TOKUYAMA

TOKUYAMA
TNFD REPORT 2025

Contents

Issued by Corporate Sustainability Div. Tokuyama Corporation April 2026

The Tokuyama Group, whose origins lie in the manufacturing of basic chemical products, has achieved sustainable growth for more than 100 years while being supported by “natural capital.” We regard the realization of Nature Positive as a key management challenge and are sincerely committed to the conservation of the global environment. Throughout our long history of business activities, we have always placed great importance on biodiversity, we are reassessing the nature-related dependencies and impacts of our business, including what they are and how they arise, as well as newly emerging risks and opportunities, in order to pursue a more sustainable future and enhance corporate value.

This report has been prepared in line with the recommendations of the Taskforce on Nature-related Financial Disclosures (TNFD) and discloses our Group’s initiatives as well as the results of our analyses.

December 2025

Introduction

In December 2022, the "Kunming-Montreal Global Biodiversity Framework" was adopted as a new international guideline for biodiversity conservation. The framework consists of the 2050 Vision, the 2030 Mission, the 2050 Global Goals, the 2030 Global Targets, and other associated elements. The 2030 Global Targets incorporate numerical indicators to enable clearer tracking of progress and include priority components for Japan, such as the 30by30 Alliance (conserving 30% of terrestrial and marine areas) and nature-based solutions.

In Japan, the Act on Promoting Activities to Enhance Regional Biodiversity (Regional Biodiversity Enhancement Act) will enter into force in April 2025, establishing a legal framework for the designation of corporate-led biodiversity conservation areas known as "Nature Symbiosis Sites." Under this system, the national government certifies areas where biodiversity is being conserved through private-sector initiatives, aligning with the internationally agreed 30by30 target. As green spaces owned and managed by companies are also eligible for certification, the registration of OECMs (Other Effective Area-Based Conservation Measures—areas outside formally protected zones that contribute to biodiversity conservation and promote collaborative efforts between the public and private sectors) is progressing nationwide.

In response to these international and domestic developments, the Tokuyama Group has stepped up its efforts based on the recommendations of the Taskforce on Nature-related Financial Disclosures (TNFD), in order to fulfill its responsibilities as a corporate group.

In May 2024, we joined the TNFD Forum and expressed our support for Japan Business Federation's Biodiversity Declaration Initiative. We have also participated in the TNFD Japan Council (TNFD Consultation Group-Japan), advancing nature-related disclosures and strategic responses.

Furthermore, in October 2025, we completed our registration as a TNFD Adopter, translating our initiatives on biodiversity into more concrete and effective actions.

TNFD Forum Member

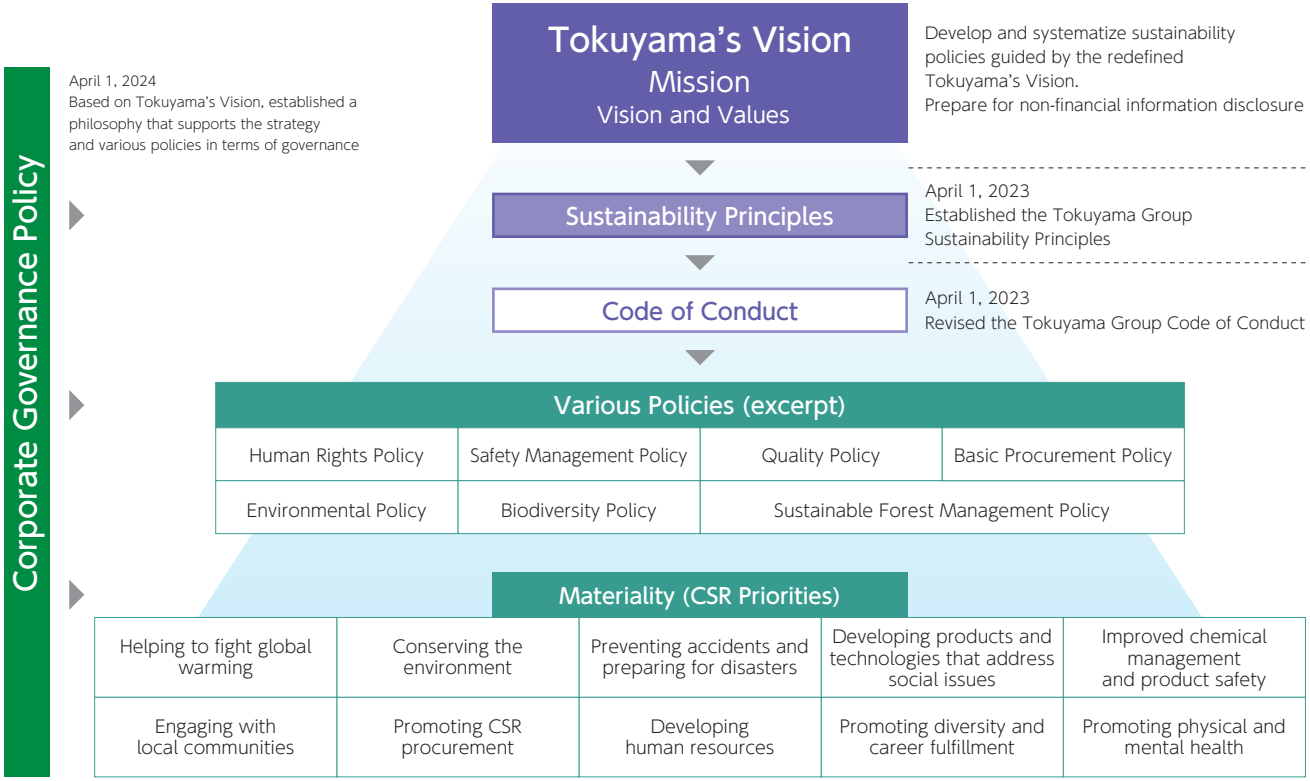
Governance

a. Oversight by the Board of Directors

Under the Tokuyama Group's Vision—comprising our Mission, Vision, and Values: *"To create a bright future in harmony with the environment, in collaboration with its customers, based on chemistry"*—we established eight Sustainability Principles in April 2023 to drive sustainable growth and enhance long-term corporate value. Guided by this vision and these principles, the Group seeks to minimize environmental impacts arising from its business activities while creating new value in harmony with the environment through the provision of products that help address social challenges.

The Board of Directors recognizes that responding to sustainability-related issues represents not only risk mitigation but also opportunity maximization and therefore constitutes a critical management priority for long-term value creation. From this perspective, the Board has adopted Sustainability Principles and actively engages in addressing these issues in a proactive manner. Key sustainability-related policies and plans are subject to Board approval or reporting, ensuring appropriate oversight and guidance. In FY2024, the Board deliberated and resolved or received reports on 41 sustainability-related agenda items—including progress on "Practice socially responsible management" (a priority under the Medium-Term Management Plan 2025), carbon neutrality initiatives, and restructuring of sustainability-related governance bodies (as described below)—covering environmental, social, and governance (ESG) topics, including nature-related matters.

Figure 1: Sustainability Policy Framework



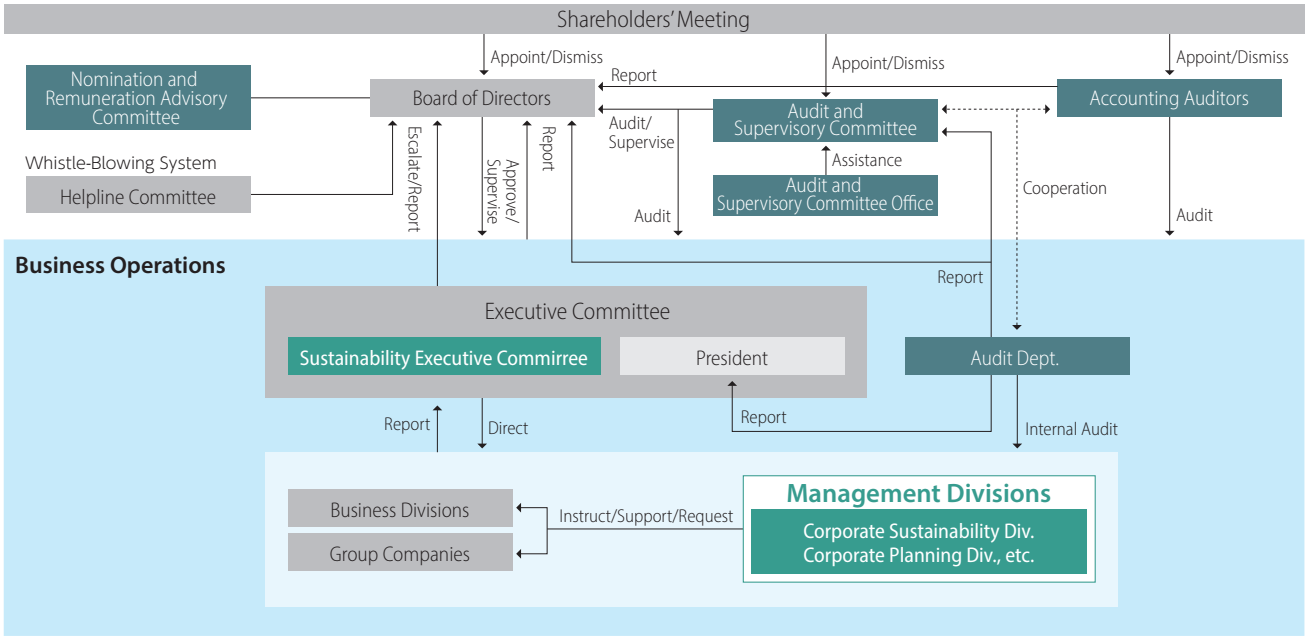
To further strengthen sustainability governance, the Board resolved to reorganize the former CSR Promotion Council (held annually in principle) into the Sustainability Executive Committee, effective April 1, 2025. The new Committee will convene regularly (at least once per year) and additionally as needed based on agenda items, forming an enhanced corporate governance structure to advance sustainability management.

Both the CSR Promotion Council and the Sustainability Executive Committee are chaired by the President and Executive Officer, with all Executive Officers serving as members, and Audit and Supervisory Committee Members, including Outside Directors, are also entitled to attend.
In the Sustainability Executive Committee, under the policies determined by the Board of Directors, the committee approves company-wide sustainability plans and confirms their execution, deliberates and decides on sustainability issues and important matters related to internal controls. Significant disclosure items related to sustainability are also discussed and decided in this committee. Previously, the CSR Promotion Council conducted discussions on company-wide risk management through its subordinate Risk Management and Compliance Committee (held twice annually in principle). After the reorganization, discussions on risk management are conducted within the Sustainability Committee. Under the Sustainability Committee, specialized subcommittees have been established to address areas of high expertise and importance from the perspective of sustainability and internal controls. Responses related to nature are mainly handled by the Environment Committee (Chair: Director in charge of Sustainability; held once annually in principle). Each specialized committee is chaired by the Director responsible for its respective area (see Figure 3 on page 5).

The Sustainability Committee is held regularly once a year, and is also structured to convene in alignment with the Executive Committee, which is held twice monthly, to ensure timely discussion and decision-making on emerging sustainability-related matters. Initiatives related to sustainability are subject to periodic internal audits conducted by the Audit Office, and the results are reported to the President and the Board of Directors.

