

# Hitachi High-Tech Corporation TNFD Report

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 **Hitachi High-Tech Corporation**

Issued: October 2024

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## Hitachi High-Tech Group's Environmental Initiatives

Based on our Basic Philosophy and Guidelines for Environmental Action, the Hitachi High-Tech Group aims to achieve the long-term environmental targets shared by the entire Hitachi Group in the Hitachi Environmental Innovation 2050 and to resolve the materiality of the Hitachi High-Tech Group. Therefore, we aim to “realize a decarbonized society,” “realize a recycling-oriented society,” and “realize a society in harmony with nature.”

Although there is a growing sense of urgency worldwide regarding natural capital, including biodiversity, our business activities benefit from natural capital (ecosystem services) and have some impact on the environment. As the degradation of natural capital escalates, the possibility of increased risk in the Group's value chain rises. On the other hand, contributing to nature positivity through our business activities will lead to sustainable growth, so the Group is also strengthening its efforts to address natural capital.

To this end, the Hitachi High-Tech Group endorses the principles of the Taskforce on Nature-related Financial Disclosures (TNFD)\* and joined the TNFD Forum in April 2024 and will now disclose information based on the TNFD disclosure framework.

This report is prepared with reference to the latest TNFD recommendations, Version 1.0, released in September 2023.

Below is an overview of the items disclosed in this report.

### ■ Disclosed information based on the TNFD framework for disclosure

#### 1. General Requirements (Hitachi High-Tech Group's Relationship with Nature)

Prior to the disclosure, we will explain the relevance of the TNFD to the Group's materiality, the scope of this disclosure and the locations with nature-related issues.

#### 2. Governance

The Hitachi High-Tech Group has a system of environmental management promotion for the purpose of strengthening our environmental management and promoting effective environmental activities. This page describes the specific structure and process for addressing materiality and nature-related issues in our strategy. We also explain the Group's human rights policy and stakeholder engagement based on that policy.

#### 3. Strategy

Regarding direct operations and the main suppliers in the Group's value chain, the results of the assessment of risks and opportunities identified in the LEAP approach as well as the identified priority locations and nature-related opportunities in our business activities are presented.

#### 4. Risk and Impact Management

This section explains the Group's risk management process and management structure.

#### 5. Metrics and Targets

In the Hitachi High-Tech Group, we manage our efforts with metrics and targets which are defined in the Environmental Action Plan and updated every three years. These are aligned with the Environmental Vision and the long-term environmental targets in the Hitachi Environmental Innovation 2050. Additionally, regarding metrics and targets on climate-related and nature-related risks and opportunities, we measure and manage through our Environmental Action Plan, which is updated every three years.

\*What is the Taskforce on Nature-related Financial Disclosures (TNFD)?

It refers to the so-named organization and to the framework that it provides for companies and organizations to disclose information and take action on how changes in the natural environment and biodiversity affect their business performance.

Disclosure using the framework is intended to help shift global financial flows from nature-negative to nature-positive outcomes.

## 2-1. Environmental Management Promotion Organization

With the aim of strengthening environmental management and promoting effective environmental activities throughout the Hitachi High-Tech Group, we have established the organization to promote environmental management.

The Environmental Committee strengthens the Group’s governance in environmental field and shares information by formulating strategy for the environmental field in general as well as taking steps to minimize environmental risks and risks related to chemical substances contained in products. We are also building the organizational structure to implement more finely-grained administration of our environmental activities as a whole. Under this committee, we have established two subcommittees. The first is the Eco Management Factory Subcommittee, which consists of the people in charge of directly promoting environmental activities at domestic manufacturing sites and environmental managers. The other is the Eco Management Office Subcommittee, which consists of members appointed from each site involved in activities to reduce the risk of chemical substances contained in products and environmental activities in commercial transactions at sales and service sites.

The Environmental Committee is chaired by the environmental strategy manager and monitors the progress of all environmental activities. The committee discusses and deliberates on issues related to strategies and measures after receiving a report on the evaluation of dependencies and impacts on natural capital and the assessment of business risks and opportunities. In addition, we classify nature-related risks that may affect our business operations into priority issues and ongoing monitoring based on risk assessment and promote measures to deal with them. The Committee makes resolutions on matters that affect business operations or are taken up as internal control issues and reports them to the Internal Control Management Committee.

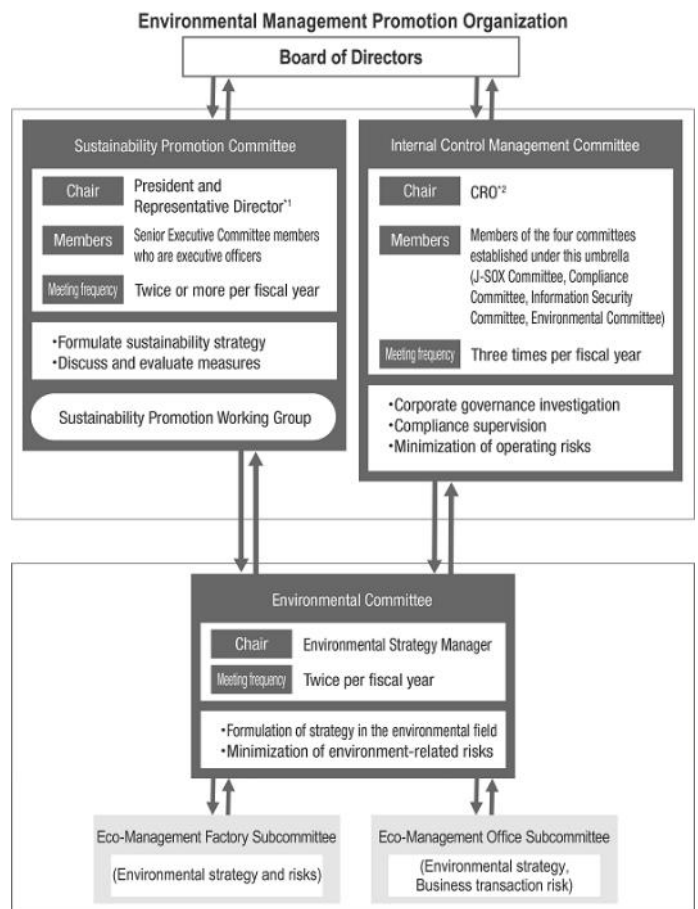
## 2-2. Initiatives and Promotion Process for Materiality

Contributing to a Sustainable Global Environment is one of the materiality for the Group. We formulate proposals and plans for policies and specific plans for (1) Realize a decarbonized society, (2) Realize recycling-oriented society, and (3) Realize a society in harmony with nature. To achieve those, we evaluate performance from each site and use the findings for further contributions. In addition, important matters relating to environmental strategy are discussed by the Sustainability Promotion Committee, which is chaired by the President and Representative Director and has directors and executive officers on its members.

## 2-3. Initiatives for Strategies for Nature-related Issues

The Sustainability Promotion Committee meets at least twice a year to discuss the formulation and implementation of our sustainability strategies, including environmental strategies that include nature-related risks.

Important matters discussed by the Sustainability Promotion Committee are reported to the Board of Directors at least once a year, and the feedback is utilized in sustainability promotion tasks.



\*1 President and Representative Director: The President and Representative Director serves as Chair of the Sustainability Promotion Committee, which has senior management as its members and has the duty of working to promote activities related to sustainability, including climate-related matters.

\*2 CRO: The Chief Risk Management Officer (CRO) is the general manager in charge of risk across the entire company, and as Chair of the Internal Control Supervisory Committee is responsible for minimizing operating risks, including environmental risks, and for establishing an emergency response system.

### 2-4. Human Rights Policy

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In April 2014, the Group formulated the Hitachi High-Tech Group Human Rights Policy. This policy clearly states that we support the International Bill of Human Rights and the International Labor Organization (ILO) Declaration on Fundamental Principles and Rights at Work. It stipulates that the Group will conduct human rights due diligence\*<sup>1</sup> and provide appropriate education based on the UN Guiding Principles on Business and Human Rights and will comply with the laws and regulations of the regions and countries where we do business. Furthermore, it states that where there is a conflict between internationally accepted standards of human rights and domestic law, we will pursue the approach that respects international principles of human rights. Based on this policy, we respect not only the human rights of Group employees, but also those of all stakeholders through the Group's business activities and our products and services.

Based on the aforementioned human rights policy, the Group recognizes the importance of the traditional territories, knowledge, and customs of indigenous peoples and local communities as a response to the global challenge of halting and restoring nature loss, particularly with regard to nature-related dependencies, impacts, risks, and opportunities. If stakeholders (such as local residents and indigenous peoples with rights to natural resources and lands) whose human rights may be exposed to risks by our business activities are identified, we recognize them as rights holders who can have an appropriate standard of living and a sustainable environment, and we respect their human rights.

[Hitachi High-Tech Group Human Rights Policy \(PDF format, 161 KB\)](#)  [Hitachi Group Code of Conduct \(Website\)](#)

### 2-5. Engagement with Stakeholders

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Our Group aims to be a successful enterprise trusted by all our stakeholders and contributing to social progress through business activities that emphasize value creation through high-tech solutions. We are committed to open, transparent, and reliable business practices. As we continue to grow, we will value the environment and strive to build a prosperous community, fulfilling our social responsibility and contributing as a corporate citizen with passion and pride in our work.

Our Group, we are working to promote communication with our stakeholders through information disclosure regarding environmental activities and staff participation in volunteer activities, etc. We consider it important to give our stakeholders an even more readily understandable explanation than before of the effects our own business activities have on the environment. We also think it crucial that we earn an understanding and empathetic response from stakeholders by continuing the cumulative two-way communication of our employees' volunteer activities.

