



**HITACHI**

Reliable Solutions

# Hitachi Construction Machinery Co., Ltd Green Finance Framework

February 2024



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# 1. Introduction

Hitachi Construction Machinery Co., Ltd. (“Hitachi Construction Machinery”) has formulated the following Green Finance Framework (the “Framework”). The framework has obtained Second Opinion from Rating and Investment Information, Inc. (R&I) on the alignment with the Green Bond Principles 2021 established by the International Capital Market Association (ICMA), the Green Bond Guidelines (2022), and the Green Loan Guidelines (2022) established by the Ministry of the Environment and the Green Loan Principles 2023 established by the Loan Market Association (LMA), the Asia Pacific Loan Market Association (APLMA), and the Loan Syndication & Trading Association (LSTA). Based on the Framework, Hitachi Construction Machinery will implement financing via Green Bond/Loan (the “Green Finance”).

## 1.1 Overview of Hitachi Construction Machinery

In 1950, Hitachi, Ltd., the precursor of Hitachi Construction Machinery launched the full-scale marketing of domestically produced cable-operated shovels. Over the following 70 years, the Hitachi Construction Machinery Group has produced the latest advancements in construction machinery to meet the needs of the construction industry. While doing so, we have developed a sales and service network to meet the needs of customers globally.

In 2022, we began striving to achieve a revival akin to a second start-up by building on the hard-earned trust of customers and strengths it has accumulated to date. To that end, we are delivering products, services, and solutions that contribute to on-site operations for customers around the world. In these ways, we will achieve our corporate vision—“Ensure a prosperous land and society for the future. We contribute toward realizing a safe and sustainable society.”

## 1.2 Group Identity

In 2022, the Hitachi Construction Machinery Group formulated a unique group identity.

As stated in our mission, we strive to swiftly respond to the expectations of our customers and address the issues they are confronting. Based on outstanding technologies, we will thus deliver innovative products, services and solutions through co-creation with our customers and alliance partners. Through these endeavors, we will create new value to “ensure a prosperous land and society for the future” in line with our vision, thereby contributing to the realization of a safe and sustainable society.

Corporate Statement

### Reliable Solutions

We are a reliable solutions partner with/for our customers

Corporate Color

Reliable Orange

How we want to be

VISION

Ensure a prosperous land and society for the future

We contribute toward realizing a safe and sustainable society

Our mission

MISSION

Meet expectations from customers, co-create innovative products, services, solutions and together, we continue to create new values

Our code of conduct

SPIRIT

Challenge  
Customer  
Communication

Foundational Values: Basics and Ethics, Trust and Technology, Pride and Responsibility

## Kenkijin Spirit

The Kenkijin Spirit is a code of conduct of the Kenkijin who both understand and take responsibility to achieve the future vision of the Hitachi Construction Machinery Group.

We strive to foster a corporate culture in which every Kenkijin around the world takes on the challenge of creating valuable technologies, products, services, and solutions from the perspective of our customers.

### 1.3 Medium-term Management Plan “BUILDING THE FUTURE 2025”

Due to changes in the social, technological, and economic environment surrounding companies, the competitive environment has changed drastically. Competition and cooperation with other industries are becoming increasingly active, such as acceleration of the development of decarbonization technology including electrification of construction machinery, digitization of construction sites, autonomous operation and other factor. Under these circumstances, 2022 marked two significant changes in the management environment which consisted of a “change in the largest shareholder” that welcomed a new shareholder partner and the “start of a full-scale independent business in the markets of the Americas” through the dissolution of a long-standing business partnership.

In the period of “Second Start-up” of us, we have formulated a new medium-term management plan in April 2023 in which we have identified a vision of “Growing as a true solutions provider by delivering innovative solutions.” This vision is designed to publicly express our determination to provide our customers with innovative solutions that help them resolve the constantly evolving issues they are confronting.

Through the promotion of the endeavors described above, we will strive to “meet expectations from customers, co-create innovative products, services, solutions and together, we continue to create new values.” By doing so, we will fulfill our mission, a key component of our group identity.

In particular, we have established four strategic pillars; “Delivering innovative solutions for customer needs,” “Enhancing value chain business,” “Expanding business in the Americas,” and “Strengthening human capital and corporate capabilities” supporting the new medium-term management plan, and we contribute to resolve our customers’ management issues such as “improve safety and productivity,” “reduce life cycle costs,” and “environmental response”.

