

Environmental

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Advancing Our Environmental Vision and Long-Term Environmental Targets

Environmental Governance

Achieving a Decarbonized Society

Achieving a Resource-Efficient Society

Achieving a Harmonized Society with Nature

Efforts to Achieve a Harmonized Society with Nature

Managing and Reducing Chemical Substances

Preserving Ecosystems

Environmental Data

Achieving a Harmonized Society with Nature

Efforts to Achieve a Harmonized Society with Nature

Approach

GRI 2-13/2-24/3-3/303-1/303-2/303-5

Our social lives and economic activities depend on numerous benefits (ecosystem services) bestowed by nature, and the loss of biodiversity is becoming recognized as a major economic risk. Nature Risk Rising, published by the World Economic Forum in 2020, notes that the creation of approximately \$44 trillion of economic value generation in economic value, or more than half of global GDP, depends on natural capital and ecosystem services at risk due to biodiversity destruction.

Against this backdrop, the Kunming-Montreal Global Biodiversity Framework, adopted at the 15th Conference of the Parties to the United Nations Convention on Biological Diversity (CBD-COP15) held in Montreal, Canada, in December 2022, established 23 global targets with the aim of implementing urgent measures to halt and reverse biodiversity loss in order to put nature on the path to recovery by 2030. Of particular important to business enterprises are Target 3, which is to conserve at least 30% of terrestrial and water areas through protected areas and OECM*¹ (30 by 30 target), and Target 15, which is to ensure that businesses, especially large corporations and financial institutions, assess and disclose risks related to biodiversity, dependencies and impacts on biodiversity, and measures to provide information required to consumers to promote sustainable consumption patterns.

In addition, with heightened interest in ESG investment and financing, a private-sector initiative is growing to require disclosure of biodiversity-related information. The Task Force on Nature-related Financial Disclosures (TNFD) established a disclosure framework for organizations to report and act on nature-related risks with a view to shifting the flow of funds to nature-positive activities. This framework requires companies and financial institutions to assess and disclose risks and

opportunities related to natural capital and biodiversity in an appropriate manner.

To achieve a harmonized society with nature, as well as to reflect related global trends, Hitachi assesses and discloses biodiversity-related risks, the dependence, and the impact of business activities overall on biodiversity.

*1 OECM: Areas other than protected areas that contribute to biodiversity conservation. Acronym for Other Effective area-based Conservation Measures

Initiatives to Minimize Impacts on Natural Capital

Activities

Materiality

To preserve the ecosystem and achieve a society harmonized with nature to continue to enjoy nature's benefits, we established targets to minimize our impact on natural capital as part of our long-term environmental targets. We classify the emission of greenhouse gases and chemical substances into the atmosphere and the generation of waste materials in the course of our business activities as negative impact activities. Providing products and services that contribute to ecosystem preservation and undertaking activities to preserve biodiversity and ecosystems are categorized as positive impact activities. We are working to quantify and minimize the difference between positive and negative impacts by 2050.

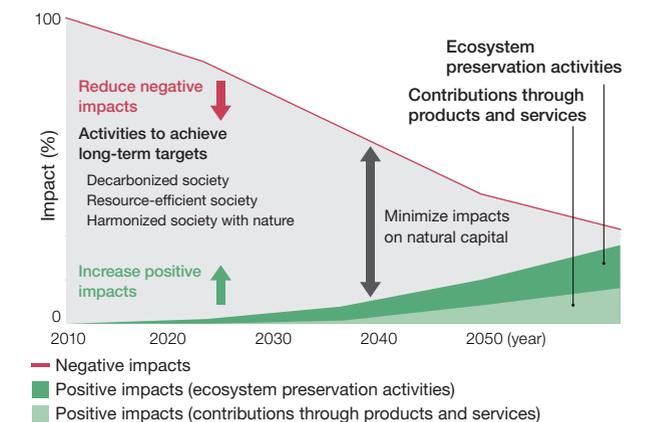
Hitachi identified the negative impacts that our business activities had on natural capital and evaluated these activities using version 2 of the Life-cycle Impact Assessment Method based on Endpoint Modeling (LIME2) and an inventory database (IDEA v2*¹), aiming to reduce such impacts. According to our estimates, approximately half of our negative impacts in fiscal year 2022 were related to climate change. With regard

to climate change, we pursue initiatives aimed at to create a decarbonized society. Regarding urban air pollution, and resource consumption, certain findings have come to light in impact assessments concerning raw materials procurement. To this end, we plan to accelerate the pace of efforts intended to achieve a resource-efficient society. To reduce our environmental load further and minimize our impact on natural capital, we will step up a wide range of activities that include increasing the energy efficiency of our products and services, improving factory efficiency, using resources more effectively, and managing chemical substances properly.