Our Group is working to promote communication with our stakeholders through information disclosure by issuing Materiality Book\*<sup>2</sup> and disclosing environmental information online, allowing business site visits and observations, and responding to external surveys. In addition, environmental sections are created during the Naka Area Midsummer Festival and the Hitachi High-Tech Science Fuji Oyama Works Summer Festival (for both events, the business sites are opened to the public to deepen relationships with local residents). At the environmental section, we deepen relationships through introducing our environmental conservation activities in this area and conduct an environment quiz.

\*1 Human rights due diligence: Involves identifying, assessing, and responding to business-related human rights impacts, taking measures to prevent, mitigate, and remedy negative impacts, then continuously verifying and disclosing the effectiveness of these measures.

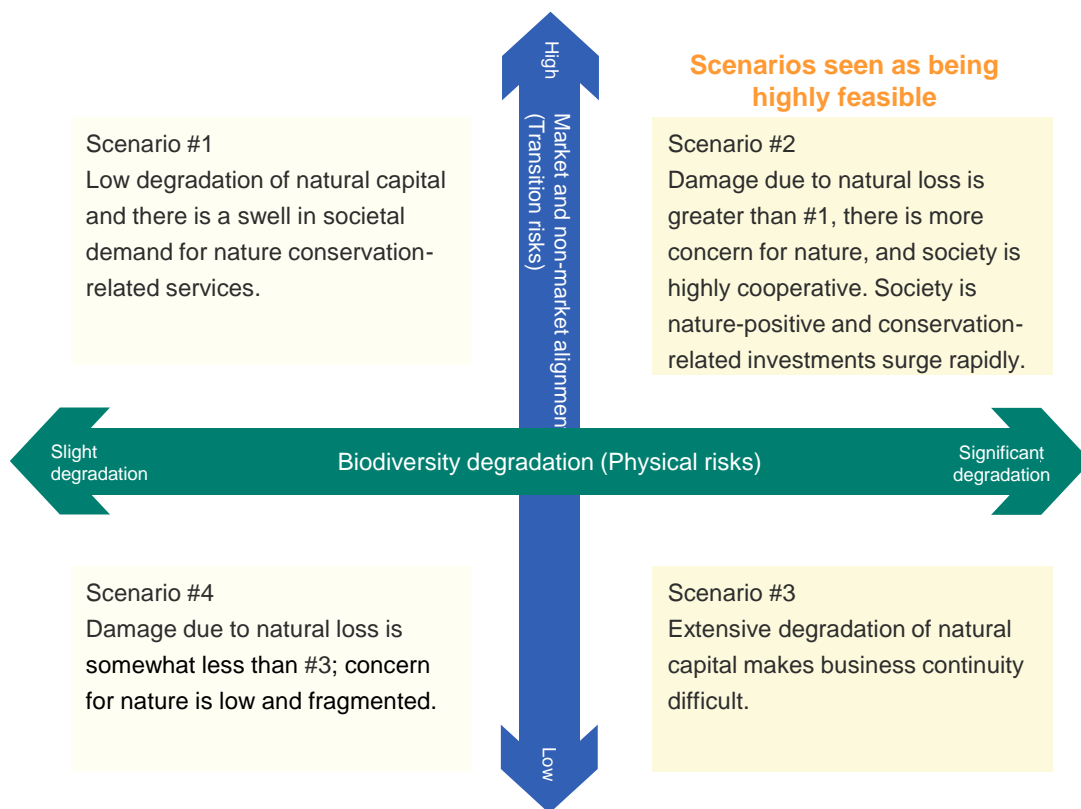
\*2 [Materiality Book \(Website\)](#)

3-1-1. Scenario Analysis

As part of our efforts to identify risks and opportunities, we have conducted scenario analyses.

Four scenarios were created based on different degrees of transition and physical risks, with two of the scenarios (Scenario #2, #3) taking into account consistency with the TCFD being selected: A 1.5 °C scenario and a 4 °C scenario.

For each scenario, we used the IPCC Sixth Assessment Report (AR6) as a reference, and based on climate change and socioeconomic scenarios, we conducted an analysis of seven forces based on the five forces of the threat of new entrants, bargaining power of sellers, bargaining power of buyers, threat of alternative goods and services, and competitive rivalry, and the additional two forces of government, and investors and finance, which are strongly connected to climate change.



Anticipated future environment		
	1.5 °C scenario	4 °C scenario
	Scenario #1 / #2	Scenario #3 / #4
TCFD	IEA NZE 2050 SSP1-1.9	IEA STEPS IEA CPS SSP5-8.5
TNFD	<p>Moderate degradation of nature.</p> <p>#1: High concern for and positivity toward nature. Tighter nature-related regulations. (2050-2100)</p> <p>#2: High concern for and positivity toward nature. Tighter nature-related regulations. (Present-2050)</p>	<p>Extensive loss of nature and severe damage.</p> <p>#3: Environmental protection efforts given low priority. (2050-2100)</p> <p>#4: Environmental protection efforts given low priority. (Present-2050)</p>

**Scenario #2:**

Biodiversity is already degraded due to climate change resulting from rising temperatures. Even if the temperature increase is contained to 1.5 °C at the end of this century, the effects are already underway, with degradation of the natural environment in terrestrial, freshwater, and other areas shown in the moderate to high range due to increased physical risks from climate change.

This scenario is considered the most feasible if the most desirable human countermeasures are put in place in the future. (Present-2050)

**Scenario #3:**

Climate change measures have failed and natural capital is severely degraded. At the end of this century, we have reached a temperature increase of 4 °C or more and it is difficult to adapt. Human health outcomes are also at very high risk, with significant impacts expected in all natural areas. (2050-2100)

### 3. Strategy

## 3-1. Assessment of Risks and Opportunities

### 3-1-2. Identified Nature-related Risks and Opportunities

Using scenario #2 (P6) from our scenario analysis, anticipated risks were each quantified regarding their impact and possibility of occurrence and evaluated on a three-grade scale (large, medium, and small), and measures for their management were considered.

#### Risks expected to have an impact within the scope of the assessment

Category	Factors / Areas of impact (Main dependencies and impacts)	Description of risks [Financial impacts]	Time frame	Risk assess.	Risk management measures
Physical risks	Acute Changes in water quantity, quality, and temperature / Freshwater (Dependency: Water supply)	The Hitachi High-Tech Group uses water for cleaning and cooling precision parts and equipment, air conditioning, cleaning, and domestic water use, etc. The Group expects increased costs in responding to changes in water quantity and quality, as well as an impact on production volume, and in the worst case, the shutting down of operations. [Operating costs, decreased sales]	Short Medium Long	Medium	<ul style="list-style-type: none"> <li>Establish a FY2050 target of 50% improvement (vs. FY2010) in water use efficiency with interim targets set every 3 years; implement water conservation measures at each business site.</li> <li>Invest systematically to conserve water and prevent water leakage.</li> </ul>
	Acute / chronic Destruction of wastewater treatment facilities or discharge of contaminated water due to heavy rainfall or flooding / Freshwater, ocean (Dependency: Water flow maintenance; Impact: Water pollution)	Deterioration of freshwater ecosystems due to pollutants discharged by the organization or other stakeholders is expected. [Community compensation costs, contamination cleanup costs]	Short Medium Long	Large	<ul style="list-style-type: none"> <li>Disperse production activities among several directly operated factories as a BCP response.</li> <li>Invest systematically to reduce risk and prevent accidents.</li> </ul>
	Chronic Increase in extreme weather events due to GHG emissions and global warming / Atmosphere (Dependency: Mitigation of natural disasters; Impact: GHG emissions)	Inundation caused by natural disasters such as torrential rains and flood are expected to affect production activities. Such cases could cause restoration costs, delayed deliveries, and suspended operations. Delivery delays or shutdowns due to supply disruptions from suppliers are also possible. [Operating costs, decreased sales]	Long	Medium	<ul style="list-style-type: none"> <li>Disperse production activities among several directly operated factories as a BCP response.</li> <li>Do business with several supplier companies and sites.</li> </ul>
	Chronic Change in risk of decline or extinction of species / Terrestrial (Dependency: Reduction of noise, etc.; Impact: ecosystem use)	If there is a reduction in acoustic mitigation due to changes in vegetation caused by climate change, it will be necessary to address the increased cost of capital investment in soundproofing walls and the potential loss of reputation in surrounding neighborhoods. [Capital investment costs, neighborhood response costs]	Medium	Small	<ul style="list-style-type: none"> <li>Conduct regular inspections with self-imposed standards stricter than legal standards.</li> <li>Invest systematically to reduce risk.</li> </ul>
Transition risks	New regulations Nature-related regulations / Atmosphere, freshwater, ocean, terrestrial	When sales exceed thresholds regulated in a given area, the Group may be required to disclose information on the status of its biodiversity measures, along with the results of its assessment of its dependencies, impacts, risks, and opportunities. [Regulatory compliance costs, decreased sales if standards are not met]	Short Medium Long	Large	<ul style="list-style-type: none"> <li>Respond quickly to regulatory trends.</li> </ul>
	Lawsuits Social responsibility for adverse effects on natural capital / Atmosphere, freshwater, ocean, terrestrial	Deterioration of freshwater ecosystems due to pollutants discharged by the organization or other stakeholders is expected. [Community compensation costs, contamination cleanup costs]	Long	Medium	<ul style="list-style-type: none"> <li>Conduct regular inspections with self-imposed standards stricter than legal standards.</li> <li>Invest systematically to reduce risk and prevent accidents.</li> </ul>
	Markets Increased customer demand concerning natural ecosystems / Atmosphere, freshwater, ocean, terrestrial	If there are products manufactured by the Group that are not recyclable, use more water or resources, or generate more waste at the customer's end, there may be increased customer demands for ecological considerations related to these products. [Costs of responding to customer demands; decreased sales if those demands cannot be met]	Medium Long	Medium	<ul style="list-style-type: none"> <li>Promote initiatives to reduce waste, such as transporting parts from suppliers in recyclable boxes and reviewing packaging materials for products we ship.</li> <li>Consider using recycled materials (plastics, recycled resins, etc.) in products.</li> </ul>
	Reputation Brand degradation due to lack of response to natural ecosystems	As a company in the Hitachi Group, we are seen as having a great deal of social responsibility. If we are judged to lack consideration for biodiversity, the credibility and reputation of our parent company, Hitachi, Ltd. and supporting financial institutions may deteriorate, and pressure may increase from outside parties. [Costs of responding to stakeholder requests; decreased sales and loss of human resources if requests cannot be met]	Medium Long	Medium	<ul style="list-style-type: none"> <li>Regularly implement biodiversity conservation activities at each directly operated business site, such as activities to restore nature on the company's own premises and forestry activities in national forests.</li> <li>Provide examples of measurements that can be used in research on the contribution of our products to natural ecosystems on our website.</li> </ul>

\* Risk assessment is carried out based on two axes: probability of occurrence over an assumed time frame and degree of impact.