Figure 2: Corporate Governance Structure

Revised as of April 1, 2025

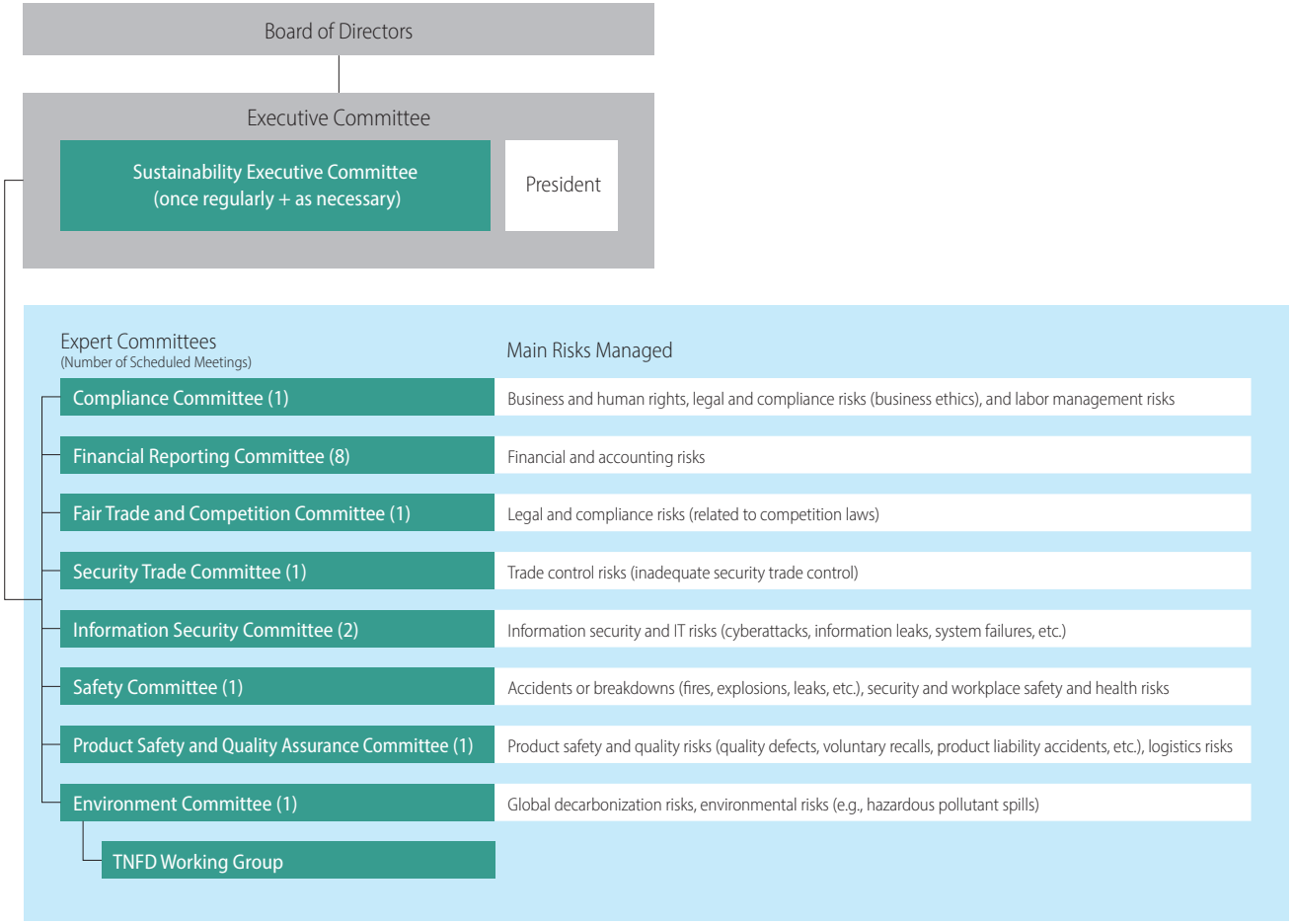


b. Management's Role

Tokuyama identifies and discloses key CSR issues for promoting sustainability management as "materiality," and among these, it lists "Conserving the environment" as one of the priorities, actively working to protect the natural environment. The identification and prioritization of materiality are determined based on dialogue with stakeholders and opinions from external experts, and resolutions are made at the CSR Promotion Council. For each materiality, a responsible person and a promoting department are designated, targets are set, and progress is reported to the CSR Promotion Council (from FY2025 onward, to the Sustainability Executive Committee). Table 1 shows the Aspiration, KPIs / Targets, Person responsible, and Department Responsible for the materiality "Conserving the environment."

In FY2024, risk management related to the natural environment was carried out by the CSR Promotion Council and its subordinate Risk Management and Compliance Committee and Environment Committee (held once annually in principle). The Risk Management and Compliance Committee confirmed the positioning of nature-related risks within company-wide risk management. The Environmental Measures Committee analyzed risks and opportunities related to the natural environment that could affect the Group's business and implemented corresponding measures. The latest trends and legal regulations concerning the natural environment are also monitored and addressed by the departments responsible under the supervision of the Environmental Measures Committee. The activities of these committees were reported to management through the CSR Promotion Council and the Executive Committee.

Figure 3: List of Sustainability-Related Committees and Their Responsible Risks (From FY2025)



Starting in FY2025, Tokuyama group's sustainability governance has been carried out by the Sustainability Executive Committee, which replaces the former CSR Promotion Council. Activities related to nature are primarily addressed by the Environment Committee and its subordinate TNFD Working Group. Summaries of activities at each production site, including those in priority areas (described later), are also reported to the Environment Committee. As before, measures involving investments are deliberated by the Executive Committee.

As for our nature-related initiatives, in FY2024 we implemented efforts such as reducing GHG emissions, reducing water consumption, and lowering environmental impacts. In addition, we conducted biodiversity conservation activities including cleanup initiatives and forest conservation efforts, and disclosed these activities using the TNFD framework (in this report).

Table 1: Materiality and Conserving the Environment of the Tokuyama Group

Materiality	Aspiration	KPI / Target	Person Responsible / Department Responsible
Conserving the Environment	• Promoting recycling and maintaining zero landfill waste • Maintaining low emissions of environmental impact substances • Complying with legal requirements and other regulations, achievement of zero environmental accidents • Contribution to biodiversity conservation	• Complying with legal requirements and other regulations: Achievement of zero violations • Continued achievement of zero environmental accidents: Zero accidents • Reduced environmental impact: • Effective waste utilization rate: ≥92% • Landfill waste disposal rate: ≤3% • Enhancing dialogue with stakeholders and information disclosure • Contributing to biodiversity conservation: Responding to TNFD • Effective use of water resources: Reduction of water consumption (excluding seawater) (compared with FY2019)	Director (Chairperson of Environment Committee) Responsible Care Management Department

Table 2: Process and frequency for receiving reports (FY2024)

Reporting Process	Meeting Frequency (Number of meetings in FY2024)	Monitoring Mechanism
Executive Committee	Twice a month in principle (28)*	With "Practice Social Responsible Management" set as a priority issue under the Medium-term Management Plan 2025, and the committee deliberates on the formulation of environmental conservation measures as well as related investments.
CSR Promotion Council	Annually (1)	Chaired by the President, the council reviews activity reports from the Risk and Compliance Management Committee and eight specialized committees and oversees the progress of the company's materiality initiatives.
Risk Management and Compliance Committee	Semiannually (2)	The committee is chaired by the director in charge of CSR. The committee conducts risk management company-wide, including identifying emerging risks and reviewing known risks.
Environment Committee	Annually (1)	The committee provides general oversight of the environmental audits conducted at each production facility, receives energy conservation activity reports, and sets environmental targets for the next fiscal year.
TNFD Working Group	Held as necessary (2)	We have established a working group under the Environment Committee to ensure responses aligned with the TNFD recommendations. The group brings together members from across the Company to gather information and examine initiatives.
Director Study Session	Annually in principle (3)	We also conduct study sessions for Directors and Executive Offisers on environmental matters, including nature-related issues.

*Regarding the Executive Committee, in addition to the above, there were two written resolutions that were deemed to have been an Executive Committee resolution.

To clarify Tokuyama's approach to nature, we have established policies such as "Environmental Policy," "Biodiversity Policy," and "Sustainable Forest Management Policy," based on the aforementioned "Tokuyama's Vision" and our "Sustainability Principles." For our supply chain as well, we promote environmental conservation and consideration for biodiversity by presenting "Basic Procurement Policy" and "Sustainable Procurement Guidelines."

Sustainability Principles

Established April 1, 2023

Based on chemistry, Tokuyama's mission is to create a bright future in harmony with the environment in collaboration with its customers. In order to fulfill this mission, we have established the following principles on the promotion of sustainability.

1. We ensure that all of our business activities help solve social issues and contribute to a sustainable future.
2. We respect human rights, individuality, and diversity, and we strive to deliver job satisfaction for our employees and business partners by implementing human resources development and health management.
3. We practice thorough compliance and conduct transparent business activities in good faith.
4. We always give top priority to safety, and we work hard to prevent accidents and ensure occupational health and safety.
5. We operate in harmony with the global environment by striving to combat global warming and protect biodiversity.
6. We deliver products and services that meet the needs of customers and consumers and provide them with peace of mind.
7. We contribute to local communities by acting as a good corporate citizen in the countries and regions in which we operate.
8. We maintain good communication with all of our diverse stakeholders.

Environmental Policy

Established April 1, 2023

- We strictly comply with laws and regulations.
- We reduce environmental impact.
- We combat climate change.
- We build trusting relationships with stakeholders.

Biodiversity Policy

Established April 1, 2023

1. Basic Stance
   The Tokuyama Group strives to ascertain the impact of its business activities on ecosystems, while working to protect biodiversity and use biological resources sustainably.
2. Scope
   This Biodiversity Policy applies to all officers and employees of the Tokuyama Group. We also expect business partners of the Tokuyama Group to embrace this policy, and we encourage them to help protect biodiversity.
3. Legal Compliance
   The Tokuyama Group complies with all applicable laws and regulations related to biodiversity and respects international agreements.
4. Training and Awareness-Raising
   The Tokuyama Group strives to raise awareness of biodiversity protection issues among its officers and employees.
5. Partnerships
   The Tokuyama Group strives to share its biodiversity awareness with partner organizations worldwide, while improving, sharing, and utilizing its biodiversity knowledge and expertise through cooperation and collaboration.
6. Information Disclosure
   The Tokuyama Group publicly releases the results of its biodiversity protection efforts and promotes good communication with society.

Sustainable Forest Management Policy

Established April 1, 2025

1. The Tokuyama Group will not be complicit in deforestation or illegal logging.
2. The Tokuyama Group only engages with sustainably and properly managed forest resources. In addition, the Group also makes effective use of burnt and/or fallen trees and driftwood damaged by natural disasters.
3. The Tokuyama Group contributes to the sustainable development of forest-related communities.
4. The Tokuyama Group respects the human rights of all people engaged in forestry and will not tolerate any discriminatory or prejudicial practices, child labor or forced labor.
5. The Tokuyama Group respects the socioeconomic rights of indigenous peoples with respect to their traditional lands and their forest-related uses.

* Tree species comprising forests include bamboo and palm tree species.

c. Human Rights Policy and Engagement Activities

The Tokuyama Group established "Human Rights Policy," which was approved by the Board of Directors, on December 1, 2022, and at the same time issued a statement of commitment to respect human rights by the President.

In "Human Rights Policy," the group declares its support for and respect of international human rights norms, such as the United Nations *International Bill of Human Rights,* the International Labor Organization (ILO) *Declaration on Fundamental Principles and Rights at Work,* and the United Nations *Guiding Principles on Business and Human Rights,* in order to fulfill its corporate responsibility to respect human rights.

The fundamental concepts outlined in the policy state that: "The Tokuyama Group recognizes that its business activities could potentially have adverse impacts on the human rights of stakeholders, or contribute to such impacts, while its businesses, products and services could have direct adverse impacts on human rights in the broader society. Therefore, we strive to avoid any human rights infringement while addressing any adverse human rights impacts that the Group' s activities may contribute to." Stakeholders are defined as shareholders and investors, customers, business partners, employees, the global environment, and local communities, explicitly including "the global environment and local communities."

To prevent negative human rights impacts on the global environment and local communities that may arise from environmental degradation, the Group conducts due diligence and engagement activities. Human rights violations related to business activities are also reported through several ways, such as whistle-blowing system (e.g. "Helpline" in Tokuyama Group). For major suppliers, regular assessments are conducted using the questionnaire (SAQ) developed by the Global Compact Network Japan (GCNJ), along with interviews for suppliers of concern, to confirm that no human rights violations are occurring.

In addition, at sites where business operations are considered to have a significant impact on the surrounding communities—such as the Tokuyama Factory and the Kashima Plant—the company conducts periodic (generally once a year) engagement with local residents through "Responsible Care (RC) Dialogues." In these sessions, the company explains its initiatives to protect the environment and ensure safety, and works to build understanding.

Figure 4: Stakeholders of the Tokuyama Group

Strategy

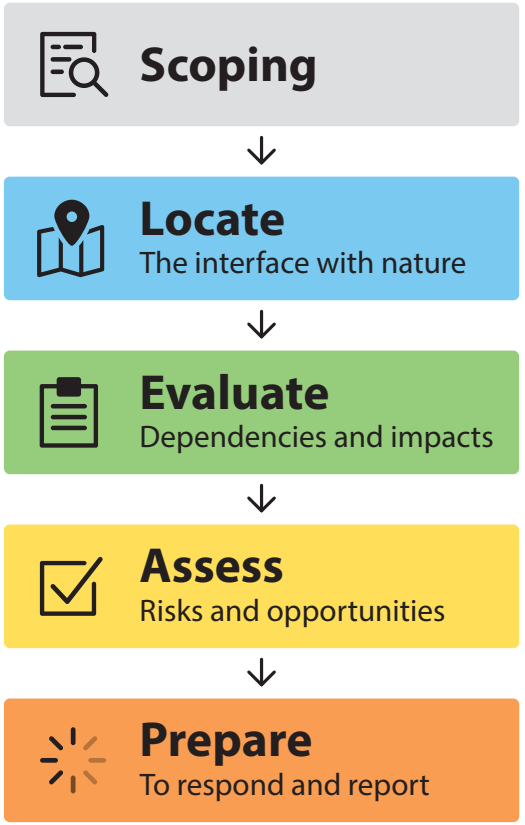
a. LEAP Approach

We evaluated the nature-related issues in the Tokuyama Group's business activities using the LEAP approach recommended by TNFD. The LEAP approach is an integrated approach for evaluating nature-related issues such as contact point with nature, dependence on nature, impact, risk, and opportunity, and consists of "scoping" and followed by four steps: "locate," "evaluate," "assess," and "prepare" (Figure 5).

b. Scoping Ⅰ

In the scoping phase, we take an overview of the organization's business activities and their relationship with natural capital, and we analyze whether significant nature-related issues exist and identify locations that require more focused analysis. Since its establishment in 1918, the Tokuyama Group has gradually expanded its business domains and extended its operational footprint both domestically and internationally. Our business activities are primarily categorized into four areas: chemicals, cement, thermal power generation (co-firing of coal and biomass), and pharmaceuticals. To objectively assess the degree of dependence on and impact on nature for each of our business activities, we used the WWF Biodiversity Risk Filter (WWF BRF). We categorized our activities into WWF BRF industry sectors and assessed the degree of BRF indicators for each sector. The assessment understanded us that each of these business activities is expected to have distinctive dependencies and impacts on nature.

Figure 5: LEAP approach



We selected the WWF BRF industry sector classifications corresponding to each of the Tokuyama Group's four business activities (Tables 3, 4, and 5). In WWF BRF, each industry sector is evaluated on a five-level scale for its degree of dependency on nature (Table 3) and its level of impact on nature (Table 4). Below, we describe the indicators with a dependency level of "High" or above for each business activity, along with their relevance to our actual operations.

