

Integrated Report

2022

Supplementary Information (Environment and Safety/ Quality Assurance)

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Outline of Environment and Safety Activities

In order to advance its medium-term environmental and safety policies, the UBE Group strives to improve its environmental and safety activities through the use of a plan-do-check-act (PDCA) cycle.




Fiscal 2021 evaluation: Plans were mostly achieved.

	FY2021 Action Plans	FY2021 Results
Common to All	<p>Cultivate a culture of safety</p> <ol style="list-style-type: none"> Cultivate a culture of safety <ol style="list-style-type: none"> Systematically undertake activities based on headquarters' assessment results Strengthen Group environmental safety governance structure <ol style="list-style-type: none"> Apportion functions between headquarters and business units and implement 	<ol style="list-style-type: none"> Cultivated a culture of safety <ol style="list-style-type: none"> Environmental and safety audits and inspections evaluated effectiveness of activities to cultivate a culture of safety, reflecting results in activity plans for the next fiscal year Strengthened Group environmental safety governance structure <ol style="list-style-type: none"> Reviewed regulations and standards for a chemical business starting from fiscal 2022 Established framework to audit Company Environment and Safety Management Division, and conducted audits
Occupational Safety and Health	<p>Occupational safety</p> <ol style="list-style-type: none"> Eliminate major disasters <ol style="list-style-type: none"> Continue implementing measures (and ensuring implementation) to address significant risks Undertake safety activities (and enhance their effectiveness) with contractors Educate and train personnel to enhance safety awareness <p>Enhance workplace environments</p> <ol style="list-style-type: none"> Enhance workplace environments <ol style="list-style-type: none"> Reduce workplace noise and implement three management improvement plans under the Industrial Safety and Health Act 	<ol style="list-style-type: none"> Eliminated major disasters <ol style="list-style-type: none"> Identified work that could lead to major accidents at each business site, formulating and implementing plans to reduce risks (such as those for intrinsic safety) Included joint patrols with contractors and subcontractors, participation in safety meetings, and stronger audits in environmental and safety management plans at each business site to foster integrated safety activities Included education and training to raise safety awareness in environmental and safety management plans at each business site, and are undertaking efforts Enhanced workplace environments <ol style="list-style-type: none"> Combated workplace noise through such measures as ensuring wearing of earplugs, maintenance of wearing records, minimizing exposure to noise, and upgrading earplugs, while measuring work environments and conducting special health checkups as planned
Process Safety and Disaster Prevention	<p>Strengthen safety management structure</p> <ol style="list-style-type: none"> Comprehensive measures to minimize accident risks with aging equipment <ol style="list-style-type: none"> Review, add, and improve priorities for inspection and testing and confirm results Prevent recurrences of similar incidents Enhance safety of high-pressure gas accredited business sites <ol style="list-style-type: none"> Establish usage (framework) for results of security evaluations and confirm effectiveness <p>Natural disaster countermeasures</p> <ol style="list-style-type: none"> Undertake natural disaster countermeasures <ol style="list-style-type: none"> Establish and confirm effectiveness of natural disaster countermeasure action plans 	<ol style="list-style-type: none"> Comprehensive measures to minimize accident risks with aging equipment <ol style="list-style-type: none"> Identified target facilities and areas at each business site, conducted risk assessments, developed improvement plans, and deployed improvements Shared information on accidents in accident information liaison meetings Enhanced safety of high-pressure gas accredited business sites <ol style="list-style-type: none"> Each certified office employed Guidelines for Using Security Evaluation Results, and implemented improvements Undertook natural disaster countermeasures <ol style="list-style-type: none"> Business units drew on results of self-assessments in implementing three-year action plans, confirming that progress was generally as planned
Environmental Conservation	<p>Reduce environmental risks</p> <ol style="list-style-type: none"> Reduce environmental risks <ol style="list-style-type: none"> Implement and confirm effectiveness of measures to reduce environmental risks Roll out at other business sites 	<ol style="list-style-type: none"> Reduced environmental risks <ol style="list-style-type: none"> Each business site continued to install additional environmental meters and additional temporary storage tanks to handle leakages Created Environmental Accident Guidelines to identify issues and rolled out risk reduction initiatives at each business site
Environmental Issues	<p>Low-carbon economy contributions and responses</p> <ol style="list-style-type: none"> Plan and implement measures to reach environmental targets Streamline data collection for each business Educate employees about environmental issues <p>Keep reducing environmental impact</p> <ol style="list-style-type: none"> Reduce industrial waste <p>Target: External landfill disposal amount Fiscal 2021 target: 83% reduction (from fiscal 2000 level)</p> Chemical substance emissions reductions <p>Benchmark: Total emissions of 20 priority chemical substances*2 Fiscal 2021 target: 37% reduction (from fiscal 2010 level)</p> 	<ol style="list-style-type: none"> Planned and implemented measures to reach environmental targets <ol style="list-style-type: none"> Greenhouse gas emissions in fiscal 2021 were 4.31 million tCO₂ (for the UBE Group) Environmentally friendly products and technologies accounted for 46% of net sales in fiscal 2021 for the UBE Group Declared commitment to becoming carbon neutral and explored new goals for fiscal 2030 Streamlined data collection for each business <ol style="list-style-type: none"> Created logic for calculating product greenhouse gas intensities Assessed systemization of product greenhouse gas intensity calculations Educated employees about environmental issues <ol style="list-style-type: none"> Provided environmental education at four business sites Provided e-learning for all employees Reduced external landfill disposal amount <p>Fiscal 2021 result: 82% reduction (from fiscal 2000 level) See page 10 for trends in landfill disposal and intermediate treatment amounts</p> Reduced emissions of 20 chemical substances <p>Fiscal 2021 result: 24% reduction (from fiscal 2010 level) Page 11 shows time trends for substances subject to PRTR Law*3 and VOCs*4.</p>
Environmental and Safety Audits and Inspections	<ol style="list-style-type: none"> Implement environmental and safety audits and inspections 	<ol style="list-style-type: none"> Implemented environmental and safety audits and inspections <ol style="list-style-type: none"> Audited seven headquarters' sites and six divisional sites Inspected eight headquarters' sites and five divisional sites
Dialogue with Communities	<ol style="list-style-type: none"> Promote dialogue with communities 	<ol style="list-style-type: none"> Held RC Regional Dialogue Meetings*5 with community stakeholders <ol style="list-style-type: none"> 13th RC Regional Dialogue Meeting in West Yamaguchi (in written form): Covered Ube City's Environmental Initiatives (presentation by Environmental Policy Division of Citizens' Environmental Department of Ube City), an introduction to activities of West Yamaguchi Regional Factory, and questionnaire results Held 13th RC Regional Dialogue Meeting in Sakai/Senboku Area (in written form): Environmental and Safety Initiatives (presentation by UBE Corporation Sakai Factory) and Environmental Initiatives (presentation by Lion Corporation's Osaka Plant)