### 3. Strategy

## 3-1. Assessment of Risks and Opportunities

Using scenario #2 from our scenario analysis, anticipated opportunities were each quantified regarding their possibility of occurrence and evaluated on a three-grade scale (large, medium, and small).

### Opportunities expected to have an impact within the scope of the assessment

Category	Factors / Areas of impact	Description of opportunities [Financial impacts]	Time frame	Opp. assess.
Resource efficiency	Reduction of water consumption through water-saving equipment upgrades / Freshwater	The Group is working to reduce water consumption and improve water use efficiency by improving productivity and upgrading to water-saving equipment. Continuation of these efforts is expected to improve water-related operating costs and increase profitability through improved productivity. [Increased sales, cost reductions]	Short Medium Long	Large
Products and services	Development of products that reduce CO <sub>2</sub> emissions / Atmosphere	We are promoting environmentally-friendly design (eco-design) to comply with stricter environmental regulations. Eco-design is a process that identifies measures to reduce environmental impact by conducting environmentally-conscious design assessments and life cycle assessments (LCA) on products and evaluates the measures at each life stage of products for the three indicators of CO <sub>2</sub> emissions, water consumption, and waste generation through LCA calculations. The Group creates and promotes a list of candidate eco-design products through evaluations and development conducted starting from the concept stage. The development of products that lead to reduced GHG emissions through the above initiatives provides an opportunity to increase sales. [Increased sales]	Short Medium Long	Large
	Development of products that reduce resource use / Freshwater			Large
Markets	Acquiring new markets by developing technologies useful for ecosystem conservation, etc. / Freshwater, terrestrial, ocean, atmosphere	The development of solutions that are useful for monitoring natural ecosystems and technologies that do not threaten ecosystems will lead to the formation of new markets and higher sales. [Increased sales]	Short Medium Long	Large
Resource efficiency	Realization of resource efficiency and stable procurement by increasing rates of use of recycled materials and reuse of water / Freshwater, terrestrial	Increasing resource efficiency in the manufacture of our products will lead to stable procurement and cost reductions in the event of resource price hikes. [Increased sales, cost reductions]	Medium	Large
Capital flow and financing	Participation in financial markets focused on natural capital / Atmosphere, freshwater, ocean, terrestrial	Disclosure and response based on the TNFD framework will enable access to nature-related green funds, bonds, and loans from financial markets. [Increased capital]	Medium	Medium
Resilience	Direct restoration, conservation, and protection of ecosystems and habitats / Terrestrial	The Group conducts biodiversity conservation activities at its directly operated business sites. One example is the 44,000-square-meter forest at Hitachi High-Tech Science Fuji Oyama Works, named the Woodlands of Hitachi High-Tech Science. Aiming to coexist with nature and as a member of the local community, Hitachi High-Tech Science has been engaging in this project since 2015, the goal of which is to return the forest to its original state as a wooded area with which people in the area once lived in harmony. Using plants native to the region, the company will engage in the large-scale conversion of human-planted cedar and cypress forests into broadleaf forests over a period of approximately 50 years. The company's forest maintenance activities include the extermination of invasive plants and the placement of insect hotels, which provide homes for insects. Employees also participate, and the presence of rare plants has been confirmed on the premises. Efforts such as this are expected to restore ecosystems and help stabilize ecosystem services, thereby leading to increased sales by gaining the trust of stakeholders. [Improved sales]	Medium Long	Large
Markets	Technological innovation that reduces negative impacts on nature and increases positive impacts / Atmosphere, freshwater, ocean, terrestrial	The Group will continue to develop nature-positive products and technologies, including technological innovations that reduce impacts on nature and increase positive impacts. Success will lead to a reduction of the burden on, and the restoration of, natural ecosystems, as well as increased sales through new products and technologies. [Increased sales]	Short Medium Long	Large

\*Opportunities are evaluated on two axes: "probability of occurrence" and "degree of impact" on the assumed time axis.

[Initiative 1 for Priority Locations: Hitachi High-Tech Naka Area \(P10\)](#)

[Initiative 2 for Priority Locations: Hitachi High-Tech Science Fuji Oyama \(P11\)](#)

[Initiative 3 for Priority Locations: Examples of Efforts to Reduce Risk in Direct Operations> \(P12\)](#)



**3-2-1. Initiative 1 for Priority Locations: Hitachi High-Tech Naka Area  
(882 Ichige, Hitachinaka City, Ibaraki Prefecture, Japan)**

\* Priority Areas: Selected as priority areas based on the LEAP approach. For details, please refer to (P18).

Hitachi High-Tech Naka Area designs, develops, and manufactures clinical analyzers, DNA sequencers, semiconductor metrology and inspection equipment, and electron microscopes that utilize spectroscopic analysis and electron beam technologies.

In its business activities, it uses water for such purposes as cleaning and cooling precision parts and equipment. Since it has the largest water intake among the Hitachi High-Tech Group companies, we are systematically making various measures to improve the efficiency of water resource use.

In addition, as a nature-friendly activity, it has been borrowing a national forest near the Naka area, naming it the Hitachi High-Tech Yasato Forest, and has been engaged in afforestation activities.



**Ecosystem Preservation: Hitachi High-Tech Yasato Forest**

Hitachi High-Tech Naka Area received a loan of approximately 2.3 hectares of national forest in Ishioka City, Ibaraki Prefecture, under the Corporate Forest Program of the Forestry Agency, named it the Hitachi High-Tech Yasato Forest and since 2005, has been engaged in a 60-year program of afforestation activities there.

The Hitachi High-Tech Yasato Forest began in April 2005, when employees and their families planted 5,600 saplings of cypress and other trees. Since the planting of the trees to the present, our Group employees and their families have also volunteered in the clearing of underbrush, pruning of branches, thinning, and other work necessary to nurture the forest.

Forests do not only produce natural resources in the form of timber. Nurturing forests provides various benefits, such as helping to prevent global warming by absorbing and storing CO<sub>2</sub>, cultivating water sources,\* deterring disasters by storing water, and preserving the ecosystem.



Hitachi High-Tech Yasato Forest details >

Examples of contribution to the environment	FY2006-2022 cumulative
Cultivating water sources (Number of 2-liter PET bottles, m <sup>3</sup> /year)	5.746 million bottles' worth (11,488 m <sup>3</sup> )
Preventing landslides (10-ton dump truck, 5.5 m <sup>3</sup> /truck)	56 trucks' worth (317m <sup>3</sup> )
Absorbing and storing carbon dioxide (CO <sub>2</sub> emission equivalent per person)	683 people's worth (CO <sub>2</sub> 219.0 t)

\*Cultivating water sources: Storing rainwater and regulating water quantity, mitigating flooding, and purifying water.

**Nature-related Opportunities  
in Business Activities**

**Examples of Potential Contributions to Biological Control Efforts to Achieve Sustainable Agriculture**

While there are concerns about future food shortages due to the rapid increase in the world's population, around the world climate change is causing droughts, floods, and damage to crops due to pests. The use of chemical pesticides, which are currently the mainstay of pest control, has led to concerns about soil contamination and pharmaceutical resistance among pests, and there is a need to establish new pest control methods. Biological control, which uses natural enemies to control pests, is expected to be an effective solution.

Professor Norihide Hinomoto of the Graduate School of Agriculture, Kyoto University, who is a leading expert in this field, has analyzed the genomes of natural enemy organisms in agricultural land and surrounding areas to clarify their genetic lineages and understand their migration and distribution. This research is being conducted to control pests using insects and microorganisms that serve as natural enemies of pests, rather than placing a burden on the environment by using pesticides.

Our DNA sequencer is expected to contribute to the conservation of biodiversity and sustainable use of ecosystem services, including this research.



Compact CE Sequencer DS3000  
[Product details \(Website\)](#)

[\(Detailed information\) SI NEWS INTERVIEW Vol.26 Biological Control Contributing to Sustainable Agriculture: Interdisciplinary Research between Ecology and Molecular Biology Aims for Innovation in Pest Control \(Japanese website only\)](#)

### 3-2-2. Initiative 2 for Priority Locations: Hitachi High-Tech Science Fuji Oyama Works (36-1 Takenoshita, Oyama Town, Sunto District, Shizuoka Prefecture, Japan)

Fuji Oyama Works of Hitachi High-Tech Science offers a wide variety of products for a wide range of industries including connected, mobility, environment, energy and healthcare with its technical capabilities in surface analysis, elemental and physical property analysis, and spectroscopic and separation analysis.

In its business activities, it uses water for such purposes as cleaning and cooling precision parts and equipment, and it depends on groundwater for the majority of its water use. For this reason, it is continuously working to improve the efficiency of water use and is conducting its business activities in consideration of the local nature.

Specifically, it has established the Woodlands of Hitachi High-Tech Science on its premises to conserve local native species, and it is also actively involved in local environmental conservation efforts, such as cleaning up nearby Mt. Fuji and the surrounding area.



