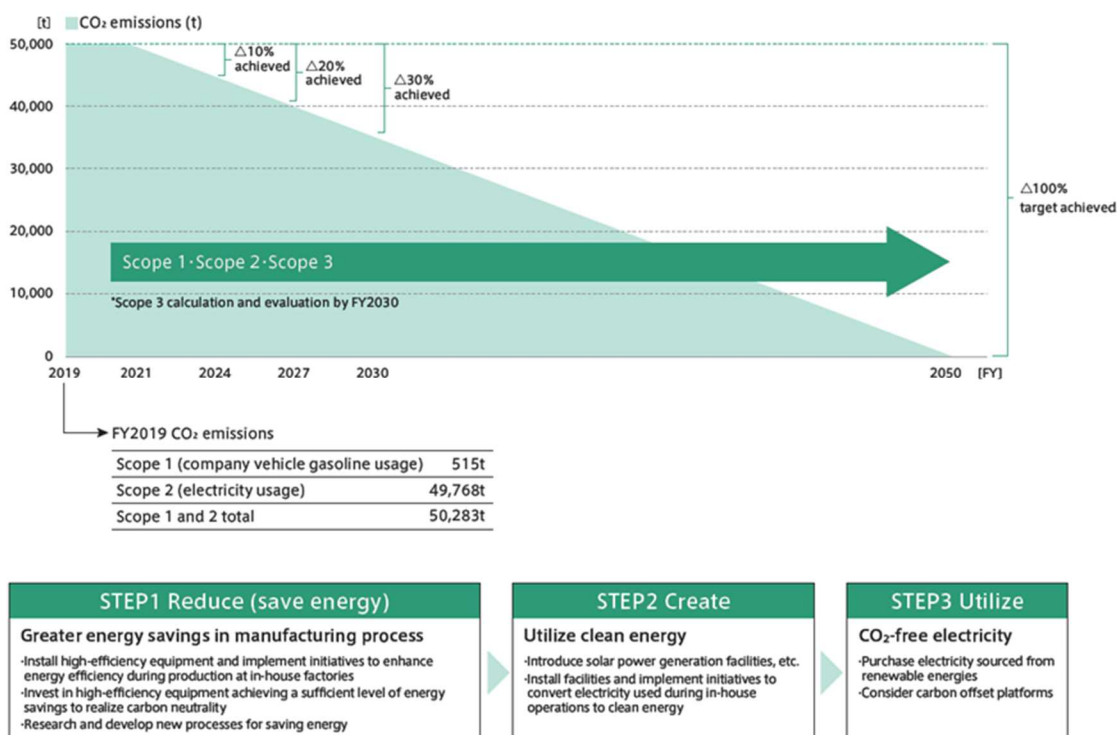
##### a. Goals

The OSG's corporate philosophy is to be a "global company" with the belief that it will expand its business on a global scale and contribute to the global manufacturing industry. Based on this corporate philosophy, the Group aims to contribute to the sustainable development of society as an essential player that contributes to the sustainable manufacturing industry around the world through its unique, high-value-added products and services as its basic sustainability policy. To realize SDGs, the Group adopted "Initiatives for Climate Change" and "Sustainable Finance" as eight priority issues that the Group should prioritize. OSG regards sustainable finance as a means of financing its investments to achieve the 2050 Carbon Neutral target. As described in the previous chapter, the Company is working to upgrade its ESG/SDGs management by financing the investment proceeds required for green buildings in manufacturing bases, utilizing renewable energy, being energy efficiency and streamlining in manufacturing processes through the issuance of green bonds, and showing effective investments by reporting after the issuance.

OSG set its slogan "as we advanced toward the carbon neutral era, the entire OSG Group will strive together to enhance corporate value with the aim of achieving overall optimization" as one of the basic policies in "Beyond the Limit 2024," the medium-term management plan announced in January 2022. Accordingly, the Company is promoting the ESG management on a Group-wide basis. As shown in the chart below, OSG sets a concrete target, the medium-and long-term goal to reduce CO<sub>2</sub> emissions (Scope1, Scope2) by 30% by FY 2030 compared to that of FY 2019 and to achieve the carbon neutral by FY 2050. The Company also announced a reduction plan with three steps: STEP1: Reduce (Energy Efficiency,) STEP2: Create and STEP3: Utilize toward the achievement of these goals. As detailed in the previous chapter, Category A of the Use of Proceeds under the Framework falls under STEP1 in the reduction plan and Category C categorizes under STEP 2 and 3 herein. OSG also simultaneously announced that the Company is scheduled to calculate/evaluate Scope3 by FY 2030 and that it works to reduce CO<sub>2</sub> emissions throughout the supply chain in the Carbon Neutral Declaration. Category B of the Use of Proceeds in the Framework is to improve energy-efficiency in products for customers and contributes to reduce CO<sub>2</sub> emissions throughout the supply chain.