To expand positive impact, we engage in social contribution activities, such as forest conservation, and business activities that contribute directly to ecosystem preservation, such as building water treatment plants. We are also studying how to quantify the impact of these activities on the environment.

*1 IDEA v2: One of Japan's leading inventory databases required to implement LCAs for calculating negative impacts.

Timetable for Minimizing Impacts



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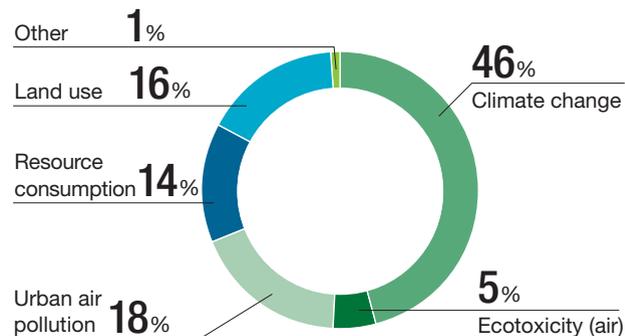
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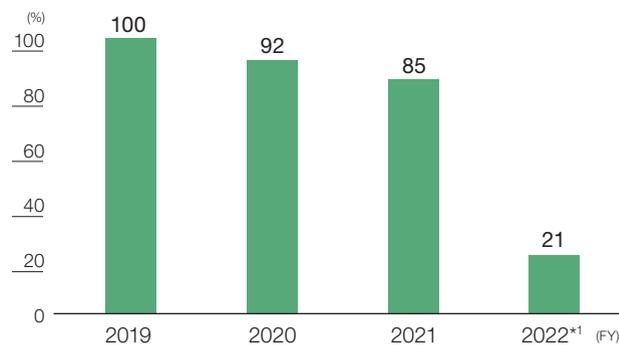
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Negative Impacts on Natural Capital (FY2022)



Note: Calculated from LIME2 by using IDEAv2

Negative Impacts on Natural Capital



*1 The Deconsolidation of materials- and construction-related companies resulted in a significant decrease.

We estimate the benefits gained through our forest conservation activities (flood prevention, water impoundment, water purification, soil loss prevention, and carbon fixation) on an ongoing basis using evaluation methods commonly used in forestry-related public works projects. We also collect data on forested areas targeted for conservation using the

Environmental Data Collection System (Eco-DS). this type of data is required to evaluate forest conservation efforts, and in fiscal 2022, we surveyed 0.31 km² of such forested areas.

[Scope of Negative Impact Calculations](https://www.hitachi.com/environment/data/method.html)
<https://www.hitachi.com/environment/data/method.html>

Signing the Call to Action Statement, Initiated by Business for Nature

In 2020, the global Business for Nature coalition issued a Call to Action*² statement. The aim was to encourage policy makers around the world to adopt policies to “to reverse nature loss in this decade.” Hitachi Ltd. agrees with this goal and has signed the statement.

*² 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.

[Business for Nature's Call to Action](https://www.businessfornature.org/call-to-action)
<https://www.businessfornature.org/call-to-action>

30 by 30 Alliance for Biodiversity Approved by Ministry of the Environment (MOE), 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

Addressing Risks Related to Water and Biodiversity

Approach Activities

Since Hitachi's exposures to water risks in businesses vary by region and the 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 Water Risk Guidelines*¹, which are followed by some 150 manufacturing sites around

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 landscapes and commercial 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 will work to advance related efforts. In August 2023 the Hitachi Kokubunji Site, *Kyouso-no-Mori*, was officially recognized by the government as a conserved area (an area where biodiversity conservation is pursued actively, and to be identified as OECMs).



[30 by 30 Alliance \(Japanese only\)](https://policies.env.go.jp/nature/biodiversity/30by30alliance/)
<https://policies.env.go.jp/nature/biodiversity/30by30alliance/>

GRI 303-1/303-2/303-5

the world that we classify as Category A in our environmental management classification.

*¹ Prepared with reference to 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. In fiscal 2021, we issued a revised version of Water Risk Guidelines reflecting the revised content of Water Risk Filter 6.0 and additional examples of measures.