### 1.4 Materiality

The Hitachi Construction Machinery Group reassessed materialities in fiscal 2021 in light of changes in social conditions, policies, and regulations in various countries. In the identification process, we examined medium- to long-term risks and opportunities from the perspectives of social issues, such as the SDGs and ESG, and the perspective of the external environment, which can enhance or damage enterprise value. In this process, we identified four materialities. After repeated discussions, and taking into account the opinions of internal and external stakeholders, our Executive Board approved these four categories of materiality in July 2021, after which we reported the results in a Board of Directors meeting. We established key performance indicators (KPIs) for each materiality, and are managing progress under our sustainability governance system. We will continue to reassess materialities as needed in light of changes in the external environment and other factors.



## Materiality Themes

## Key Initiatives

### Product and technology development contributing to climate change mitigation and adaptation



#### [Mitigation] (Measures to curb greenhouse gas emissions)

- Differentiation by expanding the development of decarbonization technologies such as electric and hydrogen engines
- Realization of decarbonized products by understanding potential market needs and accelerating the speed of development
- Acceleration of decarbonization by open innovation
- Highly efficient mine operation management system (Improving the efficiency of the entire mine)
- Environmental impact reduction in the entire value chain
- Proactively introducing renewable energy and systematically investing in high-efficiency facilities
- Optimization of global production and procurement

#### [Adaptation] (responding to current and projected climate change impacts)

- Prompt provision of optimal solutions for disaster prevention and mitigation, emergency response, and recovery and reconstruction
- Improving BCM effectiveness by strengthening BCP for the entire supply chain
- Establishment a global production and procurement system to prepare for disasters

### Conversion to recycling-oriented business model



#### [Resource saving/waste generation control]

- 3R (Reduce/Reuse/Recycle) + Renewable
- AI Production Control

#### [Longer term and effective use of products, etc. ]

- Longer service term and improved durability through eco-design

#### [Global expansion of resource recycling]

- Remanufacturing business of parts with the same quality as new products
- Development of certified brand-name used equipment
- Differentiation through high-quality rental machines and utilization of data

### Creating innovative solutions for challenges faced by customers supporting social infrastructure



#### [Optimal relationship between people and machines]

- Ensuring safety/quality, developing differentiating technologies
- Contribution to cooperative construction machinery, driver assistance systems, and site safety

#### [Productivity improvement by DX]

- Expanding machines, systems and solutions that improve construction efficiency
- Development and provision of labor-saving machines using unmanned and robotized technology

#### [Lifecycle cost reduction]

- Stable machine operation and reduction of life cycle cost

#### [Localization]

- Local development of machines and human resources
- Providing finance and machinery for infrastructure development

### Strengthening global governance



#### [Governance]

- Management Transparency
- Compliance
- Risk management

#### [Supply Chain Management]

- Respecting human rights
- Fair sales partnership

#### [Employee occupational safety and human resource development]

- Diversity human resource development locally and globally
- Global Occupational Safety and Health Management (including infectious disease control)