(Continued on page 2)

Self-Evaluation

★★★: Achieved ★★: Mostly achieved ★: Not achieved

Self-Evaluation	FY2022 Action Plans	SDGs	RC*1 Code
	1. Ensure that everyone makes safety the top priority 1-1. Ensure that each business site is well informed and surveys understanding levels 1-2. Clarify and reinforce basic rules at each business site		
★★	2. Cultivate a culture of safety 2-1. Implement plan to cultivate a culture of safety and establish framework	—	—
	3. Strengthen change management responsiveness (particularly for Chemical Group companies) 3-1. Clarify change management targets and step up risk assessments		
★★	1. Eliminate major disasters (Halve number of occupational accidents and eliminated lost-workday injuries) 1-1. Deploy major risk countermeasures to enhance intrinsic safety 1-2. Undertake safety activities with contractors 1-3. Educate and train personnel to enhance safety awareness		Occupational Safety and Health
★★	1. Improve workplace environments 1-1. Reinforce measures for workplaces needing improvements (in management categories II and III)		
★★	1. Facilities accident elimination 1-1. Encourage sharing of accident information 1-2. Strengthen facilities maintenance and management		
★★	2. Enhance safety of high-pressure gas accredited business sites 2-1. Pursue ongoing improvements by stepping up use of safety evaluation results		Process Safety and Disaster Prevention
★★	1. Undertake natural disaster countermeasures 1-1. Recognize weaknesses at all business sites and deploy implementation plans 1-2. Recognize issues common to Ube area sites and deploy improvement plans		
★★	1. Environmental accident elimination 1-1. Identify environmental risks and deploy environmental risk reduction measures		
★★	1. Step up efforts to tackle environmental issues	  	
★★	2. Keep helping to improve ESG evaluations and develop internal human resources	 	Environmental Conservation
	3. Lay groundwork for disclosing product greenhouse gas emissions		
★	Push ahead with improvement plans to attain medium-term goals 1-1. External landfill disposal amount Fiscal 2022 target: 85% reduction (from fiscal 2000 level) See page 10 for medium-term targets for reducing industrial waste 1-2. Total emissions of 20 chemical substances Fiscal 2022 target: 35% reduction (from fiscal 2010 level) Page 11 shows medium-term targets for reducing chemical substance emissions	  	
★★★	1. Implement environmental and safety audits and inspections	—	Management System
★★★	1. Promote dialogue with communities		Dialogue with Communities

