

TNFD Report 2025

 **mitsubishi materials**



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1 Introduction

1-1 Top Message

The Mitsubishi Materials Group emphasizes sustainability in its management. With regard to sustainability, it is necessary not only to contribute to a sustainable society but also for our group itself to be sustainable. From this perspective, we have defined our group's vision as "For people, society and the earth, circulating resources for a sustainable future" and set the priority in business execution toward this vision as SCQDE*. We are thoroughly conscious of safety and health first, followed by compliance and the environment, and then quality, delivery, and profitability.

Diversity is a key to supporting a healthy organization. The promotion of DE & I is based on our company's Basic Corporate Governance Policy, Basic Sustainability Policy, and Human Rights Policy. Diverse perspectives and actions by diverse human resources lead to the healthy development of an organization.

It is also a concern in nature that a loss of diversity will weaken systems. Recent surveys and media reports indicate that species are declining and becoming more endangered. The direct factors that threaten biodiversity, in descending order of impacts, are (1) Land/sea use change, (2) Direct exploitation (Including fishing and hunting), (3) Climate change, (4) Pollution, and (5) Invasive alien species. It is necessary to conduct business so as not to encourage such negative impacts.

On the other hand, in realizing Nature Positive, it is also important to consider how to promote species expansion. In this report, we mainly deal with the negative assessment of impacts, but we believe it is also important to maintain an environment in which biological species can be protected in a good way and develop and expand, making use of our company's 13,000 ha forest management. As a group that can engage not only in the protection of biological species, but also in the conservation of ecosystems, which are referred to in the Convention on Biological Diversity, we will contribute to 30 by 30 through participation in nature symbiosis sites promoted by the government, as well as other initiatives, in order to develop our business so that we can leave the Earth in a better condition for future generations.

Tetsuya Tanaka, Chief Executive Officer of Mitsubishi Materials Corporation

*S: Safety and Health, C: Compliance & Environment (Compliance, Fair & Equitable Activities, Environmental Management), Q: Quality(The quality of goods & services supplied to customers), D: Delivery(Meeting Delivery Deadlines), E: Earnings(Reasonable Profits)



1-2 Our Group's Approach to Natural Capital

The corporate history of the Mitsubishi Group mirrors the modernization of Japan that began with the Meiji Restoration in 1868. It was Yataro Iwasaki who, in 1870, established Tsukumo Shokai, a shipping company, and aggressively invested in coal and mineral mining, which grew into a key pillar of operations for Mitsubishi.

In the 1920s, as the divisions of the Mitsubishi Goshi Kaisha split off into companies, Mitsubishi Mining Company Ltd. was established and assumed the assets of mining-related divisions, leading to the current Mitsubishi Materials.

Mining, which was the core business of the Mitsubishi Materials Group, involves various forms of interaction with nature in mine development. Mine development itself is a natural development, and acid mine drainage*¹ generated

is also treated in accordance with impacts on Nature ^{*2}. Forests in Japan, which were used in past mine development to secure timber for supporting shafts, are still managed appropriately ^{*3}.

In our business activities, we recognize that we are engaged in a business that places a burden on the environment, and we conduct an appropriate environmental assessment at the time of construction. In addition, we have established a procurement policy that considers biodiversity conservation in raw material procurement, and we conduct business operations at our manufacturing sites that appropriately manage air, water, and waste.

The importance of the social issue of biodiversity conservation has long been recognized since the Convention on Biological Diversity has a history of more than 30 years. However, recognition of its importance has been heightened since the adoption of the Kunming Montreal Biodiversity Framework in 2022 and the government's formulation of a new National Biodiversity Strategy in 2023. Furthermore, with the publication of the TNFD Framework in 2023, we have organized how companies should disclose their information.

In September 2024, our group formulated the Biodiversity Conservation Policy as a policy document that details the existing environmental policy, and defined 6 focus areas ^{*4}. As part of our efforts in this policy, we have decided to advance our understanding of biodiversity in impacts, and have decided to publish the results of our analysis in this report in accordance with the TNFD Framework.

Our group will pursue business activities that incorporate biodiversity conservation in order to achieve our vision of "For people, society and the earth, circulating resources for a sustainable future"

*1. Acidic water in the pits (mine water), which is generated when rainfall and groundwater penetrate into underground shafts and cavities in mining sites formed by past mining operations and come into contact with oxidized ore, and permeated water (wastewater), which is generated when rainfall and surface water come into contact with slag, etc., in accumulation sites

*2. Our efforts to manage abandoned mines in Japan (acid mine drainage treatment) are disclosed in "[Managing Closed Mines](#)" in our company Sustainability Report 2025.

*3. Our efforts to manage forests (company-owned forests) are disclosed in "[Sustainable Use of Forest Resources \(Materials' Forest\)](#)" in our company Sustainability Report 2025.

*4. Our focus areas are disclosed in "[Biodiversity Conservation Policy](#)" on our company's corporate website and on page 13 of this report.

1-3 International Trends and TNFD on Natural Capital and Biodiversity

In recent years, international movements on natural capital and biodiversity have accelerated. As international frameworks and targets are being developed, the importance of natural capital has been recognized again, and companies and governments are stepping up efforts to conserve it.

In its 2019 report, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) warned of the degradation of nature and the biodiversity crisis. IPBES pointed out that fundamental social change is needed, looking not only at the direct causes of the crisis but also at the structural factors of society and economy. On the other hand, many economic activities are dependencies on natural capital. A 2020 report by the World Economic Forum reported that nearly \$44 trillion, or nearly half of the world's total GDP, is in dependencies from nature, suggesting that nature loss could threaten business activities of companies.

At COP15 of the Convention on Biological Diversity held in December 2022, the Kunming Montreal Biodiversity Framework was adopted. The Framework aims to conserve and sustainably use biodiversity with a 2050 year vision and 2030 year mission. In particular, the 2030 target also calls for companies to assess and disclose dependencies, impact and risks on biodiversity in their businesses. In response to this international trend, Japan formulated the National Biodiversity Strategy 2023-2030 and the Strategy for the Transition to a Nature Positive Economy.

Figure 1 Domestic and International Trends in Natural Capital and Biodiversity

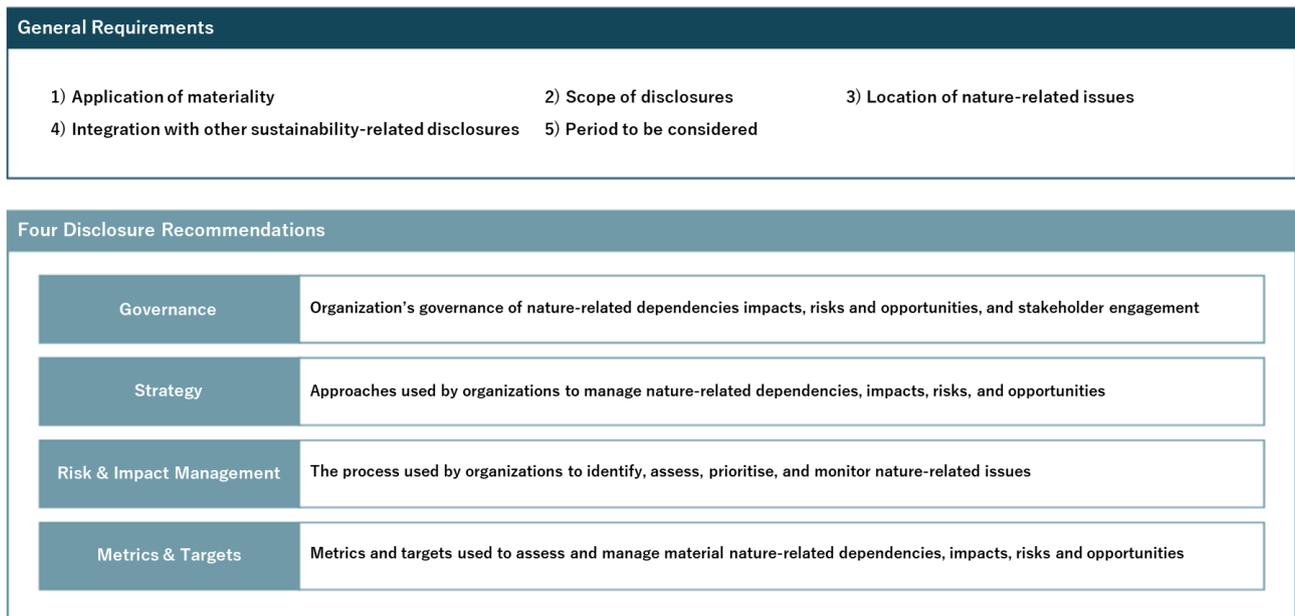


*:National Biodiversity Strategy and Action Plan

In light of these domestic and international trends, based on the recommendations of TNFD ver. 1.0 released in September 2023, our group conducted an analysis of natural capital and biodiversity in our company in dependencies and impacts, and in risks and opportunities.

The TNFD provides an international framework for the appropriate assessment and disclosure of natural capital and biodiversity in risks and opportunities. This report is based on the following framework, which includes general requirements and 4 disclosure recommendations.

Figure 2 Disclosure Items



2 General Requirements

2-1 Application of Materiality

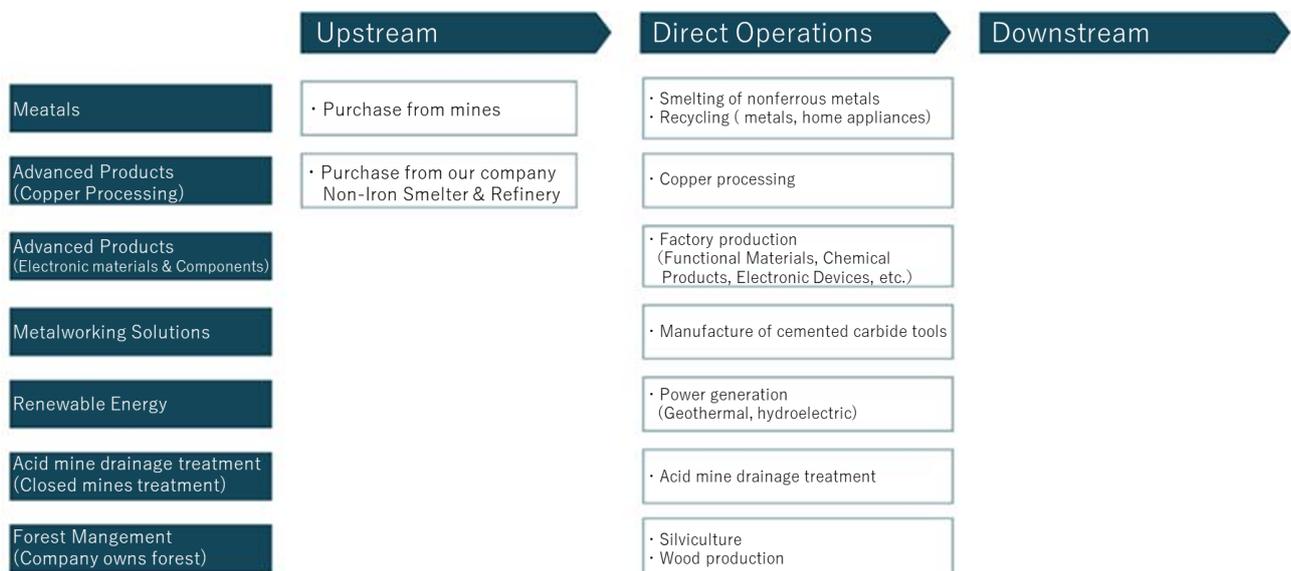
Based on its corporate philosophy “For People, Society and the Earth.” of our group's mission is to “Create a sustainable future (Prosperous society, Recycling-oriented society, and Decarbonized society).” In addition, measures to address global environmental issues have been set as a sustainability issue (materiality), and measures to address biodiversity issues are listed as one of the priority themes.