● Business Activities and Dependencies on Nature (WWF BRF) 1–4, 8

• Chemicals

Indicators rated "High" include "Water Availability" and "Media Scrutiny." In chemical manufacturing, water is extensively used for purposes such as cleaning, cooling, and as an additive in products, which results in a high level of dependency on water. Regarding "Media Scrutiny," if problems such as chemical leaks cause environmental pollution and are reported by the media, there is a risk that the company's reputation will decline.

• Cement

Indicators rated "Very High" include "Water Availability," while "Forest Productivity and Distance to Markets" and "Media Scrutiny" are rated "High." For the cement business, we selected "Construction Materials" as the relevant sector in WWF BRF. However, in Tokuyama's cement manufacturing, water usage is minimal, so the actual dependency on water is considered low. In addition, since no forest-derived timber is used, dependency on forests is also low. Regarding "Media Scrutiny," as with chemicals, if large amounts of material were to be released into the environment, there is a risk that the company's reputation would decline.

• Thermal Power Generation

Indicators rated "Very High" include "Water Availability," while "Forest Productivity and Distance to Markets" and "Extreme Heat" are rated "High." Because power generation requires large amounts of water for both electricity production and cooling, the dependency on water is considered very high. In addition, "Extreme Heat" may reduce water resources, having the potential to be a risk of insufficient cooling water. At Tokuyama's power plants, seawater is used for cooling to reduce dependency on freshwater resources, and the use of dam water is minimized. Regarding forests, we does not use of forest-derived wood at power plants; however, palm kernel shells (PKS), a byproduct of palm oil extraction, are utilized as biomass fuel to help reduce GHG emissions. While there is some dependency on forest resources, we ensure sustainability by sourcing GGL-certified products.

• Pharmaceuticals

Indicators rated "High" include "Water Availability," "Forest Productivity and Distance to Markets," and "Plant, Forest, and Aquatic Pests and Diseases." In Tokuyama Group's pharmaceutical business, water usage is minimal, and there is no direct connection with forests or plants; therefore, dependency on these is considered low.

● Business Activities and Impacts on Nature (WWF Risk Filter) 5–7

• Chemicals

The indicator rated "Very High" is "Pollution." In chemical manufacturing processes, wastewater and exhaust gases that could impact the environment and living organisms if released untreated are a concern. At all Tokuyama Group sites, emissions are strictly managed to remain below each site's regulatory standards. Regarding waste, we maintain a high recycling rate and ensure proper disposal at the time of discharge (see p.28).

• Cement

Indicators rated "Very High" include "Forest Canopy Loss" and "Pollution." For the cement business, we selected "Construction Materials" as the relevant sector in WWF BRF. However, since Tokuyama's cement manufacturing uses no forest-derived wood, the actual impact on forest loss is considered low, although potential loss caused by emission gases must also be taken into account. Regarding Pollution, as with the chemicals sector, strict compliance with emission standards and maintaining a high recycling rate help keep environmental impacts to a minimum.

• Thermal Power Generation

Indicators rated "Very High" include "Pollution" and "Protected Areas," while "Forest Canopy Loss," "Key Biodiversity Areas," "Other Important Boundaries," and "Ecosystem Condition" are rated "High." Regarding "Pollution," the combustion of fuel for power generation raises concerns about air pollution caused by harmful emission gases such as SOx and NOx; however, emissions are strictly managed to remain below regulatory standards. At Tokuyama's power plants, we does not use forest-derived wood. Although palm kernel shells (PKS) are used as biomass fuel, only GGL-certified products are purchased to ensure the sustainability of forest resources, keeping the impact on forest loss low. For the four indicators under 6. Environmental Factors, we have examined the spatial relationship between the Tokuyama Factory and nearby protected areas (see p.17).

• Pharmaceuticals

The indicator rated "Very High" is "Pollution." In Tokuyama Group's pharmaceutical manufacturing, wastewater and emission gases are minimal; however, some facilities handle highly hazardous chemicals and biohazard materials, requiring special attention. When waste is discharged from business sites, it is handled through authorized disposal contractors.

Table 3: Physical Risk Levels by Sector According to the WWF Biodiversity Risk Filter (Dependency)

* [—] Not Applicable

Physical Risk		BRF Indicators	Tokuyama Group's Business Activities			
			Chemicals	Cement	Thermal Power Generation (Coal and Biomass Co-firing)	Pharmaceuticals
			WWF BRF Industry Sector *			
			Chemicals & Other Materials Production	Construction Materials	Electric Energy Production - Combustion (Biomass, Coal, Gas, Nuclear, Oil), Geothermal Energy	Health Care, Pharmaceuticals and Biotechnology
1. Provisioning Services	1.1	Water Availability	High	Very High	Very High	High
	1.2	Forest Productivity and Distance to Markets	—	High	High	—
	1.3	Limited Wild Flora & Fauna Availability	Very Low	Very Low	—	Medium
	1.4	Limited Marine Fish Availability	—	—	—	—
2. Regulating & Supporting Services – Enabling	2.1	Soil Condition	—	—	—	—
	2.2	Water Condition	Medium	Low	Low	Medium
	2.3	Air Condition	Medium	Medium	Medium	High
	2.4	Ecosystem Condition	—	—	—	—
	2.5	Pollination	—	—	—	—
3. Regulating Services – Mitigating	3.1	Landslides	Medium	Medium	Medium	Medium
	3.2	Wildfire Hazard	Medium	Medium	Medium	Medium
	3.3	Plant/Forest/Aquatic Pests and Diseases	—	—	—	High
	3.4	Herbicide Resistance	—	—	—	—
	3.5	Extreme Heat	Medium	Medium	High	Medium
	3.6	Tropical Cyclones	Medium	Medium	Medium	Medium
4. Cultural Services	4.1	Natural & Cultural Resources	—	—	—	—
8. Additional Reputational Factors	8.1	Media Scrutiny	High	High	Low	Very High
	8.2	Political Situation	Low	Low	Medium	Low
	8.3	Sites of International Interest	Low	Low	Medium	Low
	8.4	Risk Preparation	Low	Low	Low	Low

https://riskfilter.org/biodiversity/home

Table 4: Physical Risk Levels by Sector According to the WWF Biodiversity Risk Filter (Impact)

* [—] Not Applicable

Physical Risk		BRF Indicators	Tokuyama Group's Business Activities			
			Chemicals	Cement	Thermal Power Generation (Coal and Biomass Co-firing)	Pharmaceuticals
			WWF BRF Industry Sector *			
			Chemicals & Other Materials Production	Construction Materials	Electric Energy Production - Combustion (Biomass, Coal, Gas, Nuclear, Oil), Geothermal Energy	Health Care, Pharmaceuticals and Biotechnology
5. Pressures on Biodiversity	5.1	Land, Freshwater and Sea Use Change	Very Low	Very Low	Very Low	Very Low
	5.2	Forest Canopy Loss	Very Low	Very High	High	Very Low
	5.3	Invasives	—	Low	—	—
	5.4	Pollution	Very High	Very High	Very High	Very High
6. Environmental Factors	6.1	Protected/Conserved Areas	Medium	Medium	Very High	Medium
	6.2	Key Biodiversity Areas	Low	Low	High	Low
	6.3	Other Important Delineated Areas	Low	Low	High	Low
	6.4	Ecosystem Condition	Low	Low	High	Low
	6.5	Range Rarity	Very Low	Very Low	Medium	Very Low
7. Socioeconomic Factors	7.1	Indigenous Peoples (IPs); Local Communities (LCs) Lands and Territories	Medium	Medium	Medium	Medium
	7.2	Resource Scarcity: Food - Water - Air	Very Low	Very Low	Very Low	Very Low
	7.3	Labor/Human Rights	Low	Low	Low	Low
	7.4	Financial Inequality	Low	Low	Low	Low

https://riskfilter.org/biodiversity/home

Table 5: Nature Dependencies and Impacts Identified by the WWF Biodiversity Risk Filter

	Chemicals	Cement	Thermal Power Generation	Pharmaceuticals
Dependency	Water Availability	Media Scrutiny	Water Availability	Water Availability
Impact	Pollution	Pollution	Pollution, Protected/Conserved Areas, Key Biodiversity Areas, Other Important Delineated Areas, Ecosystem Condition	Pollution

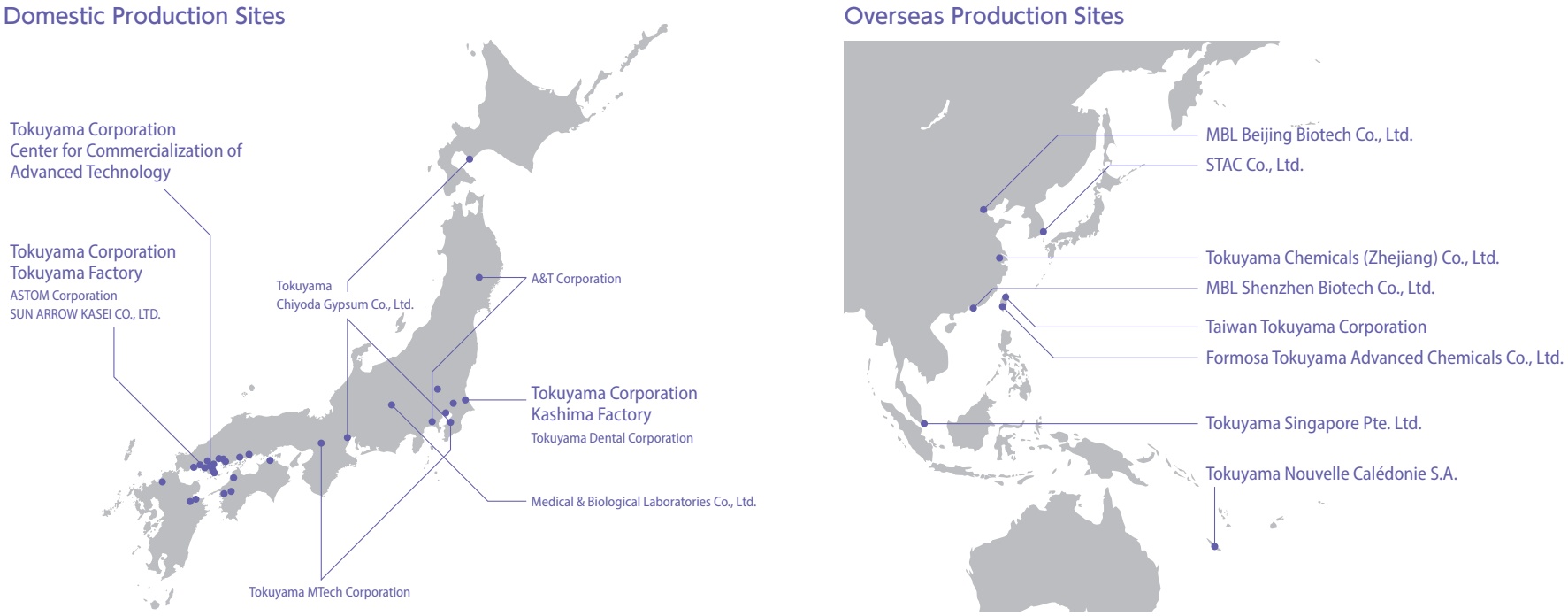
● **Business Activities and Points of Interaction with Nature**

Based on the WWF BRF, Table 5 outlines assumptions regarding Tokuyama Group's business activities that are considered to have significant dependencies and impacts on nature. Here, we examine in greater detail the points of interaction with nature and associated risks in the regions where Tokuyama Group's facilities are located.

Tokuyama Group consists of Tokuyama Corporation and 56 consolidated subsidiaries. Focusing on production sites due to their greater influence on natural capital, as shown in Figure 6, Tokuyama Corporation operates three production sites in Japan, while 21 group companies operate 33 sites producing ready-mixed concrete, building materials, and medical-related products. In addition, eight overseas group companies operate nine production sites (as of October 1, 2025).

To assess these sites, we used various tools, including WRI Aqueduct Water Risk Atlas, WRI Global Forest Watch, WWF Water Risk Filter, IBAT (Integrated Biodiversity Assessment Tool), IUCN Global Ecosystem Typology, and KBA (Key Biodiversity Area). Using these tools, we examined how each site interacts with nature and its spatial relationship to areas where rare species live. We also evaluated water-related risks, such as physical risks like water stress and projected risk changes through 2080. Among these, we selected four major sites—both domestic and overseas—that have significant sales and a substantial impact on the Group' s continuity. The analysis results for these key sites using various tools are presented (see Table 6).

Figure 6: Major Production Sites of the Tokuyama Group (as of October 1, 2025)



Tokuyama Group's primary production sites include the Tokuyama Factory—our founding location and a key manufacturing hub (see p. 21–27)—and the Kashima Factory in Kamisu City, Ibaraki Prefecture, which focuses on life science-related products. Furthermore, as overseas consolidated manufacturing subsidiaries that have expanded and developed the operations of the Tokuyama Factory, we have Tokuyama Chemical (Zhejiang) Co., Ltd. and Tokuyama Singapore (see Figure 6 and Table 6). The business sectors of these sites are as shown in Table 6, and concerns shown in Tables 3 and 4 regarding their dependency on nature and impacts identified by WWF BRF need to be considered. To organize the natural environment in which these sites are located, we assumed biomes in accordance with the IUCN Global Ecosystem Typology. Since the relevant biomes vary widely, Table 6 indicates those most closely related to each site's activities.

Since the natural environment varies depending on the location of each production site, it is necessary to identify which ecosystems they are in contact with and what nature-related issues they are facing.