Based on the above, JCR evaluates that the businesses covered in the Framework are consistent with the OSG's management philosophy and environmental targets.

Figure 3. Carbon Neutral Declaration (Image of Reducing CO<sub>2</sub> Emissions to Achieve the Target)



(Source: OSG Group Integrated Report in 2021)

## b. Selection criteria

OSG's criteria to select the use of proceeds are as described in Evaluation Phase 1, and JCR evaluates that the aforementioned selection criteria meet the level subject to the projects of great significance in promoting global and social sustainability.

## c. Process

<The Framework for Selection Process>

### 2-2. Project evaluation and selection process

For eligible projects, to which proceeds from the Green Bond will be allocated, Finance Department will select candidate projects according to their alignment with the project eligibility criteria. The Finance and Quality Assurance Department will discuss the matter before Sustainability Committee which the President chairs will make the final decision.

<Evaluation by JCR to the Framework>

In the process of selecting the OSG's green bonds, the business with a high degree of contribution to the environment and efforts to reduce environmental and social risks is set as green-eligible projects. Specifically, Quality Assurance Department calculates environmental benefits such as energy efficiency, etc. in the use of proceeds A-2 and B. The Department also determines whether environmental assessment is conducted or not, and General Manager hereof makes conclusive confirmation. Based on this information, Finance Department selects candidates, and then Treasury Department discusses/confirms the details with Division in charge. The Sustainability Committee chaired by

President finally judges/determines whether the candidate business for allocation is in conformity with the requirements of the eligible business.

Based on the aforementioned, JCR evaluates that OSG appropriately established the processes for selection since Quality Assurance Department with technical knowledge that calculates environmental data (CO<sub>2</sub> emissions, waste amounts and energy consumption) determines the greenness, and Director in Finance Department makes the conclusive decision for allocating proceeds.

The goals, selection criteria and processes for OSG set out in the Framework are appropriately developed. The Company plans to specify the goals, selection criteria and processes as requirements to be satisfied for green bonds in the framework and post and disclose the documented framework on its website. With regard to issuing bonds, the Company describes contents in the framework in the documents to be disclosed when issuing bonds, and it plans to disseminate these details to investors and directly explain these contents to investors through IR in issuing bonds: therefore; the transparency will be secured.

## 2. Appropriateness and Transparency of Management of Proceeds

### (1) JCR's Key Consideration in This Factor

It is usually assumed that the management of the proceeds varies widely depending on issuers. JCR confirms whether the proceeds are surely appropriated to the green project and whether a mechanism and internal system are in place to enable easy tracking and management of the appropriation of proceeds.

JCR also gives importance to whether proceeds are scheduled to be used for green projects at an early stage and the evaluation of management and operation methods for unallocated proceeds.

### (2) Current Status of Evaluation Targets JCR's Evaluation

<The Framework for Management of Proceeds>

#### **2-3. Management of Proceeds**

The proceeds will be allocated to eligible projects and managed by Accounting Department. Accounting Department will track and manage the proceeds using Excel so that the same amount of bonds issued based on the Framework will be allocated to any of eligible projects.

The Company will manage the unallocated proceeds in cash or cash equivalent until the full amount of the proceeds will be allocated, and the proceeds will be fully allocated within five years from issuing.

<Evaluation of JCR to the Framework>

Accounting Department will regularly track and manage the proceeds until redemption so that the same amount of green bonds issued based on the Framework will be allocated to any of eligible business. General Manager of Accounting Department will make a final approval for the management of proceeds on a quarterly or annually basis. Green bond proceeds are invested in a safe manner in cash or cash equivalents until they are fully allocated to qualified business.