## 1.5 Sustainability Management Structure

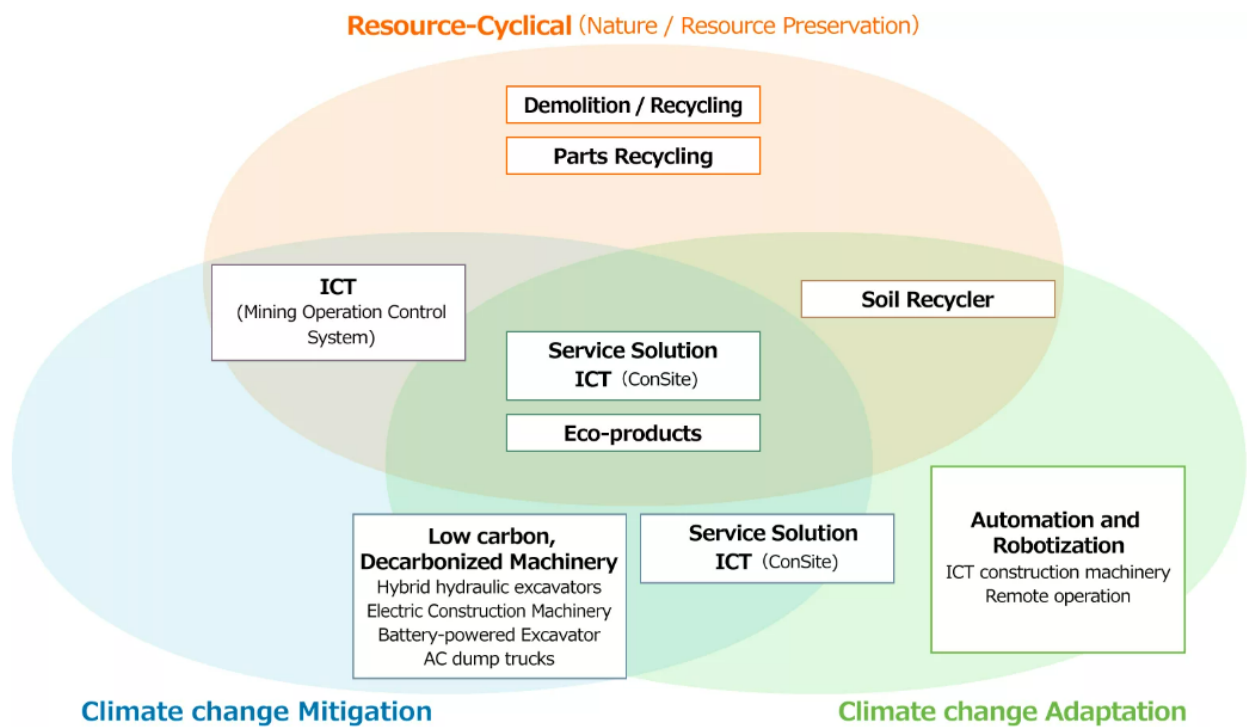
In April 2019, former Environment Policy Division and the former CSR Promotion Department were integrated to form the “Sustainability Promotion Group”, an organization under the direct control of the company president. Our structure is centered around the newly established Sustainability Promotion Group (the director in charge is the CSO: Chief Strategy Officer), which comprehensively manages and promotes sustainability-related initiatives for the entire Group as well as discloses information as appropriate. The Sustainability Promotion Committee, chaired by the COO (Chief Operating Officer) and composed of executive officers, meets twice a year to discuss and approve ESG-related issues related to management decisions, including responses to climate change. Furthermore, these important ESG issues are discussed and approved by the Executive Committee and the Board of Directors, and are appropriately monitored and supervised.

As part of our global structure, we share our policies and direction on sustainability promotion with representatives of overseas Group companies at the Global Sustainability Meeting and exchange opinions with them. In addition, the Global Sustainability Working Group shares measures in each country and region based on the determined direction, and promotes and strengthens sustainability initiatives on a global basis.



## 1.6 Environmental Value Creation Initiatives

The Hitachi Construction Machinery Group has been a pioneer in addressing environmental issues and published the Environmental Report in 2005. In 2021, the Hitachi Construction Machinery Group reorganized materialities and identified “Product and technology development contributing to climate change mitigation and adaptation” and “Conversion to recycling-oriented business model” as our materialities. Aiming to realize a decarbonized and recycling-oriented society, we work to create environmental value through our business from the perspective of products and solutions.



### Realizing Carbon Neutrality

The Hitachi Construction Machinery Group has identified “Product and technology development contributing to climate change mitigation and adaptation” as one of our materialities. By conducting risk assessments and scenario analyses of future forecasts and impacts on the business environment going forward, we seek to avoid or mitigate losses caused by possible future climate change, as well as to explore potential opportunities to create new businesses.

We have established a roadmap for both product development and production processes, and are working to reduce CO<sub>2</sub> emissions with the aim of realizing carbon neutrality throughout the entire value chain by 2050.