Table 6: Major Production Sites of the Tokuyama Group and Their Business Activities

Production Sites	Location	Business Sector *1	Main Products	Biome *2
Tokuyama Corporation Tokuyama Factory	Japan Yamaguchi Prefecture	Thermal Power Generation (Coal and Biomass Co-firing) Chemicals Cement	• Soda Ash • Caustic Soda • High-Purity IPA (Isopropyl Alcohol) • TMAH (Tetramethylammonium Hydroxide) • PVC (Polyvinyl Chloride) • Cement • Polycrystalline Silicon • Fumed Silica • Aluminum Nitride • Microporous Film	T7.4 Urban and industrial ecosystems F1.4 Seasonal upland streams F3.1 Large reservoirs FM1.2 Permanently open riverine estuaries and bays
Tokuyama Corporation Kashima Factory Tokuyama Dental Corporation	Japan Ibaraki Prefecture	Chemicals Pharmaceuticals	• Photochromic Materials • Pharmaceutical Intermediates • Dental Materials	T7.4 Urban and industrial ecosystems F1.5 Seasonal lowland rivers FM1.2 Permanently open riverine estuaries and bays
Tokuyama Chemicals (Zhejiang) Co., Ltd.	China Zhejiang Province	Chemicals	• Fumed Silica • Silane Gas	T7.1 Annual croplands T7.4 Urban and industrial ecosystems F3.5 Canals, ditches and drains FM1.2 Permanently open riverine estuaries and bays
Tokuyama Singapore Pte. Ltd.	Singapore	Chemicals	• High-Purity IPA (Isopropyl Alcohol) • TMAH (Tetramethylammonium Hydroxide)	T7.4 Urban and industrial ecosystems F3.2 Constructed lacustrine wetlands M1.1 Seagrass meadows

*1 Linked to the Business Activities of the Tokuyama Group Shown in Table 5
*2 Selected Major Biomes Classified under the IUCN Global Ecosystem Typology

https://global-ecosystems.org/

b. Scoping Ⅱ

● Baseline Water Risk (WRI Aqueduct)

Industry sectors considered highly dependent on "Water Availability" include chemicals, thermal power generation, and pharmaceutical-related operations. Using the Aqueduct Water Risk Atlas provided by WRI, we assessed baseline water risks for our major production sites (see Figures 7 and 8, Tables 7 and 8). Among the four sites evaluated, Tokuyama Chemical (Zhejiang), located on the southern coastal area of Shanghai, China, showed a "Water Stress" level of "High" and a "Riverine Flood Risk" of "Extremely High," resulting in an overall rating of "High."

With regard to riverine flood risk, measures have been put in place to enable the forced discharge of water into the river by government-managed drainage pumps when water levels reach capacity. "Water Stress" is one of the physical quantity-related risks and indicates the likelihood of water shortages causing inconvenience to communities and heightened risk in regions where water demand is excessively high. This elevated risk in the area is likely influenced by high population density and concentration of industrial facilities.

Other sites did not exhibit significant water-related risks overall.

● Future Projections of Water Stress (WRI Aqueduct)

We evaluated the future water risks for each site and compared them with the baseline risks. For all sites, the assessment of "Water Stress" showed no change from the baseline through 2080. Other future projection indicators include "Water Depletion," "Interannual Variability," and "Seasonal Variability." However, none of the sites showed any indicators with a risk level of "High" or above during the period from the present to 2080.

Table 7: Water Risks at Major Sites (Baseline)

Sites	Overall Water Risk *1	Physical Risks Quantity *2		Physical Risks Quality *3	Regulatory and Reputational Risk *3
		Water Stress	Riverine Flood Risk		
Tokuyama Corporation Tokuyama Factory	Low-Medium	Low-Medium	Low-Medium	Low-Medium	Low
Tokuyama Corporation Kashima Factory Tokuyama Dental Corporation	Low-Medium	Medium-High	Low	Low	Low
Tokuyama Chemicals (Zhejiang) Co., Ltd.	High	High	Extreamely High	Medium-High	Medium-High
Tokuyama Singapore Pte. Ltd.	Low	Low	Low-Medium	Low	Low-Medium

*1 Total evaluation of all risks
*2 Indicates the highest-risk items among physical quantity-related risks
*3 Overall assessment for each category

https://www.wri.org/aqueduct

Table 8: Future Water Stress at Major Sites

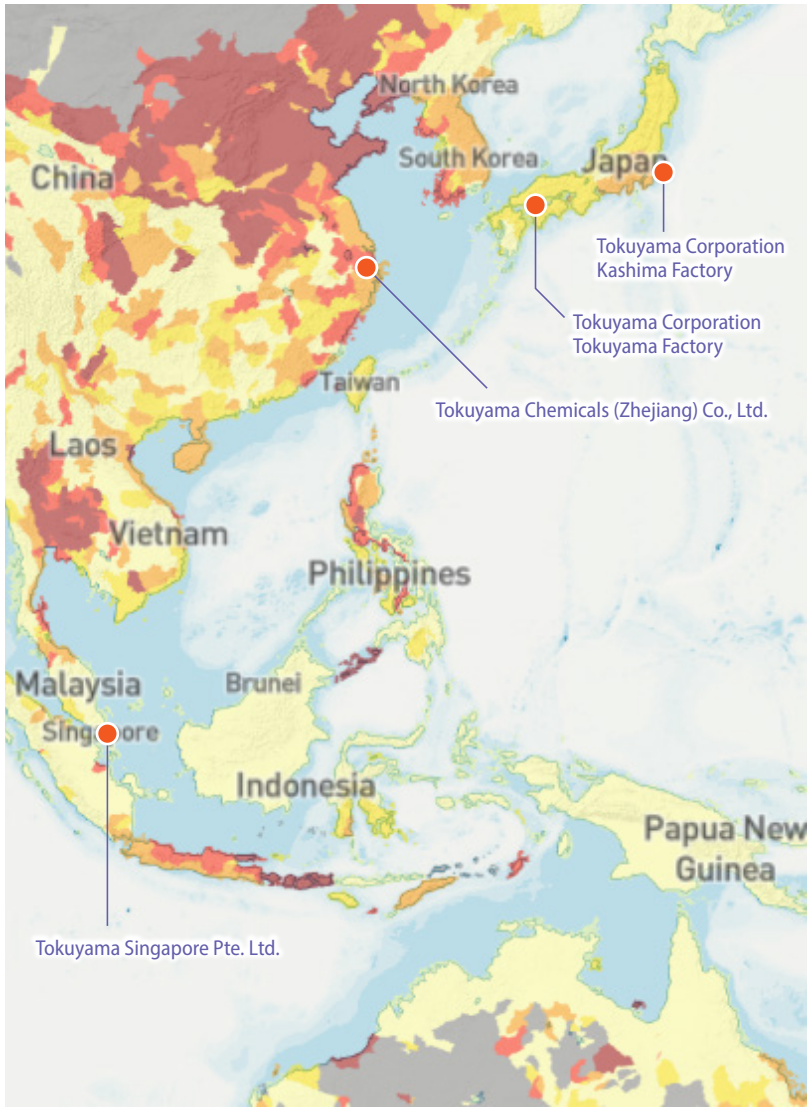
Sites	Baseline	2030	2050	2080
Tokuyama Corporation Tokuyama Factory	Low-Medium	Low-Medium	Low-Medium	Low-Medium
Tokuyama Corporation Kashima Factory Tokuyama Dental Corporation	Medium-High	Medium-High	Medium-High	Medium-High
Tokuyama Chemicals (Zhejiang) Co., Ltd.	High	High	High	High
Tokuyama Singapore Pte. Ltd.	Low	Low	Low	Low

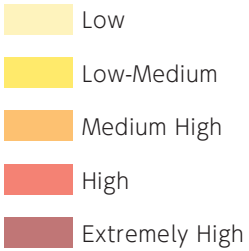
https://www.wri.org/aqueduct

The Tokuyama Factory, which operates a thermal power plant, was assessed by Aqueduct as having no significant water risk in the future. However, since power generation requires large volumes of water, we believe it is necessary to consider water risk from a perspective beyond Aqueduct's evaluation. In the future, the Tokuyama Group expects to increase major sites both in Japan and overseas, and we intend to continue examining water-related risks as part of our policy.

Figure 7: WRI Aqueduct Water Risk Atlas ／Baseline Water Stress

Figure 8: WRI Aqueduct Water Risk Atlas ／Water Stress in 2050





https://www.wri.org/aqueduct

b. Scoping Ⅲ

● Status of Tree Canopy and Spatial Relationship with Key Biodiversity Areas (WRI Global Forest Watch)

Using Global Forest Watch provided by WRI, we analyzed the status of tree canopy and the spatial relationship with Key Biodiversity Areas (KBA) around our major sites (the center of each circle in the figures indicates the site location). Global Forest Watch enables us to examine tree canopy presence over the past 20 years, as well as canopy loss and gain, and it also provides the locations of KBAs. From the overall group analysis, we present the results for our major sites.

・Tokuyama Corporation Tokuyama Factory

Shunan City in Yamaguchi Prefecture is located along the Seto Inland Sea coast in a region with abundant forests. As can be seen in Figure 9, forest cover in this area has not fluctuated significantly over the past 20 years. The Tokuyama Factory uses a large amount of industrial water drawn from local dams (see Table 9), and these water sources are presumed to be stored in the mountainous areas spreading across the northern part of Shunan City.

Regarding its location in relation to KBAs, there are no KBAs within 20 km. Within 50 km, the Kumage-Yashiro area (Site ID 15070) is located, and located more than 50 km away to the west, along the coastal region, lies the Suo-nada Coastal Area (Site ID 45151). Although the direct impact on the biodiversity of these KBAs is unclear, we pay careful attention to minimizing environmental impacts from emissions to air and water associated with our business activities.

・Tokuyama Corporation Kashima Factory

The Kashima Factory is located near the eastern coastline of the Kanto Plain, with Mount Tsukuba and Lake Kasumigaura to the north, and the Tone River—the largest river in Japan—flowing near the factory. The surrounding area has relatively few forests, and tree canopy variation has been minimal (see Figure 10).

Regarding its location in relation to KBAs, the Lower Tone floodplain (Site ID 15031) lies within 10 km, while within 50 km are the Kasumigaura and Kitaura area (Site ID 45077) and the Kujukuri Coast area (Site ID 15033). The Kashima Factory's annual wastewater discharge is approximately 52,000 m³, which is not a large volume, and all discharged water meets regulatory standards before being released into the regional sewer system.

Figure 9: Surrounding Environment of Tokuyama Factory (Shunan City, Yamaguchi Prefecture) Shunan City

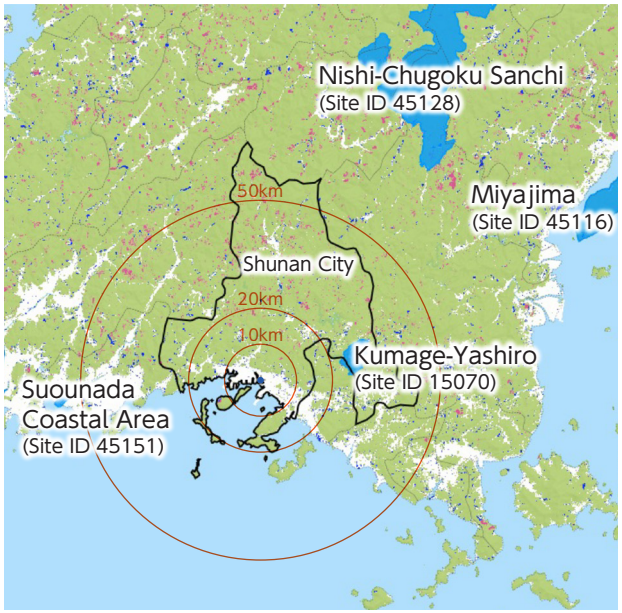
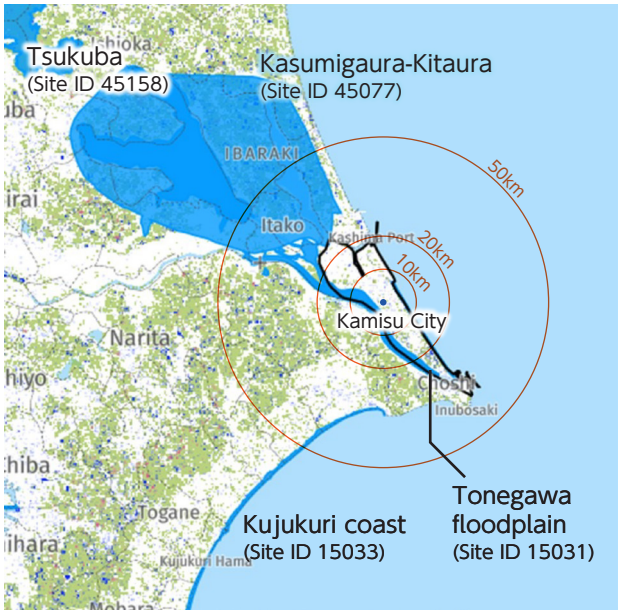


Figure 10: Surrounding Environment of Kashima Factory (Kamisu City, Ibaraki Prefecture) Kamisu City



KBA(Key Biodiversity Area)

Land with tree canopy density of 30% or more (as of 2010)

Land where tree canopy has decreased by more than 30% over the past 20 years

Land where tree canopy has increased over the past 20 years

https://www.globalforestwatch.org/
https://www.keybiodiversityareas.org/

・Tokuyama Chemicals (Zhejiang) Co., Ltd.
Zhejiang Province is located south of Shanghai, and the site is situated in its coastal area. Although the region has relatively few forests, forest cover has shown an increasing trend over the past 20 years.

Regarding its location in relation to KBAs, there are no KBAs within 50 km. The Hangzhou Wan (Site ID 15691) is located more than 100 km away. Since all wastewater is outsourced to treatment contractors, there is no direct discharge into the environment, and therefore no direct impact on KBAs is expected.