Glossary

*1 *Responsible Care (RC): Under RC, corporations that handle chemical substances voluntarily preserve the environment, safety, and health throughout product life cycles, from the development of chemicals through their manufacture, distribution, use, and final consumption to disposal and/or recycling, and communicate and engage with society by disclosing activity outcomes.*

*2 20 chemicals selected independently: methyl alcohol, butyl alcohol, toluene, epsilon-caprolactam, styrene, ammonia, cyclohexane, cyclohexanone, oxalic acid, vinyl acetate, xylene, n-hexane, ethylbenzene, chloromethane, benzene, dimethyl phthalate, N,N-dimethylacetamide, boric acid compound, phenol, hydrogen fluoride and its water-soluble salts

*3 *PRTR (Pollutant Release and Transfer Register) Law: This legislation requires companies to identify business site chemical substance emissions and transfer volumes and report to the government. The Ministry of the Environment discloses the submitted information on its website. Such disclosure is designed to encourage voluntary efforts to improve chemical substance management.*

*4 *Volatile organic compounds (VOCs): These organic chemicals evaporate or sublime easily, entering the atmosphere as gases. They are factors in the forming of suspended particulate matter (PM) and photochemical oxidant pollution.*

*5 *Responsible Care (RC) Regional Dialogue Meetings: Local members of the RC Committee of the Japan Chemical Industry Association are encouraged to engage with residents, civic groups, government officials, and other local stakeholders and convene meetings regarding RC implementation items (environmental conservation, safety and disaster prevention, etc.). A dialogue meeting is held in each district to deepen mutual understanding of initiatives.*

Occupational Safety and Health/Process Safety and Disaster Prevention

Occupational Safety and Health

Preventing Occupational Accidents

Fostering a Safety-Driven Corporate Culture

To make existing safety activities more comprehensive and effective, in fiscal 2016 we launched initiatives aimed at fostering a safety-driven corporate culture, encompassing eight elements. These are organizational governance, positive involvement, resource management, work management, motivation, learning and knowledge transmission, risk perception, and mutual understanding. In keeping with findings from assessments based on headquarters' evaluation standards, business sites identify issues and formulate and execute plans to cultivate a safety culture as part of ongoing improvement efforts.

Eliminating Major Disasters

We have undertaken a range of activities to prevent occupational accidents. In fiscal 2018, we initiated efforts that centered on eliminating major incidents. We conduct risk assessments of work that is highly susceptible to serious accidents. We implement systematic risk reduction measures and endeavor to make operations inherently safe. From fiscal 2020, we undertook safety activities with partner companies*, adding safety education and training from fiscal 2021 as a priority item.

We investigate the causes of all incidents regardless of whether they result in lost time, striving to prevent similar incidents by assessing and rolling out measures.

Occupational Safety and Health Council

This is a forum in which representatives of the Companywide union and UBE's occupational safety and health officers gather to review annual occupational safety and health results and plans for the new fiscal year and discuss requests from both sides. Participants share prevailing issues and discuss ways to address them. We reflect forum results in the following year's plans. Many major accidents have occurred among subcontractors. Labor representatives and management recognize the importance of coordinating better with those firms. Our annual plans accordingly include measures to foster safety activities with subcontractors.

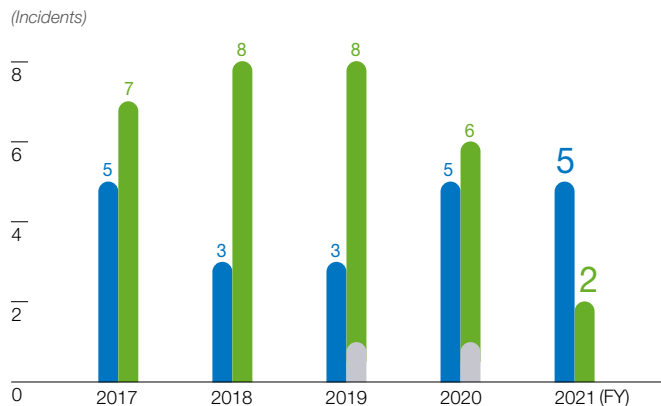
Labor-Management Councils

Following Occupational Health and Safety Council discussions with Companywide union representatives, regional business sites convene gatherings to discuss local union and management requests.