#### Protection, Restoration, and Regeneration of Ecosystems: Woodlands of Hitachi High-Tech Science

The Woodlands of Hitachi High-Tech Science cover approximately 44,000 m<sup>2</sup>\*1 within the grounds of the Hitachi High-Tech Science Fuji Oyama Works. Aiming to realize harmony with nature as a member of the local community, since 2015 we have been working to convert artificial woodland into natural broadleaf woodland using local native plants grown on the site. In addition to planting sawtooth oak and konara oak saplings — which are both traditional native species — grown from acorns collected on the site, we have also been planting saplings of all sizes such as Japanese maple, Japanese snowbell, and Japanese beautyberry, with the aim of regenerating the woodland with a wider variety of trees. We are also maintaining the Japanese pampas grass area by dividing and replanting them to convert a part of the grassland into a semi-natural field of Japanese pampas grass containing a variety of native plant species. As part of our forest planning activities, employees are also participating in the removal of invasive plants and the creation of insect hotels as nest sites for insects. Rare plants have also been identified on the premises.

As a result of these efforts, we received the highest rating of AAA (Triple-A) at JHEP certification\*2 by the Ecosystem Conservation Society-Japan. In addition, the site has been certified by the Ministry of the Environment as a Natural Symbiosis Site\*3 which is an “area where biodiversity is protected through private initiatives.” It is also registered with the OECM\*4, an international initiative. In addition, we will contribute to the realization of carbon neutrality through the protection, restoration, and regeneration of ecosystems by regularly calculating the amount of CO<sub>2</sub> accumulated as a result of these forest maintenance activities.

Please refer to the following news release for details on JHEP certification and certification of Natural Symbiosis Sites.



\*1 Of this area, 32,000 m<sup>2</sup> is registered as a Natural Symbiosis Site.

\*2 JHEP : JHEP(Japan Habitat Evaluation and Certification Program) compares the value of biodiversity in the past before the project and in the future after the project and evaluates and ranks the difference. This is the only certification system in Japan that clearly states that the company is conducting business that does not reduce or improves the quantity and quality of nature compared to the past.

[News release: Woodland of Hitachi High-Tech Science Receives Highest JHEP Certification Ranking Following Renewal](#)

\*3 Natural Symbiosis Site : Areas designated by the Ministry of the Environment where biodiversity is being conserved through private-sector efforts. It was introduced as part of the “30 by 30” target to conserve and protect at least 30% of the country’s land and sea areas by 2030.

[News release: The Woodlands of Hitachi High-Tech Science Certified by the Ministry of the Environment as a Natural Symbiosis Site](#)

\*4 OECM : Abbreviation for Other Effective area-based Conservation Measures. Areas that contribute to biodiversity conservation outside of protected areas.

Nature-related Opportunities in Business Activities

Nature-related Opportunities in Business Activities: Examples of Expected Contributions to Water Quality Testing Initiatives for Tap Water and Rivers

As global warming progresses, water problems will become more serious worldwide, and we can expect risks such as water depletion and declining water quality.

Our sequential high resolution ICP optical emission spectrometer can measure very small amounts of components in substances with high precision using light, making it possible to test the quality of tap water and rivers, and to analyze the components of substances for which precision is required.

The use of our analytical instruments, such as high-resolution sequential ICP optical emission spectrometers, is expected to help safeguard a healthy water environment.



The PS3500DDII Sequential High Resolution ICP Optical Emission Spectrometer  
Sold only in Japan

Example: Analysis of mineral water from three different sources

(Unit: ppb)

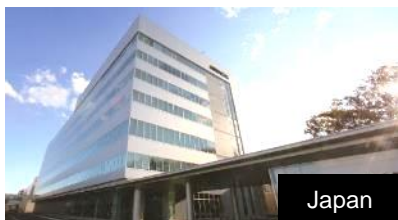
Sample source	Vanadium	Arsenic	Cadmium
1	0.86	0.72	0.00
2	59.6	0.49	0.00
3	1.93	0.75	0.19

3-2-3. Initiative 3 for Priority Locations: Examples of Efforts to Reduce Risk in Direct Operations

The Hitachi High-Tech Group uses a large amount of water in its business activities, such as for cleaning and cooling precision parts and equipment. Since 85% of our water intake is tap water and industrial water, if we consider future increases in unit water consumption fees, we believe that water conservation and other efforts will have a positive financial impact and represent a strategic opportunity for the Group.

In addition, to achieve the target of improving the efficiency of water and resources use by 50% or more under Hitachi Environmental Innovation 2050, we have formulated an environmental action plan with environmental activity items and targets for every three years and are implementing measures to improve the efficiency of water use.

To continually achieve our goals, we also make planned capital investments. Specific capital investments include the renewal of water supply equipment and leakage sensors to reduce the risk of water leakage, and the renewal of facility management equipment and pure water production equipment to improve the efficiency of water and resources use.



Hitachi High-Tech Naka Area

Design, development, and manufacture of clinical analyzers, DNA sequencers, semiconductor metrology and inspection equipment, electron microscopes, and analytical systems

Japan



Hitachi High-Tech Naka-Marine Site

Design, development and manufacture of electron microscopes and semiconductor manufacturing equipment, such as CD-SEM and inspection equipment

Japan



Hitachi High-Tech Kasado Area

Design, development and manufacture of etch systems

Japan



Hitachi High-Tech Saitama Site

Manufacture of semiconductor manufacturing equipment, and the design, development and manufacture of hard disk inspection equipment

Japan



**Hitachi High-Tech Manufacturing & Service**

Manufacture of precision parts and equipment

Japan



**Hitachi High-Tech Solutions Mito Office**

Design and development of control systems, management systems, industrial measuring equipment, etc.

Japan



**Hitachi High-Tech Science Fuji Oyama Works**

Design, development and manufacture of measurement and analytical systems

Japan



**Hitachi High-Tech Kyushu**

Design, development and manufacture of clinical analyzers, bio systems and consumables

Japan



**Hitachi Instrument (Dalian)**

Design, development and manufacture of analytical systems, and manufacture of medical and bio-units

China



**Hitachi Instrument (Suzhou)**

Design, development and manufacture of clinical analyzers and electron microscopes

China



**Hitachi High-Tech Analytical Science Shanghai**

Manufacture of X-ray fluorescence analyzers and coating thickness gauges

China



**Hitachi High-Tech Analytical Science Finland**

Design, manufacture and sales of X-ray analyzers and LIBS analyzers

Finland



**Hitachi High-Tech Analytical Science**

Design, development and manufacture of optical emission spectrometers

Germany



**Hitachi High-Tech America Chatsworth, CA**

Design, development and manufacture of X-ray detectors (silicon drift detectors)

USA

### 3-2-4. Value Chain Engagement Initiatives

The Hitachi Group, including Hitachi High-Tech and its subsidiaries, shares the concept of environmentally conscious business activities with its procurement partners and is working together on green procurement.\*1 We have been promoting green procurement ahead of our competitors. In FY1998, we formulated the “Green Procurement Guidelines,” which outlines our basic approach to procurement of environmentally friendly parts and products and our requests to our procurement partners. In July 2021, we revised the Hitachi Group Sustainable Procurement Guidelines and Green Procurement Guidelines. These guidelines strengthen our efforts with our procurement partners by requiring compliance with items related to their environmental conservation activities (establishment of an environmental management system, recommendation to acquire certification standards, etc.) and items related to the reduction of environmental impact (resource conservation, energy conservation, recycling, proper management of chemical substances contained in products, provision of appropriate information, etc.) on items delivered to us.

We also hold regular briefings for procurement partner companies of our own product manufacturing divisions to explain Hitachi’s Group-wide initiatives for the promotion of green procurement activities and supply chain CSR promotion activities.






[Hitachi Group Sustainable Procurement Guidelines \(PDF format, 316 KB\)](#) 

[Green Procurement Guidelines \(PDF format, 712 KB\)](#)



### 3-2-5. Endorsement and Support of Initiatives

The Hitachi High-Tech Group actively participates in sustainability initiatives to contribute to the realization of a sustainable society.

Name	Details	
CDP	Independent non-profit organization in the UK that researches, evaluates and publishes corporate and municipal information about climate change, water and forests at the request of investors around the world. Hitachi High-Tech submitted responses to their climate change questionnaire and the water security questionnaire.	
Task Force on Climate-related Financial Disclosures	Encourages companies and others to assess and disclose appropriate information on climate change-related risks and opportunities. Hitachi High-Tech endorses the TCFD and discloses information on climate change-related risks and opportunities.	
Japan Climate Initiative (JCI)	A network consisting mainly of companies, local governments, organizations, and NGOs that are actively working to combat climate change.	
Taskforce on Nature-related Financial Disclosures	Encourages companies and organizations to properly assess and disclose information on risks and opportunities related to natural capital and biodiversity. We participate in the TNFD Forum and are registered as a TNFD Adopter.	
30by30 Alliance for Biodiversity	Participate in the 30by30 Alliance for Biodiversity (a goal to effectively conserve at least 30% of land and sea as healthy ecosystems by 2030 with the goal of halting and restoring biodiversity loss by 2030 [nature positive]) established by the Ministry of the Environment.	
Clean Ocean Material Alliance (CLOMA)	An organization established to solve the problem of marine plastic litter by developing and promoting the introduction of innovative alternatives that lead to more sustainable use of plastic products and reduction of plastic waste.	
Semiconductor Climate Consortium (SCC)	Consortium of semiconductor companies established to accelerate the reduction of greenhouse gas emissions from the semiconductor ecosystem	

\*1 Green procurement: A system to procure parts and materials with reduced environmental impact from procurement partners who are committed to environmental conservation.

