

# Environment

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# Advancing our environmental vision and long-term environmental targets

## Environmental Vision and Hitachi Environmental Innovation 2050

In 2016, Hitachi formulated its Environmental Vision and Hitachi Environmental Innovation 2050, a set of long-term environmental targets, in response to increasingly serious global environmental issues. Since then, we have defined three-year action plans to drive the Group-wide initiatives aimed at achieving carbon neutrality at our business sites and across the value chain, improving the efficiency of water and resource use, and promoting ecosystem conservation.

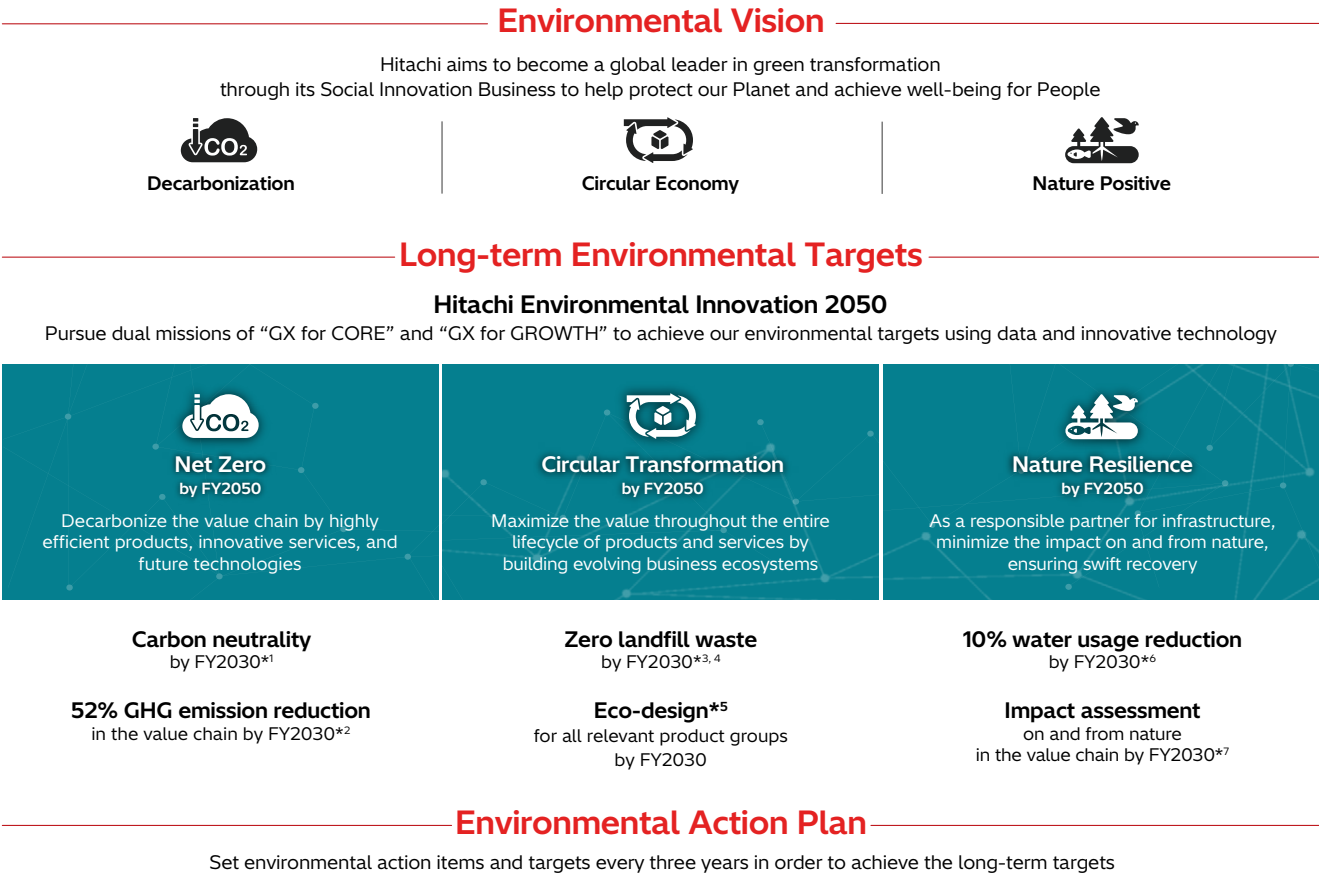
In recent years, environmental issues have become even more prominent due to factors such as the rapid surge in electricity demand driven by the expansion of generative AI, the tightening supply of critical minerals needed for battery production amid rising geopolitical risks, and the increasing severity of natural disasters. In response, a range of solutions is being explored, including the expansion of non-fossil energy use, the shift to circular business models, and efforts to conserve and restore natural capital.

Given this context, Hitachi has revised its Environmental Vision, now centered on three pillars: Decarbonization, circular economy, and nature positive. Through our Social Innovation Business, we aim to become a global leader in green transformation (GX), enabling a prosperous society that protects the global environment for all. Under this renewed vision, we have updated our long-term environmental targets in Hitachi Environmental Innovation 2050 as follows:

- **Decarbonization:** Achieve net-zero\*1 across the value chain by fiscal 2050. We will contribute to the reduction of greenhouse gas (GHG) emissions and the decarbonization of the value chain through high-efficiency products, innovative services, and future technologies.
- **Circular economy:** Set a new goal of achieving circular transformation by fiscal 2050 in which resources and businesses operate in a circular model. We aim to transition to a circular business model that minimizes energy and resource use while maximizing value across the entire lifecycle of both products and services.
- **Nature positive:** In addition to our previous goal of minimizing the impact of our business activities on nature, we have established nature resilience as a new fiscal 2050 goal—aiming to mitigate damage from natural disasters and contribute to faster recovery.

\*1 In accordance with the 1.5°C emissions reduction scenario, reduce GHG emissions throughout the value chain as much as possible, and permanently remove and neutralize the remainder by absorption or sequestration

### Environmental Vision and long-term environmental targets, “Hitachi Environmental Innovation 2050”



\*1 At factories and offices through reducing emissions and offsetting residual emissions compared to FY2019  
\*2 Gross profit-based intensity value compared to FY2022  
\*3 Defined as a final disposal rate (landfill disposal/waste and valuables) of less than 0.5% in any given fiscal year in the Hitachi Group. Pursued in assumed conformance with regulations, conditions, etc.  
\*4 At manufacturing sites  
\*5 Application of environmentally conscious design in the design of products, or implementation of environmental impact assessments for product groups  
\*6 Intensity value compared to FY2019  
\*7 For major products and projects; in addition to compliance with necessary regulations

## Main targets toward achieving Hitachi Environmental Innovation 2050

In conjunction with the revision of our Environmental Vision and Hitachi Environmental Innovation 2050, Hitachi has revised and established key targets for fiscal 2030 and fiscal 2050 under each of the three pillars: decarbonization, circular economy, and nature positive. We will further advance our environmental initiatives to achieve these targets.

### Decarbonization

Hitachi aims to achieve carbon neutrality at its business sites (factories and offices) by fiscal 2030, using fiscal 2019 as the base year. In addition, the company has set a target to reduce the greenhouse gas (GHG) emissions intensity—defined as emissions per unit of value added (gross profit)—across the value chain by 52% from the fiscal 2022 level, and is working to achieve this goal.

Targets & indicators	FY2027	FY2030	FY2050
GHG emissions reduction at business sites (factories and offices) (FY2019 base year)	75%	Carbon neutrality	Net-zero
GHG emissions intensity reduction rate*1 across the value chain (FY2022 base year)	40%	52%	

\*1 Intensity based on gross profit

### Circular economy

To deliver value across product life cycles, Hitachi is first working to eliminate landfill waste at manufacturing sites and apply Eco-Design to all product groups and encouraging environmentally conscious design and the transition to circular business models.

Targets & indicators	FY2027	FY2030
Waste landfill rate	2.0%	0%
Eco-Design application rate	New products	All relevant product groups

### Nature positive

Recognizing water as part of natural capital, Hitachi aims to reduce water use by 10% by fiscal 2030 (compared to the fiscal 2019 baseline). In addition, we will continue assessing both our impact on natural capital and the dependencies of our business activities on nature throughout the value chain, while keeping a close eye on international initiatives such as the Conference of the Parties (CBD-COP) to the Convention on Biological Diversity and the Taskforce on Nature-related Financial Disclosures (TNFD).

Targets & indicators	FY2027	FY2030
Reduction rate in water use per unit*1 (FY2019 base year)	8%	10%

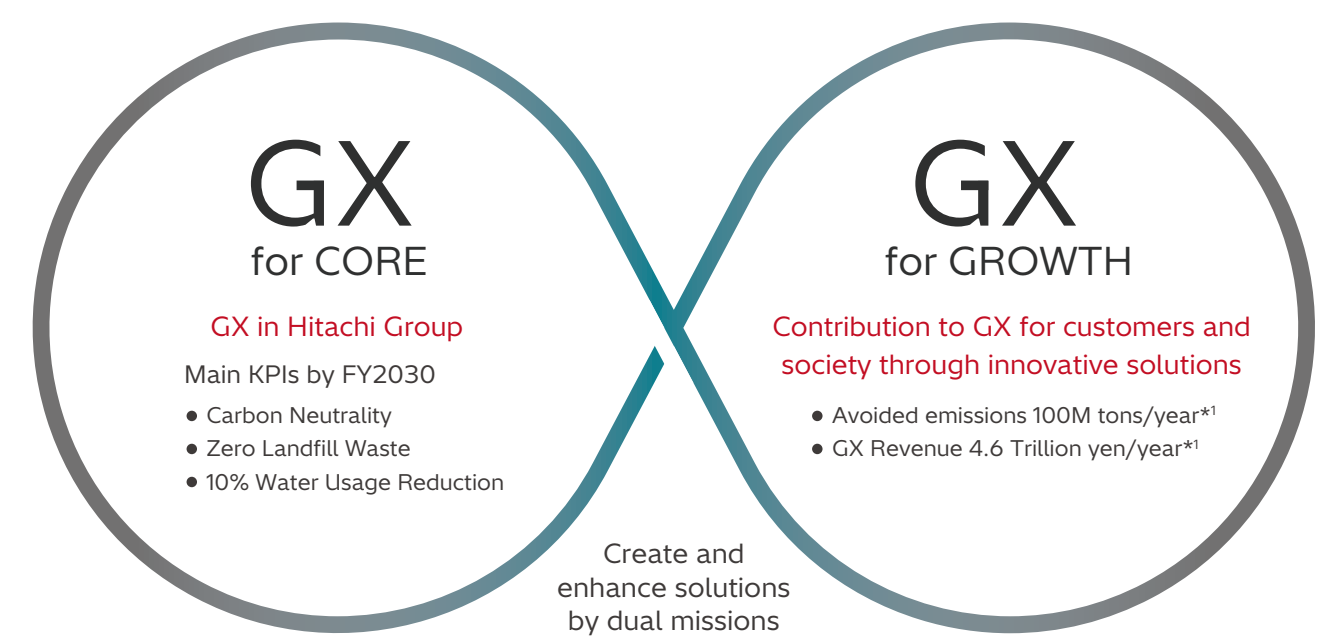
\*1 Intensity based on activity amount

## Achieving Hitachi Environmental Innovation 2050

To achieve the goals of Hitachi Environmental Innovation 2050, Hitachi is pursuing two key missions: “GX for CORE” and “GX for GROWTH.” The first pillar, known as GX for CORE, accelerates the Hitachi Group’s own green transformation.

The second pillar, GX for GROWTH, provides innovative solutions, strongly supporting green transformation for customers and society.

### GX for CORE and GX for GROWTH



\*1 3-year average from FY2025 to FY2027

## Environmental Action Plan

To achieve its Environmental Vision and the Hitachi Environmental Innovation 2050 long-term environmental targets, Hitachi draws up an Environmental Action Plan containing indicators and targets set every three years in line with the Mid-term Management Plan.

### 2024 Environmental Action Plan (fiscal 2022–2024)

Fiscal 2024 marked the final year of the Environmental Action Plan 2024 (FY2022–2024), which was established in line with the Mid-term Management Plan 2024. The results for fiscal 2024 are as follows.

◆◆◆: Achieved ◆◆: Partially achieved

Activity			Indicators	FY2024 targets	FY2024 final year results	Achievement status
Environmental management	Environmental human capital development	Promote environmental human capital development	Promote environmental human capital development	Environmental human capital development mindful of changes in personnel composition, including generational shifts		
Decarbonized society	Factories and offices	Reduce total CO <sub>2</sub>	Reduction rate of total CO <sub>2</sub> *1 (compared to FY2010)	50%	81%	◆◆◆
		Improve transportation energy consumption per unit (Japan)	Improvement rate of transportation energy consumption per unit (Japan)*2 (compared to FY2020)	4%	24%	◆◆◆
	Products and services	Reduce CO <sub>2</sub> emissions of products and services	Reduction rate of CO <sub>2</sub> emissions per unit (compared to FY2010)	14%	32%	◆◆◆
			CO <sub>2</sub> avoided emissions	100 million metric tons*3	142 million metric tons*3	◆◆◆
			Promote Eco-Design	Environmentally conscious design assessments and LCA application rates for newly developed and designed products	Full application Eco-Design for all newly developed products	100% (169 products covered)
Resource efficient society	Factories and offices	Enhance efficiency in the use of resources	Number of sites achieving zero landfill waste*4	128 business sites*5	154 business sites	◆◆◆
			Reduction rate in waste and valuables generation per unit (compared to FY2010)	20%	30%	◆◆◆
			Reduction rate in water use per unit (compared to FY2010)	24%	43%	◆◆◆
			Effective utilization rate of plastic waste	85%	98%	◆◆◆
Harmonized society with nature	Water risks	Responding to water risks	Responding to water risks	Minimization of business impacts regarding water risks		
	Chemical substances	Reduce chemical emissions	Reduction rate in chemical atmospheric emissions per unit (compared to FY2010)	8%	29%	◆◆◆
	Ecosystem preservation	Impact on natural capital	Calculation of negative impacts (business unit/Group company-level LCA implementation) / Calculation of positive impacts (forest conservation activities)			

\*1 Reduction rate of total CO<sub>2</sub>: Indicator representing CO<sub>2</sub> emissions from Hitachi’s consumption of energy alone \*2 This is a target for Japan only. Targets in other countries are set on a voluntary basis \*3 Three-year average  
\*4 Pursued in assumed conformance with regulations, conditions, etc. Less than 0.5% \*5 FY2024 target has been revised to exclude the sites of the auto parts-related companies due to their deconsolidation

2027 Environmental Action Plan (fiscal 2025–2027)

PLEDGES

In line with the revision of the long-term environmental targets, Hitachi Environmental Innovation 2050, and the formulation of the new management plan Inspire 2027, Hitachi has established the detailed targets of the 2027 Environmental Action Plan (FY2025–FY2027). Over the next three years, Hitachi will implement environmental initiatives to achieve these targets.

Category	Activity	Indicators	Base year	Targets			
				FY2025	FY2026	FY2027	
Decarbonization	Factories and offices	Reduction of GHG at business sites	GHG emissions reduction rate*1	FY2019	60%	65%	75%
	Value chain	GHG emissions throughout the value chain	Number of procurement partners that set GHG reduction plans and targets (1,000 companies by 2030)	—	400 companies	500 companies	700 companies
	Products and services	Reduce GHG emissions of products and services	GHG emissions intensity reduction rate*2	FY2022	30%	35%	40%
			Avoided emissions: 100 million tons per year*3			—	100 million tons/year
		Circular economy	Promote Eco-Design	Application rate of environmental conscious design for new product development	—	100%	100%
	Factories and offices	Enhance efficiency in the use of resources	Waste landfill rate*4	—	3.0%	2.5%	2.0%
			Effective utilization rate of plastic waste*4	—	87.5%	90.0%	92.5%
Nature positive	Biodiversity conservation	Contribution to biodiversity conservation	Reduction rate in water use per unit*4	FY2019	6%	7%	8%
			Reduction rate of water usage at manufacturing sites located in water-stressed areas	Previous FY	0.6%	0.8%	1.0%
Growth through environmental business	Products and services	Green transformation (GX) revenue	Revenue of products, services, and solutions contributing to GX per year*3	—	4.6 trillion JPY/year		

\*1 All manufacturing sites, and non-manufacturing sites for categories A, B  
\*2 Per gross profit  
\*3 FY2025-FY2027 average  
\*4 All manufacturing sites



# Products, services, and solutions that support green transformation (GX)

## Hitachi’s approach to GX

Based on its founding corporate philosophy “contribute to society through the development of superior, original technology and products,” Hitachi contributes to the realization of green transformation (GX) through its Social Innovation Business, which integrates information technology (IT), operational technology (OT), and products. Hitachi operates globally across four key sectors: Digital Systems & Services, Energy, Mobility, and Connective Industries.

