

# Environmental Strategy

We will pursue decarbonization and resource recycling, and contribute to the creation of a society that can adapt to climate change.

## Our Approach to Climate Change

The Hitachi Construction Machinery Group has identified the development of products and technologies to tackle climate change 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.

## Realizing Carbon Neutrality

The Hitachi Construction Machinery Group is working to reduce CO<sub>2</sub> emissions with the aim of realizing carbon neutrality throughout the entire value chain by 2050. To this end, we have formulated a roadmap for reduction measures to be undertaken with regard to the two aspects of product development and production processes.

With regard to product development, we have set and are promoting the goal of reducing CO<sub>2</sub> emissions by 22% and 33% by fiscal 2025 and fiscal 2030, respectively, from the fiscal 2010 level (Diagram 1). This will serve as an indicator of our ability to provide our customers and society with environmentally friendly products that contribute to the reduction of CO<sub>2</sub> emissions. To achieve this goal, we are promoting the development of an entire product range—from compact equipment to ultra-large mining machines. In addition to reducing fuel consumption, we are also working on the early market launch of electrified construction equipment and identifying hydrogen-fueled products from a technological perspective. Furthermore, we are striving to provide solutions that enable

our customers to reduce CO<sub>2</sub> while equipment is in use (Diagram 2).

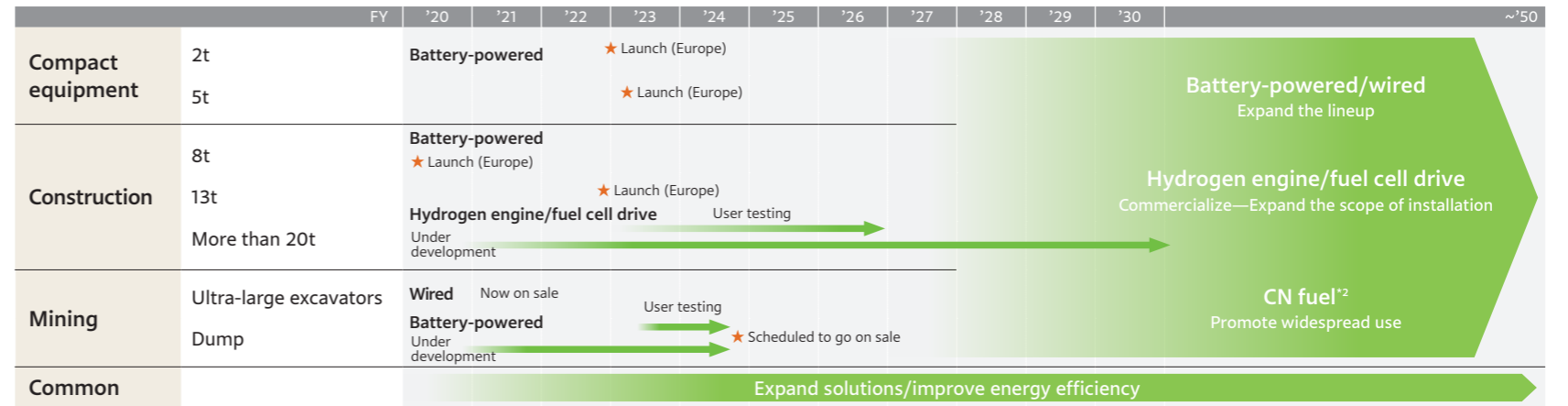
Meanwhile, as for the production process, we have set and are promoting the goal of reducing CO<sub>2</sub> emissions by 40% and 45% by fiscal 2025 and fiscal 2030, respectively, from the fiscal 2010 level (Diagram 3). Our methods for reducing CO<sub>2</sub> emissions include energy conservation, conversion to renewable energy (in-house power generation through capital investment, introduction of renewable energy electricity), electrification, and fuel conversion (Diagram 4).