・Tokuyama Singapore Pte. Ltd.
Tokuyama Singapore is located in an industrial district at the western end of Singapore. The surrounding area has relatively few forests, although extensive forested areas exist in northern Singapore and further north in Malaysia.

Regarding its location in relation to KBAs, there are no KBAs within 20 km. Within 50 km, the Kranji-Mandai area (Site ID 16393), Central Forest (Site ID 16392), and South-west Johor Coast (Site ID 16034) are present. All wastewater is outsourced to treatment contractors, so there is no direct impact on KBAs. In addition, fuel consumption is minimal, and emissions to air are almost negligible.

Figure 11: Surrounding Environment of Tokuyama Chemicals (Zhejiang) (Zhejiang Province, China)

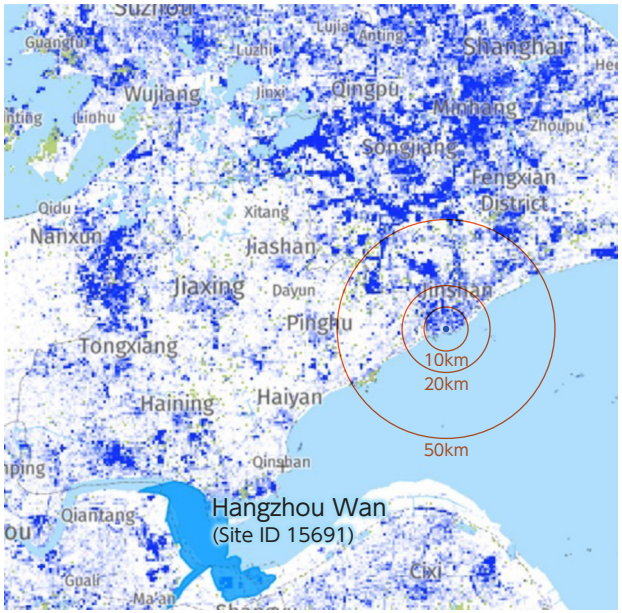
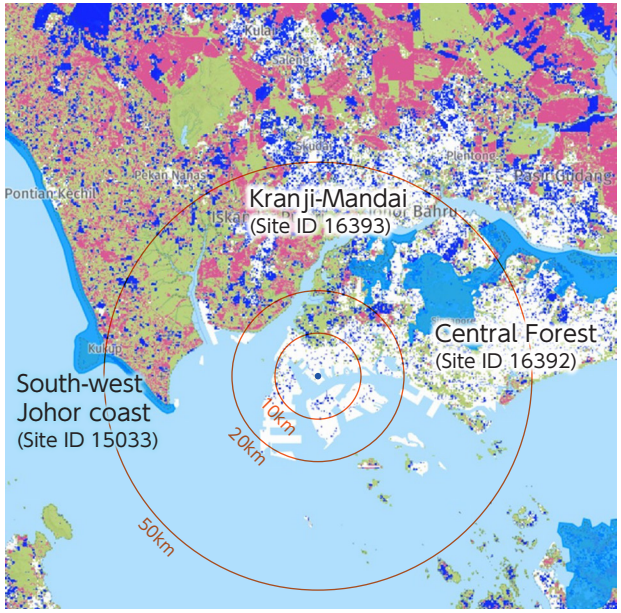


Figure 12: Surrounding Environment of Tokuyama Singapore (Singapore)



KBA(Key Biodiversity Area)

Land with tree canopy density of 30% or more (as of 2010)

Land where tree canopy has decreased by more than 30% over the past 20 years

Land where tree canopy has increased over the past 20 years

https://www.globalforestwatch.org/
https://www.keybiodiversityareas.org/

● **Summary of Scoping**

Through the use of various tools, we have examined how Tokuyama Group's business activities are expected to depend on and impact nature, the types of natural environments surrounding each site, and the water-related risks involved. Across the Group, no regions were identified where operations directly damage nature. Tokuyama Chemical in China was assessed as having a high level of water stress in the future. As shown in Table 9, the company withdraws approximately 420,000 m³ of freshwater annually, while recycling about 40.8 million m³ within its facilities—nearly 100 times the withdrawal amount. This recycling practice helps suppress additional water intake and mitigates the risk of water shortages.

We recognize the need to evaluate more detailed nature-related indicators going forward. In this report, the Tokuyama Factory has been designated as the priority area for detailed consideration, as it accounts for 97% of the Group's total water withdrawal, includes multiple business sectors, and constitutes the largest operational scale within the Group. Since many of Tokuyama Group's core businesses are developed based on the Tokuyama Factory, we believe that the environmental initiatives implemented at this site can be applied to other locations.

Table 9: Water Withdrawal and Recycled Water by Site (FY2024)

Sites	Freshwater Withdrawal (m³)				ratio in group total (%)	Recycled water (m³)
	Industrial water	water supply	ground water	Total		
Tokuyama Corporation Tokuyama Factory	40,986,000	25,000	0	41,012,000	97.48	501,740,000
Tokuyama Corporation Kashima Factory Tokuyama Dental Corporation	21,000	25,000	0	46,000	0.11	0
Tokuyama Chemicals (Zhejiang) Co., Ltd.	411,000	8,000	0	419,000	1.00	40,800,000
Tokuyama Singapore Pte. Ltd.	4,300	14,000	0	18,300	0.04	0

c. Location

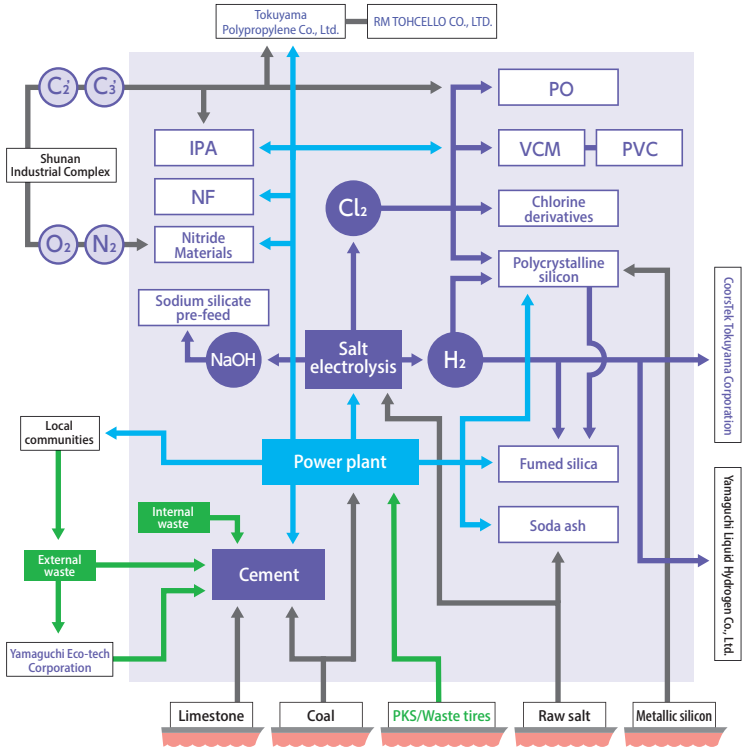
Tokuyama Group's business began in 1918, when the company, then known as Nihon Soda Kogyo Co., Ltd., established its first factory in Tokuyama Town (now Shunan City), Yamaguchi Prefecture. Since starting operations at the Tokuyama Factory with soda ash and caustic soda production, the site has expanded into cement, chemical products (such as calcium chloride and PVC), and advanced electronic materials (including polycrystalline silicon, fumed silica, and aluminum nitride). In 2018, the company celebrated its 100th anniversary. At the Tokuyama Factory, electricity and steam supplied by four on-site power generation facilities are utilized efficiently to produce a wide range of products (see Figure 13). The Tokuyama Factory also forms part of the Shunan industrial complex, where certain products are manufactured using raw materials such as ethylene and propylene supplied by neighboring companies. The Tokuyama Factory is the largest production site in the Group. It also has the highest levels of raw material input, product shipments, water consumption, and GHG emissions among Group sites, making it the most nature-dependent site in the Group. Furthermore, the technologies and products developed at the Tokuyama Factory have been utilized by consolidated production subsidiaries both in Japan and overseas, and it can be said that the origin of the Group's nature-conscious business activities lies at this site.

The following section provides an overview of the Tokuyama Factory's interaction with nature and its environmentally responsible business activities.

Table 10: History of the Tokuyama Group

1918 Founded as Soda Industry	1918 Established as Nihon Soda Kogyo Co., Ltd. 1936 Renamed Tokuyama Soda Co., Ltd. 1938 Started cement production 1940 Started calcium chloride production
1945 Expanded inorganic chemicals and cement businesses	1952 Entered electrolytic caustic soda business 1960 Started wet-process silica production Constructed Nanyo Plant and expanded cement operations Established Yamaguchi Ecotech Co., Ltd.
1961 Entered the petrochemical business	1964 Entered the petrochemical business 1966 Entered PVC (polyvinyl chloride) business 1967 Entered ion-exchange membrane business 1972 Started production of isopropyl alcohol (IPA)
1975 Expanded specialty and processing businesses	1978 Entered dental materials business 1982 Entered fine chemicals business 1983 Entered high-purity IPA business Entered diagnostic business 1984 Entered polycrystalline silicon business 1985 Entered thermal management materials business Opened Kashima Factory 1989 Established Tsukuba Research Laboratory
1990 Strengthened and restructured business foundation	1994 Renamed as Tokuyama Corporation 1996 Expanded high-purity IPA business overseas Established Tokuyama Electronic Chemicals Pte.Ltd. (now Tokuyama Singapore Pte. Ltd.) 2001 Established Yamaguchi Ecotech for waste incineration ash recycling business
2005 Aimed to enhance corporate value	2005 Established Tokuyama Chemicals (Zhejiang) Co., Ltd. for dry-process silica business 2011 Established Tokuyama Chiyoda Gypsum Co., Ltd. for environmental business 2013 Established Yamaguchi Liquid Hydrogen Co., Ltd. for liquefied hydrogen production Established Tokuyama Nouvelle Calédonie S.A. for cement business
2016 Embarked on a new phase of business 2021 Medium-Term Management Plan 2025	2020 Established Formosa Tokuyama Advanced Chemicals Co., Ltd. for high-purity IPA business 2021 Made A&T Corporation a wholly owned subsidiary for diagnostic business Opened Center for Commercialization of Advanced Technology 2022 Established STAC Co., Ltd. for high-purity IPA business

Figure 13: Open Integration at the Tokuyama Factory



The Tokuyama Factory is located near JR Tokuyama Station. To the north lies a residential area, and beyond the town are satoyama landscapes, followed by the Chugoku mountain range dotted with dams. The area surrounding the factory includes several rivers, and its southern boundary faces the Seto Inland Sea.

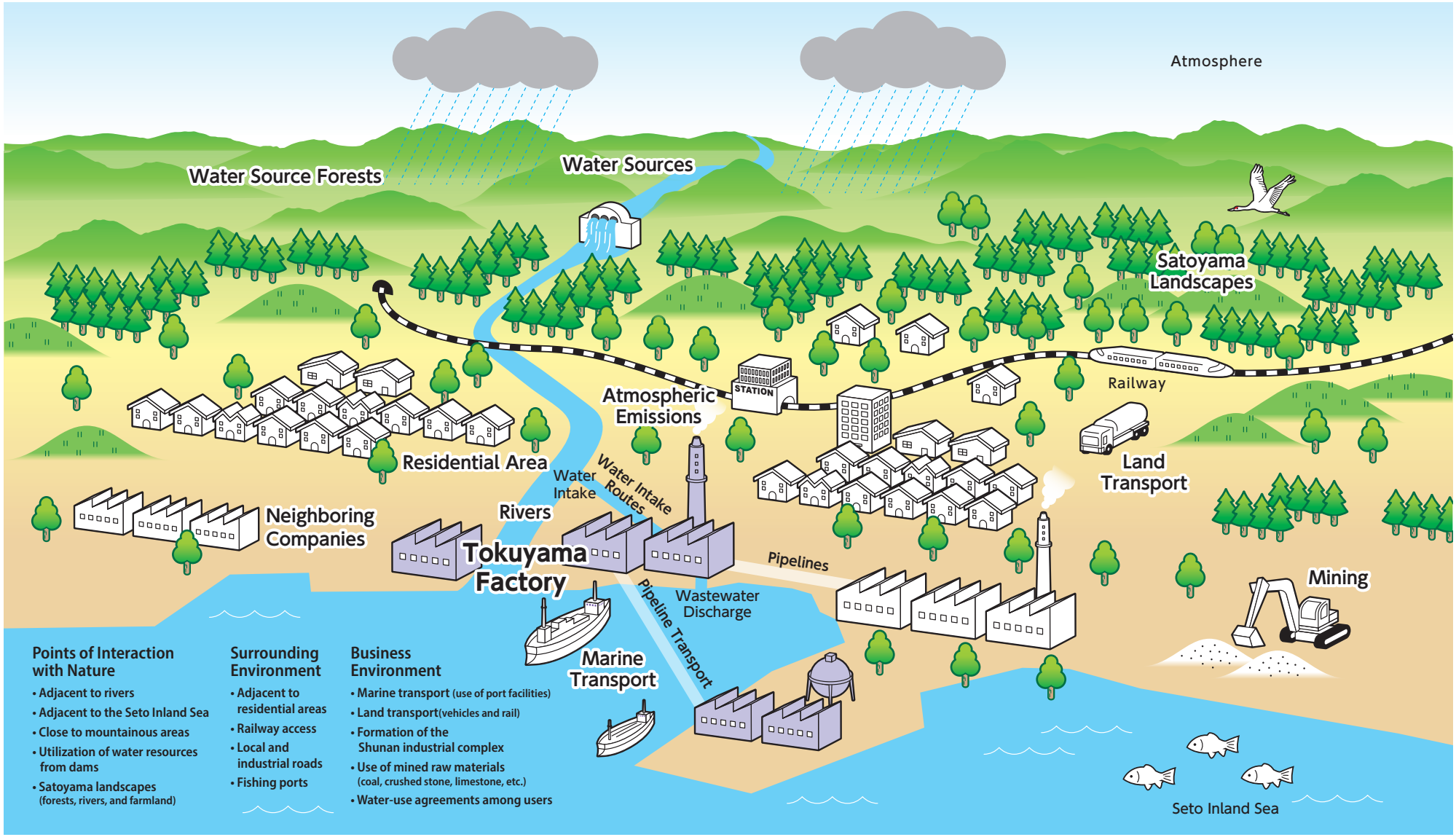
To accommodate business expansion, the factory secured land by reclaiming coastal areas and developed port facilities. Leveraging its coastal location, the site uses marine transport for most raw material procurement and product shipments, utilizing its adjacent pier and the Shunan Bulk Terminal. The factory is also connected by pipelines to neighboring companies along the Seto Inland Sea (see Figure 14). Industrial water essential for operations is drawn from nearby dams, including Sugano, Kawakami, and Kodo. The ability to utilize both abundant water resources and convenient marine transport is a benefit of the Seto region's unique geography, where mountains and sea are in close proximity.