3-3. Setting the Scope of Assessment

3-3-1. Establishing the Scope of Assessment in Business Operations

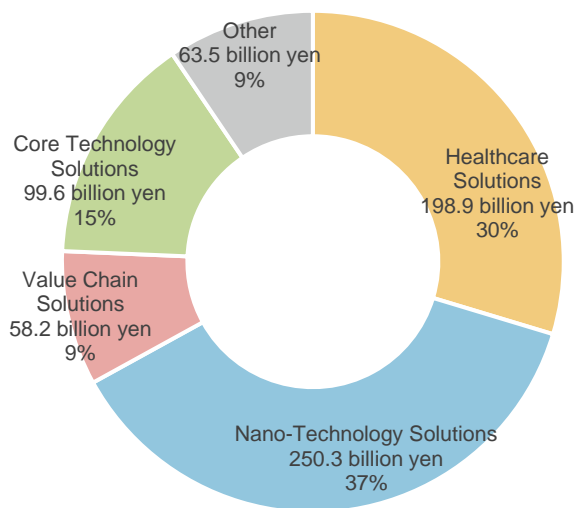
ENCORE<sup>\*1</sup> was used to confirm the assessment of nature-related dependencies and impacts for the main activities of each business (solution) of direct operations. In addition, for this disclosure, we decided to assess manufacturing sites in the three business segments of Nano-Technology Solutions, Healthcare Solutions, and Core Technology Solutions, which manufacture our main products, for the following reasons.

<Major reasons>

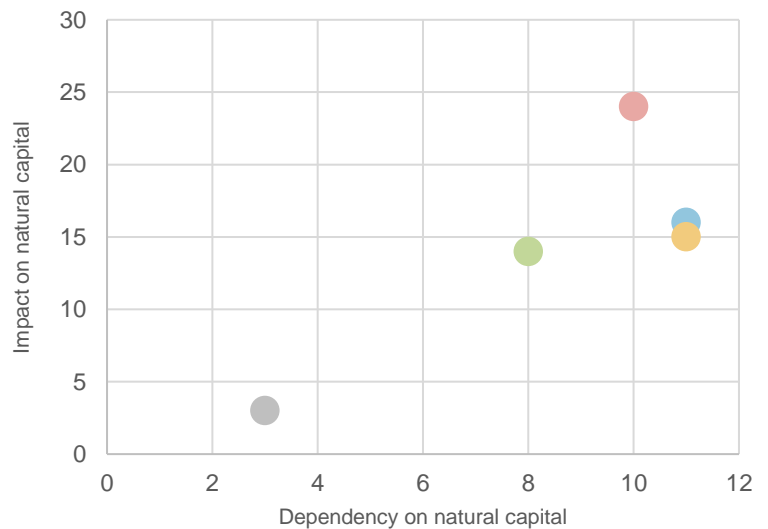
The three businesses that manufacture mainstay products have a large financial impact in the event of a suspension of business activities.

The Value Chain Solutions business has a high impact on logistics, but since logistics is outsourced, there is little direct financial impact.

Breakdown of Business Segment Sales (FY2023)



Activities and Nature-related Dependency & Impact by Each Business



- Nano-Technology Solutions (Manufacturing of semiconductor manufacturing equipment)
- Healthcare Solutions (Healthcare equipment manufacturing)
- Core Technology Solutions (Manufacturing of electronics, etc.)
- Value Chain Solutions (Sales and logistics, including consignment)
- Internet Services (Shared)

\* 1 ENCORE: Demonstrates how the economy depends on and impacts nature. Financial institutions can use data from ENCORE to identify nature-related risks they are exposed to through their lending, underwriting and investment in high-risk industries. It is operated and managed by Global Canopy, the United Nations Environment Programme Finance Initiative (UNEP FI), and the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC).

About ENCORE (from the official website): <https://www.encorenature.org/en/about/about-encore>

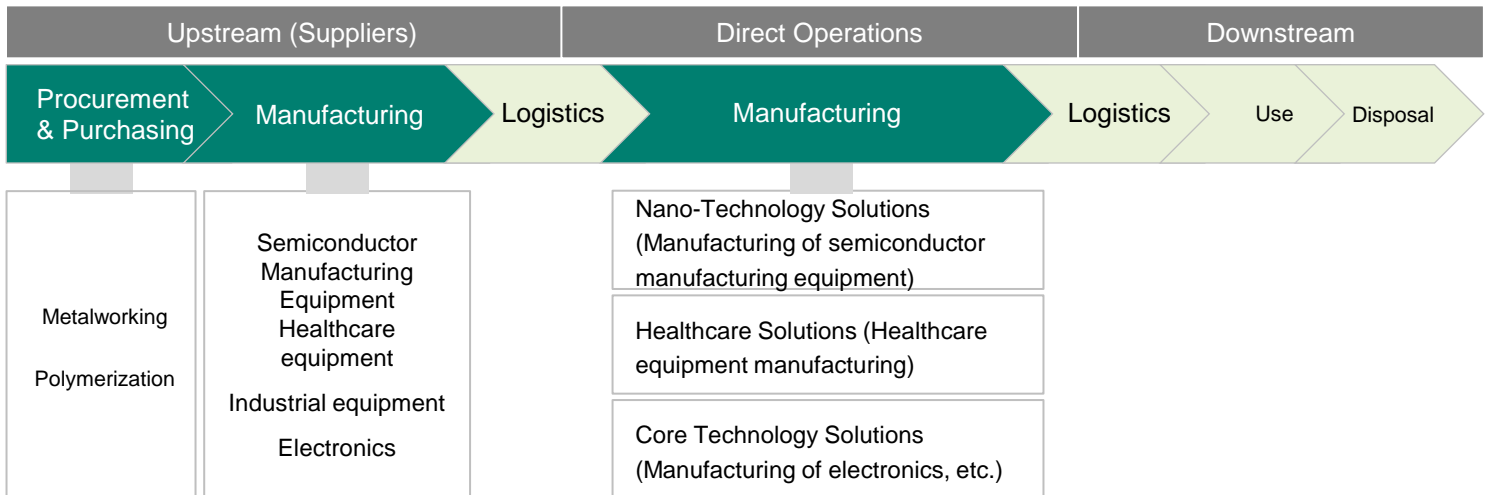
3-3-2. Establishing the Scope of Assessment in the Value Chain

In the previous section, we targeted for assessment the sites of the three manufacturing business units that account for the majority of sales. Therefore, in the value chain, we targeted suppliers (Tier 1) that have a large amount of transactions with these businesses.

We selected these suppliers in consideration of the ease of implementing countermeasures, as they have already established a relationship with us through transactions over a certain amount of money and their cooperation in environmental impact surveys that we conduct every year.

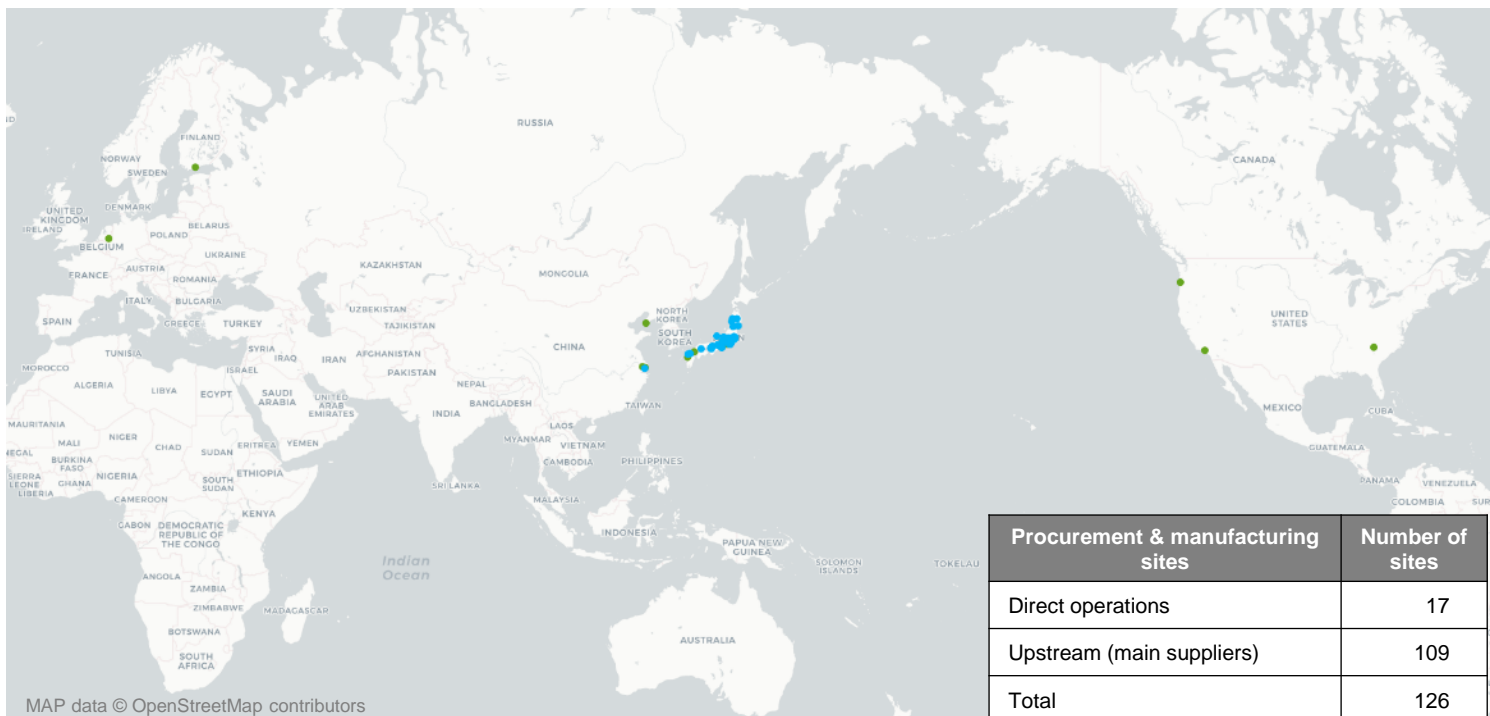
Business Activities including Value Chain

Scope of evaluation



3-3-3. Assessed Sites

We assessed 126 sites. This includes 17 direct operations (Japan, China, USA, Germany, Finland) and 109 suppliers (Japan, China).