2-2 Scope of Disclosures

The scope of disclosure covers the four business areas of our group's main business (Metals (Procurement of copper concentrates, smelting of nonferrous metals, recycling of metals, recycling of home appliances), Advanced Products (Copper processing, electronic materials & Components), Metalworking solutions, Renewable Energy (Geothermal and hydroelectric power generation)), as well as mine wastewater treatment and forest management, which are closely related to nature.

Direct operations cover our company and consolidated subsidiaries of each business. In the value chain, the scope of disclosure covers copper mines, which are some of our upstream suppliers.

Figure 3 Scope of Disclosure in the TNFD Report



2-3 Location of Nature-related Issues

322 locations of direct operations of our company and consolidated subsidiaries (Manufacturing sites, development sites, office sites, abandoned mines, company-owned forests, etc.) are targeted for nature-related issues. We also check the status of 3 copper mines that are part of our suppliers (upstream of the value chain).

2-4 Integration with Other Sustainability-related Disclosures

Based on the Task Force on Climate-related Financial Disclosures (TCFD), our group discloses its climate change initiatives, governance, strategy, management in risks and opportunities, and indicators and targets.

As part of our response to the TCFD, our group is estimating the potential damage to risks under the 1.5° C and 4° C scenarios for the Physical risks (Water risks) under climate change.

Climate change and nature are closely related, and climate change is positioned as one of the major factors affecting biodiversity in impacts. Therefore, our response to climate change is directly related to our response to biodiversity issues. Going forward, we will enhance our disclosure based on the TCFD and the TNFD, and will consider providing relevant information where possible.

2-5 Time Horizons Considered

Short-term is set as the fiscal year ending March 2026, medium-term as the fiscal year ending March 2027 to the fiscal year ending March 2031, and long-term as the fiscal year ending March 2032 to the fiscal year ending March 2046.

Table 1 Time Axis in the TNFD Report

Time Axis	Definition	Alignment with Environmental Strategy	Alignment with Company-wide Strategy
Short-term	FYE March 2025 to FYE March 2026		Phase 1 of Medium-term Management Strategy FYE March 2031
Medium-term	FYE March 2027 to FYE March 2031		Phase 2 of Medium-term Management Strategy FYE March 2031
Long-term	FYE March 2032 to FYE March 2051	FYE March 2046 Carbon Neutral Target	

2-6 Engagement with Affected Stakeholders

In developing our businesses globally, we believe that it is essential not only to comply with the laws and regulations of each country, but also to respect international human rights standards. We also expect the Group's business partners to support and practice this Policy and aim to promote respect for human rights together with them.

In the interests of sustainable corporate management, we believe that communicating with our stakeholders is crucial if we are to incorporate their expectations and requirements into our business strategies and activities. While creating more opportunities for communication, our aim is to reflect stakeholders' perspectives in our management practices to a greater extent than ever before.

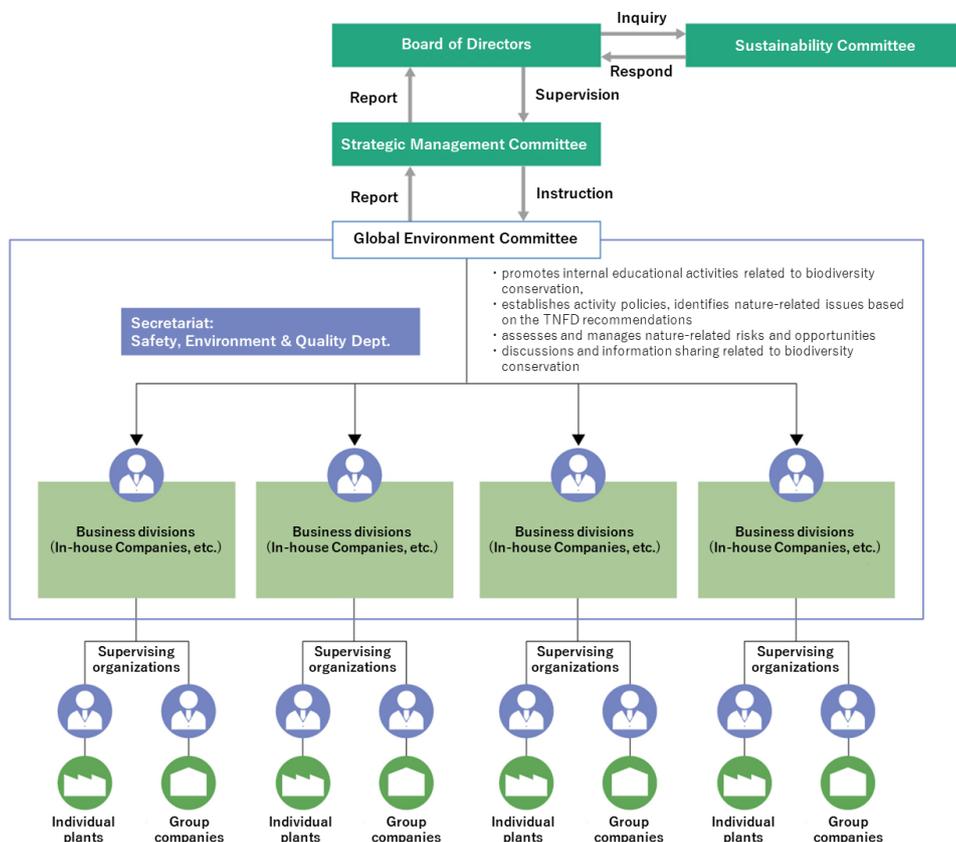
3 Governance

3-1 Roles of Management

The Company has appointed an executive officer in charge of addressing sustainability issues, including biodiversity conservation, and a CSuO as the Chief Executive Officer in each field. We have also established a Safety, Environment & Quality Dept. of the Corporate to plan and promote the Group's strategic initiatives for risks and opportunities related to biodiversity conservation. In addition, the Global Environment Committee, which the Safety, Environment & Quality Dept. serves as the secretariat, promotes internal educational activities related to biodiversity conservation, establishes activity policies, identifies nature-related issues based on the TNFD recommendations, assesses and manages nature-related risks and opportunities, prepares activity plans for a nature-positive society, and other discussions and information sharing related to biodiversity conservation. These activities are reported to the Strategic Management Committee and the Board of Directors for appropriate monitoring. (Matters for deliberation by and reporting to the Strategic Management Committee and Board of Directors)

The Board of Directors goes beyond the monitoring of sustainability initiatives. The Sustainability Committee, an advisory body to the Board of Directors, was established to actively consider the direction of sustainability efforts from different perspectives and present its findings internally. The committee monitors the Company's action related to climate change, considers the methods and issues involved, and reports its findings to the Board of Directors.

Figure 4 Governance System for Biodiversity Conservation Issues



3-2 Human Rights Policy and Engagement Activities

With regard to the human rights policy and engagement activities with stakeholders, particularly indigenous peoples and local communities, which are addressed in the TNFD recommendations, in developing our businesses globally, we believe that it is essential not only to comply with the laws and regulations of each country, but also to respect international human rights standards. For this reason, our group established the Human Rights Subcommittee under the Sustainable Management Office (now known as the SCQ Promotion Office) in July 2021, and that December established a Human Rights Policy in compliance with the UN Guiding Principles on Business and Human Rights. This Policy applies to all officers and employees of the Mitsubishi Materials Group. We also expect the Group's business partners to support and practice this Policy and aim to promote respect for human rights together with them. Our initiatives to respect human rights are periodically reported to the Executive Officers' Meeting and the Board of Directors via the SCQ Promotion Office.

In the interests of sustainable corporate management, we believe that communicating with our stakeholders is crucial if we are to incorporate their expectations and requirements into our business strategies and activities. While creating more opportunities for communication, our aim is to reflect stakeholders' perspectives in our management practices to a greater extent than ever before.

We engage in exchanges and dialogues with local communities and related non-profit organizations to build relationships of trust, and we also conduct educational activities such as environmental events and hands-on learning for local residents to gain a correct understanding of our business activities.

*Details of the SCQ Promotion Headquarters are disclosed in "[Strengthen Response to SCQ Issues](#) (p. 10)" contained in the 2024 our company Integrated Report, "Top Message."

4 Strategy

4-1 Basic Views

Our group has established an environment policy "We engage in business activities that take ecosystems into account throughout our value chain, including the development of natural resources." to address issues related to biodiversity conservation. In light of changes in the social environment related to biodiversity issues, we believe it is necessary to make our policy more specific. Therefore, in September 2024, we established the Biodiversity Conservation Policy as a detailed policy based on this environmental policy.

The Biodiversity Conservation Policy lists "Assessment of the impact of business activities and raw material procurement on biodiversity" as one of our focus areas. As concrete measures, based on the LEAP approach of TNFDv1.0, we conducted assessments of impacts for natural capital, dependencies for ecosystem services, and risks and opportunities for natural capital. The assessments were conducted mainly in the fiscal year ended March 2025, but some of them were conducted in the fiscal year ended March 2024 as a preliminary analysis.

We will consider our future activity plans based on the results of these assessments, but we will establish action targets to "avoid," "reduce," "recover (restore)," and "regenerate" those that cause impacts to nature, and build an appropriate monitoring system in cooperation with local residents and experts.

Reference 1 Mitsubishi Materials Environment Policy

Environment Policy

This Environmental Policy was established based on the Basic Sustainability Policy and is considered to be the foundation of the Mitsubishi Materials Group's business activities.

1. Promote Recycling and Provide Environmentally Friendly Products

We leverage our advanced recycling technologies to promote recycling of waste. At the same time, we provide environmentally friendly materials and products across our business activities starting from raw material procurement to the development, production, distribution, consumption, disposal and recycling of raw materials and products.

2. Advance Decarbonization

We work towards the decarbonization of our business activities by reducing energy consumption. We will also tap into geothermal and other renewable energy sources to decarbonize our entire value chain.

3. Respect Biodiversity

We engage in business activities that take ecosystems into account throughout our value chain, including the development of natural resources.

4. Effectively Use and Conserve Water Resources

We work to reduce water consumption through circular water management and reuse of cooling water, cleaning water and all other water used across our business activities.

5. Sustainably Manage Company-Owned Forests

We make effective use of timber and other forest resources as well as ensure appropriate management of company-owned forests that contribute to decarbonization, biodiversity and water conservation and recreational activities of the local communities.

6. Encourage Environmental Education and Harmonious Coexistence with Society

We strive to reduce the environmental impact from our business activities and prevent pollution by educating all our employees on relevant laws, regulations, and agreements on an on-going basis. We communicate proactively with our stakeholders and engage in environmental conservation initiatives.

(Last revised: December 1, 2021)

Appendix 2 Mitsubishi Materials Biodiversity Conservation Policy

Biodiversity Conservation Policy

Significance of Efforts to Conserve Biodiversity

Based on the Corporate Philosophy "For People, Society and the Earth," we as the Mitsubishi Materials Group have the vision of "Circulating resources for a sustainable future" and, with the mission to "Create a sustainable future (a prosperous, recycling-oriented and decarbonized society)," we have established the following in our Code of Conduct as a rule to observe: "We will work to manage our environmental impact and promote decarbonization, make efficient use of natural resources and accelerate recycling." We also consider the addressing global environmental issues as a Materiality in sustainable growth..