These initiatives aimed at realizing carbon neutrality throughout the entire value chain are also consistent with the spirit of “GX League,”<sup>\*1</sup> which will launch full-scale

activities in Japan in fiscal 2023. Hitachi Construction Machinery became a member of “GX League” in May 2023. With our membership in this league helping us facilitate carbon neutrality initiatives, we will work in collaboration with other members and organizations while playing our part in the transition of Japan’s socio-economic system as a whole.

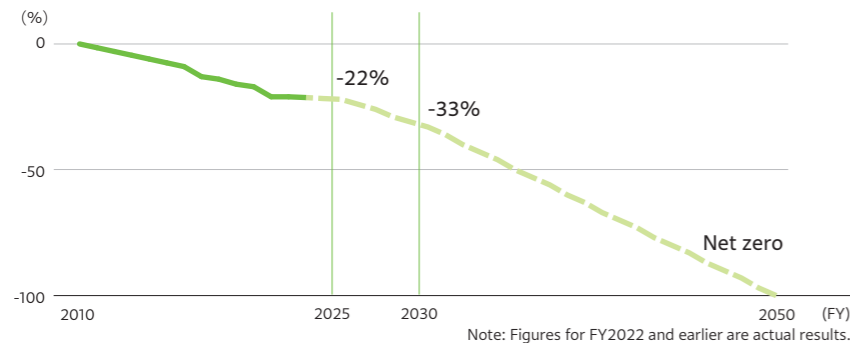
<sup>\*1</sup> Green Transformation (GX) League: An initiative established by Japan’s Ministry of Economy, Trade and Industry to provide a place for collaboration among business corporations, government agencies, financial institutions and universities to take on the challenges of GX and transform economic and social systems, with an eye to achieving carbon neutrality in 2050

## Roadmap for the Development of Environmentally Friendly Products and Solutions (Diagram 2)

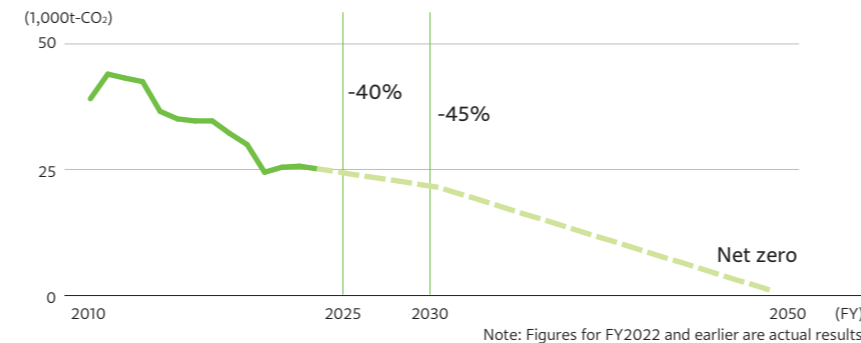


<sup>\*2</sup> CN fuel: Carbon neutral fuel (biofuel, e-fuel and other synthetic fuel)

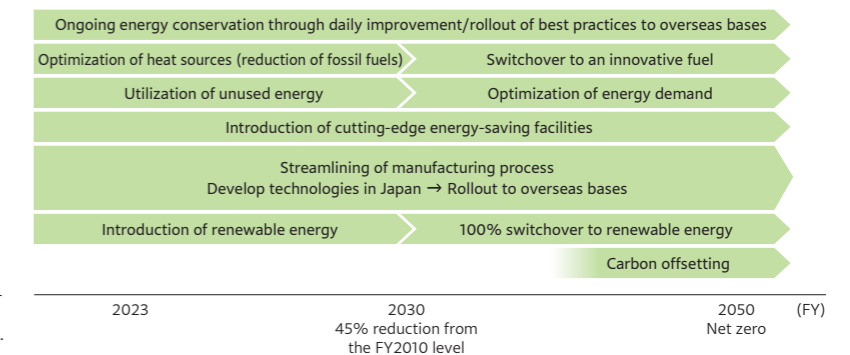
## Products: Targets for the Reduction of CO<sub>2</sub> Emission Volume (from the FY2010 level) (Diagram 1)