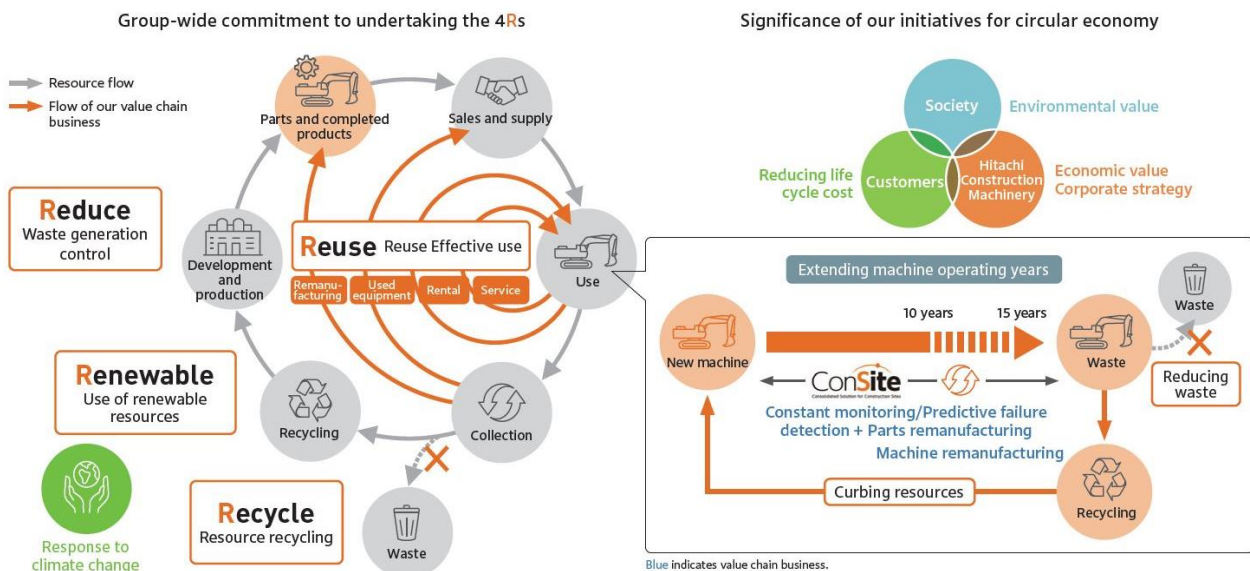


## Initiatives to Realize a Circular Economy

The Hitachi Construction Machinery Group has identified “Conversion to a recycling-oriented business model” as one of our materialities. We take a group-wide approach to the implementation of the “4Rs,” namely, “Reduce, Reuse, Recycle and Renewable,” through its value chain businesses ranging from remanufacturing, used equipment sales and rental to services. In doing so, we strive to reduce the volume of waste emissions in diverse facets of our operations. Product usage begins with the delivery of a new machine to customers and spans the lifetime of that machine. We aim to lengthen product life by 1.5 times. With this in mind, we are expanding our value chain businesses while striving to both maximize customer value and minimize resource consumption.

Specifically, we will leverage the machinery monitoring system ConSite, a service solution that supports our unique strength. We will also promote parts and machine remanufacturing. We will thus strive to lengthen the machines’ useful lives from 10 years to 15 years. Such efforts help reduce the volume of waste emissions as well as the volume of resources needed, contributing to the reduction of CO<sub>2</sub> emissions as a result.

## Hitachi Construction Machinery Group’s Goal of Shifting to a Resource-recycling Business



### 1.7 Formulation of Green Finance Framework

Hitachi Construction Machinery experienced two significant changes in the management environment in 2022 and is being in a new starting point and a transition period which should also be called the “Second Start-up” of the company now. Under the medium-term management plan “BUILDING THE FUTURE 2025” started in April 2023, we aim to be “Growing as a true solutions provider by delivering innovative solutions.” Moreover, due to the serious and urgent issue of climate change in the world, we will strengthen our efforts for the circular economy and carbon neutrality to realize a safe and sustainable society.

In order to achieve a decarbonized and circular society, we have formulated the Framework to promote the awareness of our initiatives of working on creating environmental value through products and solutions among stakeholders, and to accelerate our future efforts from the aspect of financing.

## 2. Green Finance Framework

The Framework has been formulated in the alignment with principles such as the Green Bond Principles (2021) by ICMA and provides following four components.