Basic Principles

We recognize that our business activities benefit from natural resources such as minerals and water, and we will conduct business activities that minimize the impact on the natural environment in order to pass on these limited resources to future generations.

In addition, we will conserve forests and closed mines, which are our roots, and the natural environment owned by facilities including renewable energy power plants, which will be the mainstream in the future, as important assets and also raise awareness about biodiversity conservation through community activities.

Through these activities, we will promote biodiversity conservation activities to contribute to a nature-positive society.

Focused Areas

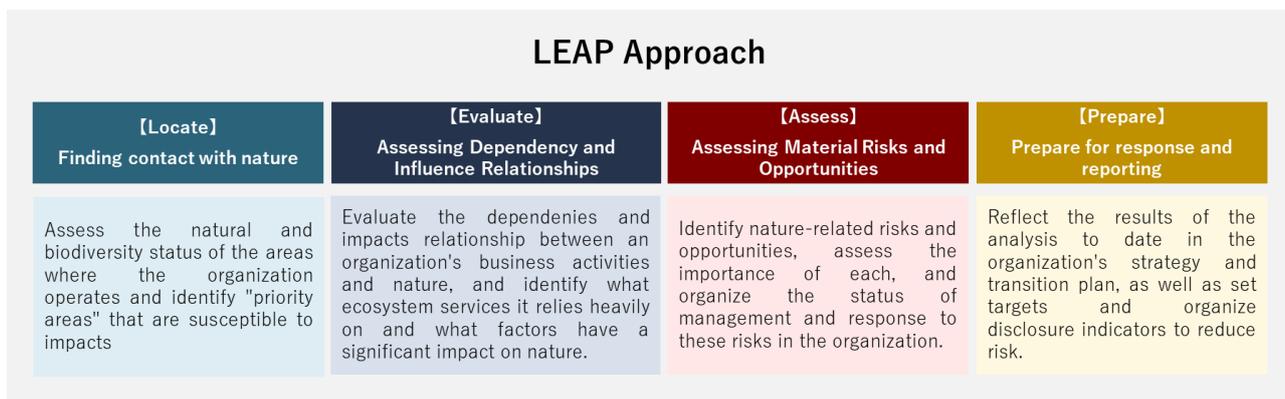
- Assessment of the impact of business activities and raw material procurement on biodiversity
- Assessment of the impact of business activities and raw material procurement on biodiversity
- Provision of opportunities to interact with nature
- Effective use of resources and reduction of the impact on the ecosystem through metal resource recycling
- Ecosystem conservation through climate change measures
- Compliance with environment-related laws and regulations in operations, etc.

Approaches

We will monitor the status of ecosystems and biodiversity at each business site, company-owned forests, closed mines, etc. In addition, we will ascertain the dependence and impact of our business (operations), including the supply chain, on the ecosystem, prioritize them and take appropriate measures.

To take measures, we will establish action targets to "avoid," "reduce" and "recover and regenerate" concerning substances that have an impact on nature and build an appropriate monitoring system in cooperation with local residents and experts.

Figure 5 TNFD's LEAP Approach



4-2 Flow of Identifying Natural-related Issues

① Understanding of Dependencies and impacts (EVALUATE) in our group Business

We used "ENCORE" to evaluate dependencies and impacts in our business. ENCORE is an online tool for organizations to study exposure (sensitivity) to nature-related risks and to understand dependencies and impacts in nature. Since the evaluation by ENCORE is a generalization of the industry, the evaluation was qualitatively corrected based on the actual conditions and characteristics of our business.

Our group's major businesses are extracted from ISIC (International Standard Industrial Classification) classifications

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Dependencies and impacts are evaluated using ENCORE (on a scale of 1 to 5)

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Evaluation results are revised based on the characteristics of our group's business

Table 2-1 List of Analyzed Businesses 1

Evaluate reviewed businesses		ISIC Code	ENCORE Classification		
			Section	Division	Group/Class
Mining investment	Copper concentrate procurement	0729	Mining and Quarrying	Mining Metal Ores	Mining of non-ferrous metal ores
Non-ferrous Metals Smelting		2420	Manufacturing	Basic metal manufacturing	Precious metals and other non-ferrous metals Manufacturing
Metal resource recycling	Metal recycling	3830	Water supply, sewerage, waste management, and cleanup activities	Collection, treatment, and disposal of waste materials	Material recovery
	Home appliance recycling	3830	Water supply, sewerage, waste management, and purification activities	Waste collection, treatment, and disposal, material recovery	Material recovery
Copper & copper alloy		2420	Manufacturing	Basic metal manufacturing	Metal casting
Electronic materials (semiconductors, automobile-related, etc.)	Devices	2610	Manufacturing	Manufacture of computers, electronics, and optical products	Manufacture of electronic components and boards
	Manufacture of basic chemicals	2011	Manufacturing	Manufacture of chemicals and chemical products	Manufacture of basic chemicals, fertilizers and nitrogen compounds, plastics and synthetic rubber in primary forms
	Manufacture of other rubber products	2219	Manufacturing	Manufacture of rubber and plastic products	Manufacture of rubber products
	Manufacture of other fabricated metal products	2599	Manufacturing	Manufacture of fabricated metal products, except machinery and equipment	Manufacture of other fabricated metal products; metalworking service activities
Metalworking Solutions	Carbide tool	2593	Manufacturing	Manufacture of fabricated metal products, except machinery and equipment	Manufacture of other fabricated metal products; metalworking service activities
Closed mines management	Acid mine drainage treatment	3822	Water supply, sewerage, waste management, purification activities	Water collection, treatment, and supply	Water collection, treatment, and supply

Table 3-2 List of Analyzed Businesses 2

Evaluate reviewed businesses		ISIC Code	ENCORE Classification		
			Section	Division	Group/Class
Renewable energy	Geothermal power generation	3510	Supply of electricity, gas, steam and air conditioning	Supply of electricity, gas, steam and air conditioning	Power generation, transmission and distribution/Geothermal energy production
	Hydroelectric power generation	3510	Supply of electricity, gas, steam and air conditioning	Supply of electricity, gas, steam, and air conditioning	Power generation, transmission, and distribution/hydropower
Forest management *	Logging	0220	Agriculture, forestry, and fishing	Forestry and logging	Logging
	Silviculture and other forestry activities	0210	Agriculture, forestry and fishing	Forestry and logging	Silviculture and other forestry activities
Office		8211	Management and support services activities	Office Management, Office Support and other business support activities	Office Management and support activities

*Forest Management identified two businesses at the time of the ENCORE analysis, but the final evaluation was based on the integration of the two businesses.

② -1 Understanding the Contact Point with Nature (LOCATE) in Our Group

In accordance with TNFD disclosure standards, priority sites were selected from among sites in our company. The selection was based on the following criteria:

- All sites were evaluated as "sensitive locations" and "material locations"
- Among all sites, large sites in dependencies and impacts (e.g., factories and company-owned forests) related to the nature of business activities were selected
- Among large sites in dependencies and impacts related to the nature of business activities, sites that meet either "sensitive locations" or "important sites" were identified as priority areas

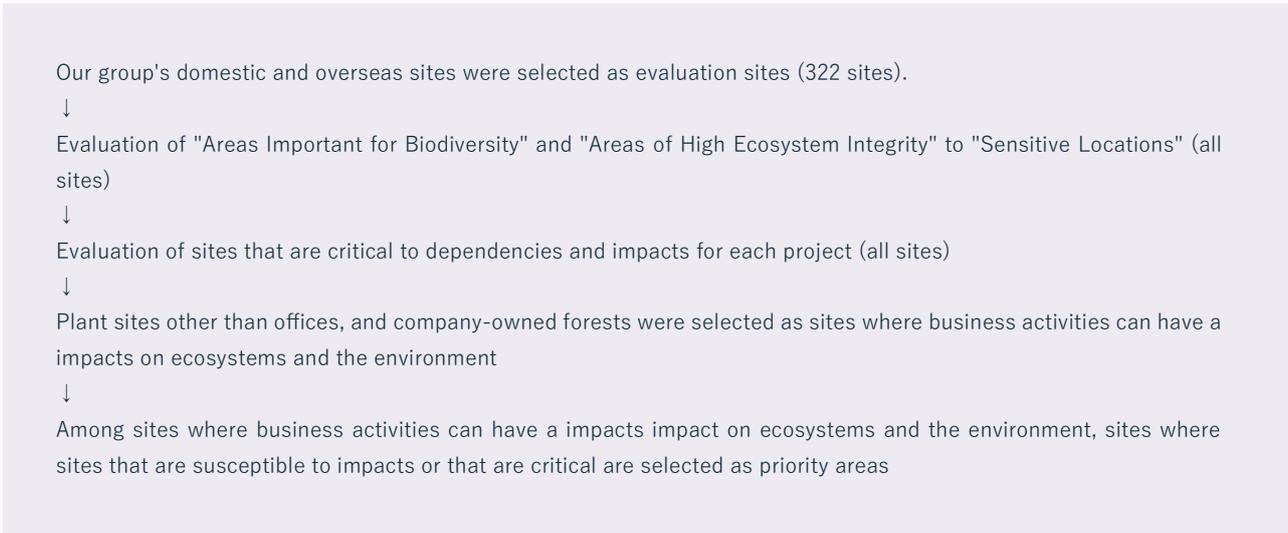
Under the TNFD, priority areas are evaluated in terms of "sensitive locations" and "material locations," and areas that meet both criteria are selected. There are five definitions of "sensitive locations," and at least one of the criteria must be met in the evaluation.

In this study, "areas important for biodiversity *¹" and "areas of high ecosystem integrity *²" in the TNFD definition of "sensitive locations" were evaluated at all sites to be evaluated as common indicators.

In addition, businesses that were evaluated in the Evaluate phase as having dependencies and impacts items of high importance were evaluated as "material locations" by setting individual indicators for important nature-related items in dependencies and impacts.

After that, factories other than offices and company-owned forests were selected as places where business

activities could contribute impacts to ecosystems and the environment. In this study, among the places where business activities can contribute impacts to ecosystems and the environment, identify as priority areas those places



that meet either of the following criteria: "sensitive locations" or "material locations."

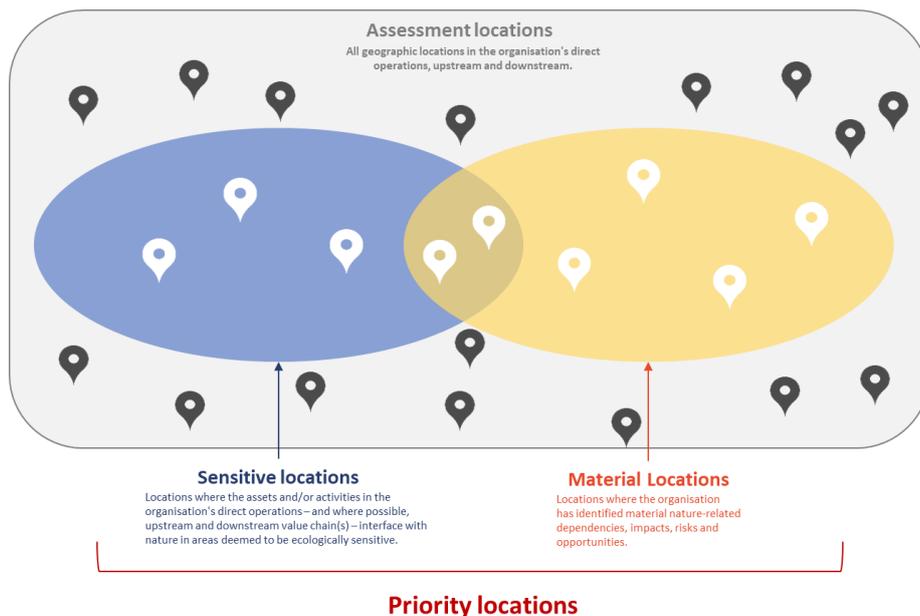
*1 Areas that meet the following criteria: These include protected areas and World Heritage Sites designated by law.