## Production Process: Targets for the Reduction of CO<sub>2</sub> Emission volume (from the FY2010 level) (Diagram 3)



## Roadmap for Carbon Neutrality in Production Process (Diagram 4)



## Environmental Strategy

### Response to TCFD Recommendations

In July 2020, we established an internal task force consisting of group managers and key personnel from corporate and business groups across the company. In October of the same year, we expressed our support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). In 2023, our internal task force updated scenario analysis for both 1.5°C and 4°C increases in temperature, assessing the likelihood of climate change risks and financial impacts. Based on the TCFD Framework, we disclose the risks and opportunities posed by climate change and our corresponding strategies. We strive to strengthen our initiatives in accordance with these recommendations for sustainable business development.



### History of Climate-Related Activities

1991	•Established Environmental Group
2005	•Established CSR Promotion Department •Published <i>Environmental Report</i>
2011	•Published <i>CSR &amp; Financial Report</i>
2015	•Positioned Climate Change as a materiality
2016	•Published <i>Long-Term Environmental Goals for 2030</i>
2019	•Established Sustainability Promotion Group •Established Sustainability Promotion Committee •Obtained SBT certification
2020	•Published four management indicators (ESG indicators) •Announced endorsement of the TCFD Recommendations
2021	•Disclosed information in the Integrated Report in accordance with the TCFD Framework •Re-positioned climate change as a materiality •First Disclosure Based on TCFD in Corporate Governance Report
2022	•Established Enterprise Risk Management (ERM) Committee •Adopted ESG evaluation <sup>*1</sup> as one of the evaluation indicators used to determine performance-linked compensation for executives •Announced a declaration to aim for carbon neutrality by 2050 •Introduced sustainable financing
2023	•Became a member of the GX League

\*1 ESG evaluation is conducted via the comprehensive assessment of ratings given by the CDP regarding the company's response to climate change and water security, its inclusion in the Dow Jones Sustainability Indices, and the progress of reductions in CO<sub>2</sub> emissions from products and production processes.

### Governance

Important issues related to climate change are discussed at the CSR Promotion Managers Meeting and the Environmental Promotion Managers Meeting. After the discussion, they are reported to the Sustainability Promotion Committee (held twice a year), which consists of executive officers and the presidents of main Group companies. The Group President and COO, who has the highest responsibility and authority for climate-related issues, chairs the Sustainability Promotion Committee, which deliberates and approves important management matters, including responses to climate change. Important matters are deliberated and approved by the Executive Committee and the Board of Directors, and are appropriately monitored and supervised. The deliberations and approvals are also shared with the Global Sustainability Promotion Managers' Meeting, which consists of overseas Group companies, and its subordinate organization, the Global Sustainability Working Group.

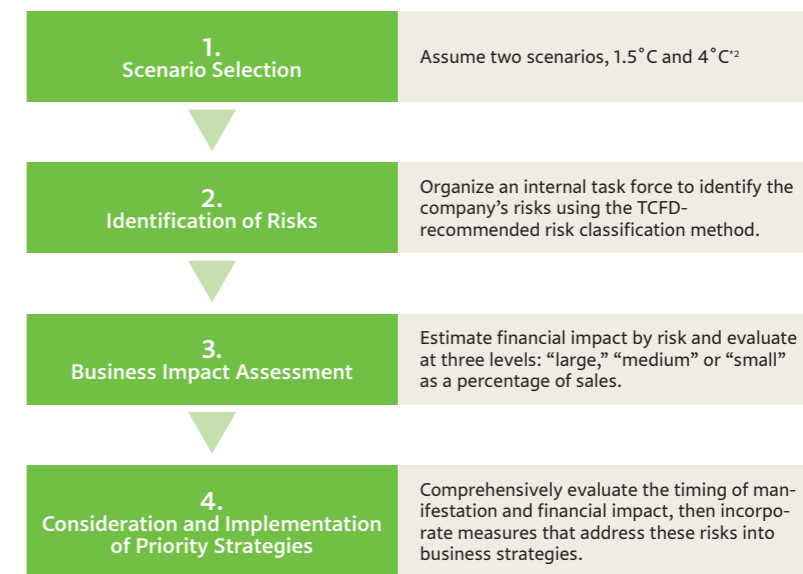
### Sustainability Promotion System



### Strategy

Looking ahead to an uncertain future with regard to climate change, which is a key management issue, companies must conduct scenario analyses to estimate the risks and opportunities said scenarios pose to the companies, and to formulate their own response measures and strategies based on these scenarios. In 2020, we organized the internal task force and have since updated analysis results of climate-related scenarios under an assumed 1.5°C or 4°C rise in global temperature in the following four processes.