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We use our Environmental Data Collection System (Eco-DS) 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 for each business unit and Group company by country and region, and for the entire Group once a year.

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.

Identification of Water Risks Using the Environmental Data Collection System (Eco-DS)

	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	5 (included in the left column)	Approximately 70	13 (included in the left column)
Risk identification method	Various water risk assessment tools, including Aqueduct*3, Water Risk Filter, Flood Hazard Map of the World*4, 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*5 from low to extremely-high	Assessed using a five-level scale*5 from low to extremely-high	Assessed using a five-level scale from low to extremely-high	Assessed using a five-level scale*5 from low to extremely-high
Risk results	High at 20 sites	High at 1 site	Low to medium-high at all sites, including the 20 to the left	Low to medium-high at all sites, including the 1 to the left
No business sites face an overall high water risk.				

*2 A water risk assessment tool developed by the World Wide Fund for Nature (WWF) and the German Development Finance Institution (DEG)

*3 A water risk assessment tool developed by the World Resources Institute (WRI).

*4 Flood risk maps published by the European Union.

*5 Five-level scale: low, low-medium, medium-high, high, extremely-high

Achievements in Fiscal 2022

In fiscal 2022, we assessed the water and biodiversity risks in each region and identified water risk as high at a total of 20 business sites operating in China, India, Mexico, Vietnam, and Egypt from among manufacturing sites classified as Category A in our environmental management classification. Additionally, one business site operating in Czech was identified as having high risk related to biodiversity.

As a result of evaluating the operational water and biodiversity risks, all business sites, including the 21 business sites identified earlier, were found to have low to medium-high operational risks related to water and biodiversity risks.

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

Water usage at the 20 business sites with high regional water risks was 1.1 million m³, accounting for about 8% of the 14.1 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 2022, we used the Aqueduct and the Water Risk Filter to identify regional water risks for about 600 of our environmental focus partners of fiscal 2021 (about 1,000 companies selected, accounting for 70% of transaction value). 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.

P.108 Responsible Procurement

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Managing and Reducing Chemical Substances

Managing Chemical Substances

Approach

Hitachi believes that the control and reduction of chemical substances such as volatile organic compounds (VOCs), one of the causes of urban air pollution, are 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 and development, procurement, and from production to quality assurance and shipping. We divide chemical substances in our products into two categories: prohibited substances and controlled substances. These categories facilitate separate management to respond to legal and regulatory frameworks at shipping destinations. With regard to chemical substances used in our business operations, we reduce risk by assigning three ranks to the use of such substances: prohibited, reduced, and controlled. We also educate chemical substance handlers and managers on laws, regulations, and proper risk assessment.

Managing Chemical Substances in Our Products

System

Activities

Hitachi designates the chemical substances in our products requiring management as Voluntarily Controlled Chemical Substances. We model the standards of the EU, where regulations are stringent, to identify and manage controlled chemical substances regardless of export destination, type of industry, or purpose of use.

We revise the list of managed substances and management levels when necessary, based on updates to the EU's REACH*¹ and other regulations. Our aim is to add substances to our list of Voluntarily Controlled Chemical Substances six months before such substances are regulated officially. For example, we revised the list in accordance with the new regulation of perfluorohexanesulfonic acid (PFHxS), their salts, and PFHxS-related substances as part of the POPs Convention*², which will be effective from November 2023.

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

*2 POPs Convention: Stockholm Convention on Persistent Organic Pollutants.

[🔗](https://www.hitachi.com/environment/data/chemical.html) Voluntarily controlled chemical substances in Hitachi Group products
<https://www.hitachi.com/environment/data/chemical.html>

Classification Examples

Prohibited Substances (Level 1)

Substances for which use in products (including packaging) is generally prohibited inside and outside Japan, but which might be found in products from suppliers.

Controlled Substances (Level 2)

Substances we are required to track and manage and substances requiring attention for recycling or appropriate disposal methods.

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Managing Chemical Substances in Our Business Operations

System	Activities
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Hitachi cuts emissions of chemical substances from factories and other sites through stricter levels of management, including expanding the number and scope of chemical substances subject to reduction*1.

We translate case studies for reduction into English and Chinese, sharing these cases globally among Hitachi Group companies. We also follow legally prescribed procedures in measuring and managing emissions*2 of sulfur oxides (SOx) and nitrogen oxides (NOx), measurements for which are required under the laws and regulations of our business site locations. At the same time, we continue efforts to restrict emissions further.