With regard to the allocation plan for proceeds based on the framework, JCR confirms that OSG will allocate proceeds to refinance within two years from the issuance of green bonds exclusively for businesses that operations have started, and allocation proceeds for new financing will be completed within five years from the issuance of bonds in all projects. JCR also confirms that OSG is appropriately mapping out a plan for proceeds for a borrower's businesses, assuming refinancing and new financing for concrete allocation businesses to be funded for the next bond issuance.

The management of proceeds is audited quarterly by an auditing firm. Various kinds of documents such as contracts and payment slips related to funding are stored semi-permanently basically in electronic data.

JCR evaluates that OSG's fund management is of high adequacy and transparency.



### 3. Reporting System

#### (1) JCR's Key Consideration in This Factor

In this section, JCR evaluates whether the system for disclosing green bonds to investors before and after issuing green bonds is planned in a detailed and effective manner, by referring to the Framework.

#### (2) Current Status of Evaluation Targets and JCR's Evaluation

<The Framework concerning Reporting>

##### 1-2. Reporting

OSG will report the status of allocation of green bond proceeds to eligible projects and effects on the environment annually on the OSG's annual report and website.

##### 1-2.1. Allocation Report

Until the proceeds from green bonds are fully allocated, OSG will annually publish the following allocation status of the proceeds to eligible projects to the extent practically possible.

- Total amount of the proceeds allocated to eligible projects
- Amount of allocated and unallocated proceeds by eligible criteria
- Allocation schedule if any unallocated proceeds
- Proportion of finance and refinance

Should a significant change occur following the allocation of proceeds, it will be disclosed in a timely manner.

##### 1-2.2. Impact reporting

OSG will publish Impact Report on following indicators and projects to the extent practically possible until redemption of the Green Bonds. The Company will disclose the details when conditions have changed significantly in a timely manner.

<Green Bond Eligible Projects>

Qualified Business Category	GBP categories	Impact Reporting Items (Example)
Energy efficiency	■ Green Building	<ul style="list-style-type: none"> <li>■ Overview of the building</li> <li>■ Progress of capital investments</li> <li>■ Type and rank of environmental certifications obtained (or schedule of certification progressed)</li> <li>■ Volume of CO<sub>2</sub> emissions</li> </ul>
	■ Energy efficiency in the product development process	<ul style="list-style-type: none"> <li>■ Reduced quantity of prototypes by introducing systems</li> <li>■ Reduction volume of power consumption by reducing prototypes</li> </ul>
Eco-efficient Products	■ Eco-efficient Products, and Production Technologies, and Processes that considers the environment and/or eco-efficient product with certifications	<ul style="list-style-type: none"> <li>■ Overview of Project and its estimated performance</li> <li>■ Reduction volume of power consumption</li> <li>■ Reduction volume of CO<sub>2</sub> emissions by improvement of energy efficiency</li> <li>■ For R&amp;D purposes;</li> </ul>

		<ul style="list-style-type: none"> <li>▪ Overview of the R&amp;D plan and its progress</li> <li>▪ Overview of targeted business and target effects (expected purposes, products or effects)</li> </ul>
Energy consumption	<ul style="list-style-type: none"> <li>■ Renewable Energy</li> </ul>	<ul style="list-style-type: none"> <li>■ Overview of Project</li> <li>■ Reduction volume of CO<sub>2</sub> emissions by using renewable energy</li> <li>■ Renewable energy generating capacity (actual volume)</li> <li>■ Volume of purchased electricity derived from renewable sources</li> </ul>

<Evaluation by JCR to the Framework>

**a. Reporting on the allocation status of the proceeds**

OSG plans to disclose the allocation of proceeds funded through green bonds on its website and in an integrated report on an annual basis. In cases where the target allocation of proceeds is significantly changed and there are unallocated proceeds, the details will be disclosed in the same manner. JCR evaluates that reporting on the allocation of proceeds is appropriate.

**b. Reporting on environmental improvement effects**

OSG plans to disclose the contents in the Framework annually on its website and in its integrated report as reporting items on the environmental improvement effects. JCR confirms that the energy-efficiency with regard to eco-efficient products for customers and the development processes that contribute to its energy efficiency will be calculated following the method confirmed with the project example by JCR. Regarding environmentally eco-efficient products for customers, JCR confirms that the Company will disclose the progress status for information on new products only from the viewpoint of competition with other companies.