1

Use of Proceeds

2

Process for Project  
Evaluation and  
Selection

3

Management of  
Proceeds

4

Reporting

### 2.1 Use of Proceeds

The proceeds from the Green Finance will be allocated to finance and refinance existing investment in the eligible projects listed below. For refinancing, proceeds are limited to allocate eligible projects that have been implemented within the 36 months preceding from the execution of the Green Finance.

Materiality Themes	ICMA GBP Project Categories	Eligible Projects
Product and technology contributing to climate change mitigation and adaptation	Circular economy adapted products, production technologies and processes and/or certified eco-efficient products	<p><b>Environmentally Friendly Products</b></p> <ul style="list-style-type: none"> <li>● Capital investments and R&amp;D related to manufacturing and/or development of battery-powered/wired electric construction machinery, hydrogen engine/fuel cell drive construction machinery, and associated products/services</li> </ul> <p><b>Example projects may include, but are not limited to:</b></p> <ul style="list-style-type: none"> <li>● R&amp;D related to the battery-powered excavators</li> <li>● R&amp;D related to the full battery rigid frame dump trucks</li> </ul>
	Energy efficiency	<p><b>CO<sub>2</sub> Emissions Reduction from Production Process</b></p> <ul style="list-style-type: none"> <li>● Capital investments related to installation of energy-efficient equipment and facilities that contribute to the improvement of energy efficiency, and energy efficient buildings</li> </ul> <p><b>Example projects may include, but are not limited to:</b></p> <ul style="list-style-type: none"> <li>● Installation of LED lightning</li> <li>● HVAC system energy efficiency upgrades</li> <li>● Installation of heat pump (electric)</li> </ul>
	Renewable energy	<p><b>CO<sub>2</sub> Emissions Reduction from Production Process</b></p> <ul style="list-style-type: none"> <li>● Capital investments and providing capital related to solar power that contribute to expand renewable energy capacity</li> <li>● Power purchase of renewable energy sources</li> </ul>
	Green buildings Energy efficiency	<p><b>CO<sub>2</sub> Emissions Reduction from Production Process</b></p> <ul style="list-style-type: none"> <li>● Construction and acquisition of buildings that have received or are expected to receive a certification listed below</li> <li>● CASBEE:A or above</li> <li>● DBJ Green Building Certification:Three stars or above</li> <li>● LEED :Silver or above</li> <li>● ZEB :Oriented or above</li> </ul>
Conversion to recycling-oriented business model	Circular economy adapted products, production technologies and processes and/or certified eco-efficient products	<p><b>Parts and Machines Remanufacturing</b></p> <ul style="list-style-type: none"> <li>● Capital investments and R&amp;D related to parts and machines remanufacturing that result in reduction of waste emissions and suppression of resource input</li> </ul> <p><b>Rental</b></p> <ul style="list-style-type: none"> <li>● Capital investments and expenditure related to rental of battery powered/wired electric construction machinery and hydrogen engine/fuel cell drive construction machinery</li> </ul>
Creating innovative solutions for challenges faced by customers supporting social infrastructure	Circular economy adapted products, production technologies and processes and/or certified eco-efficient products	<p><b>Machinery Status Management Systems</b></p> <ul style="list-style-type: none"> <li>● R&amp;D related to systems and solutions that contribute to long-term life cycle of products and their stable operation</li> </ul> <p><b>Example projects may include, but are not limited to:</b></p> <ul style="list-style-type: none"> <li>● R&amp;D related to machinery status management system “ConSite”</li> </ul> <p><b>Increase Productivity</b></p> <ul style="list-style-type: none"> <li>● R&amp;D related to ICT products, systems and solutions that result in increased productivity and safety of construction sites</li> </ul> <p><b>Example projects may include, but are not limited to:</b></p> <ul style="list-style-type: none"> <li>● R&amp;D related to ICT construction machinery</li> <li>● R&amp;D related to “ZCORE”, a system platform designed to support autonomous construction machinery</li> </ul>

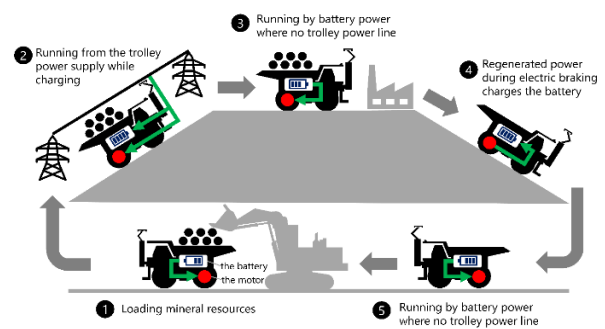
## Detailed information of eligible projects