We reference Japan's Pollutant Release and Transfer Register (PRTR) Law*3 in Group-wide monitoring in Japan of chemical substances released into the atmosphere or into public waters, removed outside our plants as waste, or discharged into sewage systems. We report the results to local governments for each office or plant. Although certain substances are exempt from reporting due to small quantities, our policy is to aggregate and manage data on the handling, emission, and transfer of all PRTR substances totaling 10 kilograms or more per year.

*1 Chemical substances subject to reduction: A total of 50 substances selected in terms of hazard and atmospheric emissions. Approximately 100% of substances in fiscal 2022 results were classified as VOCs.

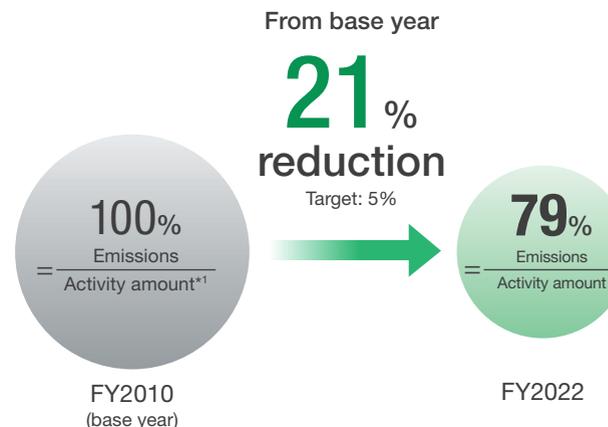
*2 Emissions of SOx and NOx: Calculated using data by business site (measured values, exhaust volume, content rate, etc.).

*3 PRTR Law: Act on the Assessment of Releases of Specified Chemical Substances in the Environment and the Promotion of Management Improvement

In fiscal 2022, which was the first year of the Environmental Action Plan for 2024 (fiscal 2022–fiscal 2024), we achieved a reduction rate of 21% toward the target of reducing atmospheric emissions of chemical substances per unit by 5% compared with a base year of fiscal 2010. To reduce the emissions, we are switching from paints containing VOCs to water-soluble and powder paints, expanding the use of said paints, while altering the painting and washing processes.

Environmental Action Plan for 2024 Management Values

Reduction Rate in Atmospheric Emissions of Chemical Substances per Unit (Hitachi Group)

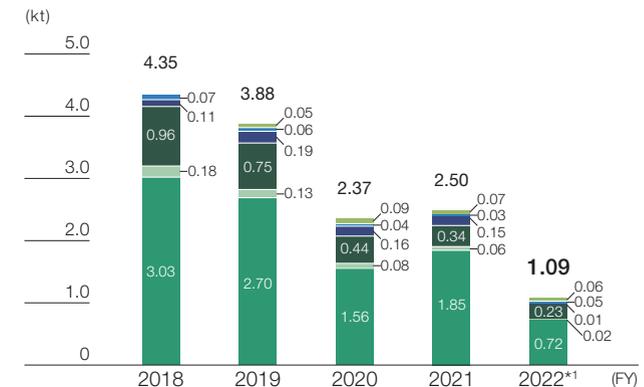


*1 Activity amount is a value closely related to atmospheric emissions of chemical substances at each business site (for example, substances handled, sales, and output)

GRI 305-7

Reducing Atmospheric Emissions of Chemical Substances (Hitachi Group)

Japan China ASEAN, India, and other Asian regions North America Europe Other regions



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

*1 Decreased significantly due to the deconsolidation of the materials and construction machinery companies.

P.063 Environmental Load from Operations

Case Studies of Reducing Chemical Substances in Our Business Activities

<https://www.hitachi.com/environment/casestudy/index.html#case05>

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Efforts to Conserve Ecosystems

Approach	Activities	GRI 304-3
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At Hitachi, we seek to reduce negative impacts on natural capital caused by business activities and to promote positive impacts, including social contribution activities to protect nature and products and services that help preserve the ecosystem. In this way, we intend to minimize our impact on natural capital by fiscal 2050.

Hitachi created an Ecosystem Preservation Activities Menu citing specific activities preserve the ecosystem. This chart including activities that are difficult to quantify but are nonetheless important, such as the protection of rare species and efforts to make biodiversity a benchmark when making investment decisions. Each business site sets goals and pursues initiatives based on the Ecosystem Preservation Activities Menu to create a harmonized society with nature.

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 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

 Case Studies of Promoting Ecosystem Preservation
<https://www.hitachi.com/environment/casestudy/index.html#case06>