### Scenario Analysis Process



\*2 References are made to reports of the Intergovernmental Panel on Climate Change (IPCC), established in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Program (UNEP), as well as information from the International Energy Agency (IEA)



Meeting Committee Structure and Deliberations regarding Sustainability  
<https://www.hitachicm.com/global/en/sustainability/management/>

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**Scenario Analysis Results**

We have listed the climate-related risks and opportunities we face in terms of products, services, solutions and the supply chain under the 1.5°C and 4°C scenarios.

Climate-related risks and opportunities were evaluated at three levels in terms of timing of manifestation and financial impact, and a comprehensive assessment of overall significance was then carried out.

Within each scenario, we are working with internal task force members to reorganize climate-related business strategies for items that we believe are of high importance.

The scenario analyses thus helped us update our recognition of risks and opportunities arising from 1.5°C and 4°C temperature rises. We are currently striving to realize strategies aligned with these risks and opportunities. Based on these considerations, we will strengthen the resilience of the Hitachi Construction Machinery Group by developing flexible and strategic businesses with the aim of maximizing opportunities and minimizing risks.

<b>Time of manifestation</b>	Short-term: Medium-term management plan (2023 to 2025) Medium-term: 2026 to 2030 Long-term: 2031 to 2050
<b>Financial Impact</b>	Small: 1 billion yen or less Medium: 1-10 billion yen Large: Over 10 billion yen