● Direct operation ● Supplier

### 3-4. I Evaluation of Nature-related Dependencies and Impacts

#### Heatmaps of Dependencies and Impacts

We organized the business activities of the sites assessed, including direct operations and suppliers, and used ENCORE to assess them. Based on the results, we created heatmaps, which revealed the following dependencies and impacts in the Hitachi High-Tech Group's value chain.

- Dependencies: Both direct operations and suppliers have moderate dependency on ground water and surface water, and only suppliers have moderate dependency on flood and storm protection and water flow maintenance.
- Impacts: Both direct operations and suppliers have very high impact on GHG emissions, and also have high impact on water pollution, soil contamination, solid waste, and water use.

#### Heatmap of Dependencies

VH: Very High, H: High, M: Moderate, L: Low, VL: Very Low

ENCORE production process*	Bio-remediation	Mediation of sensory impacts	Ventilation	Climate regulation	Flood and storm protection	Mass stabilization and erosion control	Water quality	Water flow maintenance	Dilution by atmosphere and ecosystems	Ground water	Surface water	Filtration
Semiconductor manufacturing equipment mfg.	VL			VL					VL	M	M	L
Healthcare equipment mfg.				VL					VL	M	M	
Electronics and hardware mfg.									L	M	M	
Machinery, parts, equip. mfg. (including suppliers)		M	VL	VL	M	VL	L	M	L	M	M	VL
Metalworking (suppliers)	L	L	VL	VL	M	VL	L	M	L	M	M	L
Polymerization (suppliers)		L				L				L	L	

#### Heatmap of Impacts

ENCORE production process	GHG emissions	Pollution			Solid waste	Disturbances (noise / light)	Water use	Terrestrial ecosystem use
		Water	Soil	Non-GHG air pollution				
Semiconductor manufacturing equipment mfg.	H	H	H				H	
Healthcare equipment mfg.	VH	M		M	H			
Electronics and hardware mfg.		H	H		M	M		
Machinery, parts, equip. mfg. (including suppliers)	VH	H	H	M	H	M	H	
Metalworking (suppliers)	VH	M	M	M	H		H	
Polymerization (suppliers)		H	H	M			VH	H

\* This analysis uses ENCORE's classification (GICS) up to June 2024.

GICS is an abbreviation for Global Industry Classification Standard. It is an industry classification jointly developed by S&P of the United States and MSCI (Morgan Stanley Capital International) in 1999.



### 3-4-2. Pressure Assessment to Identify Impact Factors

To identify impact factors, SBTN Materiality Screening Tool pressure scores were used to assess factors behind nature changes. The results were almost the same as the ENCORE assessment, confirming high pressures in “water use,” “GHG (greenhouse gas) emissions,” “water and soil pollutants,” and “solid waste.”

Production process	Pressure assessment	Land/water/sea use change		Resource exploitation		Climate change		Pollution						Invasive species and other	
		Land use		Water use		GHG emissions		Water pollutants		Soil pollutants		Solid waste		Disturbances	
		Indexed pressure score	Materiality rating (0 or 1)	Indexed pressure score	Materiality rating (0 or 1)	Indexed pressure score	Materiality rating (0 or 1)	Indexed pressure score	Materiality rating (0 or 1)	Indexed pressure score	Materiality rating (0 or 1)	Indexed pressure score	Materiality rating (0 or 1)	Indexed pressure score	Materiality rating (0 or 1)
Semiconductor manufacturing equipment mfg.	3	ND	ND	8.0	1	7.0	0	7.0	1	7.0	1	ND	ND	ND	ND
Electronics and hardware mfg.	2	ND	ND	ND	ND	ND	ND	7.0	1	7.0	1	6.0	0	6.0	0
Machinery, parts, equip. mfg. (including suppliers)	4	ND	ND	8.0	1	9.0	1	7.0	1	7.0	1	7.0	1	6.0	0
Metalworking (suppliers)	2	ND	ND	7.0	0	9.0	1	6.0	0	6.0	1	7.0	1	ND	ND
Chemical polymerization (suppliers)	3	7.0	0	9.0	1	ND	ND	8.0	1	8.0	1	ND	ND	ND	ND

Indexed pressure score: Scores range from 3 to 9 (the sum total of 1-3 scores for severity, frequency, and time frame).

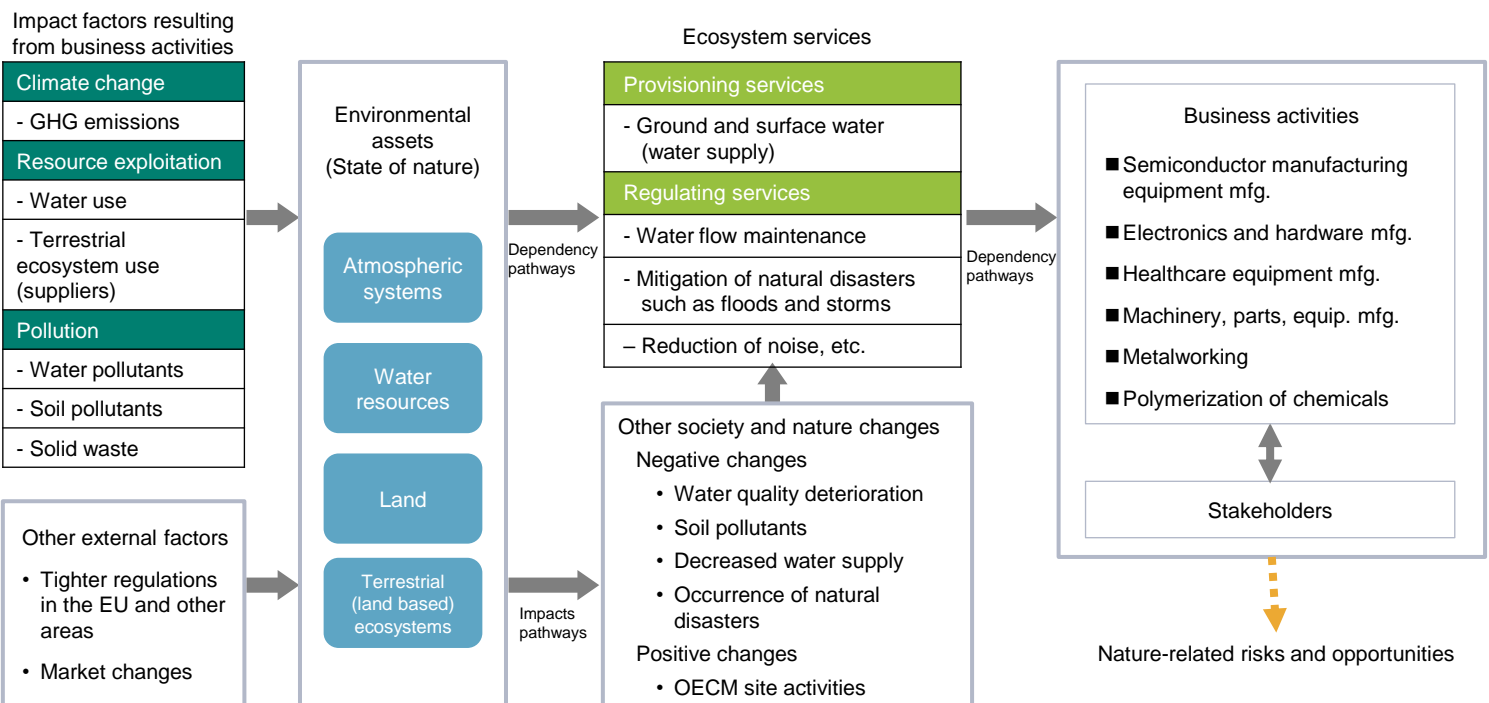
Materiality rating: 0 or 1. If 0, that means the Materiality Screening Tool (MST) Index value does not equal or exceed the materiality threshold.

If 1, the MST Index value equals or exceeds the materiality threshold.

The SBT Materiality Screening Tool is a tool developed for SBTN to facilitate initial materiality screening that companies can use to determine which economic activities and economic pressures require science-based nature conservation targets.

### 3-4-3. Relationship between Natural Capital and Business Activities

Regarding dependency and impact pathways, discussions were held based on the selection of priority locations as well as the results of the ENCORE and SBTN Materiality Screening Tool assessments to catalog the material dependencies and impacts of the Hitachi High-Tech Group and suppliers.



### 3-5. Selection of Priority Locations

#### 3-5-1. Definition and Selection Method of Priority Locations

In the LEAP approach, sites located in sensitive locations or material locations are designated as priority locations.

**■ Assessment indicators for Sensitive locations**

In line with the definition of sensitive locations, we assessed the analysis results of the assessment tool and the registration status with OECM and scored them according to our own scale.

**■ Assessment indicators for Material locations**

Material locations were scored using the following criteria.