Hitachi is advancing a range of GX initiatives, including the provision of products and services that minimize environmental impacts during use, energy transition solutions for decarbonization, safe, comfortable, and clean modes of transportation, and enhanced system efficiency and uptime through digital technologies. The following examples are introduced based on the three pillars: decarbonization, circular economy, and nature positive.

## Featured examples

### Decarbonization

**Contributing to the maximization of renewable energy utilization through digital control**  
With the anticipated increase in electricity demand due to the expanding use of generative AI, leveraging renewable energy for carbon neutrality is an urgent priority.

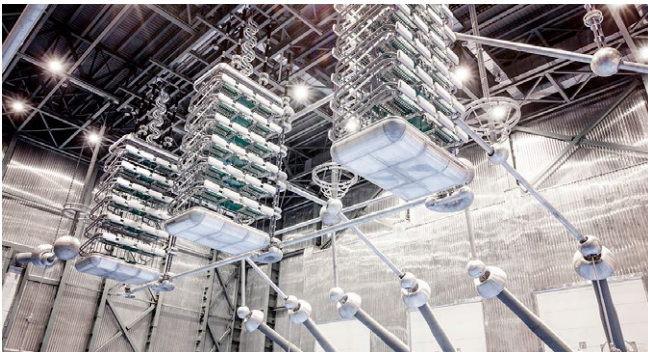
Hitachi supports the use of renewable energy with digital technology that integrates IT and OT. This includes providing cross-regional grid management systems that deliver renewable energy from production sites to distant consumption areas, as well as next-generation nationwide load dispatching systems and electricity balancing market systems that support grid stabilization, which becomes more critical as renewable energy usage grows. The next-generation nationwide load dispatching systems are built by combining Hitachi’s expertise in power systems accumulated over many years with Hitachi Energy’s global products.



**Innovation in long-distance and highly efficient transmission with high voltage direct current (HVDC)**  
Hitachi Energy’s HVDC efficiently transmits large amounts of energy over long distances from remote locations to demand areas, supporting output fluctuations and stabilizing interconnected AC systems. As a transmission technology that supports the mass introduction of renewable energy, HVDC plays a vital role in transforming energy systems.

This technology has been recognized by the World Business Council for Sustainable Development (WBCSD) as a concrete example of emissions reduction.

 [Hitachi Energy case study featured by WBCSD](#)



**Urban transport electrification and modal shift (transforming transportation methods)**  
Hitachi Rail completed the first phase of Skyline, the first fully automated urban rail system in the United States, and began passenger services in Honolulu, Hawaii, in June 2023. It is estimated that once the entire new line is completed, approximately 40,000 private car movements per day on the city’s congested streets and highways (equivalent to eight highway lanes) will be shifted to rail. The line is fully electrified, facilitating the transition from fossil-fueled private vehicles to sustainable transport and helping to ease congestion for residents and visitors.



Circular economy

Transitioning transformers to a circular model to support energy transition

Hitachi is working to reduce environmental impacts and advance the reuse of finite resources in transformers, key components of power infrastructure.

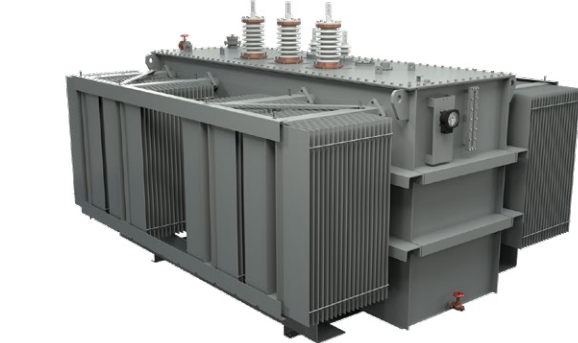
At Hitachi Energy, initiatives are being advanced across the entire value chain in collaboration with customers and partners. For example, recycled mineral oil, recovered and refined from used transformers, has been utilized as insulating oil for distribution transformers. By using recycled mineral oil instead of virgin oil, there can be a reduction of about 5 % at the transformer level in the carbon footprint from material extraction to manufacturing, while maintaining the same design as when using virgin mineral oil. In addition, using recycled

mineral oil makes it possible to increase the total share of recycled content in transformers by about 18%.

Hitachi Industrial Equipment Systems not only offers energy-efficient amorphous distribution transformers that use amorphous metal cores, but also actively adopts soybean-derived ester oils as insulating fluids. Ester oil has less impact on the increase of atmospheric CO<sub>2</sub> over its lifecycle and poses less risk of environmental pollution to soil and rivers in the event of a leak. As a result, it has been confirmed to be highly safe.



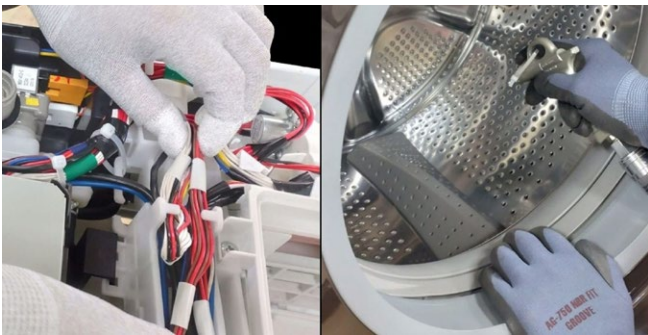
Recycled mineral oil-filled transformer



Amorphous distribution transformer

Promoting the circular economy through business model transformation

To promote the circular economy, Hitachi Global Life Solutions is expanding service businesses such as outlet sales and refurbishment of products. Refurbished products (manufacturer-refurbished units) refers to items returned to the manufacturer due to minor cosmetic or performance issues, either upon unpacking after delivery or after a short period of use, which are then restored and resold. These products are repaired as needed, with parts replaced, internal cleaning performed, and both cosmetic and performance inspections conducted before being offered as refurbished products. Additionally, products with no performance issues but with damaged or soiled packaging or minor dents or scratches on the exterior are offered as outlet products.



Hitachi Industrial Equipment Systems and Hitachi Global Air Power are engaged in rebuilding and remanufacturing services for air compressors. At Hitachi Industrial Equipment Systems, when servicing a customer's air compressor, major components that have been removed for replacement are disassembled, overhauled, inspected, and then stored as rebuilt products for future use. These rebuilt products are then used when servicing other customers' air compressors. Hitachi Global Air Power provides remanufacturing services for air compressors. Used air compressors are collected from customers and remanufactured based on the original factory specifications to restore them to like-new conditions, while incorporating the latest technologies. This process helps extend the lifespan of the air compressors.



Rebuilt air compressor



Remanufactured air compressor



Nature positive

Advanced wastewater treatment and provision of recycled water

Amid growing global concerns over water scarcity and environmental degradation, countries and regions worldwide have been facing diverse water and environmental challenges in recent years, and Hitachi has stepped up to offer tailored solutions to address these needs.

In the Philippines, Hitachi is implementing an advanced treatment and water reclamation project at the Alabang Sewage Treatment Plant in the Manila metropolitan area. The project uses a membrane bioreactor (MBR) system\*1 to remove nitrogen and phosphorus, and further treats the effluent using a reverse osmosis (RO) system\*2 and ultraviolet disinfection to produce recycled water that meets the country’s drinking water standards. In addition to designing and delivering mechanical and electrical equipment, Hitachi also provides digital transformation (DX) solutions, such as remote plant monitoring and operation optimization systems, contributing to improved water quality and meeting growing water demand.



\*1 A membrane bioreactor (MBR) system is a sewage treatment system that combines activated sludge treatment and immersion membranes to enable high-concentration activated sludge treatment. It is easy to maintain, conserves space, is low cost, and ensures high-quality treated water  
\*2 A reverse osmosis (RO) system is a water purification system that uses pressure higher than osmotic pressure to force water through a semipermeable membrane, resulting in purified water

Inundation and flood damage forecasting

In recent years, the increased frequency and severity of floods in Japan, exacerbated by climate change and other factors, have required local governments to enhance countermeasures. This includes not only physical infrastructure but also data-driven disaster preparedness measures, such as the creation of flood hazard maps. Hitachi is advancing flood forecasting initiatives, including the delivery of a basin flood damage prediction system to Aomori Prefecture.

This prediction system integrates map data, river data, and laser profiler (LP)\*1 data to run high-speed, high-precision flood simulations that support risk assessment and evacuation planning. Through the creation of a new, more precise flood risk map (flood frequency map) and an internal water hazard map\*2, Hitachi is helping municipalities prepare for both internal and external\*3 flooding, contributing to more robust flood risk management.



\*1 Laser profiler (LP) data: Three-dimensional topographic data obtained via airborne laser surveying  
\*2 An internal water hazard map summarizes estimated data such as flood area and depth when internal water (water flowing through sewers and waterways) floods due to heavy rain or similar events  
\*3 External water refers to water flowing in rivers



## Avoided emissions

Hitachi calculates the contribution to decarbonization through collaborative creation with customers as avoided emissions. We convert the amount of the contribution to customer decarbonization via Hitachi products and services into GHG emissions. We achieved an average 142 million metric tons of avoided emissions per year over the three years of the 2024 Environmental Action Plan, compared to our original target of approximately 100 million metric tons per year in fiscal 2024.

Hitachi calculates avoided emissions based on a comparison of customer GHG emissions from the use of Hitachi products and services during the fiscal year in question with emissions from Hitachi products and services during the base year. In principle, the base year for this calculation is fiscal 2013\*1.

The World Business Council for Sustainable Development issued guidance in March 2023 on avoided emissions, and in Japan, the GX League\*2 is considering the use of avoided emissions in relation to disclosures and the assessment of climate-related opportunities. In addition, the IEC\*3 is advancing standardization regarding avoided emissions. A unified guide on specific calculation methods for products and services is under discussion, and Hitachi is participating in these discussions.

In 2027 Environmental Action Plan, in line with the revision of our long-term targets, we will change the indicator for avoided emissions from CO<sub>2</sub> emissions to GHG emissions, referring to the WBCSD guidelines for calculation, and aiming to achieve an average annual GHG avoided emission of 100 million metric tons or more per year over the three years of the plan (fiscal 2025–2027). The actual result for the 2024 Environmental Action Plan, calculated with reference to the WBCSD guidelines, was 171 million metric tons per year.

\*1 In accordance with the base year of Japan’s national CO<sub>2</sub> reduction target. For the consolidated energy-related company, we set fiscal 2020 as the base year based on the year the company joined the Hitachi Group

\*2 A place where companies aiming to achieve sustainable growth with a view to becoming carbon neutral by 2050 collaborate with companies engaged in similar initiatives, as well as with entities from across industry, government, and academia

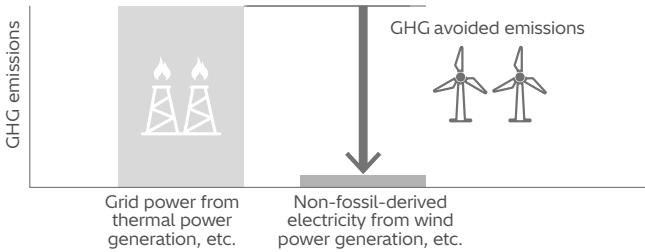
\*3 IEC: International Electrotechnical Commission

### Calculating avoided emissions

#### (1) Transition to non-fossil energy

- Calculate the amount of GHG emissions reduced by using non-fossil energy sources compared to electricity supplied from the grid

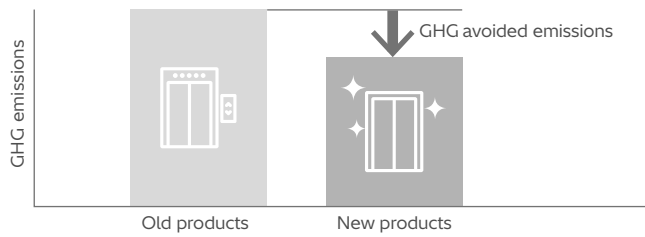
Examples: HVDC, wind turbines, etc.



#### (2) Energy saving

- Calculate the amount of GHG emissions reduced by improving energy efficiency compared to products and services with equivalent functions

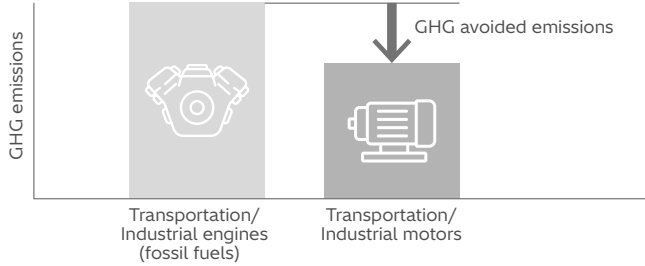
Examples: Compressors, elevators, etc.



#### (3) Electrification

- Calculate the amount of GHG emission reductions compared to products and services before electrification

Example: Electrification of industrial equipment



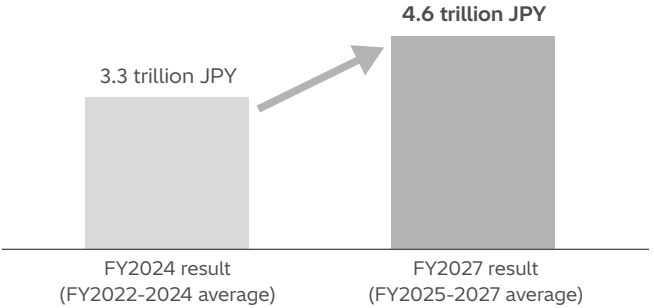
## GX revenue

Hitachi is committed to helping realize and accelerate GX for society and its customers through its Social Innovation Business. As an indicator of this commitment and the outlook for these activities, Hitachi discloses GX revenue.

GX revenue\*1 refers to the aggregated revenue of Hitachi, Ltd. and its consolidated subsidiaries from businesses designated as “environmental businesses” according to Hitachi’s own criteria. These criteria are defined independently by Hitachi, taking into account regional environmental policies and the company’s business scope. GX revenue is assessed using a three-year average. These environmental businesses encompass the pillars of Hitachi’s environmental vision: decarbonization, circular economy, and nature positive.

Please note that in response to potential changes in government environmental policy or shifts in investor and societal expectations, Hitachi may revise the criteria for what qualifies as an “environmental business”—which forms the basis for calculating GX revenue.

\*1 GX revenue is different from environmental indicators defined under the EU Taxonomy Regulation and other regulations in various jurisdictions



# Environmental governance

## Structure for fostering environmental governance

To achieve our Environmental Vision and Hitachi Environmental Innovation 2050, the long-term targets, Hitachi is building a global system to support decision-making and environmental management for a total of 619 companies, comprising Hitachi, Ltd. and 618 consolidated subsidiaries (as of March 31, 2025).

To promote sustainability management, we hold the Sustainability Promotion Meeting once or twice a year, chaired by the Chief Sustainability Officer and consisting of heads of business promotion divisions of each business unit (BU) and major Group companies, as well as sustainability officers of regional headquarters. This meeting serves as a forum to discuss and share information on important sustainability initiatives. Important environmental matters related to achieving our long-term environmental targets are discussed and decided by the Senior Executive Committee and referred to the Board of Directors when necessary.

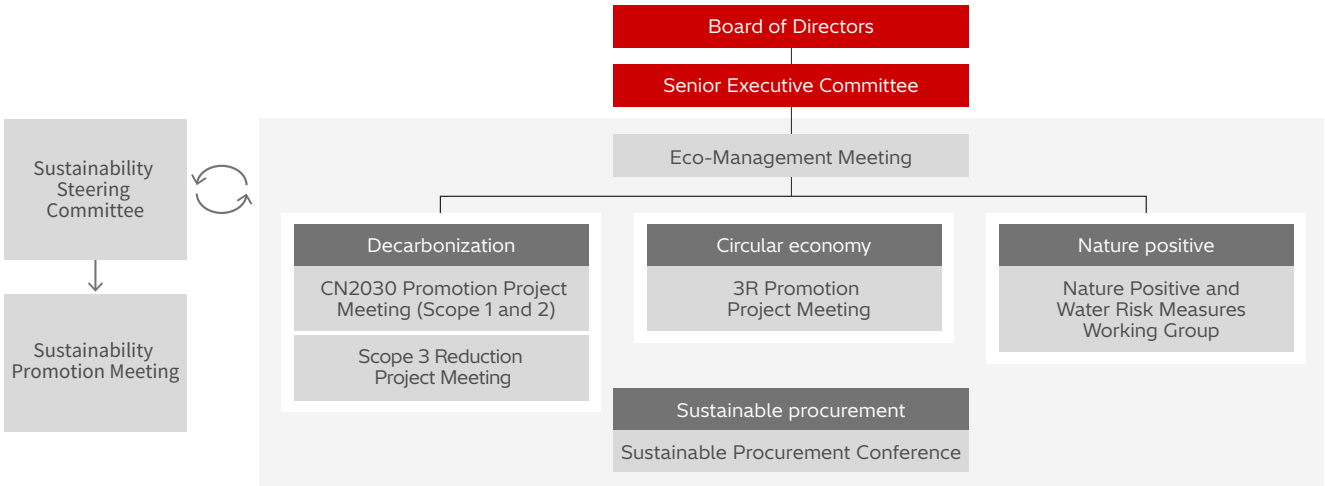
Under the three pillars of our Environmental Vision, decarbonization, circular economy, nature positive, we have established separate meetings for important topics, with responsible officers from each BU and major Group companies as the main members. Through these meetings, we promote environmental activities across the Hitachi Group by developing cross-Group measures and sharing information.