- They are recognized as priority ecosystems at the local, national, and international levels.
- The ecosystem/habitat at the site is regionally specific or highly localized.
- The site is home to endangered species and has a high extinction risks.
- They have important cultural and economic roles for stakeholders (Water supply, recreation, etc.).

The Integrated Biodiversity Assessment Tool (IBAT) was used as the assessment tool.

*2 The ability of ecosystems to maintain and sustain ecological processes and diverse communities. Areas with low ecosystem integrity have degradation/loss of ecosystem assets or services. The WWF Biodiversity Risk Filter was used as the assessment tool.

Figure 6 Priority Area Assessment: Sensitive and Material Locations



The following table shows the classification of the target sites.

Table 4 Number of Target Sites by Business

Business	Metals	Advanced products	Metalworking Solutions	Renewable Energy	Acid mine drainage treatment Related facilities	Company-owned forests	Others
Number of sites	21	42	120	9	22	32	76

Table 5 Number of Locations Covered by Region

Country region	Japan	Asia	Europe	Americas	Oceania
Number of locations	213	52	25	29	3

② -2 Understanding the Contact with Nature (LOCATE) at Overseas Copper Mines

In the fiscal year ended March 2024, surveys were conducted at 3 major overseas mines (4 sites) for copper, a major raw material in our group.

Simple assessment by IBAT confirms the number of species, endangered species, protected areas and KBA (Biodiversity Critical Areas) within a 50 km radius

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Identified the species names of some endangered species in areas with high species richness

③ -1 Evaluation (ASSESS) in Risks and Opportunities (FYE March 2024)

In the fiscal year ended March 2024, we selected representative sites in the non-ferrous metal smelting business, which is one of our main direct operations, and the hydroelectric power generation business, which is considered to have a particularly high dependencies to nature, and conducted evaluations in risks and opportunities.

Prioritized risks and opportunities were selected based on environmental information at representative sites and high evaluation results for dependencies and impacts.

List of risks and opportunities

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Prioritized risks and opportunities based on dependencies and impacts

③ -2 Risks and Opportunities (ASSESS) (FYE March 2025)

In the fiscal year ended March 2025, two projects, acid mine treatment and geothermal power generation, were selected from projects that were rated H or higher in the Evaluate phase and had a high relationship between the project and nature in terms of dependencies or impacts, and were evaluated in risks and opportunities.

For these two projects, priority risks and opportunities were selected. In selecting these projects, we conducted a qualitative assessment of the importance of risks and opportunities, and a review of the status of efforts in risks and

opportunities, and selected them based on the results of these assessments.

Severity assessments were made for risks and opportunities on a 5-point scale (impacts degree/likelihood), and were conducted based on the quantitative and qualitative risks evaluation criteria that are unified within the Group. As for the status of efforts in risks and opportunities, interviews were conducted with representative points of each business and the results were reflected in the assessments.

A list of risks and opportunities considering the height of dependencies and impacts

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Qualitative importance assessment for risks and opportunities

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Alignment of efforts in risks and opportunities

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Identification of priority risks and opportunities

4-3 Evaluation results for Dependencies and Impacts

Since the evaluation results obtained by ENCORE are generalizations for the industry being evaluated, qualitative corrections were made based on the results in light of the actual situation of our group business. Following the ENCORE evaluation, we conducted a 5-point scale evaluation of VH, H, M, L, and VL from highest to lowest, and created a heat map. The 5-point scale evaluation in the heat map does not mean that a higher evaluation is worse, but rather that it takes into account opportunities as well as risks, and shows the degree and strength of the relationship between dependencies and impacts that can occur regardless of whether it is positive or negative.

► Dependencies and Impacts Heat Map for Metals/Advanced Products/Metalworking Solutions

The items and reasons for the correction are as follows.

[Dependencies]

- **Metal recycling: 11 Solid waste remediation VH→L No processing using biological resources such as microorganisms**
- **Home appliance recycling: 11 Solid waste remediation VH→L No processing using biological resources such as microorganisms**

[Impacts]

- **Copper concentrate procurement: 6 Area of seabed use VH→N/A No seabed extraction**
- **Metalworking solutions business: 9 Emissions of toxic pollutants to water and soil H→M No hazardous substances related to the Water Pollution Control Law are contained in products, although chemical substances are used**

The following are the main reasons and characteristics of the items for which the evaluation was high.

- In the procurement of copper, one of the main raw materials in our group, large items were found in dependencies and impacts. This can be attributed to dependencies in the water environment and impacts from the alteration of the natural environment through mining operations.
- The water-related items tended to be higher in impacts across all businesses. This may be due to the possibility of soil and water pollution caused by chemical substances and heavy metals emitted during the manufacturing process.

- Some projects had a high level of disturbance, but this may have been due to concerns about impacts affecting the ecosystem caused by the noise of machinery and lighting.

Table 6 Dependencies' Relationship between Our Group Business and Nature (Metals/Advanced Products/Metalworking Solutions)

(* ENCORE results have been corrected based on actual business conditions)

Major Items	No	Minor items	Mines investment	Non-ferrous Metals Smelting	Metal resource recycling		Copper & copper alloy	Electronic materials (semiconductors, automobile-related, etc.)				Metalworking solutions	
			Copper concentrate procurement		Metal recycling	Home appliances recycling		Devices	Manufacture of basic chemicals	Manufacture of other rubber products	Manufacture of other fabricated metal products	Carbide tool	
Provisioning services	1	Biomass provisioning	VL										
	2	Genetic material											
	3	Water supply	H	M	M	M	M	M	M	L	M	M	
	4	Other provisioning services - Animal-based energy											
Regulating and maintenance services	5	Global climate regulation services	H	VL	VL	VL		VL	VL	VL	VL	VL	VL
	6	Rainfall pattern regulation	VH	M	M	M	M	VL	VL				
	7	Local (micro and meso) climate regulation	L	L			L	L	L	L	L	L	L
	8	Air filtration	VL	M	M	M	M	VL	VL	VL			
	9	Soil quality regulation											
	10	Soil and sediment retention	M	L	VL	VL	M	L	M	L	L	L	L
	11	Solid waste remediation	L	L	L	L		L	L	L	M	M	
	12	Water purification	VH	M			M	M	M	M	M	M	M
	13	Water flow regulation	H	M	L	L	M	M	M	M	M	M	M
	14	Flood mitigation	H	M	VL	VL	M	M	M	M	M	M	M
	15	Storm mitigation	M	M	VL	VL	M	M	M	M	M	M	M
	16	Noise attenuation	VL		VL	VL		VL	VL	VL	VL	VL	VL
	17	Pollination											
	18	Biological control			VL	VL							
	19	Nursery population and habitat maintenance											
	20	Other regulating and maintenance service - Dilution by atmosphere and ecosystems	M		VL	VL		L	L		L	L	
	21	Other regulating and maintenance service - Mediation of sensory impacts (other than noise)	L		VL	VL		VL	VL		VL	VL	
Cultural services	22	Recreational-related services											
	23	Visual amenity services											
	24	Education, scientific and research services											
	25	Spiritual, artistic and symbolic services											

Table 7 Impacts' Relationship between Our Group Business and Nature (Metals/Advanced Products/Metalworking Solutions)

(* Results of ENCORE have been corrected based on actual business conditions)

Major items	No	Minor items	Mines investment	Non-ferrous Metals Smelting	Metal resource recycling		Copper & copper alloy	Electronic Materials (Semiconductors, automobile-related, etc.)				Metalworking solutions
			Copper concentrate procurement		Metal recycling	Home appliances recycling		Devices	Manufacture of basic chemicals	Manufacture of other rubber products	Manufacture of other fabricated metal products	Carbide tool
Resource use/replenishment	1	Volume of water use	M	L	M	M	L	L	M	L	M	M
	2	Other bionic resource extraction (e.g. fish, timber)										
	3	Other abiotic resource extraction	H									
Land/freshwater/ocean use change	4	Area of land use	M	L	M	M	L	L	L	L	L	L
	5	Area of freshwater use	VH									
	6	Area of seabed use										
Climate change	7	Emissions of GHG	M	M	M	M	M	VL	M	M	L	L
	8	Emissions of non-GHG air pollutants	H	H	M	M	M	L	M	M	L	L
Solid waste generation and release	9	Emissions of toxic pollutants to water and soil	VH	VH	M	M	H	H	VH	M	VH	M
	10	Emissions of nutrient pollutants to water and soil		M			M					
	11	Generation and release of solid waste	H	M	M	M	L	L	M	M	L	L
	12	Disturbance (e.g. noise, light)	VH	VH	H	H	H	M	VH	M	M	M
Invasive alien species introduction/removal	13	Introduction of invasive species	L		M	M						

- Dependencies and Impacts Heat Map for Renewable energy/Acid Mine Drainage Treatment/Forest Management
The items for which the evaluation was corrected and the reasons are as follows.

[Dependencies]

- Acid mine drainage treatment :
 - 6 Rainfall pattern regulation VH→M In acid mine drainage treatment, less rainfall reduces the amount of raw water generated, and therefore, less supply is more positive. As a result, the amount of intake water used also decreases.
 - 8 Air filtration M→L Although dependencies does not use air filtration in water treatment, it may contribute to the purification of trace amounts of dust and debris from lime silos, for example.
 - 11 Solid waste remediation VH→L Biological resources such as microorganisms are not used for treatment.
 - 12 Water purification ND→L Due to the resistance of certain plants to heavy metals, some raw water and treated water have their impacts reduced.
 - 20 Other regulating and maintenance service – Dilution by atmosphere and ecosystems ND→VL Exhaust gas and waste are rarely used.
- Forest management:
 - 22 Recreational-related services ND→H These activities are positioned as forests that aim to contribute to local residents.
 - 23 Visual amenity services ND→M Considerations of the overall implementation rate of forest management projects and the situation in dependencies.
 - 24 Education, scientific and research services ND→M Considerations of the overall implementation rate of forest management projects and the situation in dependencies.