For dams supplying industrial water, the company monitors reservoir levels daily and manages water use by setting conservation rates according to storage levels. Power generation facilities require large volumes of cooling water, which are supplemented by seawater intake. In addition, water is recycled and reused within the factory to reduce dependency on industrial water. Condensed steam from power generation is also reused wherever possible, with an effective reuse volume of approximately 25,000 m³ per day. The company aims to keep water consumption below FY2019 levels and continues to implement water-saving measures. In FY2024, water use excluding seawater was 88% of FY2019 levels.

Panoramic View of the Factory (Photographed in 1969)

Panoramic View of the Factory (Photographed in 2003)

Figure 14: Interaction Between the Tokuyama Factory and Nature (Conceptual Image)



Activities in Surrounding Areas

In Yamaguchi Prefecture, efforts to protect rare wildlife species include public awareness initiatives using "Red Data Book Yamaguchi" and conservation measures based on the "Yamaguchi Prefecture Ordinance for the Protection of Rare Wildlife Species." In March 2024, the "Yamaguchi Biodiversity Center" was established, and by the end of July, the revised "Yamaguchi Biodiversity Strategy" was announced.

In Shunan City, conservation activities are underway to protect *Epipogium roseum* (a plant species listed as Near Threatened in the "Yamaguchi Red List 2018"). Additionally, to increase the number of hooded cranes (*Grus monacha*) visiting the area, which are designated as a National Natural Monument, ongoing efforts are being made in the Yashiro district to maintain roosting and feeding grounds.

Yamaguchi Prefecture has set a goal to establish seven additional "Nature Symbiosis Sites" by 2030. Going forward, Tokuyama Group intends to collaborate with local governments to support initiatives aimed at obtaining OECM (Other Effective Area-Based Conservation Measures) certification for these sites.

Source: "Red Data Book Yamaguchi 2019"

The Seto Inland Sea, which borders the Tokuyama Factory, has become significantly cleaner as a result of initiatives under the Seto Inland Sea Environmental Conservation Special Measures Act ("Seto Act"), which mandates reductions in total loads of COD, nitrogen (N), and phosphorus (P). These efforts have greatly reduced the occurrence of red tides and improved water quality.

On the other hand, concerns have been raised about negative impacts on fisheries, such as discoloration of nori (seaweed). To address these issues, the 2015 amendment to the Act incorporated basic principles such as aiming for a "rich and vibrant sea" and implementing measures tailored to the specific conditions of individual bays and sea areas. Possible factors affecting fisheries include nutrient depletion, global warming, loss of tidal flats and seaweed beds, and grazing damage. However, these causes have not been fully clarified, and understanding the relationship between corporate and civic activities and ecosystem impacts remains a difficult challenge. Continued collaboration among industry, government, academia, and NPOs is required to advance research and find solutions.

Our company participates in the "Tokuyama-Kudamatsu Port and Oshima Tidal Flat Blue Carbon Offset Program," which utilizes "J-Blue Credits" issued by the Japan Blue Economy Technology Research Association (an organization authorized by the Minister of Land, Infrastructure, Transport and Tourism). Blue carbon refers to carbon absorbed and stored by marine organisms such as seaweeds from atmospheric CO_2, and it is gaining attention as a new option for CO_2 absorption.

Under the "Tokuyama-Kudamatsu Port and Oshima Tidal Flat Blue Carbon Offset Program," CO_2 absorption achieved through conservation activities in seagrass beds and tidal flats at Oshima is certified as J-Blue Credits. By purchasing and applying these credits, we can offset GHG emissions generated by our production activities. In FY2023, we purchased 3.1 t-CO_2 worth of credits.

Through this program, we aim to contribute to the realization of a sustainable society by supporting marine environmental conservation activities, thereby preserving the richness and beauty of both mountains and seas.

Note: Blue carbon refers to carbon absorbed and stored by marine organisms such as seaweeds from atmospheric CO_2 and is increasingly recognized as an alternative CO_2 sink.

Risk and Impact Management

a. Organization-wide Risk Management

● Company-wide Process

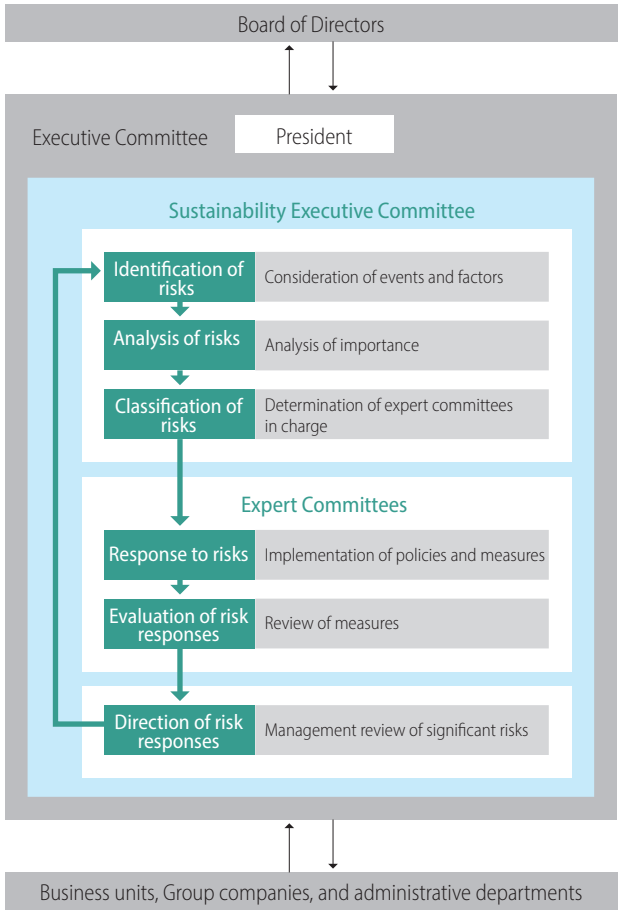
Our Group regards events and factors that could affect the achievement of expected organizational goals and the sustainability of business, and could lead to the impairment or enhancement of corporate value in corporate management, and that require a cross-organizational response, as "significant risks," and has established a management system to ensure that we respond to these risks appropriately.

Up to FY2024, company-wide risks and opportunities, including those related to nature, were managed by the CSR Promotion Council and the Risk Management and Compliance Committee established under it. In addition, for areas requiring particularly high levels of expertise or of elevated importance, specialized committees independent of the Risk Management and Compliance Committee were established to address specific issues. Nature-related risks and opportunities were handled primarily by the Environment Committee.

Effective April 2025, the CSR Promotion Council was reorganized into the Sustainability Executive Committee, and the risk management function was transferred to this new committee. Within the Sustainability Executive Committee, risks and opportunities related to sustainability— including the significant risks previously discussed by the Risk Management and Compliance Committee—are deliberated, and instructions or delegated authority are provided to business divisions and subordinate specialized committees. Nature-related risks and opportunities continue to be overseen by the Environment Committee, which has established a TNFD Working Group under its umbrella to address these matters.

Figure 15 illustrates the specific process used by the Sustainability Executive Committee to identify significant risks. The Committee reviews the positioning of currently recognized significant risks based on the frequency and probability of occurrence and scale of damage or impact, while also discussing risks that should be newly added. Each significant risk is associated with a responsible specialized committee (with some overseen by the Executive Committee), which determines policies and formulates and implements measures to address the risks.

Figure 15: Process of identifying significant risks (From FY2025)



In Table 11, we present the list of significant risks confirmed in April 2025, and in Figure 16, we show a mapping of these risks based on the scale of damage / impact and the frequency and probability of occurrence.

Amid the growing urgency of achieving a "Nature Positive by 2030" society, we recognize that expectations for reducing biodiversity impacts associated with business activities are rising significantly. Within the Tokuyama Group, nature-related risks are considered to be most significant in connection with activities at our production sites. Accordingly, each site is working to advance environmental management initiatives, such as reducing environmental burdens and achieving zero waste emissions.

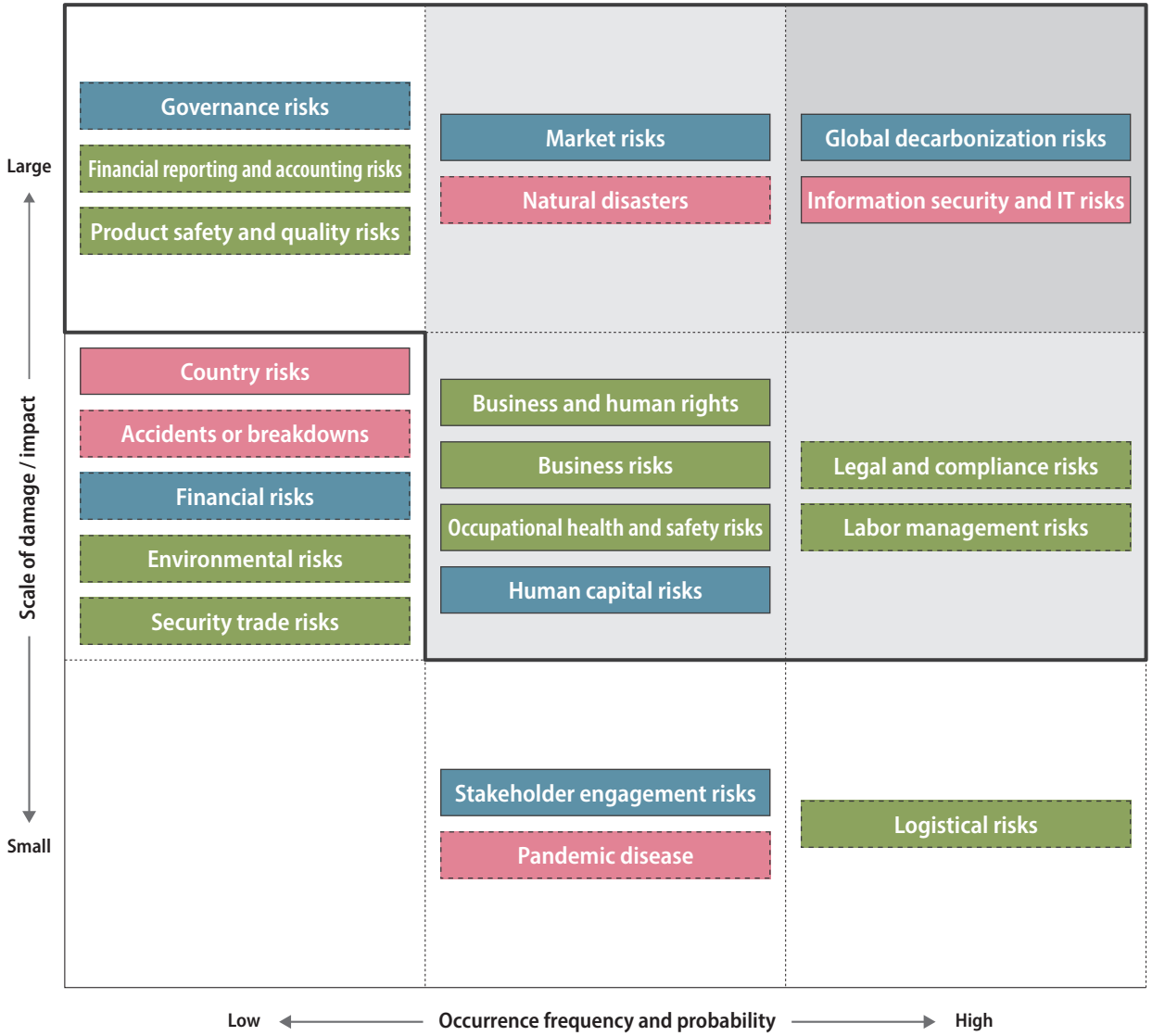
Furthermore, "biodiversity" has been identified as one of the subcategories within environmental risks, and we have begun examining the impacts that our business activities may have on biodiversity. The following sections discuss dependencies and impacts within our direct operations and value chain, focusing primarily on the Tokuyama Factory, which is considered to have the largest overall impact.