Hitachi is working to lead green transformation (GX) globally under the two pillars of GX for CORE (Hitachi’s own GX) and GX for GROWTH (GX together with customers and society) , establishing the necessary framework to support these efforts.

As a company with a Nominating Committee, etc., Hitachi has an Audit Committee composed of independent directors that conduct an annual audit of sustainability related operations, including environmental matters. Reports on climate change and other important environmental issues are made to the committee by the executive officers responsible.

- ▮ Sustainability strategy management structure
- ▮ GX for CORE and GX for GROWTH
- ▮ Decarbonization

Structure for fostering environmental governance



▮ Environmental related meetings



## Executive compensation system linked to environmental value

In fiscal 2024, we revised our executive compensation system, linking the system more closely to corporate value to accelerate our growth as a global company. Refer to the following link for more details.

 [Linking executive compensation to the sustainability strategy](#)

## Enhancing our environmental management system

Hitachi has approximately 1,100 business sites of different sizes engaging in a wide variety of activities. We classify these sites into three environmental risk categories: A (high risk), B (medium risk), and C (low risk), based on globally standardized criteria for environmental management classification\*1, and implement our environmental management according to the environmental risk level of each site.

In fiscal 2024, approximately 110 major sites were classified as Category A. For sites of companies acquired by Hitachi that have a large environmental impact (equivalent to Category A), we classify them as Category A after an adjustment period of several years to adapt to Hitachi’s environmental management system.

The business units and Group companies responsible for Category A sites participate in formulating the Environmental Action Plan at Eco-Management Meeting, set targets based on the plan and work

toward achieving them. The Environmental Action Plan is thoroughly communicated throughout the Hitachi Group via environmental strategy officers appointed from among the heads of environmental promotion divisions at BUs and Group companies. In addition to Hitachi’s own environmental management system, major global Category A manufacturing sites have also acquired third-party certifications, such as ISO 14001.

We have also established a system to encourage procurement partners to reduce their environmental impact, including efforts toward carbon neutrality upstream in the value chain. We summarize Hitachi’s approach to sustainable and green procurement, as well as requirements for procurement partners, in various guidelines, which are distributed to them. We also hold procurement briefings and conduct sustainability audits to further strengthen engagement with procurement partners.

\*1 We score each site based on criteria for environmental management classification, such as electricity consumption, waste generation, water use and whether the site is subject to legal regulations. Based on this score, we categorize the site into one of the three categories

 [Number of ISO 14001 certified companies](#)

 [Sustainable procurement](#)

## Collecting data on environmental impacts using our ESG Management Support Service

As part of our environmental management, Hitachi collects approximately 20 categories of environmental related data, ranging from energy use, water use, and waste generation, to whether an item falls under relevant environmental laws and regulations, and environmental accounting.

To streamline our data collection operations, we began transitioning from our previous Environmental Data Collection System (Eco-DS) to our ESG Management Support Service (ESG-MSS) in fiscal 2023, completing the switch in fiscal 2024. In fiscal 2024, data collection covered approximately 1,300 business sites in 78 countries. We are working to progressively expand the scope of our data collection in order to estimate the environmental impact of the entire Hitachi Group.

The aggregated data is used to provide feedback to improve environmental measures, such as in determining business site environmental management classifications, identifying environmental management issues, and sharing instructive examples within the Group. We also compile data on key metrics twice a year for the approximately 110 major sites in Category A and the approximately 80 manufacturing sites in categories B and C.

We established an international help desk to support the system and encourage an understanding of environmental management, offering support in Japanese, English, and Chinese.

## Chemical substance management system

Hitachi manages data on chemical substances in procured materials, parts, and products using A Gree’Net, a green procurement system compatible with the chemSHERPA\*1 format. This framework allows us to identify the chemical substances that are used in our products—from design and development, procurement, and production to quality assurance and shipping—and to ensure compliance with the legal and regulatory requirements of export partners.

To ensure proper use of chemical substances in our business operations, we operate a database for chemical substance management called CEGNET, which keeps track of the latest laws and regulations and our own voluntary management rules, and is used for risk searches for new substances handled at each site. The system also registers the chemical substances in use, aggregates data on quantities handled, emitted, and transferred, and supports efforts to reduce emissions.

\*1 chemSHERPA: A shared transmission scheme throughout the supply chain to ensure proper management of chemical substances in products and continuing compliance with the ever-growing requirements of major global laws and regulations like the REACH regulation (EU regulation of Registration, Evaluation, Authorisation and Restriction of Chemicals) and RoHS directive (EU rules restricting the use of hazardous substances in electrical and electronic equipment)

## Achievements in FY2024: Briefings for procurement partners

We registered data regarding chemical substances contained in approximately 1.43 million materials, parts, and products in A Gree’Net as of the end of fiscal 2024. Each year, we hold briefings for procurement partners using A Gree’Net and chemSHERPA, and we discuss regulatory revision trends. In fiscal 2024, we held two briefings attended by a cumulative 1,591 people.

## Environmental education for employees

Hitachi offers e-learning based environmental education to all Group employees, from new hires to senior management. We also provide annual specialized training on environmental risks and

compliance with environment-related laws and regulations for working-level employees in charge of environmental management and internal environmental audits. Particularly in China, where we have 17 Category A sites, we provide training focused on compliance with the country’s environmental laws and regulations, which have been tightened in recent years.

Environmental education in fiscal 2024

Contents of training	Target	Attendees
Hitachi Group training on basic environmental management, recent amendments to laws, and operational procedures	Employees working in air quality, water quality, and waste management	Japan: 1,596 people from 52 companies (979 people in waste management, plus 617 people in legal compliance) China: 44 people from 24 companies
Environmental management training program to reduce environmental risks in China and raise the knowledge of working-level employees	Working-level employees	44 people from 20 companies
New employee training	New employees in the China Hitachi Group	50 people from 20 companies

## Environmental compliance

In addition to ensuring compliance with the laws and regulations of each country and region, Hitachi strives to minimize environmental risks by setting compliance with voluntary management criteria that are more stringent than regulatory requirements and by conducting internal audits. We make periodic examinations of soil and groundwater to detect contamination at business sites where hazardous chemical substances are, or once were, used. If contamination is found, we conduct cleaning and monitoring activities until decontamination is complete.

If we discover a violation or receive a complaint, we take steps to share information about the causes and countermeasures throughout the Group, tying these efforts to the prevention of similar incidents. We designate business sites where legal or regulatory violations have occurred as high-risk business sites for a three-year period as a corrective measure. Appropriate guidance provided to such sites by business units and the Group companies in charge of their management serves to strengthen their compliance activities on an ongoing basis and prevent recurrences.

Implementation status of internal environmental audits

Implementing division	Target	Frequency
Corporate division of Hitachi, Ltd. (Sustainability Promotion Division)	Business units, headquarters of the Group companies, and business sites classified as Category A in our environmental management classification	Usually every three years
Corporate divisions of business units and the Group companies (Environment divisions)	Major business sites and subsidiaries of business units and the Group companies*1	
	Sites of business units and the Group companies outside Japan that are classified as Category A in our environmental management classification*2	
ISO 14001-certified business sites (Audit teams)	Divisions within business sites	

\*1 According to the Hitachi Group Global Audit Standards, which specify matters concerning internal audits conducted by business units and the Group companies  
\*2 According to the Environmental Action Plan

■ Number of regulatory violations and complaints



# Decarbonization

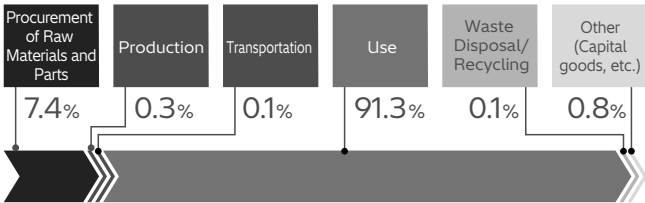
## Efforts to achieve decarbonization

Tackling climate change has become a global imperative, and the roles required of governments and companies have changed dramatically. Through participation in the 29th Conference of the Parties (COP29) to the United Nations Framework Convention on Climate Change, Hitachi aims to become a Climate Change Innovator, tackling environmental issues from a global perspective while deepening cooperation with governments and stakeholders to accelerate the transition to decarbonization.

Hitachi, with its “GX for CORE,” will accelerate measures to reduce its own GHG emissions to achieve carbon neutrality at business sites (factories and offices) by fiscal 2030. Additionally, as stated in our long-term environmental targets, Hitachi Environmental Innovation 2050, we are working toward achieving Net Zero by fiscal 2050.

And under GX for GROWTH, we aim to contribute to realizing decarbonization by collaborating with stakeholders through the growth of green businesses. For example, Hitachi Energy will invest approximately \$6.25 billion (as of March 2025) between fiscal years 2024 and 2027 to enhance manufacturing capacity

Ratio of GHG emissions at each stage of Hitachi’s value chain in fiscal 2024\*1



\*1 Percentages may fluctuate due to changes in our business portfolios

and strengthen research and development, helping to accelerate the clean energy transition. This will also help to reduce emissions during the use of our products and services, which account for the majority of GHG emissions in Hitachi’s value chain. Hitachi will tackle environmental issues head-on by providing products and services with minimal environmental impact and by offering a wider range of solutions that reduce GHG emissions for customers and society.

In addition, Hitachi has received validation from the SBT initiatives\*1 for its science-based “net-zero target” for achieving the 1.5°C target set by the Paris Agreement. Certified targets are as follows.



The net-zero science-based target validated by SBTi

	FY2030	FY2050	
	Short-term target	Long-term target	Net-zero target
Scope 1, 2 (FY2019 base year)	Total reduction of 83%	Total reduction of 90%	Net-zero throughout the entire value chain
Scope 3 Category 1, 11*2 (FY2022 base year)	Per unit of added value*3 52% reduction	Per unit of added value 97% reduction	

\*1 International initiative where companies and financial institutions set science-based greenhouse gas (GHG) emission reduction targets, and have their validity reviewed and certified

\*2 GHG emissions from purchased products and services, and GHG emissions from the use of sold products

\*3 Gross profit

## Environmental strategy for achieving decarbonization

### Initiatives for achieving decarbonization

- Achieve carbon neutrality at our own business sites and production activities (by fiscal 2030)
  - Introduce energy-saving and renewable energy equipment
  - Procure electricity from non-fossil sources across all business sites
- Achieve world-class energy efficiency in products
  - Achieve energy conservation by developing environmentally conscious products from the design stage
- Collaborate with procurement partners toward decarbonization
  - Distributed Sustainable Procurement Guidelines and Green Procurement Guidelines, requesting all procurement partners to set GHG emission reduction targets
  - Selected 21 procurement partners in fiscal 2022 and collaborated on GHG emissions reduction methods, calculation methods, and data collection and analysis methods, and how best to utilize them. Expanded our reduction activities to approximately 250 in fiscal 2024, by using these insights and methods.
- Support businesses that contribute to the decarbonization of society as a whole
  - Power grid business to support the expansion of renewable energy
  - Provide energy-efficient high-speed trains and battery hybrid trains
  - Provide Lumada solutions that support the realization of decarbonization through digitalization

- Develop technologies to enable the transition to decarbonization
  - Development of high-efficiency products, energy management systems and hydrogen-related technologies

## Reduction of product and service CO<sub>2</sub> emissions during use

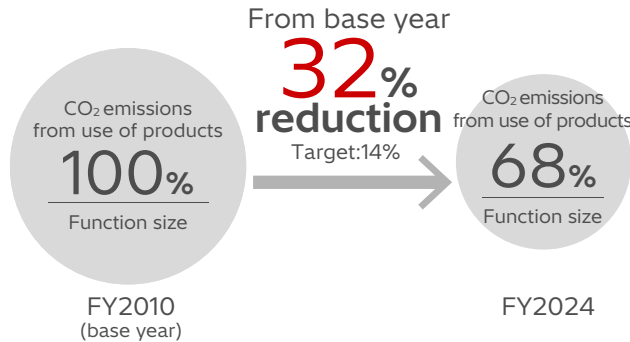
CO<sub>2</sub> emissions related to the use of products and services account for the largest proportion of emissions in our value chain. To reduce these emissions, Hitachi sets reduction rate targets per unit based on fiscal 2010 levels for each product or service targeted. We use functional size\*<sup>1</sup> as the denominator and CO<sub>2</sub> emissions as the numerator in our target equation.

In fiscal 2024, we achieved our target with a reduction rate of 32% against a target of 14%. The achievement of this target was driven by the introduction of new models of high energy-saving equipment used in industrial equipment and social infrastructure.

Under the 2027 Environmental Action Plan, in line with the revision of our long-term targets, we aim to improve GHG emissions per unit of added value\*<sup>2</sup> (Scope 3 Category 11) by 40% by fiscal 2027, using fiscal 2022 as the baseline.

\*1 Function size: Major functions of products correlated with CO<sub>2</sub> emissions, such as their output and volume  
\*2 Gross profit

### CO<sub>2</sub> emissions intensity reduction rate (Hitachi Group): 2024 environmental action plan management values



## GHG emission reduction at business sites (factories and offices) and Hitachi Carbon Neutrality 2030

In working toward realizing a decarbonized society, Hitachi has set the target of achieving carbon neutrality at all business sites (factories and offices) by fiscal 2030 as part of its long-term environmental targets.

Previously, we set a target to reduce CO<sub>2</sub> emissions by 50% by fiscal 2024 compared to fiscal 2010 levels and have been advancing initiatives to achieve this. In fiscal 2024, the final year of the 2024 Environmental Action Plan (fiscal 2022-2024), we achieved an 81% reduction.

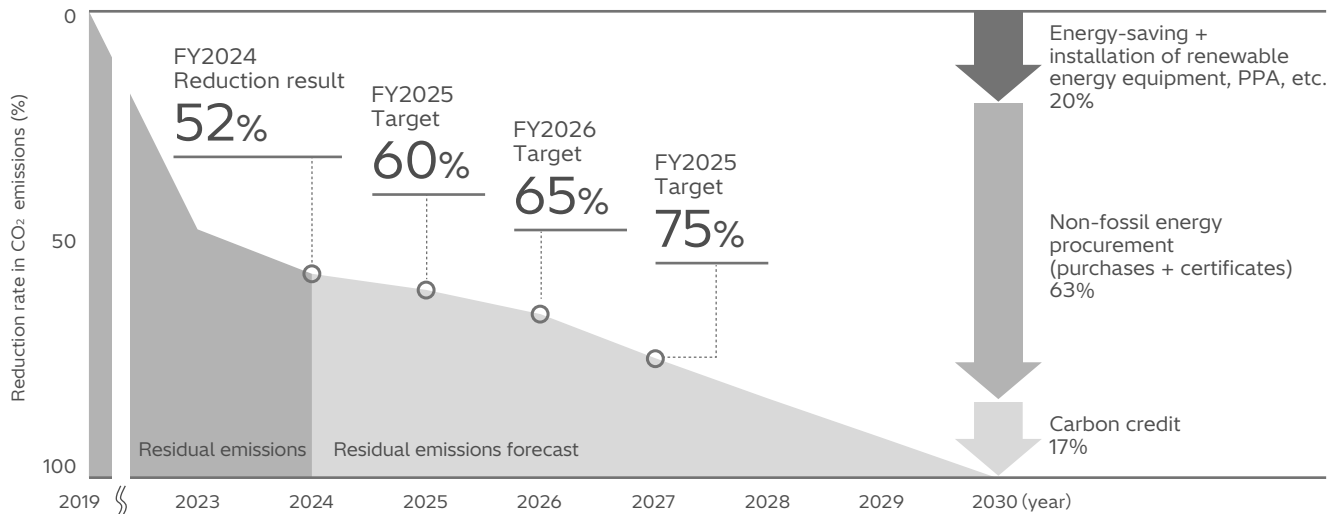
Under the 2027 Environmental Action Plan (fiscal 2025-2027), in line with the revision of our long-term targets, we will expand the scope of our targets from only Category A business sites to include all manufacturing sites and both Category A and B non-manufacturing sites, using fiscal 2019 as the new base year. In addition to conventional energy-derived CO<sub>2</sub>, we will also work to reduce non-energy-derived GHG emissions. The reduction rate of GHG emissions in fiscal 2024, based on this expanded scope and using fiscal 2019 as the base year, was 52%.

CO<sub>2</sub> emissions reduction measures at Hitachi include energy-saving initiatives, installation of renewable energy equipment, PPA\*<sup>1</sup>, as well as procurement of non-fossil energy, and utilization of energy attribute certificates\*<sup>2</sup>. Among these, energy-saving initiatives, installation of renewable energy equipment, and PPAs help mitigate the risk of future energy price increases and support compliance with carbon pricing. This approach also aligns with our corporate mission—“To contribute to society through the development of

superior, original technology and products”—and for this reason, we are placing a priority focus on these measures.