[Impacts]

- Acid mine drainage treatment :
 - 5 Area of freshwater use H→M Because large-scale changes in freshwater area are not given.
 - 7 Emission of GHG M→L Because there is almost no heat utilization and greenhouse gas emissions are lower than in general plants.
 - 8 Emissions of non-GHG air pollutants M→N/A Because there is almost no possibility and methane and nitrous oxide are not emitted.
 - 9 Emissions of toxic pollutants to water and soil M→ H: Although there is no adverse effect in normal operations, there is a concern that impacts may be contaminated with heavy metals in freshwater areas in the event of environmental accidents.
 - 11 Generation and Release of Solid Waste L→H Neutralization of heavy metals is a product of water treatment. These are either sent directly to the deposit site or pressed by a filter press and processed as a collection site or industrial waste. Water pollution in impacts are feared at the time of discharge.
- Forest management:
 - 1 Volume of water use Water Consumption M→L Water is rarely used
 - 8 Emissions of non-GHG air pollutants VH→H Fertilizers and pesticides that may release air pollutants other than GHGs are not used to the extent that they can be called VH.
 - 9 Emissions of toxic pollutants to Water and Soil H→M Herbicides are not used, but rodenticides are used in some housing complexes. However, they are said to be less harmful.
 - 10 Emissions of Nutrient Pollutants to Water and Soil H→N/A Nitrate and phosphorus are not used to increase forest productivity.
 - 13 Introduction of invasive species. H→M Larch is used as a planting species, but it is treated as a quasi-local species.

The following are the main reasons and characteristics that can be considered for the items with higher ratings.

- These business activities, which have a large contact with nature, tend to have higher ratings in terms of land use area and soil-related items.
- Since hydropower is a water-based business, dependencies items related to water are highly rated.

- Forest management has high ratings in many items because it requires a large land area and involves growing trees and harvesting wood.

Table 8 Dependencies' Relationship between Our Group Business and Nature (Renewable Energy/Acid mine Drainage Treatment/Forest Management)

(* The results of ENCORE have been corrected based on actual business conditions)

Major items	No	Minor items	Renewable Energy		Closed mines management	Forest management
			Geothermal power generation	Hydroelectric power generation	Acid mine drainage treatment	
Provisioning services	1	Biomass provisioning			VL	VH
	2	Genetic material				VH
	3	Water supply	M	VH	M	H
	4	Other provisioning services - Animal-based energy				M
Regulating and maintenance services	5	Global climate regulation services	VL	M	VL	VH
	6	Rainfall pattern regulation			M	VH
	7	Local (micro and meso) climate regulation	L	L	L	VH
	8	Air filtration	VL		L	H
	9	Soil quality regulation				VH
	10	Soil and sediment retention	H	VH	M	VH
	11	Solid waste remediation	L	L	L	M
	12	Water purification	M	L	L	VH
	13	Water flow regulation	M	VH	M	H
	14	Flood mitigation	M	VH	M	H
	15	Storm mitigation	VL	M	L	M
	16	Noise attenuation	VL		VL	VL
	17	Pollination				M
	18	Biological control			VL	H
	19	Nursery population and habitat maintenance				H
	20	Other regulating and maintenance service - Dilution by atmosphere and ecosystems			VL	
	21	Other regulating and maintenance service - Mediation of sensory impacts (other than noise)			VL	VL
Cultural services	22	Recreational-related services				H
	23	Visual amenity services				M
	24	Education, scientific and research services				M
	25	Spiritual, artistic and symbolic services				

Table 9 Impacts' Relationship between Our Group Business and Nature (Renewable Energy/Acid Mine Drainage Treatment/forest management)

(* Results of ENCORE have been corrected based on actual business conditions)

Major items	No	Minor items	Renewable energy		Closed mines management	Forests management
			Geothermal power generation	Hydroelectric power generation	Acid mine drainage treatment	
Resource use/ replenishment	1	Volume of water use	M	L	L	L
	2	Other bionic resource extraction (e.g. fish, timber)				VH
	3	Other abiotic resource extraction				
Land/ freshwater/ ocean use change	4	Area of land use	L	M	M	VH
	5	Area of freshwater use		H	M	M
	6	Area of seabed use				
Climate change	7	Emissions of GHG	M	L	L	M
	8	Emissions of non-GHG air pollutants	H			H
Solid waste generation and release	9	Emissions of toxic pollutants to water and soil	M		H	M
	10	Emissions of nutrient pollutants to water and soil				
	11	Generation and release of solid waste	VL	L	H	L
	12	Disturbance (e.g. noise, light)	M	H	M	H
Invasive alien species introduction/removal	13	Introduction of invasive species				M

4-4 Evaluation Results of Contact with Nature

Based on the method described in 4-2, the results of LOCATE were divided into ① and ② below. Based on the results of 4-3, assessment was conducted.

① Direct Operations

The following table shows the number of sites designated as priority areas for each project based on the confirmation of contact with nature.

Table 10 Number of Sites Designated as Priority Areas

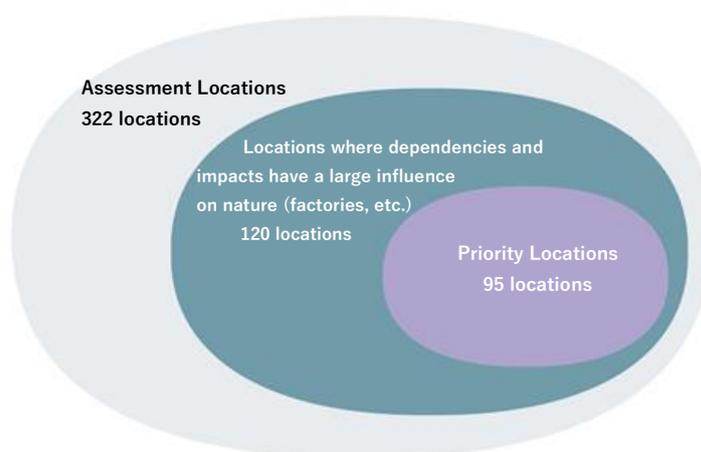
Business	Non-ferrous Metals Smelting	Metal recycling	Home appliance recycling	Copper & copper alloy	Electronic materials (devices)	Electronic materials (manufacture of basic chemicals)	Electronic materials (manufacture of other rubber products)	Electronic materials (manufacture of other fabricated metal products)	Metaworking solutions	Geothermal power generation	Hydroelectric power generation	Acid mine drainage treatment	Forest management
Number of sites subject to evaluation *	3	6	2	19	4	1	5	1	24	3	5	16	31
priority locations	2	6	2	11	3	1	4	1	13	3	5	15	29
Percentage of priority locations	67%	100%	100%	58%	75%	100%	80%	100%	54%	100%	100%	94%	94%

* Locations where dependencies and impacts have a large influence on nature (factories, company-owned forests, etc.)

In the assessment results, 95 locations were rated as priority locations. Assess will evaluate the status of its efforts in risks and opportunities from these priority locations.

Since many locations were judged to be priority locations, we will consider further prioritizing them by screening them based on such criteria as understanding the habitat conditions of plants and animals at each site, the amount of production, and the amount of business activities. As a concrete initiative, we have conducted a literature survey based on the materials of the National Museum of Nature and Science (see the next page), and are considering field surveys based on the survey.

Figure 7 Results of Narrowing Down Priority Areas



[Literature Survey on Rare Species Habitat by the National Science Museum]

Although the tools used in the LEAP approach are commonly used worldwide, we conducted a survey on the habitat of rare species at our domestic locations using the database of vascular plant specimens (seed plants and pteridophytes) owned by the National Museum of Nature and Science in order to confirm the existence of rare species based on detailed analysis.

The survey covered a total of 58 locations, including manufacturing sites directly operated in our company, renewable energy power generation areas, abandoned mines, and company-owned forests. The following activities were carried out.

1. For company land, the relevant secondary regional mesh (about 10 km on 1 side) is extracted based on GIS data or address. If it spans multiple meshes, all applicable meshes are extracted (70 meshes).
2. Data corresponding to the mesh of company land is extracted from the database of vascular plant specimens (seed plants and pteridophytes) owned by the National Museum of Nature and Science.
3. Specimen records that match either the 2020 the Ministry of the Environment Red List or the prefectural Red List are extracted.

As a result of the survey, a total of 1,642 specimens were recorded as red-listed species in the 70 secondary area meshes where company land is located.

By red list, 577 specimens were listed in both the Ministry of the Environment and prefectures, 138 were listed only in the the Ministry of the Environment Red List, and 927 were listed only in the prefectural Red List.

Some specimens were identified in the 1800s and early 1900s, and some species are not known if they can be identified at present. Therefore, we will consider conducting field surveys to confirm the habitat status of many rare species at sites where specimens were found.



"Rare species previously identified in the vicinity of company land"
(Left: *Filipendula tsuguwoi*, Right: *Lespedeza virgata*)

② Overseas Copper Mines

For overseas copper mines, we used IBAT to confirm the number of species, endangered species, protected areas, and KBAs (biodiversity critical areas) within a 50 km radius of the mines of Escondida (Chile), Los Pelambres (Chile), and Mantoverde (Chile) in which we have a stake.

We also confirmed the species names of endangered species at some of the mines mentioned above.

[Consideration for Biodiversity in Procurement from Copper Mines]

We depend on imports of copper concentrates, our main raw material, from overseas mines, and are investing in overseas mines for stable procurement. However, the development and operation of mines may have a significant impact on biodiversity in impacts. As a non-operator, we do not directly operate mines. However, to fulfill its responsibility for sustainable development, we place importance on legal compliance and the concept of a "Social License to Operate".

Prior to the commencement of mining operations at copper mines in which we have a stake (Escondida (Chile), Los Pelambres (Chile), Mantoverde (Chile)), an appropriate Environmental impacts Assessment is conducted in accordance with the laws of the countries and regions where the mining operations are conducted and international agreements such as the 10 Principles for Sustainable Development. An appropriate mine closure plan is formulated through dialogue with stakeholders such as the government and local residents. Even after the commencement of mining operations, ongoing environmental monitoring is conducted, and we periodically confirm with the business entities that operate the mines that efforts are being made to prevent and reduce impacts on the ecosystem.

We also periodically conduct a questionnaire survey with suppliers of copper mines in which we do not have a stake to confirm that they are taking care of nature conservation areas and protecting biodiversity.

[Reducing Load in Raw Material Procurement and Products Utilizing Recycled Materials]

We launched "REMINE," the first recycled metal brand in Japan^{*1}, which specifies the recycled content in non-ferrous metal products. In January 2024, we began selling "Refined Tin (Ingot)" with 100% recycled content and "Refined Lead (Ingot)" with greater than 99.6% recycled content. In December 2024, we added "Refined bismuth (Bi)(Ingot)" which contains 92.2% or more recycled content, 100% "platinum (Pt) sponge," "palladium (Pd) powder" and "tungsten trioxide (WO₃-5)."

In order to realize a sustainable society, it is our responsibility to our stakeholders to ensure the transparency and traceability of raw materials and other information in products in the supply chain from the perspective of resource circulation and the avoidance and reduction of impacts on nature. Additionally, the need to quantify the environmental impact of products is becoming more important.

The "REMINE" series offers non-ferrous metal products by using our cultivated strength in recycling technology. The recycled content is calculated in accordance with the international standard ISO14021^{*2} (JIS Q14021^{*3}) and verified by a third-party organization (SGS Japan Inc.) to ensure a higher level of reliability.

*1 This is the first time in Japan that the recycled content of non-ferrous metals is calculated in accordance with ISO14021 and verified by a third party. As of December 2023, based on our company's research.

*2 ISO14021 is an international standard that requires the elimination of ambiguous expressions and the disclosure of information necessary for verification regarding environmental information on products.

*3 JIS Q14021 is a Japanese industrial standard based on ISO14021 and has the common content with the international standard ISO14021.



4-5 Analysis of Risks and Opportunities

① Analysis of Risks and Opportunities in Each Business

For the analysis of risks and opportunities, based on the results of ENCORE and the fact that these businesses are considered to have a large contact with nature, we selected the hydroelectric power generation, geothermal power generation, and acid mine drainage treatment. The non-ferrous metal smelting business was selected by taking into account the large proportion of sales in our group and the size of risks by nature and impacts by opportunities. risks and opportunities are listed below. Prioritized risks and opportunities are marked with ★.