### Environmentally Friendly Products

- The Hitachi Construction Machinery Group has developed environmentally friendly products to realize carbon neutrality by 2050.
- Our lineup of battery-powered mini and small-size excavators consists of four models in the 2-ton, 5-ton, 8-ton and 13-ton classes. Although there is room for expansion, our lineup is of classes used in urban civil engineering. Our battery-powered excavators achieve work performance equivalent to engine-powered excavators. Depending on battery capacity, there are some limits on operation times. However, our battery-powered excavators feature a dual system that allows for a cable connection to a commercial power supply, enabling longer hours of operation.
- Furthermore, we are currently developing a full battery rigid dump truck in collaboration with ABB Ltd, a leading heavy electrical equipment company, to reduce CO<sub>2</sub> emissions at mining sites. This truck will utilize a “trolley-powered system” which takes in electricity from power lines strung above roads while ascending slopes and charges its batteries simultaneously, and it will run on battery power alone on flat terrain or downhill. This truck will be a complete electrification of a dump truck capable of carrying approximately 200 tons of mineral resources, and the plan is to start operating it in a copper mine in Africa by mid-2024.



Battery-powered excavator (8-ton class) working at a construction site



An operational concept of a full battery rigid dump trucks with trolley

### CO<sub>2</sub> Emissions Reduction from Production Process

- The Hitachi Construction Machinery Group has promoted various initiatives to realize carbon neutrality by 2050 for the production process.
- We will promote CO<sub>2</sub> emissions reduction through initiatives such as energy conservation, conversion to renewable energy (in-house power generation through capital investment, introduction of renewable energy electricity), electrification, and fuel conversion.
- Additionally, we have promoted to reduce energy consumption in facilities including production plants, by obtaining green building certifications for some facilities.



“Integrated Building” of Banshu Works, which has obtained a S-rank certification in CASBEE

## Parts and Machines Remanufacturing

- Remanufactured parts, which are regenerated from used parts to have the same performance as new parts, reduce cost and downtime of machinery. We also engage in retrofitting entire machines by purchasing water-damaged or used equipment and revitalizing them using remanufactured parts. By avoiding the production of new parts, we can reduce energy consumption and lower CO<sub>2</sub> emissions as well as contribute to the realization of a circular economy.

Before remanufacturing



After remanufacturing



Comparison of before and after remanufacturing of the excavator

## Machinery Status Management Systems

- The service solution “ConSite” launched in 2013 contributes to the stable operation of customers' machinery. It visualizes the daily operating status of the machinery through reports that inform about the machinery's operating condition and supports stable operation of the machinery. “ConSite OIL,” which monitors the condition of oil on a continuous basis contributes to reducing down-time of the machinery and the eventual life cycle cost. It extends the lifespan of the machinery and contributes to the realization of a circular economy.
- In addition, by visualizing operating hours and fuel consumption amount in the report and analyzing operating trend in “ECO Operation Report”, we propose efficient use of construction machinery to our customers. This will contribute to reducing fuel consumption and, consequently, reducing CO<sub>2</sub> emissions.



Monthly report

Alarm report

App screens where you can see the data reporting service of “ConSite”



## Increase Productivity

- Products and initiatives that contribute to improving productivity such as ICT construction machinery, remote operation, and autonomous driving, reduce operating time. These measures help reduce fuel consumption and decrease CO<sub>2</sub> emissions, making a contribution to reducing environmental impact.
- Since the development of the system platform “ZCORE” to support autonomous driving of construction machinery in 2020, we have promoted research and development under this concept. In 2023, we developed a base machine for hydraulic excavators compatible with remote and automation solutions. The technology for remotely operating and automatic/autonomous driving construction machinery is being increasingly adopted in large-scale construction sites such as mines and dams. In the future, we will provide remote and automation solutions to our customers in general construction and civil engineering projects. Through these solutions and machines, we will collaborate with our customers to aim not only to increase productivity but also to increase safety, address challenges in construction sites such as improving working environments and strengthen personnel development.