\*1 PPA stands for Power Purchase Agreement, a contract for the long-term purchase of renewable energy from power producers  
\*2 Energy attribute certificate: Accredits the environmental value associated with electricity generation from renewable energy sources. Unlike the purchase of renewable electricity, acquisition of this environmental value, which is separate from the electricity itself, is regarded as equivalent to using energy sources that do not emit CO<sub>2</sub>

### GHG reduction roadmap





**Major initiatives for reducing GHG emissions at business sites (factories and offices)**  
The specific initiatives to achieve carbon neutrality at business sites are summarized below by location type (factories, offices).

<b>Factories</b>	<ul style="list-style-type: none"><li>• Improve equipment efficiency by introducing and upgrading to high-efficiency equipment (Identify priority measures and manage rates of introduction and upgrades)</li><li>• Improve production efficiency and energy use efficiency during production through use of the Lumada platform and production technologies cultivated over many years of experience</li><li>• Optimize equipment operations and reduce wasted energy by installing smart meters</li><li>• Review product designs and processes</li><li>• Optimize control of equipment operations in response to production conditions</li></ul>
<b>Offices</b>	<ul style="list-style-type: none"><li>• Construct or relocate to new facilities with high energy efficiency</li><li>• Consolidate and integrate existing facilities</li><li>• Install energy-saving equipment and optimize equipment operations in collaboration with building owners</li></ul>
<b>Factories and offices</b>	<ul style="list-style-type: none"><li>• Install renewable energy systems</li><li>• Procure electricity from non-fossil power sources</li><li>• Utilize energy attribute certificates</li><li>• Utilize renewable energy with additionality*2 through corporate PPA*1</li><li>• Engage in capital investment to reduce CO<sub>2</sub> through the use of Hitachi Internal Carbon Pricing (HICP)</li></ul>

\*1 Corporate PPA: A contract whereby a corporation, municipality, or other legal entity purchases electricity generated by renewable energy from a power producer on a long-term basis (usually 10 to 25 years). PPA stands for power purchase agreement

\*2 Additionality: The effect whereby the introduction of renewable energy electricity leads to an increase in new renewable energy generation facilities

## The Hitachi internal carbon pricing framework

To facilitate CO<sub>2</sub> reduction at its business sites (factories and offices), Hitachi introduced the Hitachi Internal Carbon Pricing\*1 (HICP) framework in fiscal 2019. By referencing global emissions trading schemes and carbon taxes, we set internal carbon prices and convert the CO<sub>2</sub> reduction effects of decarbonization-related capital investments into monetary value. This value is added to the effect of energy savings to evaluate the overall investment impact, thereby providing incentives to further expand capital investment aimed at decarbonization.

The introduction of the HICP framework enables us to incorporate risk factors such as potential increases in future carbon tax burdens and new emission regulations from the initial stages of capital investment planning. By prioritizing decarbonization investments, we aim to minimize the impacts of future climate change risks and strengthen our corporate resilience.

Initially, we set the HICP rate at 5,000 yen/t-CO<sub>2</sub> in consideration of 2025 carbon taxes and carbon trading prices (ETS\*2). Subsequently, looking ahead to 2030, we increased the rate to 14,000 yen/t-CO<sub>2</sub> in August 2021 in consideration of anticipated carbon taxes and carbon trading prices. By doing so, we are able to respond proactively to future risks such as carbon taxes and to accelerate the implementation of energy-saving and renewable energy equipment, our highest priority initiative aimed at achieving carbon neutrality.

\*1 Internal carbon pricing: An in-house tool for voluntarily assigning a price to the amount of carbon generated or reduced within the company, to support investment decisions and risk management

\*2 ETS: Emission Trading Scheme

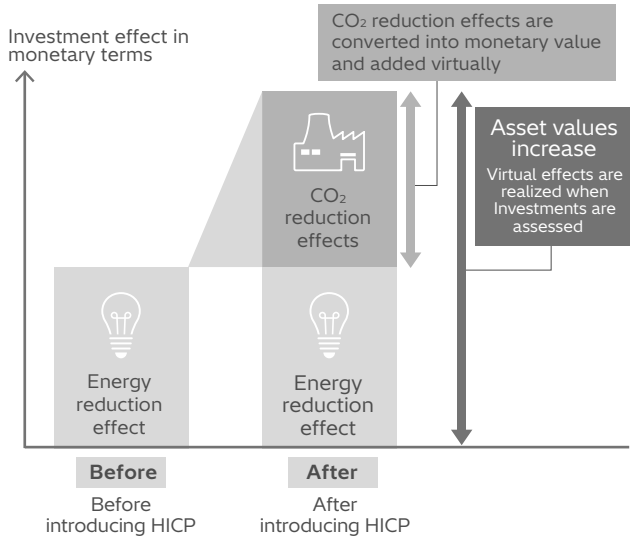
**Actions taken in FY2024**  
Hitachi utilizes the HICP system to facilitate additional investment that would not have qualified under previous criteria by converting CO<sub>2</sub> reduction benefits into monetary values. This approach helps drive further reductions in CO<sub>2</sub> emissions.

In fiscal 2024, the number of adopted projects increased to 70, and the amount of investment also slightly increased. However, CO<sub>2</sub> emissions reduction remained at 2,864 tons.

We will continue to utilize the HICP system to reduce CO<sub>2</sub> emissions.

### Hitachi internal carbon pricing (HICP) framework

Approach to Assessing Investment Effectiveness with HICP



CO<sub>2</sub> reduction = cost reduction  
Facilities that generate less CO<sub>2</sub> have higher asset values

HICP implementation results

Category	FY2020*1	FY2021*1	FY2022*1	FY2023	FY2024
<b>Number of HICP projects</b>	22	59	94	52	70
<b>Investment [M (JPY)]</b>	250	1,464	1,185	2,234	2,282
<b>CO<sub>2</sub> emissions reduction [t-CO<sub>2</sub>]</b>	447	1,230	2,519	4,302	2,864

Note: From August 2021, the set carbon price will be raised from 5,000 JPY/t-CO<sub>2</sub> to 14,000 JPY/t-CO<sub>2</sub>

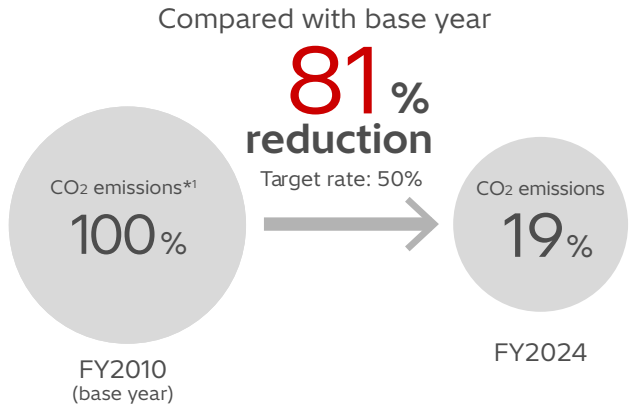
\*1 Excluding an energy-related company that became a consolidated subsidiary in fiscal 2020

## Activities and achievements at business sites (factories and offices)

The 2024 Hitachi Environmental Action Plan sets a target for the total CO<sub>2</sub> emissions reduction rate at business sites (factories and offices).

In fiscal 2024, the actual reduction in total CO<sub>2</sub> emissions was 81%, surpassing the target of a 50% reduction compared to the base year of fiscal 2010. This achievement was driven by steady progress through initiatives such as improving facility efficiency by introducing and upgrading high-efficiency equipment, installing renewable energy systems, and procuring electricity from non-fossil energy sources.

CO<sub>2</sub> emissions reduction rate (Hitachi Group): 2024 environmental action plan management values



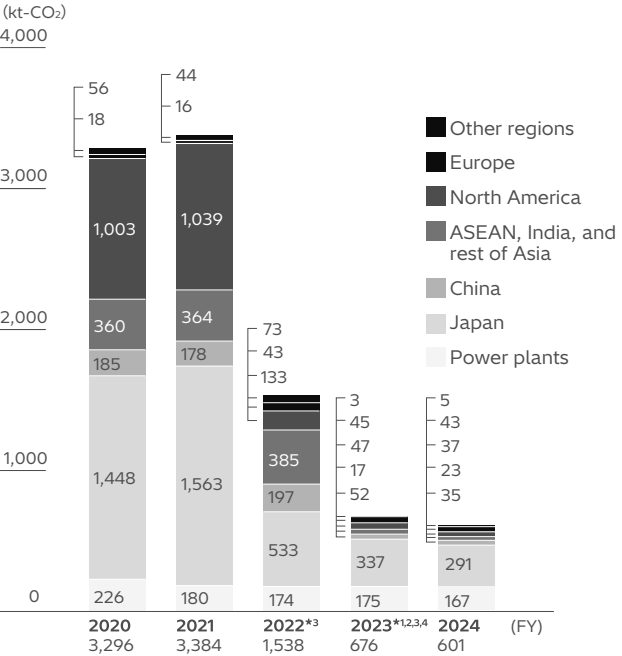
Note: Regarding CO<sub>2</sub> emission factors for electricity: For Japan, we used adjusted emission factors for each power company based on the Act on Promotion of Global Warming Countermeasures. For China, we used the average emission factors for regional power grids published by the government. For other countries, we used the latest annual emission factors for each country provided by the International Energy Agency (IEA) or the latest factors provided by power supply companies

Note : The Environmental Action Plan’s management values do not include amounts for our power plants in either fiscal 2010 (base year) or fiscal 2024

Note : Only for the 2024 Environmental Action Plan management values, emissions of 16.9 kt-CO<sub>2</sub> from the cancellation of credits for neutralization were deducted. For the figures subject to independent assurance, emissions from the cancellation of credits for neutralization were not deducted

\*1 CO<sub>2</sub> emitted from the organization (Scope 1 and 2)

Trends in CO<sub>2</sub> emissions (Hitachi Group’s factories, offices, and power plants)



\*1 Energy-derived CO<sub>2</sub> emissions in fiscal 2024 were 325 kt-CO<sub>2</sub> for Scope 1 and 208 kt-CO<sub>2</sub> for Scope 2 (market based)

\*2 In fiscal 2023, the amount decreased due to the deconsolidation of auto parts-related companies

\*3 CO<sub>2</sub> emissions were disclosed only for category A until fiscal 2022, and for all manufacturing sites as well as Category A and B non-manufacturing sites from fiscal 2023 onward

\*4 From fiscal 2023, amounts includes non-energy-related GHG emissions (kt-CO<sub>2</sub>e)

## Introducing renewable energy

To reduce CO<sub>2</sub> emissions, Hitachi is advancing the installation of renewable energy power generation equipment on its premises and is also actively promoting the procurement of electricity generated by newly constructed renewable energy equipment located off-site. Furthermore, by expanding the introduction of corporate PPA, we are accelerating the replacement of fossil fuel-derived electricity with electricity from renewable energy sources.

The renewable electricity introduced will comply with the standards set by the GHG Protocol.

### Actions taken in FY2024

Renewable electricity generation across the Hitachi Group in fiscal 2024 amounted to 747 GWh.

This accounted for 71% of the electricity usage within the target management scope, a significant increase from 56% in the previous year.

At 73 sites, all electricity used came from renewable sources. 21 of these sites achieved carbon neutrality (reduced Scope 1 and 2 GHG emissions to zero) through enhanced energy-savings and purchases of credits for neutralization.

In addition, Hitachi Energy continues to actively pursue decarbonization by supplying 100% of its in-house electricity needs with non-fossil fuel derived electricity. Furthermore, Hitachi Industrial Equipment Systems Group achieved carbon neutrality in fiscal 2024, ahead of its original target of fiscal 2030.

Sites supplied with 100% renewable electricity

Country/ Region	Sites using 100% renewable electricity	Carbon neutrality
Europe	28 sites	1 site (Hitachi Rail Group) 2 sites (Hitachi Energy Group)
North America	12 sites	1 site (Hitachi Industrial Equipment Systems Group)
China	7 sites	2 sites (Hitachi Industrial Equipment Systems Group)
Japan	12 sites	1 site (Hitachi, Ltd.) 5 sites (Hitachi High-Tech Group) 6 sites (Hitachi Industrial Equipment Systems Group)
Asia (excluding China and Japan)	8 sites	1 site (Hitachi Industrial Equipment Systems Group) 2 sites (Hitachi Energy Group)
Other areas	6 sites	—
Total	73 sites	21 sites



## Encouraging procurement partners to reduce their environmental footprint

Hitachi’s businesses cover a broad range of business domains, and our procurement is supported by many procurement partners from whom we source various products and parts. In order to encourage these procurement partners to reduce their impact on the environment, we are working to ensure that relevant guidelines are widely known, and Hitachi’s environmental policy is shared through briefings. In particular, we set a target to achieve carbon neutrality by fiscal 2050 throughout our value chain as we pursue our goal of realizing Net Zero. To this end, we encourage collaboration and cooperation with procurement partners on initiatives upstream in the value chain.

■ **Environmental Vision and Hitachi Environmental Innovation 2050**

### Efforts toward carbon neutrality upstream in the value chain

#### GHG emissions measurement upstream in the value chain

In order to calculate GHG emissions of Scope 3 Category 1, Purchased Goods and Services, upstream in the value chain, Hitachi uses a calculation method that covers the entire procurement amount based on spend and also partially reflects primary data from procurement partners. We place emphasis on partner engagement in collecting primary data from procurement partners and utilize a third-party sustainability evaluation platform, EcoVadis.

The calculation result for Scope 3 Category 1 in fiscal 2024 is 15,370,000 tons.

#### GHG emissions reduction efforts upstream in the value chain

To foster GHG emissions reduction activities among Hitachi’s procurement partners, we engaged in dialogue with 21 procurement partners selected in fiscal 2022. Through these discussions, we explored methods for GHG reduction, calculation techniques, and approaches to data collection, analysis, and utilization. Leveraging the insights and methods gained, Hitachi carried out reduction initiatives with approximately 100 procurement partners in fiscal 2023 and approximately 250 partners in fiscal 2024.

Target procurement partners were selected from those with the highest Scope 3 Category 1 emissions, and key procurement partners in Hitachi’s business activities. Our selected procurement partners are located in a wide range of countries and regions, and in a variety of industries, including raw materials, parts, and equipment. In terms of scale, our partners include not only large companies but also small and medium-sized companies.

Hitachi has been working to understand the amount of GHG reductions upstream in Hitachi’s value chain by obtaining reduction plans from procurement partners and analyzing the details of these plans. While some of the targeted partners are steadily progressing with emissions calculation, target setting, and action plan development, Hitachi has recognized that others—particularly small and medium-sized enterprises—are uncertain about what steps to take, how to schedule them, how to apply specialized calculation methods, or how to set appropriate targets. With the goal of having 700 procurement partners establish reduction targets and plans by fiscal 2027, Hitachi is working to expand GHG emissions reduction activities. Moving forward, based on insights gained from previous fact-

finding surveys, Hitachi will focus on supporting small and medium-sized enterprises by developing and providing capacity-building programs and support tools ( “Handbook for Carbon Reduction Journey” and others).

### Sharing our Green Procurement Guidelines and related initiative

Hitachi distributes the Green Procurement Guidelines that define our basic position on procuring environmentally friendly parts and products as well as our requirements of procurement partners. The guidelines set out requirements, such as establishing environmental management and recommend obtaining environmental certificates. They also address environmental conservation reducing the impact of products supplied to Hitachi, such as conserving resources and energy, recycling, managing chemical substances in products, and appropriate disclosures of related information.

To address the issue of chemical substances in products, we recommend using chemSHERPA\*1 CI/AI, a standardized format for communicating information on chemical substances in products throughout the supply chain.

\*1 chemSHERPA: Developed by the Japanese Ministry of Economy, Trade and Industry to facilitate the management of chemical substances in products by creating a standardized format throughout the supply chain. The chemSHERPA- CI standard is applicable to chemical substances contained in chemical products and chemSHERPA-AI to those contained in molded products

📄 **Green Procurement Guidelines**

📄 **Green Procurement Guidelines Annex**

#### Adoption of environmentally conscious procured materials

To reduce CO<sub>2</sub> emissions from products and services purchased upstream in the value chain, Hitachi began, in fiscal 2023, to source all newly refined aluminum (AL ≥ 99.7%, standard ingots) for Japan use from manufacturers that produce it primarily using hydropower. In fiscal 2024, through co-creation with procurement partners, Hitachi also began adopting green steel\*1 produced using the mass balance approach. To help realize a sustainable society, we will continue to work closely with our procurement partners to adopt and explore environmentally conscious materials, while also promoting initiatives aimed at achieving a circular economy, such as the use of recycled materials.

\*1 Green Steel: Steel products supplied with certificates indicating the allocation of GHG emission reductions, such as CO<sub>2</sub>, achieved through additional reduction projects carried out by steel manufacturers. These reductions are pooled and distributed across selected steel products by the manufacturer.