■ **Assessment Results Based on Scenario Analysis (1.5°C Scenario)**

		Risks	Opportunities	Time of manifestation	Financial Impact	Our Response (Strategies)
1.5°C Scenario	Transition to a decarbonized society	Possible changes in investment and lending behavior due to tighter decarbonization regulations and increased decarbonization awareness	Establishment of a competitive advantage by developing decarbonization technologies ahead of competitors	Medium- to long-term	Small	<ul style="list-style-type: none"> <li>We aim to accelerate development by increasing R&amp;D investment in advanced development areas of decarbonization and productivity improvement (automation/autonomous function, driver assistance, etc.): nearly tripling the FY2017 level by FY2025.</li> <li>Increase production capacity to approximately 1.3 times the current level by FY2025 to meet growing demand for compact products in the North American and European markets</li> <li>Hitachi Construction Machinery Tierra has expanded the functions of its development and testing facility to accommodate the more sophisticated testing of electrified construction machinery and other equipment</li> <li>Conduct user tests with an eye to commercializing mid- and large-size hydraulic excavators powered by hydrogen engine &amp; fuel cell drive technologies</li> <li>Signed a joint development agreement with ABB for an engine-less, fully electric rigid dump truck for achieving net-zero emissions from mining machinery in 2021. PoC (Proof of Concept) is scheduled to start in 2024.</li> <li>Expand sales of trolley-powered dump trucks</li> <li>Consider the development of stationary rechargeable EVs and fuel cell EVs/hydrogen batteries to improve dump truck user-friendliness</li> <li>We contribute to the longevity of our products by sending used machines back into the world as PREMIUM USED machines that have been serviced and given a warranty.</li> </ul>
		Decline in coal demand	Increased demand for hard rock	Medium- to long-term	Medium	<ul style="list-style-type: none"> <li>The all-electric power system is an indispensable technological element supporting our customers' efforts to achieve net-zero emissions by 2050. We will expand our solutions business and deploy decarbonization technologies and other new technologies, including electric-powered ultra-large hydraulic excavators; trolley-powered dump trucks; the Autonomous Haulage System (AHS), an autonomous driving system for dump trucks used in mining; and the Fleet Management System (FMS), a mine operation management system.</li> <li>In Latin America, we will strengthen our mining sales and service system in cooperation with the Marubeni Group, and strengthen ties with the ITOCHU Corporation Group in North America.</li> </ul>
	Supply Chains	Growing pressure to promote decarbonization and deterioration in the company's reputation	Carbon tax savings	Medium- to long-term	Large	<ul style="list-style-type: none"> <li>In FY2019, we incorporated an internal carbon pricing system to consider the carbon price in investment decisions. We raised our carbon price from 5,000 ¥/t-CO<sub>2</sub> at the time of introduction to 14,000 ¥/t-CO<sub>2</sub>. Based on this pricing, we have promoted investment in energy-saving facilities and the introduction of renewable energy.</li> <li>Planning to invest around ¥10 billion in measures aimed at reducing CO<sub>2</sub> emissions from production processes as well as to invest a similar amount in measures aimed at reducing emissions from products themselves over the course of the current medium-term management plan period</li> <li>Hitachi Construction Machinery Energy Management System, which utilizes advanced IoT technology, has been introduced at six plants in Japan. The system mainly reduces peak power consumption and standby power consumption based on the visualized data.</li> <li>We are promoting the use of IoT for factory production equipment to monitor equipment operating conditions, thereby helping to improve productivity and reduce CO<sub>2</sub>.</li> <li>Renewable power is being introduced at Tsuchiura Plant, Kasumigaura Plant, Hitachinaka Plant, Banshu Plant, Hitachi Construction Machinery Tierra, Hitachi Construction Machinery Camino, Tada Kiko, Tata Hitachi Construction Machinery Company and Bradken.</li> <li>We are working to reduce the volume of CO<sub>2</sub> emissions attributable to Bradken's Coimbatore factory in India by raising the ratio of renewable energy used by the site.</li> <li>We promote the optimization of global production and procurement, including the optimization of product inventory and transportation.</li> <li>We provide support for main procurement partners so that they can save electricity and improve energy productivity at their production facilities.</li> </ul>

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■ Assessment Results Based on Scenario Analysis (4°C Scenario)

		Risks	Opportunities	Time of manifestation	Financial Impact	Our Response (Strategies)	
4°C Scenario	Rapid increase in natural disasters and abnormal weather	Products, Services and Solutions	Increase in the frequency and severity of such natural disasters as typhoons and floods due to climate change	Increased demand for products, services, and solutions that can contribute to disaster prevention and mitigation	Medium- to long-term	Small	• Providing construction machinery products and rental products (light dump trucks, small general-purpose products and attachments such as fork grapples, etc.) that contribute to infrastructure resilience measures related to disaster prevention and disaster mitigation
							• We strive to provide the best solutions to meet demand at disaster sites by taking advantage of such technologies as the Solution Linkage.
		Supply Chains	Production stoppage due to the suspension of parts supply or the disruption of logistics networks	Establishment of a stable production system through emergency measures	Medium- to long-term	Large	• Ensuring timely restoration support to procurement partners whose facilities were affected by flooding and executing production adjustment within the Group in order to avoid shipment delays
• We conducted the BCP checklist analysis for major procurement partners, such as members of the Tokiwa-kai cooperative association. For procurement partners identified as requiring enhanced measures, we conducted flooding risk assessments.							
		Risk of heat stroke due to rising temperatures	Establish a stable production system through emergency measures	Medium- to long-term	Small	• We implemented flooding countermeasures, including the installation of drainage channels and defense walls around key facilities, to safeguard our own factories located in areas with high flooding risks.	
						• We take into account natural disaster risks, including those arising from climate change, when we build/relocate factories and offices.	
						• WBGT (heat index) meters evaluate the level of heat stress in hot environments of the manufacturing sites. When dangerously hot weather is expected, early alerts warning of heat stroke are issued.	