(The results of trial analysis conducted in January 2024 for the non-ferrous metal smelting business and the hydroelectric power generation business, and in January 2025 for the geothermal power generation business and acid mine drainage treatment business.)

► Non-ferrous Metal Smelting Business

In the non-ferrous metal smelting business, environmental pollution caused by wastewater heat in risks and regional contribution by restoring seagrass beds were mentioned.

Table 11 Risks of Non-ferrous Metals Smelting Business

No.	Risks category		Possible major changes in risks and business activities
1	Physical risks	Acute	Sudden accidents, such as fire and discharge of pollutants into the sea
2		Chronic	★Enhancement of sea-burn caused by wastewater heat
3	Transition risks	Policy and legal	★Finance impacts by CO ₂ emission regulation and introduction of carbon tax
4			★Temperature regulation of wastewater due to the progress of sea-burning in neighboring seas
5		Market	★Reduced competitiveness when other companies develop products produced by processes with lower CO ₂ emissions
6		Technology	★ Finance impacts associated with capital investment to reduce the heat of wastewater and discharge
7		Reputation	according to the location of nearby fishing bases and tourist attractions Reputation impacts associated with adverse impacts on marine ecosystems
8		Liability	The potential risks are low because there is no protected area adjacent to the smelter and no significant natural capital deterioration has been observed.

Table 12 Opportunities of Non-ferrous Metal Smelting Business

No.	Opportunities category	Major expected changes in opportunities and business activities
1	Products/services	Business models that provide a positive impacts/benefit to nature, and exploring other ways to use heat from wastewater
2	Financial flows and financing	★Enjoyment of policy support and incentives for CO ₂ reduction such as emissions trading schemes
3		★Contribution to local communities by rehabilitating seagrass beds to prevent seashore burning and use of blue carbon credit schemes
4	Reputational capital	★ Cooperative engagement with stakeholders at the local level (e.g. seagrass rehabilitating activities)
5	Conservation and regeneration of ecosystems	Cooperation for the recovery of plastic waste drifting to nearby ports

[Efforts to Reduce the Heat of Wastewater]

At the Naoshima Smelter and Refinery, our main base, we are working to improve wastewater temperature management based on the results of assessment analysis using the LEAP approach. In addition to regularly measuring the temperature of wastewater into seawater, we are now designing a wastewater temperature management system. Through these efforts, we are working to avoid and reduce the risk of risks sea-burn caused by wastewater heat.

► Hydroelectric Power Generation Business

In the hydroelectric power generation business, risks was cited for equipment damage and water pollution caused by floods, and opportunities for promoting the supply of renewable energy.

Table 13 Risks of the Hydroelectric Power Generation Business

No.	Risks category		Possible major changes in risks and business activities
1	Physical risks	Acute	★Sudden accidents such as water pollution caused by damage to power plant facilities due to floods and oil spills
2		Chronic	★Response of flood control functions of dams to frequent extreme heavy rainfall and changes in annual rainfall due to climate change, such as impacts, and instability of power generation plans
3	Transition risks	Policy and legal	Response to strengthening of existing regulations and introduction of new regulations for nature conservation
4		Market	Increase in the unit price of electricity generated due to higher costs for biodiversity conservation measures
5		Reputation	Criticism of adverse ecological impacts caused by power plants
6		Liability	Liability and administrative penalties for strengthening existing regulations and introducing new regulations

Table 14 Opportunities of Hydroelectric power Generation Business

No.	Opportunities category	Major expected changes in opportunities and business activities
1	Products/services	★Continue to grasp the ecosystem of the dam and surrounding area, disclose it, and maintain the environment in cooperation with local governments and research organizations, and promote the continuous supply of renewable energy power
2	Reputation capital	Actively participate in the maintenance of trust by continuing to grasp the ecosystem and disclose information with local governments and other stakeholders in the basin
3	Conservation and restoration of ecosystems	Participation in the Moriyoshi Sanroku Kogen Nature Restoration Project and other technical solutions for the restoration of beech trees and forests

Response levels were assessed for the geothermal power generation and acid mine drainage treatment projects. The definitions are as follows.

Table 15 Definition of Response Levels

Response	Definition
Not Supported	Appropriate measures have not been taken to reduce risks and create opportunities
Continuous Measures to Reduce	Efforts are being made to reduce risks and create opportunities, but further action is required. (Change the likelihood of occurrence (prevention, prevention, complementation, reserve) Change impacts degree (mitigation, dispersion, isolation))
No additional action	Maintain the status quo in risks and opportunities by continuing existing control measures (Acceptable even if risks occurs, and efforts to address opportunities have been made)

► Geothermal Power Generation Business

In the Geothermal Power Generation Business, we conducted a questionnaire survey of the Appi Geothermal Power Plant, evaluated the importance score and response level, and identified risks and opportunities as priority areas.

These included impacts due to landslides and risks due to impacts affecting terrestrial ecosystems. In the case of opportunities, improvements in the efficiency of business processes were cited.

Figure 8 Importance and Response Matrix of Geothermal Power Generation Business Risks

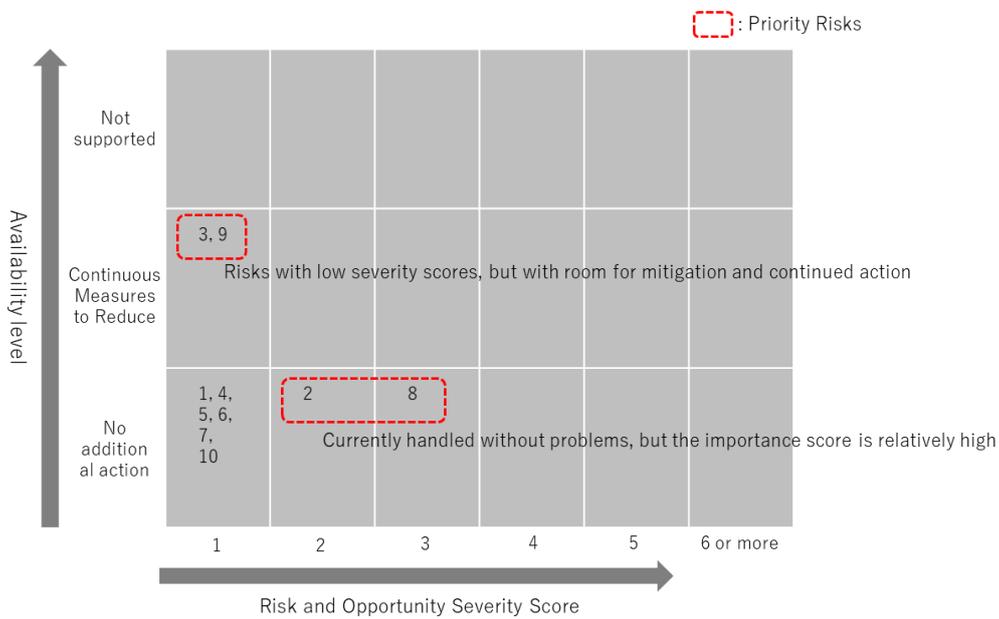


Table 16 Risks of Geothermal Power Generation Business

No.	High priority dependencies, impacts	Risks category		Possible major changes in risks and business activities
1	[Dependencies] Soil and sediment retention	Transition risks	Responsibility	Regulations become stricter and violations of new regulations (laws and regulations) may result in fines and sanctions
2		Physical risks	Acute	★ Landslides and the collapse of the project area caused the suspension of operations and the burden of repair work.
3	[Impacts] Emissions of non-GHG air pollutants	Transition risks	Market	★ Destabilization of stock prices due to increased ESG investment as investors become more environmentally conscious Destabilization of stock prices due to exclusion from ESG investment stocks
4			Reputation	Failure to properly manage air pollutants can result in adverse ecological impacts and harm to local health In the above cases, consumer support will decrease and sales will decrease
5			Responsibility	Regulations become stricter and violations of new regulations (laws and regulations) can result in fines and sanctions
6		Physical risks	Acute	If the ecosystem is destroyed by emissions of air pollutants other than greenhouse gases, there will be costs for responding to the ecosystem.
7	[Impacts] Use of terrestrial ecosystems	Transition risks	Policy	An additional burden imposed by the government's consideration of introducing an environmental tax, economic impacts will arise
8			Policy	★ Due to concerns about impacts on terrestrial ecosystems, restrictions will be placed on business activity areas by stricter regulations on conservation of terrestrial ecosystems, including the establishment of protected areas. Sales will decrease due to restrictions on business activities
9			Policy	★ Due to concerns about impacts on terrestrial ecosystems due to development and steam production activities, requests for response will increase due to stricter regulations on conservation of terrestrial ecosystems, including the restoration of nature within operating areas, and the burden of responding to regulations such as tree planting will increase
10			Technology	New technologies related to monitoring and countermeasures will be developed to reduce impacts on terrestrial ecosystems, and requests for introduction will increase, and the burden of introducing new technologies will increase

[Impacts Assessment of Biodiversity in the Development of Geothermal Power Generation]

In 2015, we established Appi Geothermal Co., Ltd. in collaboration with Mitsubishi Gas Chemical Co., Inc., In 2018, Electric Power Development Co., Ltd. joined together, and the 3 companies promoted the commercialization in the west of Appi Kogen, Hachimantai City, Iwate Prefecture. The geothermal power plant which output is a 14,900kW was started operation in 2024. In 2015, Appi Geothermal Co., Ltd. began the Environmental Impact Assessment (EIA) process to investigate, predict, and evaluate impacts of the installation of the Appi Geothermal Power Plant on the surrounding environment. In January 2018, we received a final notification regarding the Environmental Impact Assessment Report from the Minister of Economy, Trade and Industry and construction began in August 2019.

In addition, we will conduct surveys similar to those conducted at the Appi Geothermal Power Plant in new developments, and we will strive to avoid impacts on important natural environments by complying with various laws and regulations, such as excluding habitats of rare species and birds of prey, protected forests, and virgin forests from project candidates.

Figure 9 Importance and Response Matrix of Geothermal Power Generation Business Opportunities



Table 17 Opportunities of Geothermal Power Generation Business

No.	High priority dependencies, impacts	Opportunities category		Possible major changes in opportunities and business activities
1	[Dependencies] Soil and sediment retention	Business	Resource efficiency	Reduced labor costs by optimizing processes to improve operational efficiency
2	[Impacts] Emissions of non-GHG	Business	Capital and funds	★Stabilization of stock prices by attracting ESG investments
3	air pollutants		Resource efficiency	★Reduction of personnel costs by optimizing processes to improve operational efficiency

[Efforts to Expand Renewable Energy Utilization]

We have established a target of achieving a 100% renewable energy utilization rate for electricity consumption by the fiscal year ending March 2035, and attaining full self-sufficiency in renewable energy-based electricity by the fiscal year ending March 2050. This objective will be pursued through the development and expansion of renewable energy sources, including geothermal power generation, an area in which the Group possesses significant expertise.

To achieve these targets, the Group will invest 10.5 billion yen mainly in energy-saving measures and equipment improvements at manufacturing sites and 30 billion yen in the renewable energy business by fiscal 2030.