## 4. Organization's Environmental Initiatives

### (1) JCR's Key Consideration in This Factor

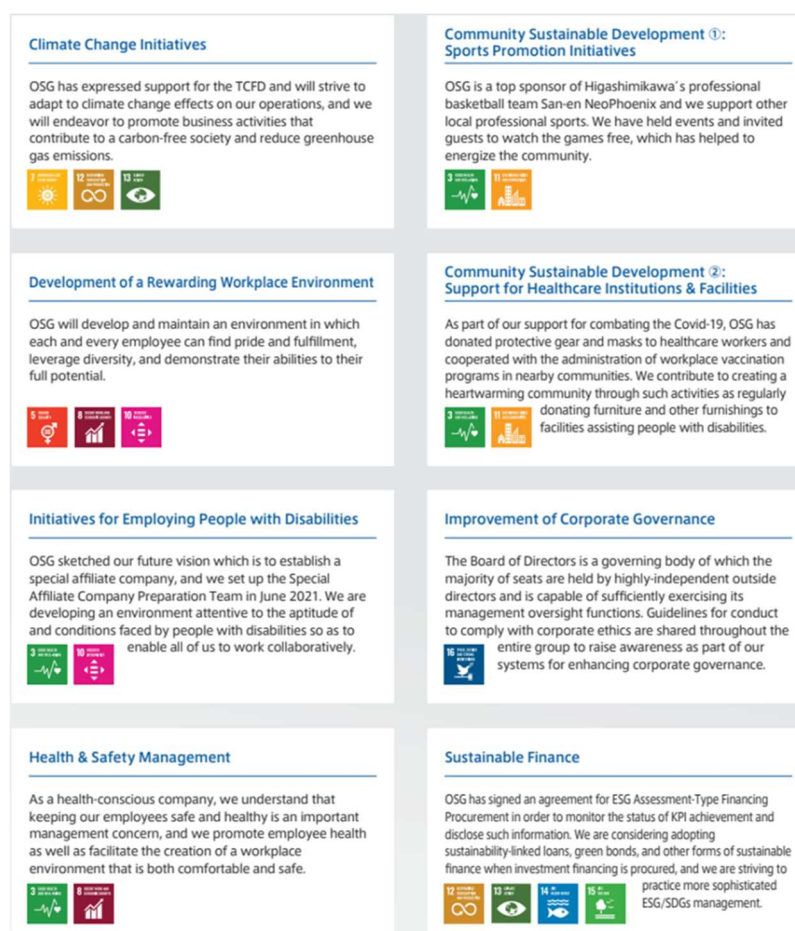
In this section, JCR evaluates whether the management of an issuer highly prioritizes environmental issues for management and whether the green bond issuance policies, processes and selection criteria for green projects are clearly positioned through the establishment of a department specializing in environmental issues or in collaboration with external organizations.

### (2) Current Status of Evaluation Targets and JCR's Evaluation

OSG's corporate philosophy is to be a "global company" with the belief that it will expand its business on a global scale and contribute to the global manufacturing industry. In 1996, the former Chairperson Teruhide Osawa made "Three Declarations" toward the 21st century as follows: 1. To be Global Company; 2. To be Healthy Company; and 3. To be Environmentally-Friendly Company. The Company has already addressed the management, considering "Global," "Health" and "Environment" and the efforts with its spirit has continued since the era during which "ESG management" was not yet disseminated under the former Chairperson.

Based on the corporate philosophy and the spirit above, the Group aims to contribute to the sustainable development of the society as an essential player that contributes to the sustainable manufacturing industry around the world through its unique high-value-added products and services as its basic sustainability policy. The Group identified the key issues that should be prioritized from the two points, "importance of stakeholders" and "importance of OSG," and set eight key issues, "materiality" toward the achievement of SDGs. In this context, the Company sets "Initiatives for Climate Change" and "Sustainable Finance" as key issues.