Number of Fatal and Lost-Time Incidents among Domestic Operations

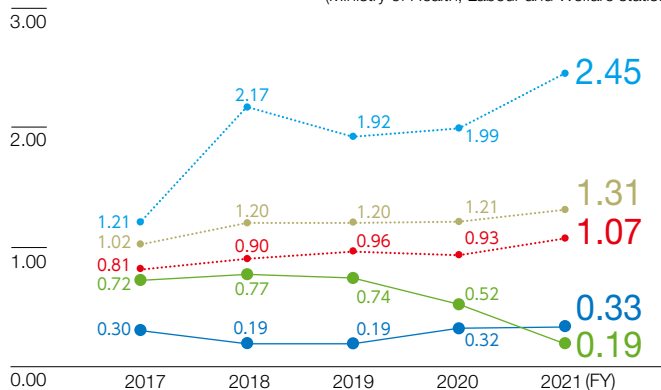
Number of Lost-Time Incidents

● UBE Group employees
● Employees of partner companies of the UBE Group* (● Number of fatal incidents)



Lost-Time Injury Frequency Rate

● UBE Group employees
● Employees of partner companies of the UBE Group*
● Cement industry and cement manufacturers
● Chemical industry
● Manufacturing industry (Ministry of Health, Labour and Welfare statistics)



Glossary

* Partner companies: Including construction and other contractors

Measures to Prevent Occupational Accidents

	Goals	Activities	Status and History of Initiatives
1. Setting occupational accident-related benchmarks	Prevent occupational accidents	Establish numerical goals	Fiscal 2021 goal: 4 incidents with lost work time and 19 without, for a total of 23 Fiscal 2021 result: 7 incidents with lost work time and 26 without, for a total of 33
2. Use of occupational accident information	Prevent similar accidents	Create occupational accident information database and publish it on intranet	We are using information on occupational accidents at each business site as important data sources for facilities and operational risk assessments.
3. Audits and inspections	Drive ongoing improvements at business sites <ul style="list-style-type: none"> Improve weak areas Enhance safety levels 	(1) Audits <ul style="list-style-type: none"> Audits conducted by the head office and business site environmental safety personnel Quantitative evaluation of offices in line with checklists and feedback <ul style="list-style-type: none"> Chemical substance management audits Audit three management areas (work, work environments, and health) as covered by the Occupational Safety and Health Act (2) Inspections <ul style="list-style-type: none"> Members of the president-chaired Strategic Management Meeting visit business sites Confirming results of audit and activity achievements and conveying reviews 	History of improvement activities inspired by audits and inspections <ul style="list-style-type: none"> Fiscal 2013: Summarize outstanding activities in Best Practices and Safety and Health Guidelines and publish these on intranet Fiscal 2016: Begin assessments according to eight culture of safety components, which are organizational governance, positive involvement, resource management, work management, motivation, learning and knowledge transmission, risk perception, and mutual understanding Fiscal 2017: Start disclosing evaluation criteria and verifying gaps between these and self-evaluations Fiscal 2018: Publish evaluation criteria on intranet and integrate UBE Group evaluation criteria in a culture of safety Fiscal 2018: Audit all Chemicals business sites Fiscal 2019: Audit Research and Development Department Fiscal 2019: Establish Companywide criteria in three management areas, build database for substances handled in-house and related regulations, formulate quantitative risk assessment techniques for chemical substances, and sequentially and continuously improve Fiscal 2017: Launch small safety team reports and group discussions
4. Safety and health rallies	Share information Encourage activities	Annual UBE Group health and safety rallies Participants: Approximately 300 people (Group executives and employees, including online) participating	Zero accident efforts and resolutions to enhance workplace environments <ul style="list-style-type: none"> Recognition by the president (to entities and individuals for outstanding contributions to health and safety) Small safety team presentations on experiences Special lectures from outside instructors on safety and health management Executives and all employees reciting safety goals after rallies

Process Safety and Disaster Prevention

We endeavor to eliminate process accidents through initiatives that ensure our facilities are safe and secure. We also undertake activities to minimize damage in the event of major natural disasters. In fiscal 2021, we focused on comprehensive measures to address the risks of accidents at aging facilities, improving safety at certified high-pressure gas sites, and implementing natural disaster measures.