#### Received the highest rating for CDP supplier engagement

In July 2025, Hitachi, Ltd. was selected as a Supplier Engagement Leader, the highest rating in the Supplier Engagement Rating by CDP, an international non-governmental organization working in the environmental sector. Hitachi has been selected for the fourth consecutive year since 2021 in recognition of a series of initiatives aimed at realizing a net-zero society, including reducing CO<sub>2</sub> emissions across the entire value chain.

📄 **External ESG evaluations**



## Reducing transportation energy consumption

In addition to reducing energy consumption at our business sites (factories and offices), Hitachi is also working to reduce energy use during product transportation. Each BU and Group company set targets for the rate of improvement in transportation energy per unit in Japan while establishing voluntary targets for regions outside Japan.

Also, each business site is working to reduce transportation energy consumption by promoting modal shifts to more efficient transportation methods, improving truck loading ratios, and taking other measures. In addition, we are promoting the transition to eco-friendly vehicles for company use.

### Actions taken in FY2024

Fiscal 2024 reduction measures focused on improving loading efficiency for product transportation, utilizing joint transportation, and optimizing transportation vehicles. CO<sub>2</sub> emissions from transportation in Japan were 17.0 kt-CO<sub>2</sub>, a decrease of 0.8 kt-CO<sub>2</sub> compared with fiscal 2023.

### Reducing CO<sub>2</sub> emissions from business vehicles through Hitachi fleet management

Hitachi is preparing to electrify its fleet of business vehicles as part of efforts to achieve net-zero by fiscal 2050. However, there are various challenges associated with the introduction of electric vehicles by companies, such as the limited availability of electric vehicle options and insufficient charging infrastructure.

To address these challenges, Hitachi is steadily preparing for the electrification of business vehicles at each BU and Group company based on its own fleet

management plan. Specifically, Hitachi utilizes BPO\*1 and AI drive recorders\*2 to visualize vehicle operating conditions, followed by an analysis of collected driving data and monitoring of CO<sub>2</sub> emissions. Based on the results of this analysis and monitoring, Hitachi implements actions to reduce CO<sub>2</sub> emissions from existing vehicles and is promoting the phased replacement of business vehicles with electric vehicles to further reduce CO<sub>2</sub> emissions from its fleet.

\*1 BPO: Abbreviation of business process outsourcing. BPO outsources the entirety of a business process to a specialized contractor  
\*2 AI drive recorder: A service that uses AI to analyze recorded driving footage and visualize signs of dangerous driving and driver tendencies

#### Hitachi fleet management

- |                       |   |
|-----------------------|---|
| Vehicle visualization | <ul style="list-style-type: none"><li>Centralized fleet management via BPO</li><li>AI drive recorders to monitor vehicle operation status</li></ul> |
|-----------------------|---|



- |                       |  |
|-----------------------|--|
| Vehicle data analysis | <ul style="list-style-type: none"><li>Analysis of vehicle operation status and travel routes</li><li>Analysis of driver tendencies</li><li>Continuous monitoring of electrification rates and CO<sub>2</sub> emissions</li></ul> |
|-----------------------|--|



- |   |   |
|---|---|
| Actions to reduce CO <sub>2</sub> emissions | <ul style="list-style-type: none"><li>Optimizing fleet size based on vehicle utilization status</li><li>Encouraging eco-driving by reducing sudden acceleration and braking</li><li>Fostering awareness of CO<sub>2</sub> reductions via visualizations of emissions</li><li>Phased vehicle electrification, taking operational impact into account</li></ul> |
|---|---|

### Actions taken in FY2024

In fiscal 2024, as part of our reduction initiatives, we focused on utilizing Business Process Outsourcing (BPO) to enable centralized vehicle management and on installing AI drive recorders to monitor vehicle operation status.

These measures have already been implemented in 73% of our business vehicles in Japan, and we plan to further expand their adoption going forward.

In addition, as a further measure to promote centralized fleet management, we will begin consolidating monthly parking lots. Through this initiative, we will increase the number of basic charging stations as part of our charging infrastructure strategy, thereby facilitating the introduction of electric vehicles.



# Climate-related financial information disclosure (based on TCFD recommendations)

## Endorsement of the TCFD recommendations

In June 2018, Hitachi announced its endorsement of the recommendations by the Financial Stability Board’s (FSB) Task Force on Climate-related Financial Disclosures (TCFD). This section discloses key climate-related financial information in line with the TCFD’s recommendations.

Hitachi’s TCFD disclosure has been selected for the Excellent TCFD Disclosure for four consecutive years, as announced in January 2025, by domestic equity investment management institutions of the Government Pension Investment Fund of Japan (GPIF).

## Governance

Hitachi sees climate change and other environmental issues as important management issues.

Important matters concerning the Group’s sustainability strategy, including climate change measures, are discussed and decided on by the Senior Executive Committee and submitted to the Board of Directors as necessary. Hitachi’s long-term environmental targets, Hitachi Environmental Innovation 2050, which include greenhouse gas emission reduction targets, are reported to the Board of Directors when formulated or revised. In addition, the Audit Committee, composed of independent directors, conducts an audit of sustainability-related operations once a year, and responsible executive officers report to the committee on important climate-related matters during the audit.

As for TCFD initiatives we conduct outside the company, Hitachi has participated in the TCFD Study Group on Green Finance and Corporate Disclosures hosted by Japan’s Ministry of Economy, Trade and Industry (METI) since 2019. In addition, we are participating as a Steering Committee member in the TCFD Consortium, which holds discussions on efforts to link effective corporate information disclosure and disclosed information with appropriate investment decisions by financial institutions and others.

- ▣ Sustainability strategy management structure
- ▣ Structure for fostering environmental governance

## Strategy

Since 2002, Hitachi has advanced environmental initiatives by publishing its environmental vision and outlining its contributions as a global company toward realizing decarbonization. In fiscal 2016, the company established its long-term environmental targets, Hitachi Environmental Innovation 2050, based on the Paris Agreement and projections such as the IPCC’s Fifth Assessment Report RCP2.6\*1 and RCP8.5\*2 scenarios. Following the release of the IPCC Special Report on Global Warming of 1.5°C and the Sixth Assessment Report with the SSP1-1.9\*3 scenario, Hitachi revised its long-term targets to align with the goal of limiting the global temperature rise to 1.5°C.

In May 2025, amid changes leading to increased GHG emissions such as the surge in electricity demand driven by expanded generative AI use, Hitachi updated its environmental strategy and transition plan, Hitachi Environmental Innovation 2050, setting a new target of achieving net zero by fiscal 2050.

In addition, Hitachi’s GHG reduction targets toward fiscal 2050 have been certified by the Science Based Targets initiative (SBTi)\*4 as a science-based net-zero target, consistent with the 1.5°C pathway\*5 outlined in the Paris Agreement.

By setting even more ambitious goals, Hitachi is committed to contributing to global decarbonization.

- \*1 A Representative Concentration Pathway (RCP) scenario under which, at the end of the 21st century, the increase in global temperatures from preindustrial levels is kept below 2°C
- \*2 An RCP scenario that assumes that emissions will continue to rise resulting in an approximately 4°C rise in global temperatures compared to preindustrial levels
- \*3 SSP1-1.9 scenario: Presented in the Sixth Assessment Report of the IPCC. A scenario that limits the temperature increase to less than 1.5°C under sustainable development
- \*4 An international initiative where companies and financial institutions set science-based greenhouse gas (GHG) emission reduction targets and have their validity reviewed and certified
- \*5 A target to limit the rise in global average temperature to 1.5°C compared to pre-industrial levels

- ▣ Environmental Vision and Hitachi Environmental Innovation 2050
- ▣ Environmental strategy for achieving decarbonization
- ▣ GHG emission reduction at business sites (factories and offices) and Hitachi Carbon Neutrality 2030

**Identification and assessment of climate-related risks and opportunities**  
The Hitachi Group operates a broad array of businesses around the world with each business having its own set of risks and opportunities. To address the impacts of climate change, climate-related risks and opportunities are assessed in accordance with TCFD classifications. For important businesses with relatively high likelihood of being affected by climate change, risks and opportunities are evaluated on a business specific basis. The assessment time horizon is classified into short-term, medium-term, and long-term as defined below.

### Time horizon for assessing climate-related risks and opportunities

	Time horizon	Reason for adoption
Short-term	Over the next three years, from fiscal 2025 to 2027	Corresponds to the three-year management period covered by 2027 Environmental Action Plan established in line with the management plan
Medium-term	Up to fiscal 2030	Time horizon of our fiscal 2030 long-term environmental targets
Long-term	Up to fiscal 2050	Time horizon of our fiscal 2050 long-term environmental targets

### Degrees of impact

Impact	Definition
Major	Has an impact sufficient to disrupt business or cause it to substantially decrease or increase
Medium	Part of the business is impacted
Minor	There is little impact

**Responding to climate scenario risks and opportunities for each business**  
Hitachi operates a broad array of businesses with each business having its own set of risks and opportunities. Accordingly, scenario analyses were conducted for businesses with a relatively high likelihood of being affected by climate change. In selecting these businesses, factors such as sales volume within Hitachi and the amount of GHG emissions from energy use during product and service utilization were considered. Previously some businesses relied on fossil fuels as their main energy source, however these businesses have been deconsolidated.

As a result of the review, the Railway Systems, Power Generation and Power Grids, IT Systems, and the Industrial Equipment businesses were selected for analysis. For each of these businesses, the business environment under the 1.5°C and 4°C scenarios and corresponding responses were examined.

• 1.5°C scenario: As projected by the RCP2.6 scenario in the IPCC’s Fifth Assessment Report, the SSP1-1.9 scenario in the IPCC’s Sixth Assessment Report, the IEA 450 scenario, and the IEA Net Zero scenario, a world is assumed in which stringent measures and regulations will be implemented to realize decarbonization. Risks and opportunities were examined on the premise of achieving net-zero by fiscal 2050.

• 4°C scenario: A situation was examined in which global greenhouse gas emissions increase due to lack of regulation and frequent disasters are caused by climate change, as shown by the RCP 8.5 scenario in the IPCC’s Fifth Assessment Report and SSP 5-8.5 scenario in the IPCC’s Sixth Assessment Report.

Furthermore, events expected to occur regardless of progress toward global decarbonization have been summarized as non-environmental market factors (neither the 1.5°C nor 4°C scenario).

The major risks and opportunities for the selected businesses are outlined in the following table.

Business environment, major risks and opportunities, and strategies under the 1.5°C and 4°C scenarios

Target businesses	Railway systems	Power generation and power grids	Digital systems & services	Industrial equipment
Business environment, major risks, and opportunities under the 1.5°C scenario	<b>Business environment</b> Global demand will continue to grow for railway transport systems that emit relatively less GHG per distance covered, with tighter GHG emission regulations in each country and region.	<b>Business environment</b> Global demand will continue to grow for electricity from non-fossil sources, such as renewable energy and nuclear power, with tighter GHG emission regulations in each country and region. Power networks will increasingly accommodate renewable energy produced through distributed power generation. Policy makers and regulators will have significant impact on driving and prioritizing non-fossil power sources. Cost of capital and related government subsidy programs will be also decisive criteria determining the speed of transition. Possible increase cost of energy to the end users might challenge general affordability and affect consumption patterns.	<b>Business environment</b> Demand for energy-saving, high-efficiency digital solutions will grow, with tighter GHG emission regulations in each country and region. There will also be increased demand for data centers and data analysis systems to accommodate the expansion of data utilization businesses, including the use of generative AI, in addition to the expansion of environment-related and financial-related businesses such as investments and loans for decarbonization businesses and green bond issues.	<b>Business environment</b> Global demand for energy-saving industrial equipment will grow, with tighter GHG emission regulations across countries and regions.
	<b>Risks</b> A decline in competitiveness in the railroad sector if there are delays in the development of innovative technologies of the type expected to contribute to the reduction of GHG emissions. Specifically, delays in the development of new technologies such as dynamic headways (flexible operations based on passenger demand) and support for new mobility services (e.g., MaaS). Also, a decline in competitiveness due to delays in the timely marketing of effective and sustainable products that comply with increasingly stringent laws and regulations for decarbonization.	<b>Risks</b> Unprecedented demand will not be fulfilled by production capacity of established suppliers which will lower the barriers to entry for emerging suppliers. CAPEX capacity extension investment might dilute the strategic focus to accelerate development of new technologies and/or business models to thrive in the period after the peak of the industry mega-cycle. Pressures to shorten new technology development cycles might lead to quality issues in the long term. A lack of international and regional cooperation to maintain a balance between supply and demand in the power grid for renewable energy generation having large output fluctuations could result in delays in renewable energy deployment.	<b>Risks</b> Competitiveness will decline if there is a slowdown in technological and human resource development to provide energy-saving and highly efficient digital solutions and if decarbonized measures for energy-intensive data centers are delayed.	<b>Risks</b> Competitiveness will decline if there are delays in the development of high-efficiency, low-loss products.
	<b>Opportunities</b> A transition of most long-distance public transportation to the railway sector under the 1.5°C scenario, since rail is a mode of transportation that contributes to decarbonization with low GHG emissions per unit of transportation. Expanded business opportunities by developing and delivering railroad cars that are more energy efficient than existing models by converting to bi-mode railroad cars and by increasing the efficiency of rail services with digital technology.	<b>Opportunities</b> Expanded business opportunities in conjunction with rising demand for renewable energy—the key to a decarbonized future—and with the development of grid solutions, digital service solutions, and energy platforms that can accommodate the diversification of energy suppliers. Unprecedented level of investments will be deployed into offshore wind, solar, digital load management systems , high/ultra-voltage transmission and energy storage systems.	<b>Opportunities</b> There will also be increased demand for environment-related financial services as investments and loans for decarbonization businesses and green bond issues. Demand will grow for energy saving and high-efficiency digital solutions that contribute to zero-emissions.	<b>Opportunities</b> Utilization of IoT, digitalization, and connectivity to develop innovative products and solutions that contribute to GHG emission reductions beyond the energy-saving performance of individual products.

Target businesses	Railway systems	Power generation and power grids	Digital systems & services	Industrial equipment
The business environment, major risks, and opportunities under the 4°C scenario	<b>Business environment</b> Demand for electric-powered transport will gradually increase even without tighter energy regulations. Damage from typhoons, floods, and other natural disasters caused by climate change will rise sharply.	<b>Business environment</b> The cost competitiveness of non-fossil energy will increase as fuel prices gradually increase due to increased fossil energy consumption, and demand for renewable energy and nuclear power will increase moderately. Natural disasters caused by climate change will rise sharply. Needs will increase for climate adaptation to protect electric energy systems from extreme weather events.	<b>Business environment</b> Demand for new, high-efficiency technology will expand as multiplex digital systems in response to natural disaster BCPs will result in increased energy consumption. Demand will also grow for social and public systems to reduce damage from natural disasters. In addition, climate change will increase risks to food procurement, including agricultural crops, and there will be a growing need for solutions to address these risks.	<b>Business environment</b> Typhoons, floods, and other natural disasters caused by climate change will increase significantly.
	<b>Risks</b> The frequent occurrence of natural disasters will exacerbate damage to production facilities, worsen working environments, and disrupt supply chains, leading to delays in deliveries and the procurement of parts.	<b>Risks</b> The frequent occurrence of natural disasters will increase damage to power generation and transmission/distribution facilities, hamper efforts to restore power transmission/distribution, and disrupt supply chains, leading to delays in deliveries and the procurement of parts. Increased delays in the development and provision of power generation, transmission, and distribution equipment, facilities, and services capable of withstanding frequent natural disasters.	<b>Risks</b> Natural disasters will exacerbate damage to production facilities, worsen working environments, and disrupt supply chains, leading to delays in deliveries and the procurement of parts and increased risk of damage to data centers.	<b>Risks</b> Natural disasters will exacerbate damage to production facilities, worsen working environments, and disrupt supply chains, leading to delays in deliveries and the procurement of parts.
	<b>Opportunities</b> Transport systems more resilient to natural disasters can be developed. Competitiveness can be enhanced by providing added value in such forms as energy-saving railcars and adaptability to new technologies.	<b>Opportunities</b> Energy demand will grow as warmer weather leads to increased use of air conditioning. Demand will increase for disaster-resilient power generation and transmission/distribution technologies. Increase the competitiveness of existing power transmission and distribution systems by making these systems more resilient to extreme weather conditions.	<b>Opportunities</b> Demand will increase for social and public systems that help reduce damage from natural disasters and for digital solutions required as part of BCP. In addition, there is increasing demand for digital analytics solutions that leverage data and AI in the agriculture and biotechnology sectors, along with rising demand for disaster-resilient data centers.	<b>Opportunities</b> Efforts to accommodate IoT products will lead to higher demand for remote control and remote maintenance during natural disasters.
Non-environmental market factors (neither the 1.5°C nor 4°C scenario)	<ul style="list-style-type: none"><li>Economic growth will lead to urbanization and population growth around the world which will drive the railway business globally as an efficient form of public transport for large numbers of passengers regardless of climate conditions. The market size in Japan and Europe will remain flat, but the Asian market overall will see substantial growth.</li><li>Competition will grow as major railway manufacturers in various countries will expand their businesses to meet global demand.</li></ul>	<ul style="list-style-type: none"><li>Economic growth, urbanization, and population growth will push up demand for energy, especially electricity, mainly in developing countries.</li><li>Political trends in each country and region related to climate change and energy issues, and changes in public awareness.</li><li>Energy supply and demand will diversify due to various factors, such as GHG emissions, the environmental burden, economic performance, safety, and supply stability.</li><li>Digital technology will develop further to enhance the stability and efficiency of the power supply.</li></ul>	<ul style="list-style-type: none"><li>Further digitization globally will exponentially increase the volume of data circulated, accumulated, and analyzed.</li><li>New services and businesses utilizing digital technology will expand. As a result, demand for data centers and energy consumption will increase.</li><li>Slower market expansion due to heightened geopolitical and trade risks.</li></ul>	<ul style="list-style-type: none"><li>Growing automation market driven by the use of digital technologies such as AI to reduce labor needs, update aging infrastructure, and respond to population decline and labor shortages due to aging societies.</li><li>Increased demand for factory automation as a result of global pandemics limiting office attendance and accelerating the shift to remote work, requiring operations to be managed by smaller teams.</li><li>The industrial market in emerging economies will grow due to a rise in production plants.</li></ul>