Figure 4 Materiality in the OSG Group



(Source: OSG Group Integrated Report 2021)

OSG set its slogan, "As we advanced toward the carbon neutral era, the entire OSG Group will strive together to enhance corporate value with the aim of achieving overall optimization) as one of the basic policies of "Beyond the Limit 2024," the medium-term management plan announced in January 2022. Accordingly, the Company is promoting the ESG management on a group-wide basis. As specific targets, the Company set medium- and long-term targets to reduce emissions by 30% by FY 2030 compared to that of FY 2019 and achieving the carbon neutral by FY 2050, and it announced three STEPs toward the achievement of these targets as follows:

- STEP1: Reduce (energy efficiency)
  - Energy efficiency in manufacturing processes; i.e., installing facilities with high-efficiency or efforts in production activities in its own plants and related investments, and additionally R&D of new processes
- STEP2: Create
  - Utilizing clean energy ; i.e., installing photovoltaic power generation facilities. In particular, installing facilities to convert electricity for own use into clean energy
- STEP3: Utilize CO<sub>2</sub>-free electricity
  - Purchasing electricity derived from renewable energy, and considering carbon offset platforms

The Company has upgraded equipment to the leading model, and promoted a conversion of LED lighting, done away with equipment using fuel oil on a company-wide basis to date as specific efforts of STEP 1. These efforts resulted in a 12% reduction in the energy consumption (per production unit) and a 1% reduction in total CO<sub>2</sub> emissions in FY 2021 (both compared to those in FY 2020.) The Company will move forward with the initiatives aimed at reducing CO<sub>2</sub> emissions across the whole company and supply chains, including green projects, which are listed in the use of proceeds in the Framework hereafter. OSG is also working to develop/disseminate products/services to contribute to the environment by utilizing its technologies. For instance, the raw materials of carbide tools or others include rare resources such as tungsten and cobalt; therefore, the Company collects those tools after their use from customers and works to recycle the rare metals collected. With regard to cutting tools such as tap end mills and drills, which were worn away and became dull after repeatedly used, OSG prolongs the life of those products by providing regrinding services, which contributes to reduce waste.

OSG establishes the Sustainability Committee to carry out the sustainability initiatives described above. The Sustainability Committee deliberates ESG-related issues, consistency of policies or visions, priority measures and other matters, and quarterly reports on its activities to the Board of Directors. Measures for promoting sustainability are taken by department heads (ESG officers) and facilitators in each organization based on decisions made by President who chairs the Sustainability Committee.

Figure 5. Sustainability Promotion System



(Source: Green Bond Framework)

OCG also recognizes the importance of climate-related financial information disclosure, and endorsed the recommendations of Task Force on Climate-related Financial Disclosures ("TCFD") in 2021. Some manufacturing sites and the Group companies received certifications for their internal environmental management through ISO14001, an external audit. Furthermore, the Company received an external evaluation, "B" in "CDP Climate-Change 2022," was selected as index components in ESG Index in FTSE, and was awarded by the Japan Machinery and Tool Manufacturers Association. OSG concluded an agreement with Sumitomo Mitsui Banking Corporation for "ESG evaluation-type loans" to confirm the current status of the Company in promoting the ESG management as a collaboration with external parties<sup>8</sup>. The Company sets a target to increase carbon productivity by 14.2% by FY 2024 compared to that of FY 2021, and is certified by the Ministry of Economy, Trade and Industry as an adaptive project to the carbon neutral investment promotion tax system<sup>9</sup>.

Based on the aforementioned, JCR evaluates that the management highly prioritizes the environmental issues, and experts from inside and outside the company with specialized knowledge are involved in the sustainability initiatives.

<sup>8</sup> SMBC website <https://www.smbc.co.jp/hojin/eco/goriyou/sustainability.html>

<sup>9</sup> [https://www.meti.go.jp/policy/economy/kyosoryoku\\_kyoka/gaiyo64cn.pdf](https://www.meti.go.jp/policy/economy/kyosoryoku_kyoka/gaiyo64cn.pdf)

■Evaluation Results

JCR assigned "g1(F)" for "Greenness Evaluation (the Use of Proceeds)" and "m1(F)" for "Management, Operation, and Transparency Evaluation" with regard to the Framework, based on its JCR Green Finance Evaluation Methodology. Consequently, JCR assigned "Green 1 (F)" for "JCR Green Bond Framework Evaluation." JCR evaluates that the Framework meets the standards for the items required in Green Bond Principles and Green Bond Guidelines.