Measures to address the risks of accidents at aging facilities entail each business site inspecting and assessing aging facilities and formulating improvement plans. We have rolled out initiatives to prevent accidents similar to those in recent years from recurring. By undertaking comprehensive risk measures, we endeavor to build business sites that are impervious to accidents. For certified high-pressure gas sites, we set up an improvement agenda in line with assessment findings from the Japan Industrial Safety Competency Center and engage in systematic improvement initiatives. We push ahead with measures to address natural disasters by having each business site conduct self-assessments in line with self-assessment criteria for such measures, and pursue ongoing improvements. We also respond to the Industrial Process Safety Action Plan of the Japan Petrochemical Industry Association.

Industrial Process Safety Action Plans

Page 5 presents progress with the Industrial Process Safety Action Plan.

Initiatives for Process Safety and Disaster Prevention

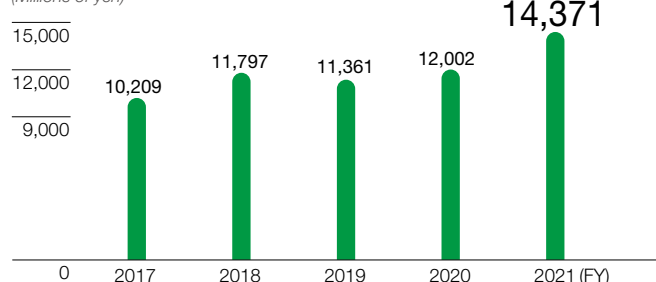
UBE Group Facility-Related Accidents

	Number of accidents				
	2017	2018	2019	2020	2021(FY)
UBE	3	4	4	13	5
Group companies	1	0	3	2	3

In fiscal 2021, the UBE Group recorded 8 accidents, investigated their causes, and implemented recurrence prevention measures.

Occupational Safety, Health, and Disaster Prevention Expenditures of the UBE Group

(Millions of yen)



Plant Safety Assessment

Plant safety assessments of new, additional, or modified offices and facilities are carried out following the methods stipulated in the plant safety assessment standards. In fiscal 2021, the UBE Group carried out 138 such safety assessments.

Response to the Japan Petrochemical Industry Association's Industrial Process Safety Action Plans

	Initiatives that Member Companies Should Take	UBE's Initiatives
1. Commitment of corporate management to industrial process safety	(1) Commitment to basic principles and policies related to process safety and other aspects of safety	Establishing and maintaining the UBE Corporate Philosophy, UBE Management Principles, and UBE Group Environmental and Safety Guidelines Messaging from top management to employees and partner companies about industrial process safety On-site roundtable meetings with top management held at facilities, facilitating direct communication between the president and employees
	(2) Commitment to policy on resource allocation for industrial process safety	Building an educational structure and using educational and training facilities to develop human resources Providing explanations to facilities regarding budgets and staffing for production plans, maintenance plans, and capital investment plans prepared by process safety divisions
2. Setting goals for industrial process safety	(1) Set numerical targets for process safety	Numerical target: Zero major facility accidents
3. Formulating action plans to implement industrial process safety measures	(1) Risk assessment	Conducting risk assessments with the participation of several departments from comprehensive and diverse perspectives for normal and unstable circumstances and when deploying new facilities and processes
	(2) Education and training to develop human resources	Participating in classes, on-the-job training, and RA and educating about operational principles and know-how through experiential education and providing plant simulator education
	(3) Utilize information about accidents	Horizontally sharing information on accidents inside and outside the Company and their countermeasures through the Accident Information Liaison Group
	(4) Organizational operations	Implementing change management with operational management, facility management, process safety management, and design divisions when facilities are newly established or renovated and when procedures change
	(5) Facility maintenance and deterioration countermeasures	Update based on results of assessments of remaining service lives and formulate repair plans Harness the IoT, including for deploying advanced nondestructive inspection techniques and tablets
	(6) Maintain and enhance earthquake resistance of high-pressure gas facilities and conduct voluntary seismic assessments of existing piping	Assessing compliance with seismic resistance standards for high-pressure gas facilities, undertaking measures, and conducting seismic diagnoses of existing piping systems
	(7) Incorporate new methods and technologies to enhance safety	Incorporating operational data to analyze operational patterns, utilizing driving training simulators, smart devices and electronic reporting system
	(8) Safety management that encompasses partner companies	Group companies and related partner companies hold joint safety management meetings Staff in charge of operational management, facility management, and staff from partner companies meet before construction begins to confirm safety
4. Surveying and evaluating achievement of goals and implementation of measures	(1) Structure and operations relating to attainment surveys and assessments	Progress is checked and evaluated through annual audits Strategic Management Meeting considers the results of the year's activities when discussing measures for the next year
	(2) Respond to results of above survey and assessments	Based on assessment results, act on key priorities, which are to undertake overall risk steps to prevent accidents from aging facilities, improve the safety of certified high-pressure gas sites, and undertake measures to tackle natural disasters
5. Initiatives to advance each company's own process safety activities (cultivating a culture of safety)	(1) Approaches to developing a culture of safety	Institute safety awards within the Group and at business sites Each business site formulated goals and plans to improve the safety culture and undertook improvement initiatives
6. Leveraging external knowledge	(1) Harnessing third-party institutions	Have the Japan Industrial Safety Competency Center assess business site safety Set improvement goals based on assessment results and acted
	(2) Disseminating information externally	Provide safety and security information to local industry associations
7. Communicating about risks with communities	(1) Risk communications tools and frequency	Holding regular dialogue with local residents Hold events for local citizens
8. Efforts to prevent industrial accidents from earthquakes, tsunamis, and other natural disasters	(1) Evacuating employees in event of major earthquakes and tsunamis and approaches to facility setups	Formulating responses for earthquakes and tsunamis and conducting evacuation training, and assessing and reinforcing seismic resistance of facilities and piping Creating and implementing earthquake and tsunami countermeasure plans and formulating business continuity plans