Target businesses	Railway systems	Power generation and power grids	Digital systems & services	Industrial equipment
<b>Response to future business risks (business opportunities)</b>	<b>Response to business risks under 1.5°C or 4°C scenarios</b> <ul style="list-style-type: none"><li>Continue to strengthen the railway business as global demand for railways will increase under either scenario.</li><li>Specifically, develop and market more energy-saving railcars and battery powered railcars for non-electrified sections. Strengthen railway services through digital utilization such as dynamic headway (flexible operations in response to passenger demand) and new mobility solutions like HMAX.</li><li>Increase competitiveness by strengthening sustainable activities while adhering to international standards, etc.</li><li>Given the increasing frequency of natural disasters, take risk aversion into account when deciding the location and equipment layout of a new plant. Keep an eye on the supply chain in strengthening our ability to respond to business disruption risks in accordance with our BCPs. Evaluate and analyze organizational structures and physical locations, and reflect the results of this work in response measures.</li></ul>	<b>Response to business risks under 1.5°C or 4°C scenarios</b> <ul style="list-style-type: none"><li>Continue to enhance the response to relevant markets in view of expected higher demand for non-fossil energy under either scenario.</li><li>Production capacity expansion investments</li><li>Strengthen the provision of grid solutions, digital service solutions, and energy platforms that can accommodate the increased use of renewable energy and diversification of energy supply and demand management.</li><li>Given the increasing frequency of natural disasters, develop technologies for disaster-resilient renewable energy systems and disruption-resistant power transmission/distribution systems. Take risk aversion into account when deciding the location and equipment layout of a new production plant. Keep an eye on the supply chain in strengthening our ability to respond to business disruption risks in accordance with our BCPs.</li></ul>	<b>Response to business risks under 1.5°C or 4°C scenarios</b> <ul style="list-style-type: none"><li>Continue to develop innovative digital technologies and utilize AI, nurture necessary human capital, and enhance digital service solutions that generate new value in view of the expected growth in demand for digital services and the subsequent market expansion under either scenario.</li><li>Specifically, enhance competitiveness by providing energy-saving and high efficiency digital solutions that contribute to the following: zero-emissions; environment-related financial services for decarbonization businesses; social and public systems to prevent natural disasters, reduce damage, and enhance resilience; and digital systems for BCPs.</li><li>Given the increasing frequency of natural disasters, strengthen our ability to respond to business disruption risks in accordance with our BCPs.</li><li>Actively promote the use of AI, decarbonization, and enhanced disaster resilience in data centers to strengthen competitiveness as sustainable and resilient facilities.</li></ul>	<b>Response to business risks under 1.5°C or 4°C scenarios</b> <ul style="list-style-type: none"><li>Under either scenario, continue developing energy-saving, high-efficiency products that use IoT technology. Focus particularly on connected products with communication features. Miniaturized, high-efficiency, low-loss products can also help reduce GHG emissions.</li><li>Given the increasing frequency of natural disasters, take risk aversion into account when deciding the location and equipment layout of a new plant. Keep an eye on the supply chain in strengthening our ability to respond to business disruption risks in accordance with our BCPs.</li></ul>
<b>Financial information (sales volume of each target sector)</b>	Partial impact on the revenue of Mobility Segment, which accounted for approximately 12% of Hitachi's revenue at 1,171.3 billion yen in fiscal 2024	Partial impact on the revenue of the Energy Segment, which accounted for approximately 27% of Hitachi's revenue at 2,627.0 billion yen in fiscal 2024	Partial impact on the revenue of the Digital Systems & Services Segment, which accounted for approximately 29.0% of Hitachi's revenue at 2,832.5 billion yen in fiscal 2024	Partial impact on the revenue of the Industrial Products & Services, which accounted for approximately 7% of Hitachi's revenue at 637.3 billion yen in fiscal 2024

Note: The above scenario analyses are not future projections but attempts to examine our resilience to climate change. How the future unfolds may be quite different from any of these scenarios

Climate-related risks (Hitachi Group)

Based on a business-by-business review, no significant climate change-related risks that were difficult to address were identified at Hitachi.

When considering whether existing businesses will be viable in decarbonization, businesses that use electricity as their primary energy source can adapt by switching to electricity derived from non-fossil energy sources. On the other hand, businesses that currently use fossil fuels are expected to require various measures to adapt, such as adopting new technologies including hydrogen and biomass, as well as carbon offset initiatives.

Since many of Hitachi’s businesses use electricity, there is little significant risk associated with the unavailability of fossil fuels. The following is a summary of Hitachi’s overall risks under the 1.5°C scenario and the 4°C scenario. For Hitachi’s business portfolio, it has been determined that these climate change-related risks can be managed through appropriate countermeasures.

(1) Given Hitachi’s business format, we have determined that these risks related to climate change can be addressed.

Category	Major risks	Time horizon	Impact	Main initiatives
Policy and legal	Increased business costs from the introduction of carbon taxes, fuel and energy consumption taxes, emissions trading systems, and other measures	Short to long term	Medium	<ul style="list-style-type: none"><li>• Advance activities to achieve net zero.</li><li>• Avoid increases in business costs by further enhancing production and transport efficiency and expanding the use of non-fossil fuel-based energy. Encourage the adoption of energy-saving equipment by introducing Hitachi Internal Carbon Pricing (HICP).</li><li>• Transition from fossil fuel-using businesses to non-fossil fuel-using businesses.</li><li>• Facilitate investments that contribute to decarbonization. For example, Hitachi Energy plans to invest approximately \$6.25 billion (as of March 2025) from FY2024 to FY2027.</li></ul>
Technology	Loss of sales opportunities due to delays in technology development for products and services aimed at decarbonization	Short to long term	Medium	<ul style="list-style-type: none"><li>• Contribute to reducing GHG emissions by developing and marketing innovative products and services that lead to the achievement of long-term environmental targets and expanding the decarbonization business.</li><li>• Advance the development of energy-saving and low-carbon products by implementing Environmentally Conscious Design Assessments when designing products and services.</li></ul>
Market and reputation	Impact on business due to a decline in reputation or assessment of the company’s approach to climate change issues	Medium to long term	Minor	<ul style="list-style-type: none"><li>• Established a net-zero target under the Hitachi Environmental Innovation 2050 long-term environmental targets and obtained SBT net-zero validation to drive decarbonization efforts.</li><li>• Disclosing information on climate change initiatives and progress through sustainability reports, the corporate website, responses to CDP, and participation in events such as COP.</li></ul>

(2) Risks related to the physical impacts of climate change (4°C scenario)

Category	Major risks	Time horizon	Impact	Main initiatives
Acute and chronic physical risks	Climate-related risks to business continuity, including increased severity of typhoons and floods (acute risks), as well as long-term rising temperatures and head waves (chronic risks)	Short to long term	Medium	<ul style="list-style-type: none"><li>• Consider the possibility of flood damage when deciding on the location, equipment layout and other conditions for a new plant</li><li>• Compiled the Water Risk Guidelines for identifying water risks and countermeasures, and ensured compliance at major manufacturing sites globally.</li></ul>

▣ Addressing risks related to water and biodiversity

**Climate-related opportunities (Hitachi Group)**  
Hitachi, which promotes the Social Innovation Business, views addressing environmental challenges, including climate change, as a key management priority and sees contributing to decarbonization as a significant business opportunity.

Under its long-term environmental goals, Hitachi Environmental Innovation 2050, the company has set a target of achieving net zero across the entire value chain by fiscal 2050. Achieving this target requires not only decarbonizing factories and offices, but also reducing GHG emissions associated with the use of sold products and services, which account for a large portion of value chain emissions. In addition, achieving the target of 100 million metric tons of avoided emissions per year will require Hitachi products to make a significant contribution to GHG emissions reduction. Hitachi will continue to advance these initiatives and contribute to resolving issues related to climate change.

Category	Major opportunities	Impact	Main initiatives
Services and markets for products	Expansion of business opportunities through the expanded deployment of innovative products and services that can contribute to the mitigation of and adaptation to climate change	Major	<ul style="list-style-type: none"><li>Expand business areas that contribute to decarbonization.</li><li>In the energy field, advance power generation using non-fossil fuel energy sources and the installation of supporting power grids.</li><li>In fields such as mobility and connective industries, advance the reduction of GHG emissions during product use by enhancing energy efficiency through greater utilization of digital technology (Green by Digital) and by developing products with world-class efficiency.</li><li>Facilitate the adoption of carbon-free solutions and services through co-creation with customers.</li></ul>
Resilience	Provision of solutions to address climate-related natural disasters	Medium	<ul style="list-style-type: none"><li>Providing flood simulators and evacuation and emergency operation support systems</li><li>Providing disaster prevention solutions such as high-performance firefighting command systems</li></ul>

▣ **Products, services, and solutions that support green transformation (GX)**



The results of these studies indicate that Hitachi has not uncovered any significant or difficult-to-address climate change-related risks at this stage. It has been determined that contributions to climate change action can be regarded as business opportunities. Hitachi believes that we have high resilience in the transition to decarbonization over the medium to long term, as we closely monitor market trends and develop business flexibly and strategically under both the 1.5°C and 4°C scenarios.



Risk management

Hitachi identifies, evaluates, and manages climate change-related risks for each BU and the Group company to determine environmental impacts and other factors. The results are consolidated by the Group Environmental Division of Hitachi, Ltd., and any risks or opportunities recognized as particularly important for the Group as a whole are deliberated and decided by the Senior Executive Committee and, if necessary, by the Board of Directors.

Metrics and targets

Hitachi defines medium- to long-term metrics and targets in the long-term environmental targets Hitachi Environmental Innovation 2050, while short-term metrics and targets are established and managed in detail every three years through the Environmental Action Plan.

Metrics for climate change mitigation and adaptation include total GHG emissions and the intensity reduction rate of GHG emissions. Total GHG emissions from the use of sold products in Scope 3 in Category 11, which account for most emissions given the nature of Hitachi’s business, fluctuate greatly due to changes in sales volumes, products handled, and the business portfolio. This makes it difficult to visualize the results of energy saving and efficiency improvements. Therefore, intensity reduction of GHG emissions has been established as a metric for providing customers and society with products and services that offer equivalent value while emitting less GHG emissions. In addition, a metric for avoided emissions that contribute to decarbonization is also set and managed.

GHG emissions generated at business sites (factories and offices) are continuously reduced by utilizing the Hitachi Internal Carbon Pricing (HICP) system, which provides incentives for capital investments that contribute to GHG reductions. The carbon price for HICP is set at 14,000 yen per ton-CO<sub>2</sub>.

In addition, since fiscal 2021, evaluations that take environmental value into account have been incorporated into the executive compensation system to accelerate the creation of environmental value toward achieving long-term environmental targets.

- ▣ [Linking executive compensation to the sustainability strategy](#)
- ▣ [Environmental Vision and Hitachi Environmental Innovation 2050](#)
- ▣ [Environmental Action Plan](#)
- ▣ [Decarbonization](#)
- ▣ [Products, services, and solutions that support green transformation \(GX\)](#)
- ▣ [GHG emission reduction at business sites \(factories and offices\) and Hitachi Carbon Neutrality 2030](#)
- ▣ [Calculating GHG emissions throughout the value chain \(fiscal 2024\)](#)

# Circular economy

## Efforts to achieve circular economy

Environmental issues continue to intensify associated with increased economic and social activities within the conventional linear economy of mass production, mass consumption, and mass disposal. These problems involve resource shortages, tight supply and demand for energy, environmental pollution caused by increasing waste, global warming, and the loss of biodiversity.

To solve these problems and create sustainable societies, we must shift away from linear economies and toward circular economies. Hitachi, together with customers and society, contributes to the transition to a circular economy through its business activities.

### Circular economy initiatives

Hitachi has previously set an environmental long-term target to “improve water and resource utilization efficiency by 50% by 2050” in pursuit of

a resource efficient society. We have created higher economic value using fewer resources and pursued production activities with a lower environmental burden. Furthermore, Hitachi has been driving the development of product designs, tools, and services aimed at achieving circular economy.

In May 2025, Hitachi updated its long-term environmental targets, Hitachi Environmental Innovation 2050, introducing a new target called circular transformation: by 2050, to transition both resources and businesses toward a fully circular model. Circular transformation involves shifting toward circular business models by minimizing energy and resource use and maximizing value throughout the entire lifecycle of products and services through initiatives such as enhancing value and extending product lifespans during product usage via sharing and recurring use, and recovering resources from end-of-life products through remanufacturing or recycling.

Furthermore, in order to achieve circular transformation, Hitachi is actively working on reduction of landfill waste and implementation of Eco-Design, which is environmentally conscious product design. Since resources that are landfilled or discarded during the manufacturing process lose their value, Hitachi aims to achieve zero landfill waste generated at its manufacturing facilities by 2030. Additionally, transition to a circular economy, including landfill waste reduction, requires eco-design in product development stages, and application to all relevant product groups by fiscal 2030 is targeted.

## Approaches toward circular transformation

With the goal of achieving a circular transformation, Hitachi is striving to continuously utilize resources and assets throughout the product lifecycle for reduction and prevention of waste generation. To achieve this, we are using three approaches: innovation in upstream product design, innovation in the product manufacturing process, and innovation of our business model.

**(2) Innovation in the manufacturing process**  
We share case studies among divisions to highlight initiatives in this area. Case studies include product and parts manufacturing volume optimization based on an understanding of supply and demand, digitization of design processes for paperless work, the reduction of packaging material usage, the reduction of defective products through quality improvement, and the reduction of chemical substances. Further, we established specific targets for the number of sites achieving the goal of the zero landfill waste initiative, as well as for effective utilization rates related to plastic waste. In particular, we are targeting all manufacturing sites from fiscal 2022 with the aim of achieving zero landfill waste\*1.

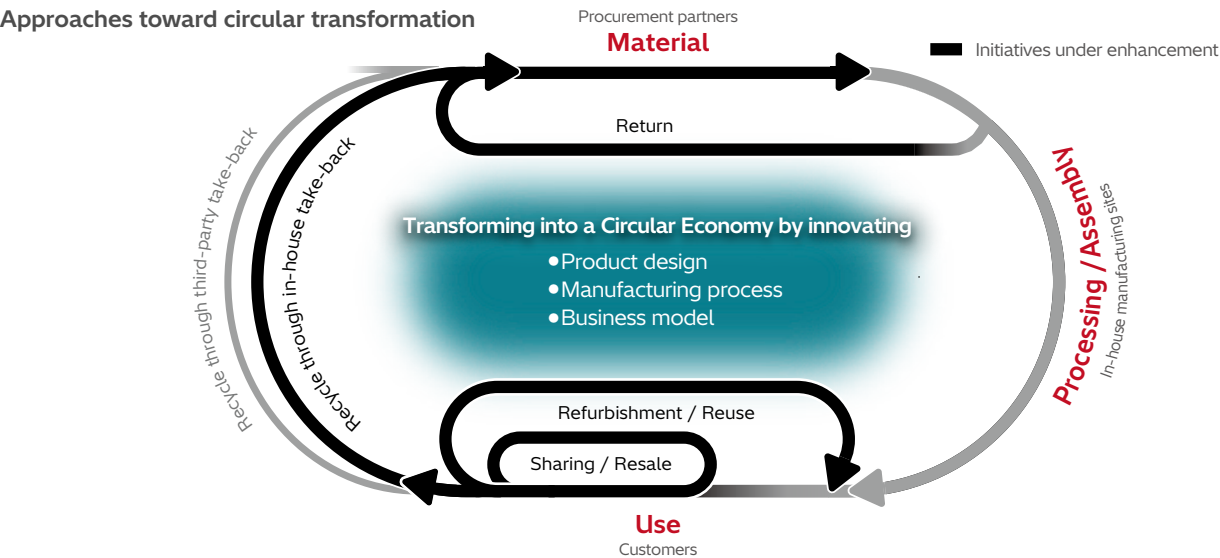
\*1 Pursued in careful compliance with regulations, conditions, etc., in each country or region

**(3) Innovation of business model**  
To adapt to a society that is transitioning from goods to experiences, and, from ownership to leasing, we enable the effective use of resources and assets through leasing, pay-per-use systems, subscriptions, products as a service, reuse, and sharing-based models.