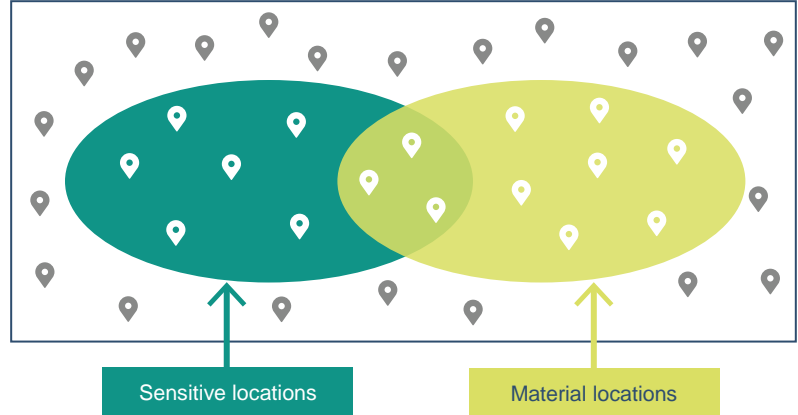
- Sectors assessed as high impact in ENCORE
- Sites exposed to water-related risks as disclosed in our CDP water risk responses
- Assessment in the Hitachi Environmental Management Classification Survey conducted by the Hitachi Group

Volume of water withdrawal

Ultimately, priority locations were selected based on the total scores of sensitive locations, and material locations.

#### Assessment Locations

All geographic locations in the organization's direct operations, upstream and downstream.



Locations where the assets or activities in the organization's direct operations—and where possible, upstream and downstream value chain(s)—interface with nature in areas deemed to be ecologically sensitive

Locations where the organization has identified material nature-related dependencies, impacts, risks and opportunities

Source: Guidance on the identification and assessment of nature-related issues: the LEAP approach (p. 61)

#### Definition of sensitive locations

- Areas important for biodiversity
- Areas of high ecosystem integrity
- Areas of rapid decline in ecosystem integrity
- Areas of high physical water risk
- Areas of importance for ecosystem service provision, including benefits to Indigenous Peoples, Local Communities and stakeholders

\*1 IBAT: International Biodiversity Assessment Tool. Used by companies, governments, banks, etc. for risk assessment. Provides information from sources such as the IUCN Red List of Threatened Species, the World Database on Protected Areas (WDPA), and the World Database of Key Biodiversity Areas (WDKBA). <https://www.ibat-alliance.org/>

\*2 KBA: An abbreviation of Key Biodiversity Areas. Sites that are home to a diversity of nature in terrestrial, freshwater, and marine ecosystems and which contribute significantly to the global persistence of biodiversity. These sites can be used to identify areas to focus conservation efforts and to avoid or reduce impacts on biodiversity as much as possible.

\*3 Global Forest Watch: An online system for monitoring forests and other nature-related items on a global scale using satellite imagery. <https://www.globalforestwatch.org/>

\*4 WWF Risk Filter Suite: A biodiversity-related risk assessment tool developed by the World Wildlife Fund (WWF). Its two tools, the Biodiversity Risk Filter and the Water Risk Filter, can be used to quantify biodiversity and water risks.

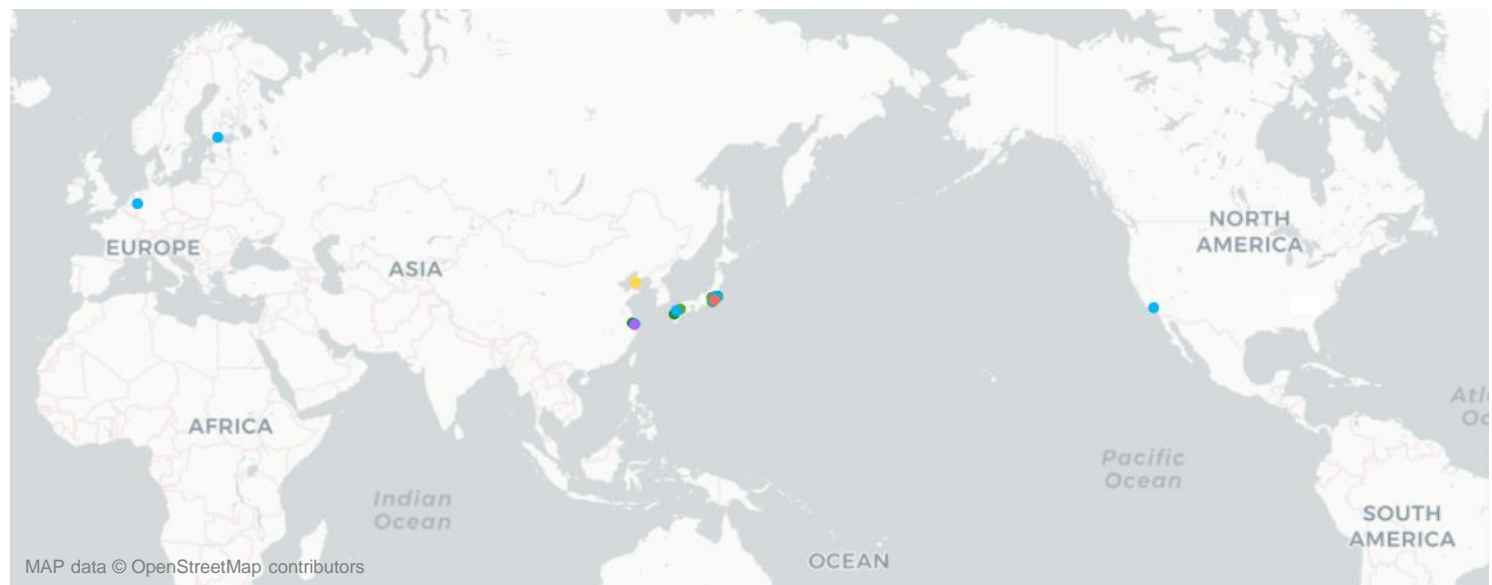
## 3-5-2. Selection of Priority Locations

Fifteen direct operations and six suppliers were selected as priority locations.

## List of direct operation priority locations

Site name	Country	Place
Hitachi High-Tech, Naka Area	Japan	Ibaraki
Hitachi High-Tech Science, Fuji Oyama Works	Japan	Shizuoka
Hitachi High-Tech, Kasado Area	Japan	Yamaguchi
Hitachi High-Tech Manufacturing & Service	Japan	Ibaraki
Hitachi High-Tech Analytical Science	Germany	Nordrhein-Westfalen
Hitachi High-Tech Kyushu	Japan	Fukuoka
Hitachi High-Tech, Saitama Site	Japan	Saitama
Hitachi High-Tech Manufacturing & Service, 6th Branch Office	Japan	Ibaraki
Hitachi High-Tech Solutions, Mito Office	Japan	Ibaraki
Hitachi Instrument (Suzhou)	China	Jiangsu Province
Hitachi High-Tech America, Chatsworth, CA	U.S.A.	California
Hitachi High-Tech Analytical Science Finland	Finland	Espoo
Hitachi High-Tech Analytical Science Shanghai	China	Shanghai
Hitachi High-Tech, Naka-Marine Site	Japan	Ibaraki
Hitachi Instruments (Dalian)	China	Liaoning Province

## Map of priority locations (15 direct operations, 6 suppliers)



- Electronics and hardware mfg.
- Semiconductor manufacturing equipment mfg.
- Healthcare equipment mfg.
- Machinery, parts, equip. mfg.
- Metalworking
- Polymerization of diverse chemicals

3-6. Example of Risk Assessment of Direct Operation Priority Locations (Water)

A comparison of water withdrawals at direct operation priority locations in Japan and overseas showed usage is high in Japan, particularly at the Hitachi High-Tech Naka Area. Sites with high water withdrawals and a high physical water risk assessment may experience production impacts and increased costs if water withdrawals are restricted or water treatment is required due to low water quality. Consideration was also given to flood risk, which is included in the physical water risk assessment, because the recent increase in the frequency of natural disasters, and the impact of a shutdown of operations for a certain period of time due to flooding or heavy rainfall would be significant. At the Hitachi High-Tech Naka Area, which has a large water withdrawal, we have already invested in facilities to improve the efficiency of water resource use.

We will continue to monitor and will conduct another risk assessment if there are any changes in social, economic, or natural conditions.

3-2-1. Initiative 1 for Priority Locations: Hitachi High-Tech Naka Area (P10)

Water withdrawal and water-related risk assessment for 15 directly operated sites

Sites	FY2023 Water withdrawal (m³)	WWF Water Risk Filter			
		Physical water risks	Flooding	Water quality	Ecosystem services
Hitachi High-Tech, Naka Area	268,130.0	2.56	3.9	3	3.6
Hitachi High-Tech Science, Fuji Oyama Works	23,493.7	2.68	3.9	3	3.1
Hitachi High-Tech, Kasado Area	11,283.0	2.69	3.9	2	2.9
Hitachi High-Tech Manufacturing & Service	15,394.9	3.48	3.9	3	3.6
Hitachi High-Tech Analytical Science	560.0	4.12	3	5	4.1
Hitachi High-Tech Kyushu	9,536.0	2.56	3.95	3	2.9
Hitachi High-Tech, Saitama Site	58,917.4	2.19	3.9	3	3.1
Hitachi High-Tech Manufacturing & Service, 6th Branch Office	4,931.4	2.54	3.9	3	3.6
Hitachi High-Tech Solutions, Mito Office	5,324.8	2.6	3.9	3	3.6
Hitachi Instrument (Suzhou)	34,471.0	3.68	3.95	4	3.15
Hitachi High-Tech America, Chatsworth, CA	274.0	2.69	1.1	4	2.45
Hitachi High-Tech Analytical Science Finland	746.0	3.55	3.9	4	4
Hitachi High-Tech Analytical Science Shanghai	433.0	3.59	3.95	4	3.15
Hitachi High-Tech, Naka-Marine Site	24,658.7	2.68	2.95	2	3.35
Hitachi Instruments (Dalian)	1,205.0	2.14	2.95	5	2.5