Environmental Issues: Tackling Global Warming

GHG Emissions

(FY)	kt-CO ₂ e			
	2019	2020	2021	
Scope 1	11,400	10,690	3,790* ¹ (11,250)* ²	Direct GHG emissions from a reporting entity, due to fuel use, etc.
Scope 2	700	580	520* ¹ (590)* ²	Indirect GHG emissions from electricity and heat purchased from other entities
Scope 3	15,100	13,470	2,480	Indirect GHG emissions throughout the supply chain, such as those that occur during material procurement, transport and product processing, use and disposal
Total	27,200	24,740	6,790	

*1 The Greenhouse Gas Emissions Assurance Statement assured the above Scope 1 and 2 energy-derived CO₂ emissions in fiscal 2021. Please see the assurance statement on page 13.

*2 Figures in parentheses include data for the former Construction Materials Company, calculated using the same boundary used in fiscal 2020.

Scope 3 Emissions by Category

Category	GHG Emissions (kt-CO ₂ e)		
	2019	2020	2021*
1 Purchased goods and services	2,180	2,040	1,100
10 Processing of sold products	200	180	180
11 Use of sold products	8,960	7,650	1,200
Total	11,340	9,870	2,480

Note: We are reviewing calculation and other methods for other categories, and will disclose information at a later date.

* Data for fiscal 2021 is an aggregate for UBE Group sites in Japan, excluding those of the former Construction Materials Company.

Energy Type Consumption Data

Energy Type	MWh/year		
	2019	2020	2021*
Thermal coal	17,400,000	16,170,000	6,963,000
Kerosene and light oil	400,000	370,000	263,000
Liquefied natural gas	590,000	650,000	626,000
Liquefied petroleum gas	150,000	130,000	138,000
Petroleum coke	550,000	520,000	0
Heavy oil	320,000	270,000	201,000
Gas and oil by-products	230,000	250,000	226,000
Biomass	500,000	670,000	0
Total	20,140,000	19,030,000	8,417,000

* Data for fiscal 2021 is an aggregate for UBE Group sites in Japan, excluding those of the former Construction Materials Company.

Energy Consumption Data

	MWh/year						Notes
	2019		2020		2021		
	Total	Derived from Renewable Energy	Total	Derived from Renewable Energy	Total	Derived from Renewable Energy	
Fuel consumption	20,140,000	500,000	19,030,000	670,000	8,417,000	0	Biomass
Purchased electricity consumption	920,000	0	840,000	60,000	800,000	176,000	Power from renewable energy
Purchased steam consumption	1,080,000	0	1,050,000	0	1,425,000	0	
Private power generation (renewable energy)	1,000	1,000	2,000	2,000	2,000	2,000	Solar power
Total	22,140,000	500,000	20,920,000	730,000	10,644,000	178,000	

Note: Numbers may not add up due to rounding.

* Data for fiscal 2021 is an aggregate for UBE Group sites in Japan, excluding those of the former Construction Materials Company.

GHG Emissions by Company in 2021

Business Sites	kt-CO ₂ e		
	Scope 1	Scope 2	Total
Chemicals Business	3,590	510	4,100
Domestic	2,790	200	2,990
Thailand	440	310	760
Spain	360	0*	360
UBE Machinery Group	200	10	210
Total	3,790	520	4,310

Note: Numbers may not add up due to rounding.

* Externally purchased electricity was almost entirely from renewable energy sources.