At the same time, we collect used products and consider their sale, repair, or recycling, to further utilize resources and assets efficiently. To this end, we share our goals with diverse stakeholders in the value chain and drive co-creation.

Additionally, we advance research and development involving raw materials, products, tools, applications, and services necessary for our goals, leveraging the strengths of Hitachi’s IT × OT × Products to support the realization of circular economy not only in our value chain, but also in our customer’s activities.

**Improving the environmental performance of products and services through Eco-Design**



## Management of waste and valuables generated at business sites

We collect environmental load data for waste and valuables\*<sup>1</sup> generated at the business sites to centrally manage the volumes of waste and valuables generated and exported by type. For hazardous waste, in particular, we ensure thorough compliance with laws and regulations, and engage in proper disposal within the Group.

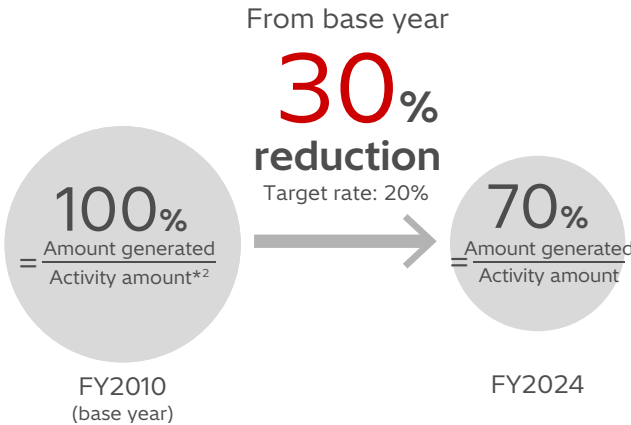
From fiscal 2023, we started transitioning from the previous Environmental Data Collection System (Eco-DS) to the ESG Management Support Service (ESG-MSS) to streamline our data collection operations. We completed this transition to ESG-MSS in fiscal 2024.

For fiscal 2024, which was the final year of the 2024 Environmental Action Plan (fiscal 2022–2024), we established a 20% per-unit reduction target (compared with a base year of fiscal 2010) for waste and valuables generated. We achieved a reduction of 30% for this year.

We reduced the amount of waste and valuables generated by 34kt, or 21%, compared to the base year. This result was accomplished through ongoing measures such as installing recycling facilities within our business sites, closed-loop recycling, whereby byproducts and scrap from the production process are reused as resources by other business sites, and repeated use of packing and cushioning materials for transportation.

\*<sup>1</sup> Waste and valuables: Materials generated through business activities. Each country has a legal definition of waste, and in Japan, the term refers to refuse, bulky refuse, ashes, sludge, excreta, waste oil, waste acid and alkali, carcasses, and other filthy and unnecessary matter, which are in a solid or liquid state according to the Waste Management and Public Cleansing Law. Valuables, meanwhile, are those materials left over after business activities other than waste, and that can be sold or transferred free of charge to other parties as items of value.

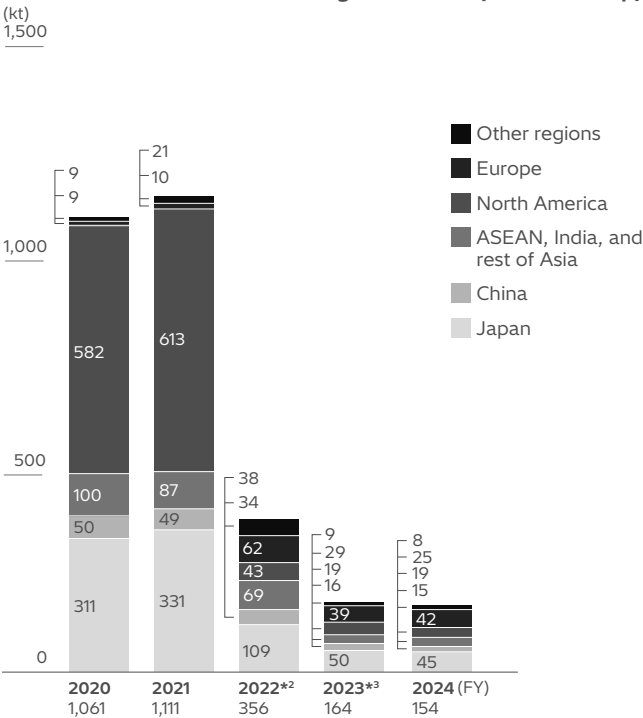
### 2024 Environmental Action Plan management values reduction rate in waste and valuables generation\*<sup>1</sup> per unit (Hitachi Group)



\*<sup>1</sup> Amount of waste and valuables generated from the production process

\*<sup>2</sup> Activity amount is a value closely related to waste and valuables generated at each business site (for example, output, sales, and production weight)

### Trends in waste and valuables generation\*<sup>1</sup> (Hitachi Group)



\*<sup>1</sup> Waste and valuables: Through fiscal 2021, this volume was the amount of waste and valuables generated by major business sites. Beginning in fiscal 2022, this volume is the total amount of waste and valuables generated in the manufacturing processes of all business sites and the amount generated at offices other than manufacturing processes

\*<sup>2</sup> In fiscal 2022, the amount decreased significantly due to deconsolidation of materials-related and construction machinery-related companies. From fiscal 2022, the above figures include waste and valuables generated by an energy-related company and auto parts-related companies which have been included in the scope of consolidation since fiscal 2020

\*<sup>3</sup> In fiscal 2023, the amount decreased due to the deconsolidation of the auto parts-related companies

## Number of sites achieving the goal of the zero waste to landfill initiative

We pursue activities to achieve the goals of the Zero Waste to Landfill\*<sup>1</sup> initiative, which seeks to minimize landfill disposal for the ongoing, sustainable utilization of resources, and have set specific targets for the number of manufacturing sites to achieve zero landfill waste. In fiscal 2024, 154 of the sites covered by our activities achieved zero landfill waste.

### 2024 Environmental Action Plan Management Values

Number of sites achieving zero landfill waste	154 business sites (73% achievement) FY2024 target: 128* <sup>2</sup> business sites (approx. 61%)
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Note: All manufacturing sites are covered

\*<sup>1</sup> Zero Waste to Landfill goal: Defined as a final disposal rate (landfill disposal/waste and valuables) of less than 0.5% for the relevant fiscal year in the Hitachi Group. Pursued in assumed conformance with regulations, conditions, etc.

\*<sup>2</sup> The fiscal 2024 target was revised to exclude the sites of the auto parts-related companies following their deconsolidation



Effective utilization rate of plastic waste

We began strengthening our activities in fiscal 2022 toward achieving a 100% effective utilization\*1 rate of waste plastics throughout the entire Hitachi Group by fiscal 2030. In fiscal 2024, we set an effective utilization rate target of 85% and achieved 98%. To improve the effective utilization rate, we are implementing measures that include design changes for equipment and products that do not generate waste, reduction of waste through yield improvements, in-house reuse, sorting and accumulation of waste to enhance value, and recycling measures through detailed sorting.

2024 Environmental Action Plan management values

Effective utilization rate of plastic waste 98% achievement  
FY2024 target: 85%

For example, Hitachi Global Life Solutions has adopted a new design with consideration to product usability. In cordless stick vacuum cleaners, they have worked on eco-conscious designs together with a lightweight design and improved suction power. In certain products, the plastic materials used in the exterior parts such as the base of the vacuum cleaner stand include recycled plastic, comprising at least 10% of the total weight. External resin components use a paint-free design to facilitate material recycling of the resin. In addition, in products equipped with cassette-style lithium-ion batteries, the design enables easy separation of the battery during disposal.

Furthermore, Kanto Eco Recycle Co., Ltd. , a subsidiary of Hitachi Global Life Solutions that handles the recycling of used household appliances, has introduced a sorting device for mixed plastics in the recycling

process for washing machines and other products, and this began full-scale operations in early April of FY2024.

To facilitate recycling of home appliances in Japan, Hitachi Global Life Solutions works to recycle four categories of end-of-life home appliances (air conditioners, TVs, refrigerators/freezers, and washing machines/dryers) at 19 recycling plants as part of cooperative efforts among five companies\*2 in response to the 2001 Act on Recycling of Specified Home Appliances. A total of 68.0kt of recyclable materials\*3 were recovered in fiscal 2024, of which approximately 60.3kt were recycled. By product type, the recycling rate for refrigerators and freezers was 80%, exceeding the legal requirement of 70% by 10 percentage points, and for washing machines and dryers it was 94%, exceeding the legal requirement of 82% by 12 percentage points.

\*1 Effective utilization encompasses material recycling, chemical recycling, and thermal recovery. Pursued in assumed conformance with regulations, conditions, etc.  
\*2 Hitachi Global Life Solutions, Sharp Corporation, Sony Corporation, Fujitsu General Limited, and Mitsubishi Electric Corporation  
\*3 Parts and materials recovered from four categories of end-of-life home appliances (air conditioners, TVs, refrigerators/freezers, and washing machines/dryers) and recycled through in-house use, sale, or transfer free of charge to other entities for use

Improving the environmental performance of products and services through Eco-Design

For all products and services involving a design process, Hitachi promotes Eco-Design by applying our Environmentally Conscious Design Assessments to steadily improve environmental performance throughout the Group. This assessment identifies a total of 30 environmental impact categories that affect climate change, resource depletion, and ecosystem degradation at each stage of the life cycle of products and services. In this way, we assess the reduction of the environmental impact from business activities across multiple perspectives.

Initiatives for improving the environmental performance of products and services

- Promoting environmentally conscious processes: In accordance with the IEC 62430\*1 criteria, promote environmentally conscious processes in designing and developing products and services, including by meeting environmental regulatory requirements and ascertaining the environment-related needs of our stakeholders within our existing management system.
- Implementing Life Cycle Assessments (LCAs): For our main, priority products, quantitatively evaluate their global environmental burden in such areas as the consumption of mineral resources, fossil fuels, and water resources, as well as their impact on climate change and air pollution, disclose the results to our stakeholders, and utilize them in improving the design of next-generation products.

\*1 IEC 62430: The standard developed by the International Electrotechnical Commission (IEC) concerning environmentally conscious design for electrical and electronic products

# Nature positive

## Efforts to achieve Nature positive

Nature Risk Rising, published by the World Economic Forum in 2020, reports that the creation of approximately \$44 trillion of economic value, or more than half of global GDP, depends on natural capital and ecosystem services it provides. In recent years, natural capital including air, water, soil, and biodiversity has been facing global crises, prompting increased international interest in achieving nature positive outcomes—stopping natural capital loss and restoring natural environments.

At the 15th Conference of the Parties to the United Nations Convention on Biological Diversity (CBD-COP15) held in 2022, the “Kunming-Montreal Global Biodiversity Framework” was adopted, including the "30by30 target" to conserve at least 30% of land and water areas by 2030. Additionally, in 2023, the Task Force on Nature-related Financial Disclosures (TNFD) published its final recommendations, driving broader efforts among companies to assess impacts on natural capital and its dependencies and to disclose information in a transparent manner.

Natural capital is the foundation of a sustainable society, deeply intertwined with social infrastructure. Social infrastructure extends beyond physical systems, playing a vital role in advancing symbiosis with nature along with the conservation and restoration of biodiversity. As a responsible partner for social infrastructure, Hitachi commits to contributing to the realization of a nature positive future.

## Nature positive initiatives

Previously, Hitachi has set a long-term environmental target to minimize impact on natural capital by 2050 as part of its goal of “Achieving a Harmonized Society with Nature,” and has promoted initiatives to minimize the difference between positive and negative impacts in its business activities.

The updated long-term environmental targets introduce a new target of achieving nature resilience by 2050, which not only focuses on minimizing impacts on natural capital but also addresses mitigating damage from natural disasters and supporting faster recovery. Toward this target, Hitachi aims to reduce water usage by 10% and to advance impact assessments on and from nature by 2030.

## Nature resilience approaches

To preserve the ecosystem and achieve a harmonized society with nature and continue to enjoy nature’s benefits, Hitachi has consistently set targets to

minimize our impact on natural capital. Using the Life-cycle Impact Assessment Method based on Endpoint Modeling (LIME2)\*1, we are identifying the negative impacts associated with our business activities.

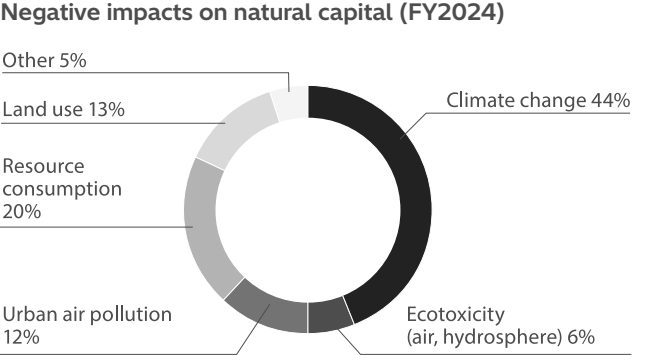
Results from fiscal 2024 showed approximately 44% of Hitachi’s negative impacts were related to climate change. For this reason, we are actively promoting initiatives aimed at decarbonization as part of our measures against climate change. In addition to minimizing negative impacts on natural capital, we are also working on efforts to expand positive impacts. An example of such activities includes promoting social contribution activities, such as forest conservation, and the area covered by forest conservation activities conducted in fiscal 2024 reached 0.7 km².

Furthermore, with regard to nature resilience efforts, while keenly monitoring international initiatives and regulatory trends such as the Conference of the Parties to the United Nations Convention on Biological Diversity (CBD-COP) and the Taskforce on Nature-related Financial Disclosures (TNFD), we are working

to conduct impact assessments that evaluate the mutual interactions with nature across the entire value chain for major products and projects.

In addition, we will continue efforts aimed at reducing water use—a form of natural capital. By strengthening water intake management, implementing leak prevention measures, recirculating cooling water, and wastewater purification in manufacturing processes and domestic water use at manufacturing sites, our target is to reduce water use per unit of activity by 10% by fiscal 2030, compared to the level in fiscal 2019.

\*1 IDEAv2, a widely used inventory database in Japan, is utilized for conducting LCAs to calculate negative impacts

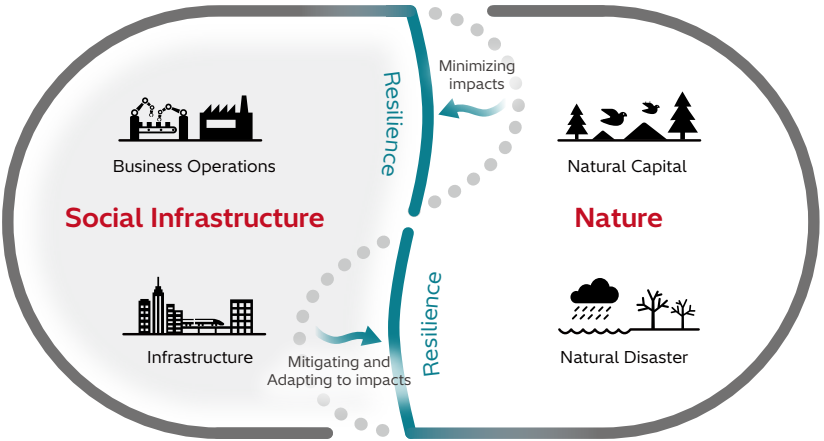


Note: Calculated from LIME2 by using IDEAv2

## Support for Business for Nature’s Call to Action

In 2020, the global Business for Nature coalition issued a Call to Action\*1, encouraging policy makers around the world to adopt policies to “reverse nature loss in this decade.” Hitachi Ltd. supports and has signed the Call to Action.

\*1 The Call to Action states that healthy societies, resilient economies, and thriving businesses rely on nature. The statement urges governments to adopt policies to reverse the loss of nature, and calls for the protection, restoration, and sustainable use of natural resources



**Support for 30 by 30 Alliance for Biodiversity lead by Ministry of the Environment, Japan**

The 30 by 30 target aims to conserve or protect at least 30% of the land and sea areas in Japan by 2030 to achieve nature positive goals of curbing biodiversity loss and encouraging restoration by the same year.



The 30 by 30 Alliance for Biodiversity was established to promote achievement of the 30 by 30 target agreed to at the G7 Summit 2021 and consists of governments, companies, and NPOs. The goals of the alliance are to expand national parks, register “satochi-satoyama\*1” landscapes and corporate forests (areas of biodiversity preservation planned by various organizations) in international databases, pursue conservation in such areas, and share information concerning these activities.