Risk Management

New risks have emerged that could shake the very foundations of our business, such as climate change, geopolitical risks and human rights issues in the supply chain. Managing these risks is becoming increasingly important. Against this backdrop, we have designated new risks that require company-wide response policies and management decisions as company-wide risks. We established the ERM (Enterprise Risk Management) Committee in April 2022 as a forum to manage these risks. Under the leadership of the CSO (Chief Strategy Officer) and other members of management, we have established a system for the overall management of and prompt response to company-wide risks. The ERM Committee reports important matters, such as company-wide risk management policies, to the Executive Committee and the Board of Directors.

Indicators and Targets

In line with its goal of achieving carbon neutrality throughout the value chain by 2050, Hitachi Construction Machinery is promoting measures to reduce CO<sub>2</sub> emissions with regard to the two aspects of product development and production processes.

Interim targets for 2030

Reduction of CO <sub>2</sub> emissions (total volume)	Production	45% reduction (from the FY2010 level)
	Products	33% reduction (from the FY2010 level)

Target for 2050

Realizing carbon neutrality throughout the entire value chain

TOPICS

Exhibiting the mini excavators and small-size excavators, both battery-powered, at “bauma 2022”

Hitachi Construction Machinery participated in “bauma 2022,” an international construction machinery trade fair held in Munich, Germany, on October 24 through 30, 2022. At this event, we exhibited a full lineup of mini excavators and small-size excavators, both battery-powered.

Since 2020, the Hitachi Construction Machinery Group has marketed 8-ton class excavators and, in June 2022, began taking orders for 5-ton class excavators, as part of efforts to contribute to transition to zero-emission construction sites. In addition to exhibiting these two models, we unveiled two prototypes—a 2-ton class battery-powered excavator and a 13-ton class battery-powered excavator—at “bauma 2022.” These two excavators were developed by EAC European Application Center GmbH (currently KTEG GmbH), a joint venture established by Hitachi Construction Machinery and a subsidiary of Kiesel, our distributor in Europe. Thus, we have exhibited a total of four models.

Today, many countries and regions are strengthening environmental regulations with the aim of promoting global warming countermeasures and realizing a low-carbon society. Accordingly, the need for electrified construction machinery is expected to grow even greater. Looking ahead, the Hitachi Construction Machinery Group will strive to take on the development of technologies and products to create new value and thereby resolve issues confronting society, the environment and customers.

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**Initiatives to realize a circular economy**

The Hitachi Construction Machinery Group takes 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 machinery sales and rental to services. In doing so, we strive to reduce the volume of waste emissions in diverse facets of our operations.