Table 11: List of significant risks (FY2025)

*The chairperson of each committee is a director who is responsible for the relevant risks

Large category	Moderate category	Minimal category	Relevant committee *
Hazard risk (external environment risk) Risks posed by the external environment and potential events	Natural disasters	Earthquake, tsunami, weather-related disaster, abnormal weather event (typhoon, storm surge, heavy rains, etc.)	Sustainability Executive Committee
	Accidents or breakdowns	Fire, explosion, chemical leak, equipment or device damage or failure, utility supply interruption, accident with aircraft, ship or railway	Safety Committee
	Infectious diseases and pandemics	Widespread outbreak of COVID-19 or another endemic infectious disease	Sustainability Executive Committee
	Country risks	War, conflict, terrorism incident, riot, unlawful political change, or economic crisis	Sustainability Executive Committee
	Information security and IT risks	Cyberattack, virus infection, information leaks, system failure, failure of system facilities/equipment, IT risks	Information Security Committee
Business risk (strategic risk) Risks posed by the quality and accuracy of corporate strategies that affect performance and corporate value	Global decarbonization risks	Carbon pricing and energy costs, green process adoption measures, customer penetration of green procurement, stakeholder assessment, more frequent severe weather in the long term, and lost opportunity of expansion into the green market	Sustainability Executive Committee Environment Committee
	Market risks	Changes in market needs, marketing failures or deficiencies, emergence of new competitors, product development failures or obsolescence, delays in responding to rapid technological innovations, and delays or barriers to overseas expansion, low PBR risks	(Executive Committee)
	Human capital risks	High turnover and difficulty in securing talent, workforce aging, distorted human resource pyramid, human resource development and technology transfer, delay in addressing diversity, failure to adopt new work styles, human resource mismatch due to business transitions, inadequacies and delays in disclosing human capital information	(Executive Committee)
	Governance risks	Insufficient succession plans, maintaining governance transparency, inadequacies in reporting line control	(Executive Committee)
	Financial risks	Funding plan or financing failure, paid capital increase, suspension of financial support, interest rate or foreign exchange rate fluctuation risk, and stock price decline	(Executive Committee)
	Stakeholder engagement risks	Media criticism and slander, reputational harm, social media risks, improper information disclosure, corporate value destruction caused by self-serving activists	(Executive Committee)
Operational risk (business process risk) Risks arising from deficiencies in internal processes related to business execution, or from inadequate functions	Occupational health and safety risks	Equipment or machine stoppages or accidents due to operating errors, industrial accidents, and aging equipment or machinery	Safety Committee
	Business risks	Soaring raw material or fuel prices, failed pricing policies, declining price competitiveness, dependence on a small number of suppliers, and dependence on a small number of customers	(Executive Committee)
	Product safety and quality risks	Quality defects, voluntary recalls, product liability incidents due to design defects, manufacturing defects, false labeling, and misrepresentation, violations of domestic and international laws and regulations	Product Safety and Quality Assurance Committee
	Logistical risks	Damage accidents during transportation and storage (including hazardous material spills)	Product Safety and Quality Assurance Committee
	Environmental risks	Release of hazardous pollutants, contamination of soil and groundwater, complaints from local residents regarding noise and odors, illegal dumping and improper disposal of waste, water risks, and biodiversity	Environment Committee
	Security trade risks	Deficiencies in security trade control	Security Trade Committee
	Business and human rights	Human rights violations in supply chains, boycotts, and consumer movements	Compliance Committee
	Financial reporting and accounting risks	Window dressing settlements, inappropriate accounting practices, tax compliance, non-performing loans/bad debts	Financial Reporting Committee
	Legal and compliance risks	Intellectual property rights infringement and violation, invention compensation disputes, antimonopoly law violation, Unfair Competition Prevention Act violation (bribery), improper contract signing, insider trading, inadequate management of licenses and permits, misconduct involving executives or employees, ties to antisocial forces, and intimidation	Fair Trade and Competition Committee Compliance Committee
	Labor management risks	Death from overwork, extended working hours, unlawful overtime, labor conflicts and strikes, human rights violations and discrimination, harassments, mental health concerns, and the safety of expatriates and business travelers overseas	Compliance Committee

Figure 16: Mapping of significant enterprise risks (FY2025)



Definitions of major risk categories

- ··· **Hazard risk (External environment risk)**
  Risks posed by the external environment and potential events
- ··· **Business risk (Strategic risk)**
  Risks posed by the quality and accuracy of corporate strategies that affect performance and corporate value
- ··· **Operational risk (Business process risk)**
  Risks arising from deficiencies in internal processes related to business execution, or from inadequate functions

Definition of scale of damage and impact

Large ↑	Damage that threatens the survival of the company, as well as substantial damage such as loss of assets
Moderate	Significant decrease of profits, or minor loss of assets
Small ↓	Little impact on corporate profits and assets

Definition of occurrence frequency and probability

High →	Occurs more than once a year Will almost certainly occur in the near future
Moderate	Occurs several times a decade
Low ←	Occurs once every decade or more

Definition of vulnerability

High	··· Mitigation measures have not been implemented or are completely inadequate
Moderate	··· Some measures have been implemented, but they are still insufficient
Low	··· Effective measures have been implemented and a management cycle is in place

b. Evaluation and Prioritization in Direct Operations

Figure 17 illustrates an overview of the Tokuyama Factory's business activities and its dependencies on nature. From the upstream supply chain, the factory receives fuel, raw materials, water, and waste, which are utilized for in-house thermal power generation. Electricity and steam produced through this process are used in production activities, and the resulting products are shipped to customers. Wastewater and exhaust gases generated during production are discharged after harmful substances have been removed. Furthermore, most of the waste generated within the factory is reused.

● Key Characteristics of Business Activities

・In-house Thermal Power Generation

The factory generates electricity and steam using fossil fuels (such as coal), non-fossil fuels (including waste tires and hydrogen), and biomass fuels (such as PKS and wood chips). These are supplied to various plants within the Tokuyama Factory. At the same time, this process results in significant GHG emissions. We have set targets to reduce Scope 1 and Scope 2 emissions by 30% compared to FY2019 levels by FY2030 and to achieve carbon neutrality by FY2050.

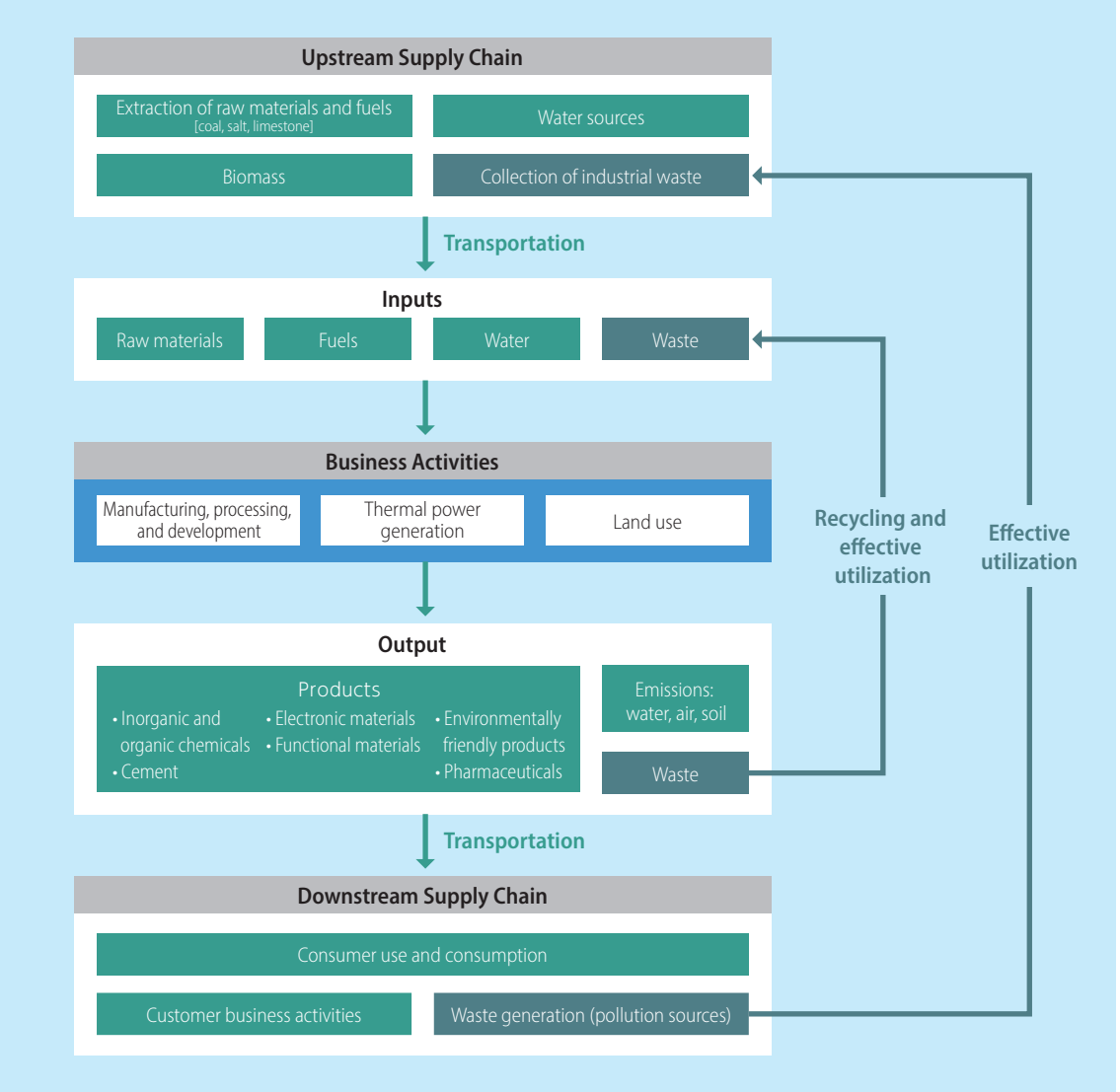
・Salt Electrolysis Business

Our product lines begin with the electrolysis of brine. This process yields caustic soda and chlorine, which, together with ethylene and propylene supplied from the Shunan industrial complex, are used to produce a wide range of products (see Figure 13).

・Cement Business

Raw materials such as limestone, silica, and coal are calcined in high-temperature kilns. In addition to electricity supplied from in-house thermal power generation facilities, we utilize waste materials (including waste plastics and organic sludge) as energy sources.

Figure 17: Overview of Business Activities Including the Supply Chain



● **Environmental Activities at the Tokuyama Factory**

At the Tokuyama Factory, we have promoted environmental activities such as compliance with environmental laws and regulations, reducing environmental impact, and advancing zero-emission waste initiatives. Our environmental management system is certified under ISO 14001. In promoting zero-emission waste, we not only address the waste generated within our own operations but also accept waste from external companies and local area for use as raw materials in cement production, thereby contributing to the realization of a circular economy.

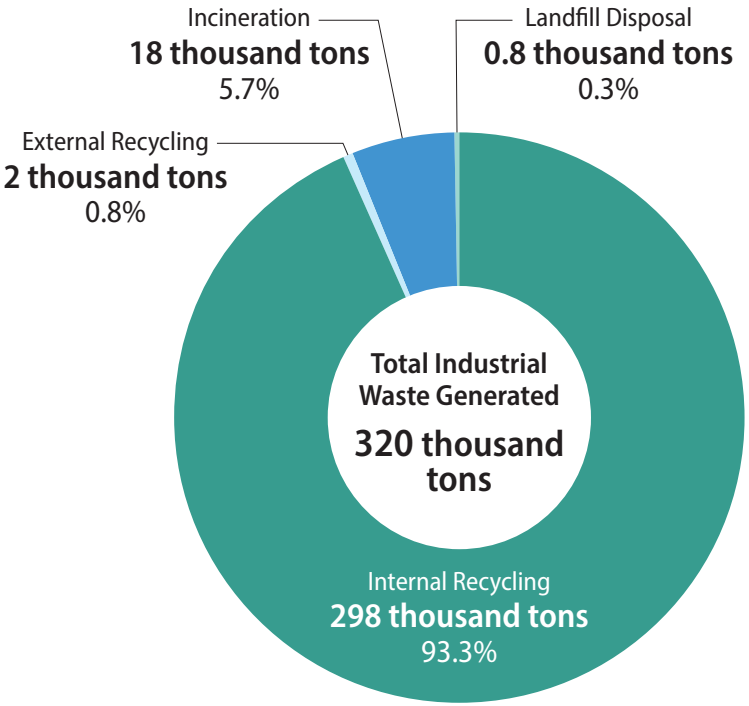
Until now, we have conducted business activities with attention to environmental conservation. However, future biodiversity initiatives require us to re-recognize the relationship between our business activities and the local community and to collaborate with regional stakeholders.

As part of our participation in the Shunan District Industrial Water Users' Council, we have carried out activities aimed at protecting the watershed environment, such as forest volunteer programs and riverbank clean-up efforts. It is important not only to continue these activities that we have long implemented but also to reaffirm their significance in addressing global environmental issues, such as securing water resources and tackling marine plastic pollution.

Regarding the ecosystem of the Seto Inland Sea, which faces the Tokuyama Factory, we share information obtained through seminars organized by the Yamaguchi Prefecture Seto Inland Sea Environmental Conservation Association to raise awareness within the company. We also refer to biodiversity strategies formulated by the prefecture and municipalities to identify needs where we can contribute to regional biodiversity conservation in collaboration with stakeholders.

In accordance with the "Tokuyama Group Biodiversity Conservation Policy," all employees at the Tokuyama Factory will maintain an interest in changes in the natural environment, strive to understand the impact of our business activities on ecosystems, and promote collaboration and cooperation with stakeholders to contribute to biodiversity conservation in the region.

Figure 18: Breakdown of Industrial Waste Treatment in FY2024 (Standalone Basis)



Effective Utilization Rate

94.1%

Of the 320 thousand tons of waste generated within the company, approximately 300 thousand tons were effectively utilized through recycling.