Emissions Data by GHG Category

GHG Categories	kt-CO ₂ e		
	2019	2020	2021* ²
CO ₂	11,230	10,410	3,390
Energy-derived CO ₂			216* ³
Non-energy-derived CO ₂ (including those from waste)			123
CH ₄ * ¹	10	10	0
N ₂ O	870	850	920
HFC* ¹	0	0	0
PFC	0	0	0
SF ₆ * ¹	0	0	0
NF ₃	0	0	0
Total	12,110	11,270	4,310

*1 Less than 10,000t-CO₂e

*2 Data for fiscal 2021 is an aggregate for UBE Group sites in Japan, excluding those of the former Construction Materials Company.

*3 The figure with "t" mark was assured by the third party assurance. Please see the assurance statement on page 13.

GHG Emission Intensity (GHG emissions per unit of production)

	t-CO ₂ e/t-Lc		
	2019	2020	2021*
GHG emission intensity	3.282	3.263	2.521

* Data for fiscal 2021 is an aggregate for UBE Group sites in Japan, excluding those of the former Construction Materials Company.

Environmental Issues: Water Resource Usage and Fluorocarbon Emission Restriction

Water Resource Usage

UBE Group Water Resource Usage (Fiscal 2017 through 2021)

Data covers [UBE factories, laboratories, and key domestic consolidated subsidiaries with factories shown on page 16](#), representing 70% of such subsidiaries.

			(FY)	2017	2018	2019	2020	2021	
Water resource withdrawals (Millions of cubic meters)	Chemicals Business	Tap water		0.2	0.2	0.2	0.2	0.2	
		Groundwater		2.0	2.0	2.0	2.0	2.2	
		Industrial water		81	79	84	81	83	
		Seawater		114	105	114	107	115	
		Subtotal		197	186	200	190	200**	
	Machinery Company	Tap water		0.1	0.1	0.1	0.2	0.1	
		Groundwater		0.0	0.0	0.0	0.0	0.0	
		Industrial water		1.1	0.9	1.0	1.0	0.9	
		Seawater		0.0	0.0	0.0	0.0	0.0	
		Subtotal		1.2	1.0	1.1	1.2	1.0	
	Construction Materials Company	Tap water		0.3	0.3	0.3	0.3	0.3	
		Groundwater		0.0	0.0	0.0	0.0	0.0	
		Industrial water		9.7	9.4	9.5	10	9.7	
		Seawater		1.1	1.1	1.1	1.1	1.1	
		Subtotal		11	11	11	11	11	
Total (UBE Group)				209	198	212	202	212	
Water discharges (Millions of cubic meters)	Chemicals Business	Sewers		0.0	0.0	0.0	0.0	0.0	
		Rivers and lakes		2.1	2.1	2.1	2.1	2.2	
		Ocean areas		155	140	156	145	152	
		Subtotal		157	142	158	147	154	
	Machinery Company	Sewers		0.0	0.0	0.0	0.0	0.0	
		Rivers and lakes		0.0	0.0	0.0	0.0	0.0	
		Ocean areas		0.9	0.8	0.9	0.8	0.8	
		Subtotal		0.9	0.8	0.9	0.8	0.8	
	Construction Materials Company	Sewers		0.0	0.0	0.0	0.0	0.0	
		Rivers and lakes		0.0	0.0	0.0	0.0	0.0	
		Ocean areas		4.3	4.4	4.3	4.2	4.2	
		Subtotal		4.3	4.4	4.3	4.2	4.2	
	Total (UBE Group)				162	147	163	152	159

We installed pollutant monitoring facilities to manage the quality of water discharges into bodies of water. We maintain facilities to treat plant wastewater that could cause significant pollution.

* The figure with “+” mark was assured by the third party assurance. Please see the assurance statement on page 13.