The remote operation of a base machine of hydraulic excavator

## 2.2 Process for Project Evaluation and Selection

The Finance Division and the Sustainability Promotion Division will select projects that meet the requirements for eligible projects set forth in section 2.1 “Use of Proceeds,” after discussing the consistency between these projects and our materialities and the medium-term management plan. The general managers of the Finance Division and the Sustainability Promotion Division will make the final decision after comprehensive analysis and consideration.

When selecting projects, we will confirm that the following measures are taken to reduce environmental and social risks related to all eligible projects:

- Compliance with environmental laws required by the central and local governments of the area where the projects are implemented and conducting environmental impact assessments as necessary.
- Promoting the acquisition of environmental management system certifications such as ISO 14001 and Eco Stage for major suppliers.
- Respecting human rights based on the “Hitachi Construction Machinery Group Codes of Conduct” and “Hitachi Construction Machinery Group Human Rights Policy”.

## 2.3 Management of Proceeds

The Finance Division will allocate and manage the proceeds of the Green Finance to eligible projects. The Finance Division will track and manage the allocation of the proceeds every half year using an internal management system.

The Finance Division will manage unallocated amount of the proceeds in cash or cash equivalents.

## 2.4 Reporting

Annually, we will publish a report on our website that will include the status of the allocation of the proceeds and the environmental impacts from eligible projects to the extent reasonably practicable and within the constraints of confidentiality.

We will disclose timely in the event of a notable change in the allocation of proceeds.

### A) Allocation Reporting

Until full allocation of the proceeds, we will disclose the following information.

- ① Allocation amount by eligible projects
- ② Amount of unallocated proceeds and expected allocation timing
- ③ Approximate amount or ratio of proceeds allocated to refinance

### B) Impact Reporting

As long as the green finance remain outstanding, we will disclose the following information.

Eligible Project		Reporting Items
<b>Environmentally Friendly Products</b>		<ul style="list-style-type: none"> <li>● Overview of the target products and CO<sub>2</sub> emission reduction per product (t-CO<sub>2</sub>)</li> <li>● Scope 3 (Category 11) CO<sub>2</sub> emissions for the entire group (t-CO<sub>2</sub>)</li> <li>● Revenue of the business sector to which the target products belong (In case of R&amp;D)</li> <li>● Overview of the R&amp;D/validation and expected impacts</li> </ul>
<b>CO<sub>2</sub> Emissions Reduction from Production Process</b>	<b>Energy Efficiency</b>	<ul style="list-style-type: none"> <li>● Energy reduction (Crude oil equivalent) (KL)</li> <li>● Amount of CO<sub>2</sub> emissions reduction (t-CO<sub>2</sub>)</li> </ul>
	<b>Renewable Energy</b>	<ul style="list-style-type: none"> <li>● Renewable electricity generated (MWh)</li> <li>● Amount of CO<sub>2</sub> emissions reduction (t-CO<sub>2</sub>)</li> </ul>
	<b>Green Buildings Energy Efficiency</b>	<ul style="list-style-type: none"> <li>● Type and level of certification</li> </ul>
<b>Parts and Machines Remanufacturing</b>		<ul style="list-style-type: none"> <li>● Growth rate of the number of machines in long term operations</li> <li>● Growth rate of reused parts (weight basis) via remanufacturing</li> </ul>
<b>Rental</b>		<ul style="list-style-type: none"> <li>● Overview of the target products and CO<sub>2</sub> emission reduction per product (t-CO<sub>2</sub>)</li> <li>● Scope 3 (Category 11) CO<sub>2</sub> emissions for the entire group (t-CO<sub>2</sub>)</li> <li>● Revenue of the rental sector to which the target products belong</li> </ul>
<b>Machinery Status Management Systems</b>		<ul style="list-style-type: none"> <li>● Overview of the projects</li> <li>● Cases that have contributed to reducing CO<sub>2</sub> emissions or extending the lifespan of the machinery</li> </ul>
<b>Increase Productivity</b>		<ul style="list-style-type: none"> <li>● Overview of the projects</li> <li>● Cases that have contributed to reducing CO<sub>2</sub> emissions through shortened work hours, etc.</li> </ul>