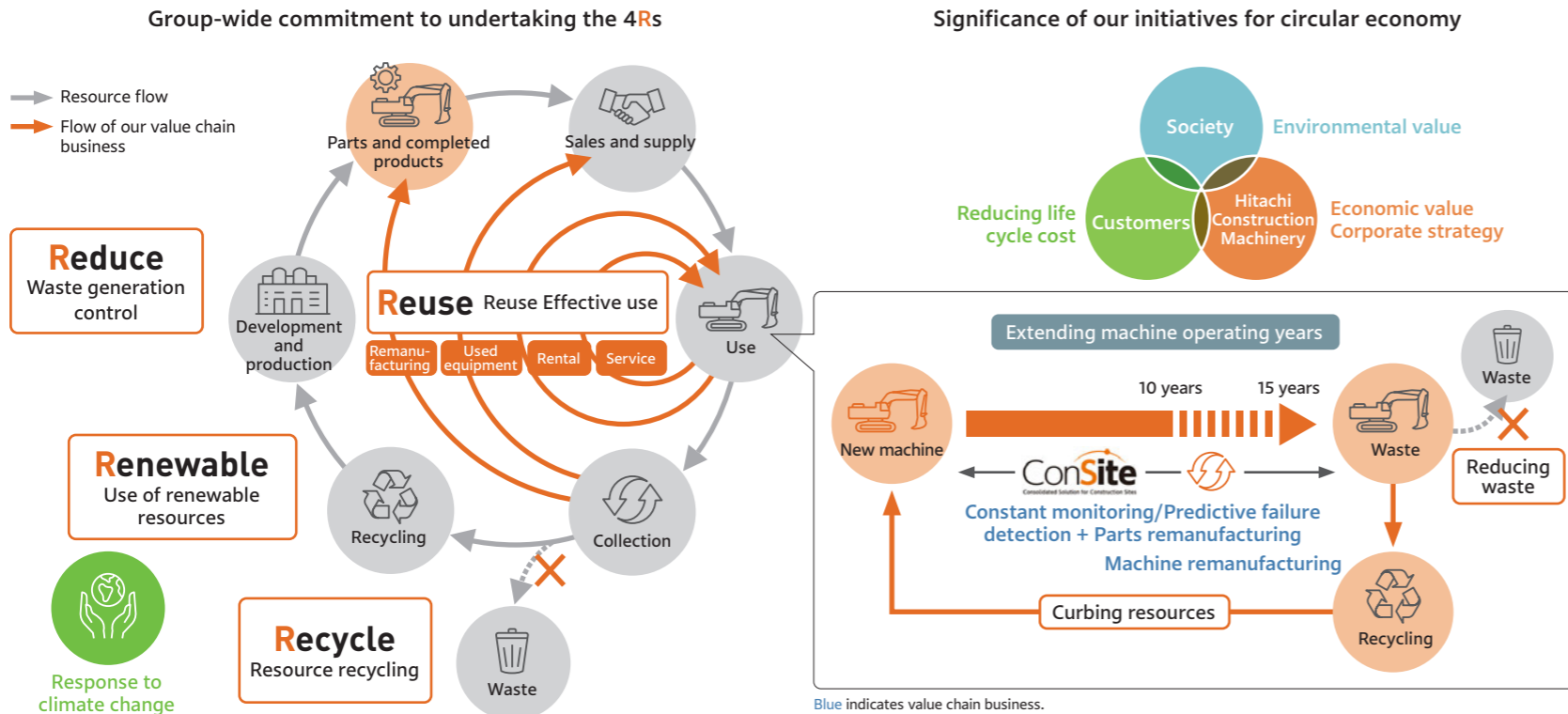
Product usage begins with the delivery of a new machine to customers and spans the lifetime of that machine. We aim to lengthen product life by 1.5 times. With this in mind, we are expanding our value chain businesses while striving to both maximize customer value and minimize resource consumption.

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, thus contributing to the reduction of CO<sub>2</sub> emissions.

As part of the medium-term management plan, we have also identified KPIs for the promotion of a circular economy. We believe that the significance of our initiatives lies in simultaneously contributing to the reduction of life cycle costs borne by customers and the resolution of social and environmental issues. Based on this belief, we will help create a sustainable society by “Shifting to a Resource-recycling Business,” as specified in the Hitachi Construction Machinery Group’s materialities.

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



**KPIs for the Promotion of a Circular Economy**

4R category	Item	Details	FY2022	FY2025	FY2030
			Results	Targets	Targets
Reduce	Waste emission intensity reduction rate (vs. FY2022)	Ratio of waste emission volumes to the amount of activities	±0%	+7%	+20%
Recycle	Resource recycling rate	Ratio of recycled resources to the volume of waste emissions	94%	90%	99.5%
Reuse	Growth rate of the number of machines in long-term operations (vs. FY2022)	Growth in the proportion of machines in long-term operation (60,000 hours or longer) in the total number of active mining machines	±0%	+20%	+50%
	Growth rate of reused parts (weight basis) via remanufacturing (vs. FY2022)	Ratio of raw material reduction through the recycling business	±0%	+40%	+150%
	Expansion in used equipment business sales revenue (vs. FY2022)	Sales revenue growth rate	±0%	+8%	Spread the adoption of products that meet local needs
Expansion in sales revenue from the rental business (vs. FY2022)	Sales revenue growth rate	±0%	+30%		
Machinery status management systems	ConSite adoption rate	73%	100% (Standard feature in FY2024)	Aim for zero downtime	