The landfill (offsite) disposal rate

0.3%

Landfill volume has been reduced from 36 thousand tons in FY1990 to 0.8 thousand tons in FY2024.

Note:All figures represent Tokuyama on a standalone basis.
Note:Percentages may not total 100% due to rounding.

Contribution to a Circular Economy through the Use of Cement Kilns

c. Dependencies and Impacts on Nature Across the Value Chain

Table 12 organizes Tokuyama Factory's business activities, including upstream and downstream supply chains, in relation to the five impact drivers of nature changes. Coal, which is required for in-house thermal power generation and heat energy production, leads to significant GHG emissions and is a major factor contributing to climate change. Therefore, the impact level is high, and we are continuously implementing countermeasures. We have set targets to reduce Scope 1 and Scope 2 emissions by 30% compared to FY2019 levels by FY2030 and aim to achieve carbon neutrality by FY2050.

In addition, water and land use associated with our activities, as well as upstream raw material extraction, may cause changes to terrestrial and aquatic environments. We monitor dam water levels daily and continue to examine ways to reduce water intake, while recognizing the need to expand our efforts to include water source conservation in the future. Exhaust gases, wastewater, and waste generated by business activities can become sources of various types of pollution. Most of the waste generated is recycled as resources, maintaining a recycling rate of over 94%. Given that much of our transportation depends on overseas routes, there is a risk of invasive species entering through logistics. Continued collaboration with transport operators remains necessary.

Table 12: Dependencies and Impacts on Nature

Impact Drivers	Business Activities and Dependencies on Nature	Impact Level	Impacts on Nature	Countermeasures and Initiatives	Status of Measures
Climate change	● Fuel combustion fossil fuels / non-fossil fuels / biomass / waste (*in-house thermal power generation, high-temperature kilns)	High	● Global warming and increased natural disasters due to GHG emissions	● Achieving carbon neutrality; increasing use of non-fossil fuels (biomass, ammonia co-firing, hydrogen)	B
Pollution / pollution removal	● Air emissions: SOx, NOx, fluorocarbons, etc.	High	● Air pollution	● Recovery and detoxification of chemical substances; process improvements to reduce emissions	A
	● Discharges to water: COD, BOD	High	● Deterioration of water quality		A
	● Disposal of industrial waste	High	● Soil contamination		A
Land / freshwater / ocean use change	● Use of water resources	High	● Reduction and depletion of water resources	● Reduction of water intake; enhancement of water recycling technologies	B
	● Extraction of raw materials and fuels	Medium	● Mine development and expansion	● Reforestation after mining ● Contracts with responsible mining operators	B
			● Loss of green areas and marine habitats	● Management of green areas; forest conservation activities; promotion of greening after raw material extraction	B
	● Use of land and port facilities	Low	● Loss of ecosystems	● Maintenance and management of ecosystems (qualitative and quantitative assessment)	Not yet considered
Resource use / replenishment	● Use of water resources	High	● Depletion of water resources	● Reduction of water intake	B
	● Extraction and transportation of raw materials	Medium	● Depletion of mineral resources	● Management of mines	B
			● Global warming caused by GHG emissions during transportation	● Thorough implementation of resource recycling	A
	● Transportation of waste and recycled materials	Medium		● Modal shift in transportation ● Reduction of GHG emissions	C
Invasive alien species introduction / removal	● Overseas procurement of raw materials and fuels, product exports (loading / unloading at ports, round-trip shipping)	Medium	● Disruption of ecosystem balance due to invasive species	● Measures against invasive species during cargo handling ● Compliance with relevant laws and regulations	B

Status of Measures
A: Fully implemented
B: Under review and in progress
C: Under consideration

d. Resilience to Risks and Opportunities

● **Purpose of Scenario Analysis and Assumed Scenarios**

In order to evaluate resilience to nature-related risks and opportunities, we set future scenarios based on TNFD recommendations and analyzed their potential impacts on our business.

Scenarios	Natural Environment	Society and Market Response	Overview
A: Nature-Positive Society	Good	Active	Ecosystem conservation advances, and demand for environmentally friendly products expands.
B: Regulation-Driven Response Society	Degraded	Active	Natural environment deteriorates, but policies a nd markets respond strongly.
C: Market-Stagnation Society	Good	Passive	Natural environment improves, but consumer and corporate responses are delayed.
D: Nature Degradation and Delayed Response Society	Degraded	Passive	Natural environment deteriorates, and societal responses remain insufficient.

● **Risks and Opportunities in Each Scenario**

Risks (Examples)

- Supply uncertainty for raw materials (e.g., limestone) and biomass fuels
- Increased operating costs due to stricter wastewater and air emission regulations
- Friction with local communities caused by biodiversity loss

Opportunities (Examples)

- Development of environmentally friendly products
- Advancement of waste recycling technologies
- Growing demand for resource recovery from waste and scrap materials
- Financing advantages derived from improved ESG ratings.

● **Resilience Assessment**

Current measures within the Tokuyama Group demonstrate high effectiveness under Scenarios A and B. However, under Scenarios C and D, delayed market reactions and regulatory responses may hinder the widespread adoption of environmentally friendly products. To address these challenges, we are considering the following measures:

- Diversification of raw material procurement sources
- Development of products with lower environmental impact
- Promotion of forest resource utilization, forest maintenance, and effective use
- Monitoring water usage and promoting reduction and reuse
- Redesigning the supply chain
- Strengthening collaboration with stakeholders

● **Integration into Management**

Going forward, we will further enhance scenario analysis, strengthen the establishment and monitoring of nature-related KPIs, and utilize these efforts to review our management strategies and capital allocation.

Metrics and Targets

a. Measurement Indicators

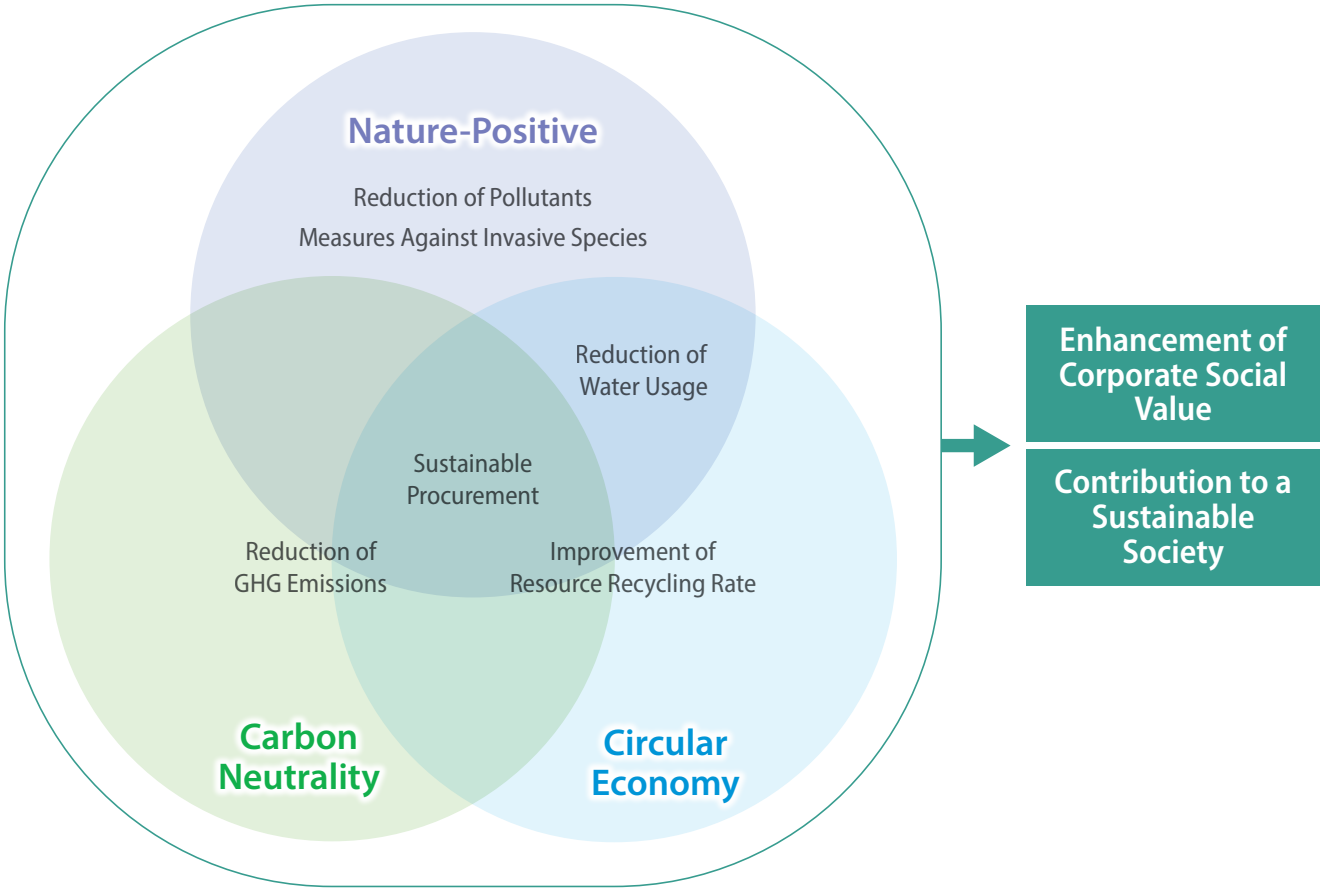
● **Enhancing Corporate Value and Contributing to a Sustainable Society**

"From the Use of Natural Capital to Nature-Positive"

As one of the priority issues in our Medium-Term Management Plan 2025, we have set the goal of "Contributing to the Prevention of Global Warming," aiming to reduce GHG emissions that drive global climate change. Details of our initiatives toward achieving carbon neutrality are provided in the Tokuyama TCFD Report 2025.

At the same time, preserving the global environment requires companies to address three key elements: Circular Economy, Climate Change Mitigation, and Nature-Positive. We are steadily implementing measures in all three areas (see Figure 19). Through these efforts, we will ensure business continuity while enhancing social value and contributing to a sustainable society.

Figure 19: Tokuyama Group's Comprehensive Initiatives for Global Environmental Conservation



b. Targets

For the five impact drivers of nature change, Table 13 shows the actions and targets we are addressing in both our direct operations and across the value chain.

Our targets for managing nature-related risks and opportunities are also included in our materiality (CSR priority issues), such as contributing to the prevention of global warming, reducing environmental impact, achieving zero environmental incidents, and supporting biodiversity conservation.

Specific nature-related initiatives include reducing water consumption (excluding seawater), promoting effective utilization of waste, and expanding businesses that contribute to environmental sustainability. Since the Tokuyama Group uses a large amount of raw materials, we pay close attention to the impact on natural capital upstream in the supply chain and comply with procurement practices based on our Sustainable Procurement Guidelines. For example, in sourcing biomass fuel, we use 100% materials certified under the Green Gold Label (GGL) program.

The Tokuyama Group aims to realize a happy future in harmony with the environment and will continue working toward sustainable economic growth and biodiversity conservation.

Table 13: Targets for Managing Nature-Related Risks and Opportunities

Impact Drivers	Business Activities	Environmental Risks	Tokuyama Group's Environmental Responses and Targets
Climate change	● GHG emissions from in-house thermal power generation, cement operations, and chemical businesses ● GHG emissions from transportation	・Global warming ・Extreme weather events	● GHG Emission Reduction Targets Scope 1 & 2: 30% reduction by FY2030 (base year: FY2019) Scope 3: 10% reduction by FY2030 (base year: FY2022) Scope 1 & 2: Achieve carbon neutrality by FY2050 Scope 3: Challenge carbon neutrality by FY2050 ● Transportation Modal Shift：Ship transport ratio at least 80%, AI-based optimization of vessel allocation and fuel reduction
Pollution / pollution removal	● Air emissions: SOx, NOx, dust, fluorocarbons ● Water emissions: COD, BOD ● Reduction of industrial waste	・Air pollution ・Soil contamination ・Water pollution	● Compliance with emission standards: adherence to legal limits and local agreements, establishment of stricter voluntary control values, monitoring of pollutants, and thorough purification using treatment facilities ● Industrial waste landfill (offsite) disposal rate: ≤3%
Land / freshwater / ocean use change	● Use of industrial water, tap water, and seawater ● Procurement of biological resources ● Procurement of mineral resources	・Water resource depletion ・Land degradation ・Ecosystem destruction ・Depletion of natural capital ・Soil erosion	● Water resource management and efficient use: monitoring dam reservoir levels and reducing water consumption (excluding seawater) to FY2019 baseline or lower ● Compliance with Sustainable Procurement Guidelines: collection of ESG information from suppliers and confirmation of land restoration measures at resource extraction sites ● Biomass fuel procurement: use of 100% GGL-certified products to ensure sustainability (conservation of HCV areas and habitats of endangered species) and legality (elimination of illegally developed farmland)
Resource use / replenishment	● Effective utilization of industrial waste ● Recycling business	・Depletion of natural capital	● Effective utilization rate of waste: ≥94% ● Reduction of plastic waste and setting quantitative targets ● Gypsum board recycling business: operations at three domestic sites of Tokuyama Chiyoda Gypsum Co., Ltd. ● Joint research with NEDO on solar panel recycling: demonstration project in Nanporo, Hokkaido, and commercialization under consideration
Invasive alien species introduction / removal	● Overseas procurement of raw materials and fuels; product exports (cargo handling at ports, round-trip shipping)	・Ecosystem disruption caused by invasive species ・Habitat destruction of endangered species	● Clarification of selection criteria for overseas raw material procurement (including fumigation treatment for biomass fuel) and implementation of quarantine upon receipt ● Standard use of resin pallets ● Measures to prevent invasive species via ballast water