<JCR Green Bond Framework Evaluation Matrix>

		Management, Operation, and Transparency Evaluation				
		m1(F)	m2(F)	m3(F)	m4(F)	m5(F)
Greenness Evaluation	g1(F)	Green 1(F)	Green 2(F)	Green 3(F)	Green 4(F)	Green 5(F)
	g2(F)	Green 2(F)	Green 2(F)	Green 3(F)	Green 4(F)	Green 5(F)
	g3(F)	Green 3(F)	Green 3(F)	Green 4(F)	Green 5(F)	Not qualified
	g4(F)	Green 4(F)	Green 4(F)	Green 5(F)	Not qualified	Not qualified
	g5(F)	Green 5(F)	Green 5(F)	Not qualified	Not qualified	Not qualified

(Responsible) Atsuko KAJIWARA and Haruna GOTO

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## Important explanation of this evaluation

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### 1. Assumptions, Significance, and Limitations of the JCR Green Finance Framework evaluation

JCR Green Finance Framework Assessment, which is assigned and provided by the Japan Credit Rating Agency ("JCR"), is a comprehensive statement of the JCR's current opinions on the extent to which it manages, operates, and ensures transparency in relation to, among other things, the conformity of green projects as defined by JCR, based on the policies stipulated in Green Finance Framework. Accordingly, it is not intended to evaluate the specific environmental benefits and management, operation systems, and transparency evaluation of the use of proceeds such as individual bonds or borrowings, which are implemented based on the said policy. In cases where green finance evaluation is assigned for individual bonds or individual borrowings based on the said framework, evaluation should be made separately. JCR Green Finance Framework Evaluation does not demonstrate the environmental benefits of individual bonds or borrowings implemented under the said framework, and JCR is not responsible for the environmental benefits. With respect to the environmental benefits of the proceeds funded under Green Finance Framework, JCR confirms matters that are measured quantitatively and qualitatively by the issuer or by the third party requested by the issuer; however, as a general rule, those are not measured directly.

### 2. Methodologies Used in Conducting this Evaluation

The methodologies used for this evaluation are listed in the "JCR Green Finance Evaluation Methodology" under the "Sustainable Finance ESG" section of <https://www.jcr.co.jp/> website.

### 3. Relationship with Credit Rating Agency Activities

The act of assigning and providing JCR Green Finance Framework Evaluation is carried out by JCR as its related business and differs from the act of the credit rating business.

### 4. Relationship with credit ratings

The Evaluation is different from the credit rating and does not commit to providing a predetermined credit rating or making available for browsing.

### 5. Third-Party Evaluation in JCR Green Finance Framework Assessment

There are no capital or personal relationships, etc. that may cause conflicts of interest between evaluation targets and JCR.

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#### Points to consider

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#### ■Terminology

JCR Green Finance Framework Evaluation: it evaluates the extent to which the proceeds funded under Green Finance Framework is allocated to green projects as defined by JCR and the extent to which the use of proceeds for the green finance is managed and operated and the transparency is secured. The Evaluation is shown on a five-point scale, from top to bottom, using the evaluation symbols of Green1(F), Green2(F), Green3(F), Green4(F) and Green5(F).

#### ■Status of Registration as External Evaluator of Sustainability Finance

- Registered as an external reviewer of Green Bond by the Ministry of the Environment
- ICMA (registration as an observer to the International Capital Markets Association as an external evaluator)
- Members of the Working Group on UNEP FI Positive Impact Financial Principles
- Climate Bonds Initiative Approved Verifier (Climate-Bond Initiative Accredited Verifiers)

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

- Credit Rating Agency: the Commissioner of the Financial Services Agency (Credit Rating) No. 1
- EU Certified Credit Rating Agency
- NRSRO: JCR registered with the following four of the five credit rating classes of Nationally Recognized Statistical Rating Organization (NRSRO) as defined by the U.S. Securities and Exchange Commission: (1) Financial institutions, broker/dealers, (2) insurance companies, (3) general business corporations and (4) government and local governments. In cases where disclosure is required based on Section 17g-7(a) of the Securities and Exchange Commission rules, such disclosure is attached to a news release posted on the JCR's website (<https://www.jcr.co.jp/en/>).

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