Flood risk



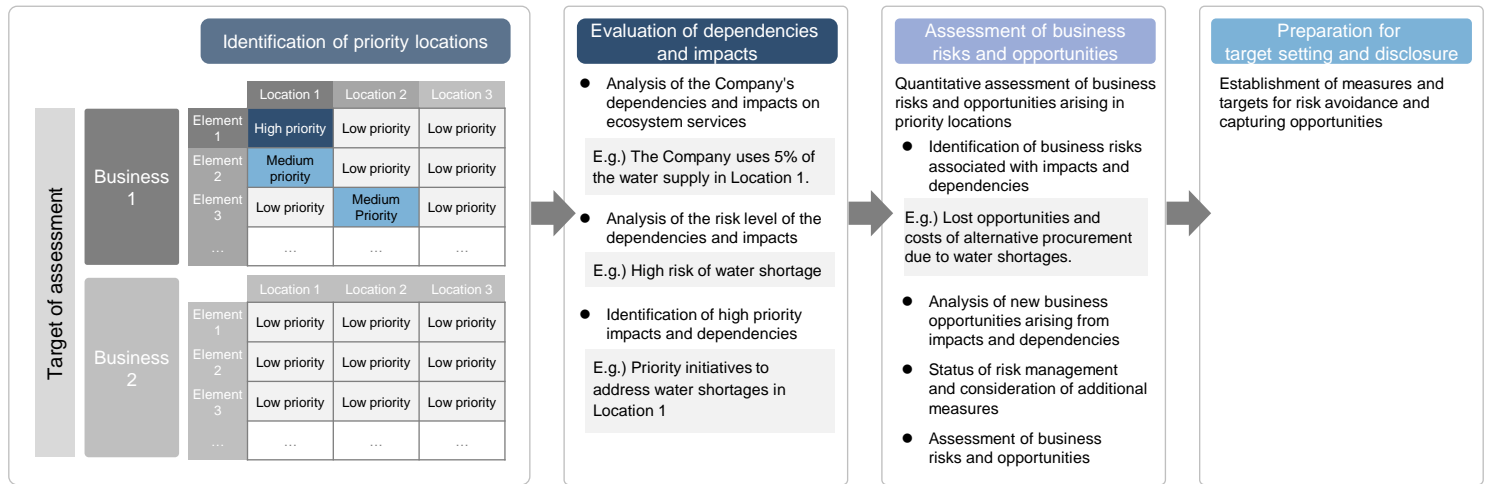
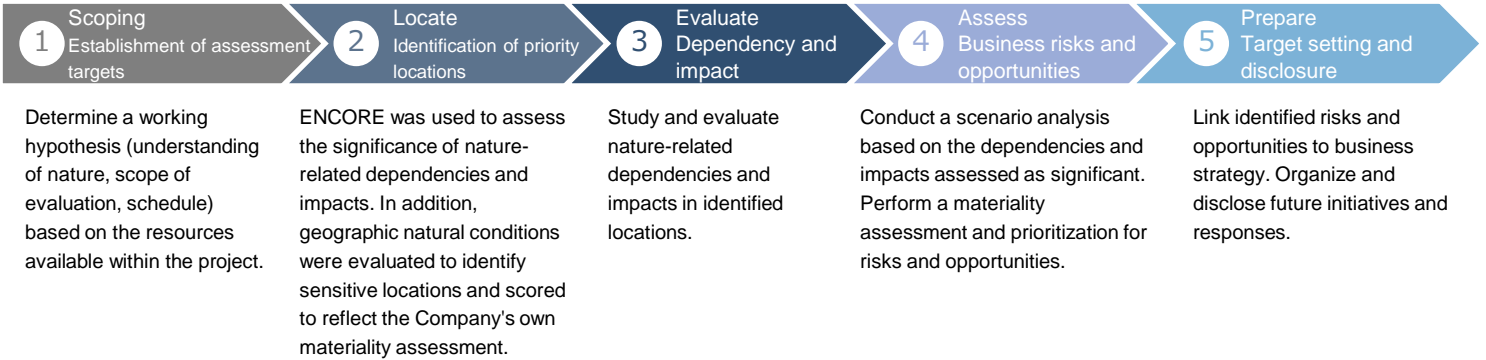
Source: WWF Risk Filter Suite: riskfilter.org

## 4-1. Risk Management

### 4-1-1. Risk Management Process

The Hitachi High-Tech Group adopts the LEAP approach recommended by the TNFD to disclose information in accordance with version 1.0 of the TNFD framework. We evaluate dependence on and impact on natural capital throughout the value chain (direct operations and upstream) and assess business risks and opportunities in accordance with the following steps. Target items and response plans were developed for natural capital with high dependence and impact, and business risks and opportunities of high significance identified through this process.

#### Steps of the LEAP Approach



As part of the management process, the Environmental Committee conducts periodic evaluations and discusses and deliberates on strategies and response plans for target items. The contents of deliberations by the Environmental Committee are reported to the Sustainability Promotion Committee. The Sustainability Promotion Committee discusses important matters and integrates them into the company-wide sustainability strategy and measures.

### 4-1-2. Risk Management Structure

Incidents affecting business operations and nature-related risks impacting business operations are classified by the Environmental Committee based on risk assessments into priority issues and ongoing monitoring, and measures are promoted to address them. Topics with a certain impact on our business or be taken up as internal control issues are resolved by the Environmental Committee and reported to the Internal Control Management Committee. For compliance with laws and management of operational risks, we have established the "Risk Management Regulations," creating a system where each responsible department appropriately identifies and manages these risks. The Internal Control Management Committee is chaired by the CRO and oversees operational risks by reporting on the activities of four subcommittees (J-SOX Committee, Compliance Committee, Information Security Committee, and Environmental Committee) and the results of actions taken by each responsible department.

## 5-1. Metrics and Targets

In the Hitachi Group, we manage our efforts with metrics and targets which are defined in the Environmental Action Plan and updated every three years. These are aligned with the Environmental Vision and the long-term environmental targets in the Hitachi Environmental Innovation 2050. Additionally, regarding metrics and targets on climate-related and nature-related risks and opportunities, we measure and manage through our Environmental Action Plan, which is updated every three years.

The targets that the Hitachi Environmental Innovation 2050 sets for working toward contribution through products and services and for harmonizing with nature are shown below.

### Contribution by Products and Services

Activity Targets	Activities for Promotion	FY2022 Targets	FY2023 Targets	FY2024 Targets
Reduction in CO <sub>2</sub> emissions by products and services	Reduction in CO <sub>2</sub> emissions by environmentally conscious design during product development (base fiscal year: FY 2010)	Amount reduced 71,287 t-CO <sub>2</sub> or more	Amount reduced 29,083 t-CO <sub>2</sub> or more	Amount reduced 99,366 t-CO <sub>2</sub> or more
	Raise rate of reduction of CO <sub>2</sub> emissions by products (base fiscal year: FY2010)	35.8% or more	39.0% or more	42.3% or more
	Reduction in total CO <sub>2</sub> emissions by products and services (base fiscal year: FY2010)	Emissions 537,895 t-CO <sub>2</sub> or less	Emissions 670,523 t-CO <sub>2</sub> or less	Emissions 429,632 t-CO <sub>2</sub> or less
Implementation of environmentally conscious design assessments	Implementation of environmentally conscious design assessments (assessments conducted during the year/assessments subjected to during the year) Note: Includes conducting LCA evaluations	100% (All target models)	100% (All target models)	100% (All target models)

### Contribution by Factories and Offices

Activity Targets	Activities for Promotion	FY2022 Targets	FY2023 Targets	FY2024 Targets
Reduction in CO <sub>2</sub> emissions by business establishments	Reduction in total CO <sub>2</sub> emissions	Emissions 30,759 t-CO <sub>2</sub> or less	Emissions 30,906 t-CO <sub>2</sub> or less	Emissions 18,570 t-CO <sub>2</sub> or less
	(Unique to Hitachi High-Tech Group) Improve rate of introduction of renewable energy, etc.	26.9% or more	27.2% or more	60.1% or more
Switch to electric power for vehicles	Consider introducing electric vehicles (EV) when replacing vehicles	Monitor number of electric vehicles		
Reduction of CO <sub>2</sub> in transportation	Grasp transportation energy per unit in nominal production	Monitor transportation energy per unit		

## 5. Metrics and Targets

### Building a Society that Recycles Resources

Activity Targets	Activities for Promotion	FY2022 Targets	FY2023 Targets	FY2024 Targets
Improvement of efficiency in use of resources	Improvement of waste generation per unit (compared to FY2010)	35.1% or more	37.0% or more	38.1% or more
	Improvement of rate of effective use of plastic waste	98.7% or more	98.7% or more	98.8% or more
Transition to circular economy	Reduce use of virgin materials and create resource recycling businesses by promoting "5 R's"*	<ul style="list-style-type: none"> <li>Monitor proportion of use by recycled material in products</li> <li>Monitor proportion of products that give consideration to improved efficiency in use of resources during design</li> </ul>		
Reduction in waste material	Reduction of rate of landfill disposal of waste	0.13% or less	0.13% or less	0.12% or less

\* \*Reduce, Reuse, Recycle, Repair, Rethink

### Building a Society that Recycles Water

Activity Targets	Activities for Promotion	FY2022 Targets	FY2023 Targets	FY2024 Targets
Improvement of efficiency in use of water	Improvement of water consumption per unit (compared to FY2010)	49.0% or more	48.9% or more	49.5% or more

### Management of Chemical Substances

Activity Targets	Activities for Promotion	FY2022 Targets	FY2023 Targets	FY2024 Targets
Reduction in emissions of chemical substances	Reduction in atmospheric emissions of chemical substances per unit (compared to FY2010)	59.8% or more	58.5% or more	60.6% or more

### Ecosystem Conservation

Activity Targets	Activities for Promotion	FY2022 Targets	FY2023 Targets	FY2024 Targets
Contribution to ecosystem conservation	Promotion of ecosystem conservation activity headings	Number of activities implemented 66	Number of activities implemented 67	Number of activities implemented 68

Please refer to the following for achievements.

[Summary of FY2023 Environmental Activities and Environmental Action Plan for FY2022-2024 \(Website\)](#)