► Acid Mine Drainage Treatment

In the acid mine drainage treatment, we conducted an evaluation of the importance score and response level using questionnaires at 4 sites: Akita Refinery, Ikuno Plant, Osarizawa Plant of Eco-Management Co., Ltd., and Hosokura Metal Mining Co., Ltd. The score evaluated at each site was used as the evaluation value for each of risks and opportunities by taking the maximum value of the 4 sites.

For risks, the deterioration of its reputation due to water and soil pollution was cited. For opportunities, the regional contribution by protecting the surrounding ecosystem was cited.

Figure 10 Importance and Response Matrix of Acid Mine Drainage Treatment Risks

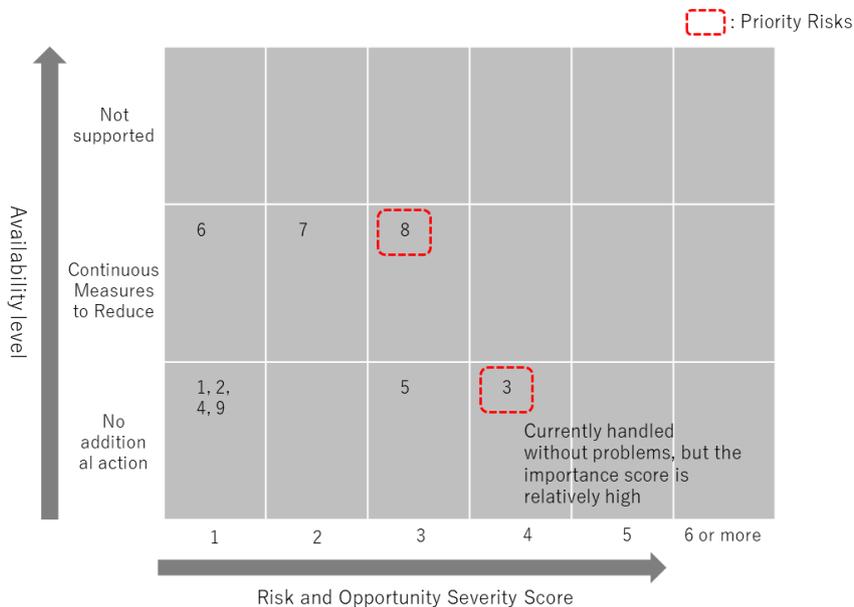


Table 18 Risks of Acid Mine Drainage Treatment

No.	High priority dependencies, impacts	Risks category		Possible major changes in risks and business activities
1	[impacts] Emissions of toxic pollutants to water and soil	Transition risks	Policy	Additional burden imposed by the introduction of environmental taxes and wastewater charges, resulting in economic impacts
2			Market	Stabilization of stock prices due to increased ESG investment as investors become more environmentally conscious
3			Technology	Cost burden increases due to further capital investment to comply with wastewater standards
4			Reputation	★Decrease in sales due to loss of brand value due to ecosystem destruction caused by water and soil pollution Decrease in support from stakeholders and lack of understanding of operations in the case of "Eco"
5				Responsibility
6	[impacts] Generation and release of solid waste	Migration risks	Market	Stabilization of stock prices due to increased ESG investment in line with increased environmental awareness among investors
7			Reputation	Decrease in sales due to negative impact of environmental pollution on ecosystems and negative impact on health. In the case of Eco, etc., support from stakeholders decreases and understanding of operations is lost
8			Responsibility	★If new regulations (laws) are violated, fines and sanctions are imposed.
9	[impacts] Use of terrestrial ecosystems	Transition risks	Policy	Regulations for conservation of terrestrial ecosystems are strengthened, resulting in a decrease in sales due to restrictions on business activities. In the case of Eco, etc., restrictions on business activities are imposed on operations.

[Advanced Management System of Acid Mine Drainage Treatment with Experts]

We have upgraded its acid mine drainage treatment facilities and strengthened them to adequately respond to heavy rain disasters. However, recent extreme weather events have often exceeded past expectations, and it is believed that unlimited facility upgrades will be necessary to respond to each event.

In light of the above, we have established a committee involving external experts to develop management systems and methods that do not rely on facility upgrades.

This initiative aims to enhance resilience against natural disasters by conducting prior assessments of the environmental impact of acid mine drainage on nearby rivers and other areas, in line with the basic policy for the implementation of mine pollution prevention projects established by the Ministry of Economy, Trade and Industry (6th edition). Specifically, we are consulting with experts to assess the appropriateness of countermeasures by first identifying potential risks that may arise during disasters, thereby optimizing management methods in emergencies and minimizing environmental impact. In addition, we disseminate the results to local government and other stakeholders to enhance mine management through dialogue.



Left: Site inspection by experts, right: Expert committee

Figure 11 Importance and Response Matrix of Acid Mine Drainage Treatment Opportunities

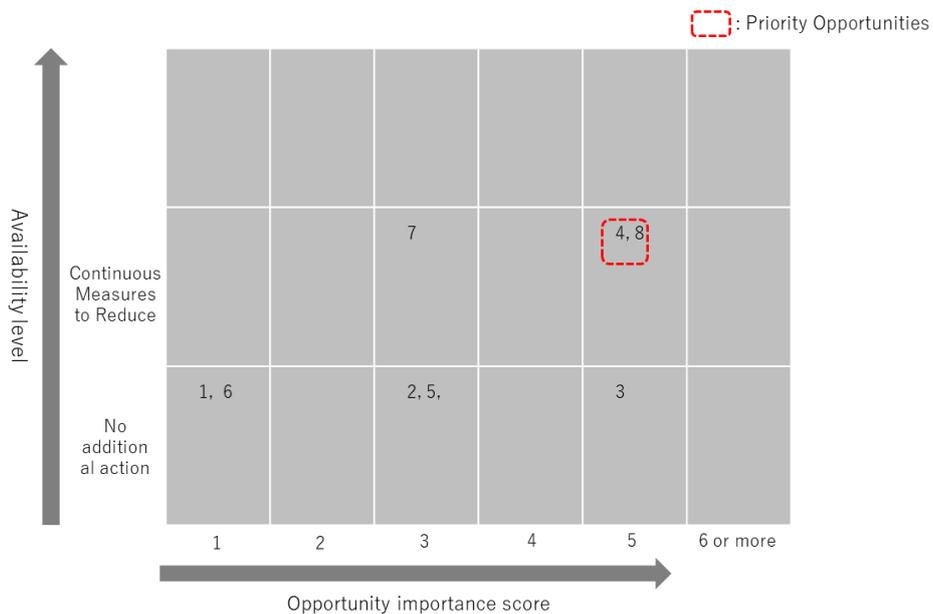


Table 19 Opportunities of Acid Mine Drainage Treatment

No.	High priority dependencies, impacts	Opportunities category		Major expected changes in opportunities and business activities
1	[impacts] Emissions of toxic pollutants to water and soil	Business	Market	It is necessary to avoid the new tightening of regulations risks. As a business, thorough management such as raising the standard value for the treatment of hazardous pollutants in water and soil will lead to avoidance and reduction of impacts from the new tightening of regulations
2			Resource efficiency	Reduction of personnel costs, etc. due to reduction of processing processes by improving operational efficiency
3			Reputation	Enhancing reputation by strengthening communication with local communities
				Enhancing reputation also improves business continuity
4		Reputation	★Earning the trust of government and other stakeholders by fulfilling their responsibilities as the final holder of mining rights. Enhancing reputation also improves business continuity	
5	Sustainability	Protection, restoration and regeneration of ecosystems	Implement the transition of wastewater standards to management of water utilization points, etc. Evaluation of impacts on ecosystem on water quality management at water utilization points. Consultation with stakeholders such as local governments leads to ecosystem protection and restoration.	
6	[impacts] Generation and release of solid waste	Business	Market	It is necessary to avoid risks of new regulations. As a business, thorough management, such as raising the standard value for the treatment of hazardous pollutants in water and soil, will help impacts avoid and reduce the risk of new regulations.
7			Resource efficiency	Reduction of personnel costs due to reduction of processing processes through increased operational efficiency
8	[impacts] Use of terrestrial ecosystems	Sustainability	Ecosystem protection, restoration, and regeneration	★Activities to protect, restore, and regenerate ecosystems around abandoned mines

[Release of Young Ayu to Neighboring Rivers]

In Yoneshiro River, a watershed in northern Akita Prefecture, we are hosting a release of young ayu in cooperation with neighboring companies and the local conservation council. This activity is carried out by a total of about 100 people, including local elementary school students, school officials, and local fishery cooperatives. We believe that this activity will help protect and improve the ecosystem in Yoneshiro River. We also believe that it will contribute to building new relationships between companies and local residents through Yoneshiro River, which is a common asset.



[Greening at the Loading Dock]

Greening of the loading dock is being carried out in conjunction with the permanent construction of the abandoned mine. In addition, to confirm the effects of these measures, our company, the University of Tsukuba, Yamagata University, Forestry Research Institute, and the Hokkaido University endowed course are collaborating on research on vegetation transition after greening and the effects of these measures. One of the results of this research is that the bare area occupied about 30% of the area immediately after construction, but vegetation transition has progressed since then, and after five years, the vegetation coverage has increased to 100%. Seed plants are blooming and butterflies are dancing. We believe that this represents the colonization of natural species from outside the area and the return of insects. We are also studying a greening method that does not require soil cover as a planting test at the depot where the accumulation of granules has been completed.



Status of Greening by Permanent Construction



Depot Field Greening Test (Left: Vegetation condition, Right: Medium-scale greening test condition)

② Results of Water Analysis

▶ Physical Risks (Water Risks)

1) Scenario Analysis for River Flood Risks

As part of climate change scenario analysis, we conduct a physical risks assessment of water. In the fiscal year ended March 2020, we used Aqeduct to evaluate the Water risks at manufacturing sites. Because many of the sites with high Flood risks among the various Water risks, we conducted a Financial risks Assessment from the fiscal year ended March 2022 to the fiscal year ended March 2023 for sites with high Flood risks.

In evaluating the Financial risks, we used Gaia Vision's Climate Vision to simulate river floods in risks at 1.5° C and 4° C, and calculated the amount of direct damage to equipment and other facilities due to the flood and the amount of indirect damage due to the shutdown of operations. For sites with high Water risks, we are taking measures to reduce risks of Flood by raising equipment and installing water shutoff boards.

Our group's Water risks initiatives are disclosed in "[Water Resource Management](#)" in our company Sustainability Report 2025.

2) Operations in Water Stressed Areas

As of the end of March 2025, there were 11 manufacturing sites located in water stressed areas worldwide. They accounted for approximately 1% of total Group sales in the fiscal year March 2023.

5 Management in Risks and Opportunities

While critical risks inherent to each field of business are identified by individual business divisions and critical risks inherent to each site are identified by individual sites compulsively, each corporate department identifies and evaluates serious, high priority risks which share a high degree of commonality across the Group and which are expected to have a severe impact on the Group's business management..

Each Critical risks is reviewed and selected annually by the Strategic Management Committee in which all executive officers participate. The response plan for these Critical risks is reported and deliberated by the Sustainability Council, and the status of its efforts is shared at meetings such as the Sustainability Review.

The Executive Officer in charge is responsible for overall risks management activities, and these activities are managed independently of the Audit Committee.

In terms of education, we strive to improve the quality of our activities by providing educational content that covers everything from an overview of risks Management to specific approaches to management, and by holding seminars to improve risks's sensitivity by external lecturers.

We recognizes nature-related issues as one of the major risks issues that may have an important impact on our group's business performance and financial position, and promotes these issues in its risks management activities.