Hitachi, Ltd. supports this mission and is actively engaged in related initiatives.

\*1 An area consisting of farmlands, irrigation ponds, secondary forest, plantation forest, and grasslands surrounding human settlements that is located between more natural, deep mountainous areas and urban areas of intensive human activities

**Natural Symbiosis Sites certified by the Ministry of the Environment**

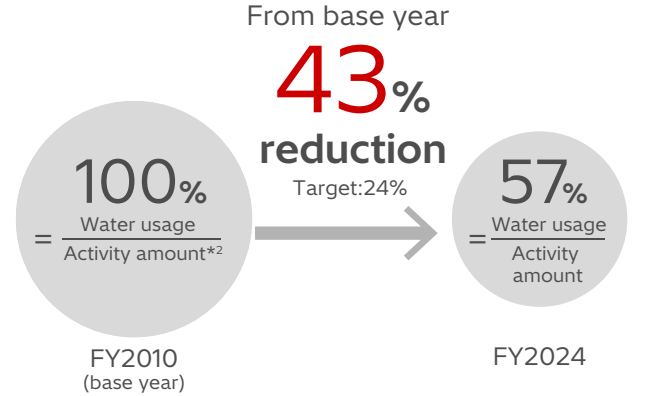
Natural Symbiosis Sites are one of the initiatives by the Ministry of the Environment aimed at achieving nature positive goals. Starting in fiscal 2023, the ministry began recognizing areas where biodiversity is conserved through private sector initiatives, such as corporate forests, “satochi-satoyama,” and urban green spaces managed by private entities, where biodiversity conservation is actively pursued, as Natural Symbiosis Sites. These recognized areas, excluding overlaps with protected regions, are registered as Other Effective area-based Conservation Measures (OECM) in the international database, and contribute to achieving the 30by30 target.

In fiscal 2023, Hitachi had three sites recognized as Natural Symbiosis Sites.

## Management of water use at business sites

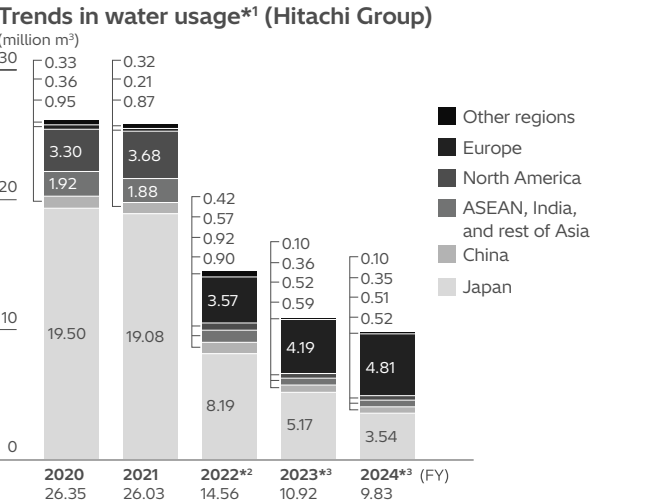
For fiscal 2024, which was the final year of the 2024 Environmental Action Plan (fiscal 2022–2024), we set a target reduction of 24% (compared with a base year of fiscal 2010) in water use per unit for manufacturing processes and general daily usage in manufacturing sites. We achieved an improvement rate of 43%, surpassing the target. We reduced the volume of water used by 8.2 million m<sup>3</sup>, equivalent to a reduction of 47% compared with the base year. Our measures to reduce water usage included strengthening water intake management by installing flowmeters, installing water pipes above ground to prevent leakage, recirculating cooling water, and reusing purified waste water.

### 2024 Environmental Action Plan management values reduction in water usage\*1 per unit (Hitachi Group)



\*1 Total amount of water used in manufacturing processes and general daily usage at manufacturing sites

\*2 Activity amount is a value closely related to water use at each business site (for example, output, sales, and production weight)



\*1 Includes manufacturing processes and daily usage at manufacturing sites, and daily usage at non-manufacturing sites

\*2 In fiscal 2022, the amount decreased significantly due to deconsolidation of materials-related and construction machinery-related companies. From fiscal 2022, the above figures include water usage by an energy-related company and auto parts-related companies which have been included in the scope of consolidation since fiscal 2020

\*3 Fiscal 2023, decreased due to deconsolidation of auto parts-related companies

Company name	Site name	Location	Site overview
Hitachi, Ltd.	Kokubunji Site: Kyoso-no-Mori	Kokubunji City, Tokyo	Primary vegetation includes dogwood, sawara cypress, and konara oak. The site features a variety of natural environments, such as springs, ponds, natural forests, bamboo groves, and grasslands, creating a diverse ecosystem that supports a wide range of species.
	Hitachi Group Mito Business Sites	Hitachinaka City, Ibaraki Prefecture	The naturally occurring tall red pine trees have been preserved in a way that closely resembles the original forest at the time the works were established. Additionally, in the greenbelt known as the Sagiyama area, large forests, primarily consisting of Japanese bay and hackberry trees—vegetation believed to represent the area’s potential natural vegetation—are being systematically maintained and managed.
Hitachi High-Tech	Woodlands of Hitachi High-Tech Science	Oyama Town, Sunto District, Shizuoka Prefecture	Efforts are being made to manage and conserve the green spaces within the site to create a forest rich in biodiversity. Initiatives include 1. Maintaining and restoring green spaces 2. Converting artificial forests into natural forests 3. Restoring the Japanese pampas grassland 4. Eradicating invasive plant species



## Addressing risks related to water and biodiversity

Since Hitachi’s exposure to water risks in businesses varies by region and type of business, it is important to identify respective risks and implement countermeasures. To facilitate risk response, we compiled the procedures for water risk identification and countermeasures under the Water Risk Guidelines\*1, which are followed by approximately 110 major manufacturing sites worldwide classified as Category A

in our environmental management classification.

We use our ESG Management Support System (ESG-MSS) and various globally recognized tools for water risk assessment, in addition to region-and operation-specific water risk identification checklists. We use these data and checklists to identify and evaluate the water risks annually for each business unit, Group company by country and region, and for the entire Group.

In recent years, the TNFD, an international information disclosure framework, has indicated that the perspective

of biodiversity is also important in identifying and assessing water risks. Therefore, we conduct risk assessments specific to biodiversity by identifying and analyzing specific biodiversity-related data using tools such as the Water Risk Filter\*2 and the water risk identification checklist.

Based on the results of these assessments, we pursue more effective risk reduction activities related to water risk and biodiversity.

\*1 Prepared with reference to the guide for Setting Site Water Targets Informed By Catchment Context created by members of the UN Global Compact, the CEO Water Mandate, the Pacific Institute, WRI, WWF, and other global institutions with the aim of helping companies set effective site water targets  
\*2 A water risk assessment tool developed by the World Wide Fund for Nature (WWF) and the German Development Finance Institution (DEG)

### Actions taken in FY2024

In fiscal 2024, we assessed the water and biodiversity risks in each region and identified water risk as high at a total of 14 business sites operating in China, India, Egypt, Vietnam, and Brazil from among manufacturing sites classified as Category A in our environmental management classification. Additionally, 10 business sites operating in China, India, Egypt, and the United States of America were identified as having high risk related to biodiversity.

As a result of evaluating the operational water and biodiversity risks, all business sites, including the previously identified high-risk business sites, were found to have medium-high or lower operational risks related to water and biodiversity risks.

For this reason, Hitachi believes that none of our business sites faces overall high water or biodiversity risks.

Water usage at the 14 business sites with high regional water risks was 0.6 million m³, accounting for about

7% of the 9.2 million m³ of water used in Hitachi’s main manufacturing processes.

### Understanding water risks in the supply chain

Hitachi believes it is important to understand the water risks faced by procurement partners to ensure stable procurement of parts and products.

In fiscal 2024, we used the Aqueduct and the Water Risk Filter to identify regional water risks among companies assessed by EcoVadis (about 4,000 companies selected based on transaction history and country of operation.) About 1,800 of these partners responded to our survey regarding environmental initiatives, and we shared the results with relevant internal departments. Moving forward, we will strive to understand the water risks of our procurement partners further by expanding the scope of the survey.

## Managing chemical substances

Hitachi believes that management and reduction of chemical substances such as volatile organic compounds (VOCs), one of the causes of urban air pollution, is important not only for reducing discharge of pollutants into the air and water but also for managing chemical substance usage properly to minimize our impact on natural capital.

Based on this belief, Hitachi formulated the Environment and CSR-Based MONOZUKURI Standards to manage chemical substances at all stages of its operations—from design, development, and procurement, to production, quality assurance, and shipping. We divide chemical substances in our products into two categories: prohibited substances and controlled substances. These categories are managed separately to ensure compliance with legal

Identification of Water Risks Using the ESG Management Support Service (ESG-MSS)

	Regional water risks		Operational water risks	
		Risks related to biodiversity		Risks related to biodiversity
Number of evaluation items related to water resources, water quality, water damage, regulations, reputational risk, etc.	Approximately 50	42 (included in the left column)	Approximately 70	13 (included in the left column)
Risk identification method	Various water risk assessment tools, including Aqueduct*1, Water Risk Filter, and Flood Hazard Map of the World*2, are combined to identify risks based on address information	Water Risk Filter	Risks identified using information such as a business site’s volume of water intake and effluents discharged and water-related initiatives	Identifying risks related to biodiversity based on information on water intake and wastewater discharge at business sites
Risk assessment	Assessed using a five-level scale*3 from low to extremely-high	Assessed using a five-level scale*3 from low to extremely-high	Assessed using a five-level scale*3 from low to extremely-high	Assessed using a five-level scale*3 from low to extremely-high
Risk results	High at 14 sites	High at 10 sites	Low to low-medium at all sites, including the 14 to the left	Low to medium-high at all sites, including the 10 to the left
No business sites face an overall high-water risk.				

\*1 A water risk assessment tool developed by the World Resources Institute (WRI) \*2 Flood risk maps published by the European Union  
\*3 Five-level scale: low, low-medium, medium-high, high, extremely-high

and regulatory requirements in export destinations. With regard to chemical substances used in our business operations, we manage them in three categories: prohibited, reduced, and controlled. We also provide education on laws, regulations, and risk assessment to chemical substance handlers and managers to further reduce risks.

### Managing chemical substances in our products

Hitachi defines the chemical substances in our products that require management as Hitachi Group voluntarily controlled chemical substances. As a rule, we use the stringent EU standards as our baseline for identifying and managing these substances, regardless of export destination, industry, or application.

We review and update the list of managed substances and management levels in accordance with revisions to the EU’s REACH\*1 and other regulations. In principle, we designate substances as Hitachi Group voluntarily controlled chemical substances at least six months before they are officially regulated.

\*1 REACH: The European Union regulation concerning Registration, Evaluation, Authorisation, and Restriction of Chemicals

Classification examples

Prohibited substances (Level 1)

Substances for which use in products (including packaging) is generally prohibited in Japan and overseas, but which may still be present in procured items.

Controlled substances (Level 2)

Substances for which tracking and management are required, as well as substances that should be considered for recycling or appropriate disposal.

### Managing chemical substances in our business operations

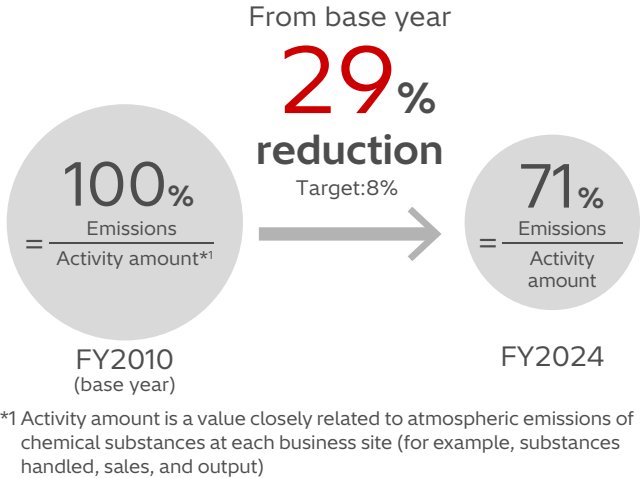
Hitachi is working to reduce emissions of chemical substances from factories and other sites through enhanced management, including expanding the number and scope of chemical substances subject to reduction\*1.

We translate reduction case studies into English and Chinese, and share them globally within the Hitachi Group. We measure and manage emissions\*2 of sulfur oxides (SOx) and nitrogen oxides (NOx), and biochemical oxygen demand (BOD) and chemical oxygen demand (COD) in accordance with local laws and regulations, and continue efforts to further reduce emissions.

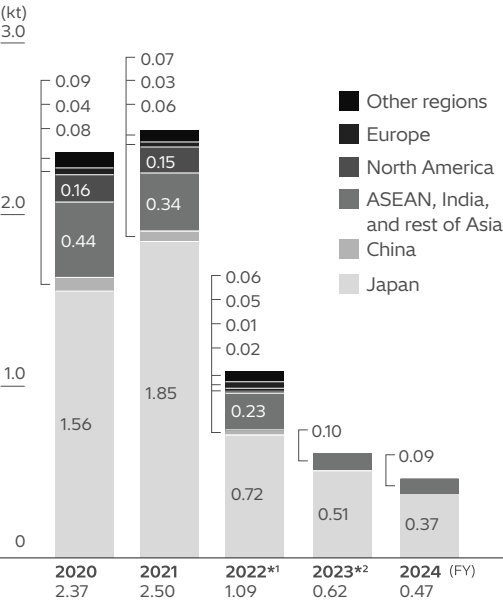
In fiscal 2024, the final year of the 2024 Environmental Action Plan (fiscal 2022–fiscal 2024), we set a target of an 8% improvement in atmospheric chemical substance emissions per unit compared to the base year of fiscal 2010, and achieved a 29% improvement, surpassing the target. To reduce the emissions, we switched from paints containing VOCs to water-soluble and powder paints, expanded their application, and implemented process changes in painting and washing operations.

\*1 Chemical substances subject to reduction: A total of 50 substances selected based on hazard and atmospheric emissions. Approximately 100% of substances in fiscal 2024 were classified as VOCs  
\*2 Emissions: Calculated using site-specific data (measured values, exhaust volume, content rate, water effluents discharged, etc.)

2024 Environmental Action Plan management values  
reduction rate in atmospheric emissions of chemical substances per unit (Hitachi Group)



Trends in reducing atmospheric emissions of chemical substances (Hitachi Group)



Note: Atmospheric emissions of VOCs and other chemical substances are calculated from the content rate included in the materials, etc.

\*1 In fiscal 2022, amount decreased due to deconsolidation of the materials-related and construction machinery-related companies. From fiscal 2022, the above figures include atmospheric emissions of chemical substances from auto parts-related companies which became a consolidated subsidiary in fiscal 2020

\*2 In fiscal 2023, the amount decreased due to the deconsolidation of auto parts-related companies

Efforts to conserve ecosystems

At Hitachi, we seek to reduce negative impacts on natural capital caused by our business activities and provide products and services that contribute to ecosystem preservation, as well as engage in social contribution activities for nature conservation. In the 2024 Environmental Action Plan, we have worked to minimize negative impacts on natural capital through these initiatives.

In addition, Hitachi has established an Ecosystem Preservation Activities Menu citing specific activities to preserve the ecosystem. This chart includes activities that are difficult to quantify but are nonetheless important, such as the protection of rare species and incorporating biodiversity considerations into investment decision criteria. Each business site sets goals and implements initiatives based on the Ecosystem Preservation Activities Menu, thereby contributing to the realization of a nature positive.

Ecosystem preservation activities menu

	Category	Activities	No. of menu items
Business sites	Production	Reduce the use of resources that cannot be reused	4
	Transportation	Use packaging that takes the ecosystem into consideration	7
	Collection, disposal, and recycling	Reduce hazardous materials in products	2
	Product planning, development, and design	Estimate the impact of R&D on biodiversity during the product life cycle and implement mitigation measures, if needed	3
	Site management	Use native species and establish biotopes	17
	Water use	Use rain water	1
Value chain	Investment and acquisition	Confirm the impact on biodiversity when investing in or acquiring a business, and implement measures to minimize such impacts	1
	Market entry and expansion	Include biodiversity as an investment benchmark	1
	Business development	Develop products and services to purify water, air, and soil and expand such businesses	1
	Procurement	Procure paper and other office supplies with a bias for products that take biodiversity into consideration	17
	Transportation	Implement ballast water measures during marine transportation	2
	Sales	Expand the sales of products that take biodiversity into consideration	9
	Collection, disposal, and recycling	Reuse and recycle components	7
	Entire value chain	Pursue the use of renewable energy	1
Community	Engagement	Promote employee activities outside the company	3
	Social contribution	Conduct desert greening and afforestation activities	12
Water use that takes watershed ecosystems into consideration	Intake	Observe and collect biota information (impact on ecosystem depending on intake volume)	14
	Discharge	Establish biota management indicators and make observations (species and numbers of inhabiting organisms)	14