Details of our group's risks management structure and operational status, and the selection process for Critical risks are disclosed in "[Risk Management](#)" in our company Sustainability Report 2025.

6 Metrics and Targets

6-1 Metrics

The following table lists the indicators related to natural change disclosed by our group.

Table 20 Disclosure of Natural Change

Factors Related to Natural Change	Indicators	Disclosure	Remarks	Global Core of the corresponding TNFD Indicator number
Changes in land/freshwater/ocean use	Total spatial footprint	Company owned forest area	Production site area to be considered	C1.0
Pollution/decontamination	Wastewater Discharged	Water Discharged Discharge Destination Category: Sea Water, Rivers and Lakes, Sewage, Others		C2.1
	Waste generation and disposal	Industrial Waste Discharge Category: Final Disposal (Non-Hazardous), Final Disposal (Hazardous), Recycling (Non-Hazardous), Recycling (Hazardous)		C2.2
	Plastic Pollution	Plastic Products Industrial Waste Discharge		C2.3
	Non-GHG air pollutants	Sulfur oxides (SO _x), nitrogen oxides (NO _x), soot and dust		C2.4
Resource use/replenishment	Water withdrawal and consumption from areas of water scarcity	Water withdrawal and water consumption		C3.0

Details of each item are disclosed in the "[Sustainability Data](#)" in Sustainability Report 2024.

6-2 Targets

We are also promoting initiatives related to climate change and resource recycling, and the targets set in relation to nature are as follows. We will consider indicator targets for items not included in this report based on the results of this assessment.

▶ GHG^{*}

In July 2024, The group revised its GHG emissions (Scope1 + Scope2) reduction target to be set for emissions excluding GHG emissions from resource recycling efforts.

Since we have set "For people, society and the earth, circulating resource for a sustainable future" as Our Commitment and have made strengthening resource recycling by leveraging the strengths of our business a pillar of our Medium-term Management Strategy, we have set a new GHG reduction target of GHG emissions from our resource recycling efforts of emissions excluding GHG emissions from resource recycling efforts, we have set a new GHG reduction target of a 47% reduction from the fiscal year ended March 2021 level by the fiscal year ending March 2031.

Details of our targets and future reduction efforts are disclosed in the Sustainability Report 2025, "[Climate Change \(Disclosure in Accordance with TCFD\)](#)."

*Greenhouse Gas

▶ Plastics

The Company falls under the category of large-volume waste generating business operator (a business operator generating at least 250 tons of industrial waste from plastic products a year) as defined by the Act on Promotion of Resource Circulation for Plastics. The Company has set targets concerning the reduction and recycling of industrial waste from plastic products as required by this designation, and is working to switch from heat recovery and landfill disposal to resource recycling. The targets are as follows.

"By FYE March 2028, achieve a 35% reduction and recycling rate for industrial waste from plastic products compared with FYE March 2022 levels (1,115 tons)."

As specific initiatives, we plan to implement the "Reduce the amount of plastic materials used in site business activities, consider using alternatives, or switch to material recycling" and the switching of packaging plastics for our company products to material recycling.

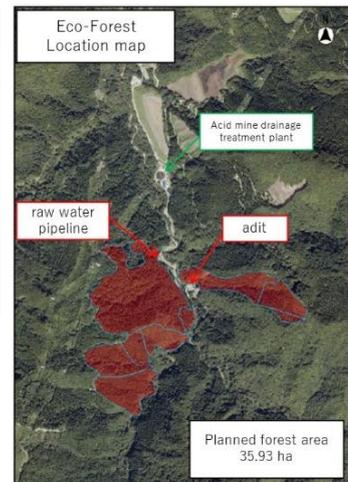
7 Other Initiatives Related to Nature

▶ Supplier Engagement on Nature Related Issues

In identifying nature related issues, it is not limited to identifying issues in direct operations, but also the need to identify issues in the value chain. We are building relationships with suppliers to identify issues throughout the value chain. Specifically, we send engagement letters to major copper concentrate suppliers to share information on the status of their efforts to address global environmental issues, the current status of their understanding of nature related issues, and the status of their disclosure to the TNFD. We plan to continue these efforts in the future and expand the number of eligible suppliers.

▶ Yamagata Bonded Forest Agreement

In 2025, Eco Management Co., Ltd., a our group company, concluded the Yamagata Bonded Forest Agreement (planned forest area: 35.93 hectares) with the aim of reducing risks in the event of landslides from outside the site during heavy rains and contributing to the local environment through forestation activities by Yamagata Prefecture and the forest owners (Tazawa Jikokai). As a result of this agreement, 40 companies and organizations have concluded agreements, and these activities are conducted in 38 districts. These activities promote forest development through the maintenance and use of forests, and we believe that these activities will contribute to responding to severe weather events and contributing to the environment, as well as revitalizing the Satoyama region through regional exchanges.



▶ Assessment of Natural Capital at the Sedimentation Site

From 2025, we plan to conduct an assessment of natural capital at the sedimentation site and its surrounding areas at the decommissioned mine in cooperation with the National Institute of Advanced Industrial Science and Technology. The purpose of this assessment is to understand the environmental DNA around the sedimentation site and the diversity of microorganisms in the sedimentation site soil, and to evaluate the relationship with the aboveground ecosystem. We plan to confirm the value and degree of regeneration of natural capital at the sedimentation site in our company, and use this as an indicator of Nature Positive activities.



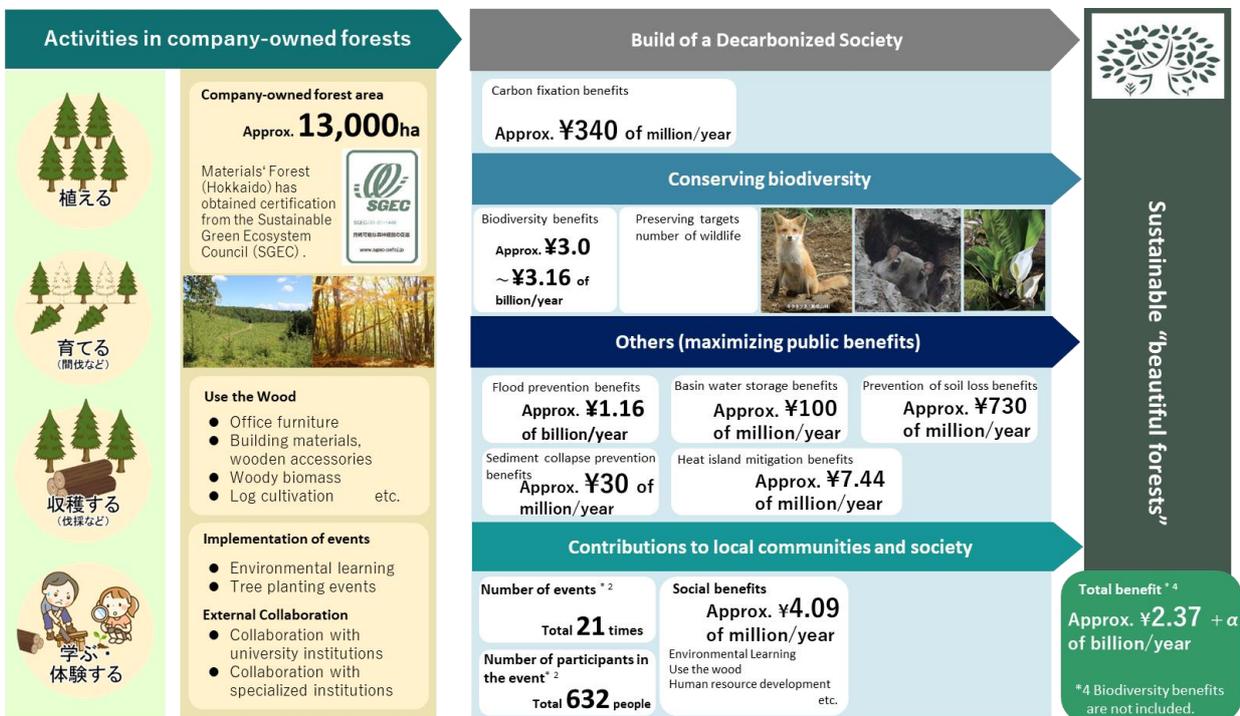
Status of Natural Return at the Sedimentation Site (Shimokawa Mine)

▶ Economic Value Assessment of Public Benefit Functions of the Company-owned Forests

We own one of the largest forests in Japan, known as the “Materials’ Forests”, which originated from mining development (ore production). These forests provide various public benefit functions, including timber production, water and soil conservation, and recreational spaces. These public functions benefit our daily lives in the form of ecosystem services.

In the “Materials’ Forests”, we are engaged in social contribution activities such as providing timber through forest maintenance and offering environmental education as part of our efforts to contribute to society toward nature-positive. We have decided to quantitatively assess the public functions that these activities provide and to estimate the economic value of the benefits gained from such management.

The benefits generated through forest maintenance, such as thinning, and social contribution activities, including environmental education events amounted to approximately ¥2.37 billion per year for 30 housing complexes (excluding benefits for biodiversity conservation). We decided not to include benefits for biodiversity conservation in the total of other benefits due to remaining issues in the calculation methodology, but we found that the benefits amounted to approximately ¥3.1 billion per year (see the figure below).



*1: Only forests in Hokkaido that have obtained "SGEC Forest Certification" *2: Events from 2017 to 2021 *3: As of March 2025

Since the evaluation reflects the management status of each housing complex, we will make use of the results in the development policies of each housing complex, and will proceed with efforts toward "beautiful forests 100 years from now," which is the goal of our company-owned forests. For details, please refer to the papers submitted at the Environmental Systems Research Paper Presentation Meeting..

[Papers submitted at the Environmental Systems Research Paper Presentation Meeting](#)

* This data is only available in Japanese on the website.

▶ Engaging with Indigenous Peoples

Of the forests owned by our company, eight housing estates in the prefecture have obtained SGEC forest certification. The SGEC has established guidelines for FPIC(It stands for Free, Prior and Informed Consent and consists of three elements: Free Consent, Prior Consent and Informed Consent.) implementation for the Ainu people. We understands the necessity of FPIC implementation and is implementing activities in accordance with the

guidelines.

Our company-owned Forests, which own many forests in Hokkaido, report on its forest activities and holds hearings with the Hokkaido Ainu Association and other Ainu associations in the municipalities where the forest is located. Through these activities, we ascertain opinions and requests about our company Forest, and strive to contribute to the preservation of the customs of the Ainu people while building and maintaining good relationships.

► Certified as a "Natural Symbiosis Sites"

"Teine Forest, one of the Materials' Forests" ("Teine Forest"), a company-owned forest of Mitsubishi Materials Corporation, has been certified as one of the "The Nationally Certified Sustainably Managed Natural Sites" by the Ministry of the Environment.

"Natural Symbiosis Sites" are areas where biodiversity is being conserved through the efforts of the private sector, etc., and are certified by the national government. The certified area was registered in the international database as OECM* in August 2024, excluding overlaps with protected areas.

*Other Effective Area-based Conservation Measures, Areas that contribute to biodiversity conservation other than officially protected areas, such as corporate forests.

Teine Forest, which has been certified this time, is a suburban forest adjacent to the urban area of Sapporo City, although it is home to a wide variety of flora and fauna. Teine Forest has been highly evaluated for its adoption of a work system with low environmental impact on forest management to conserve its biodiversity and for its monitoring activities using digital tools..