Response to the Fluorocarbon Emission Restriction Law

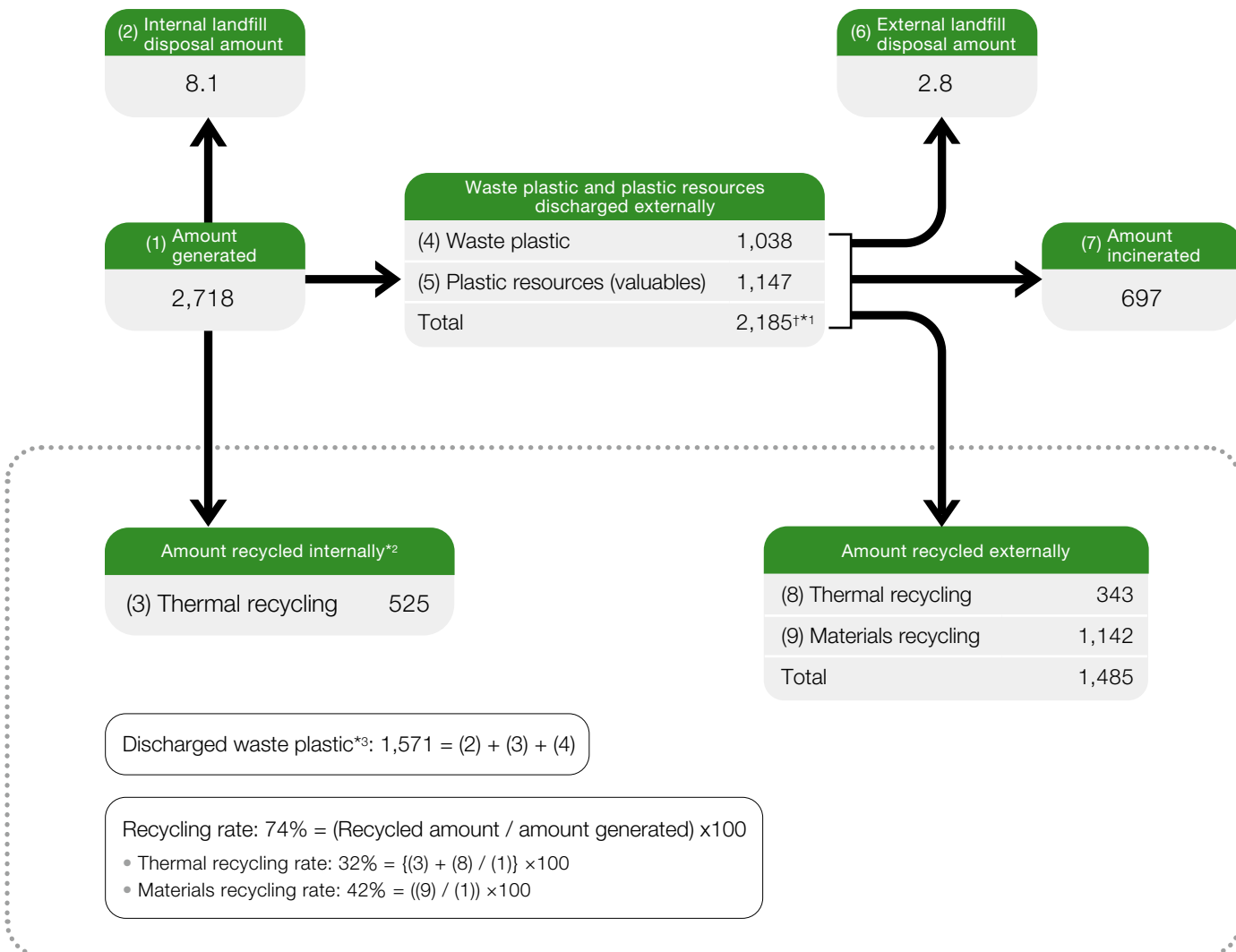
Promulgated in April 2015, the Act on Rational Use and Appropriate Management of Fluorocarbons is aimed at reducing leaks of fluorocarbon refrigerants (chlorofluorocarbon, hydrochlorofluorocarbon, and hydrofluorocarbon) to help prevent global warming and the further destruction of the ozone layer. We comply strictly with laws and regulations relating to chlorofluorocarbon refrigeration and air conditioning equipment inspections. We endeavor to prevent fluorocarbon leaks by improving their recovery and filling methods and strengthening equipment operations management.

We are systematically replacing chlorofluorocarbon refrigeration equipment from our processes with alternatives that use low global warming potential hydrofluorocarbons or non-chlorofluorocarbon refrigerants.

Environmental Issues: Recycling Plastic Resources

Flow of Plastic Resources (UBE Corporation, FY2021)

(t)



^{*1} The figure with "†" mark was assured by the third party assurance. Please see the assurance statement on page 13.

^{*2} Amount recycled by Construction Materials Company (now Mitsubishi UBE Cement Corporation)

^{*3} Including in-house internal landfill disposal and recycled amount that are subject to calculation under the Plastic Resource Circulation Act.

The Plastic Resource Circulation Act, which went into effect in April 2022, requires businesses to minimize and recycle waste plastic. UBE's efforts to use plastic resources effectively resulted in a 74% recycling rate in fiscal 2021. It will continue to push ahead with plastic recycling.

Data covers eight UBE business sites. These are the Sakai Factory, Ube Chemical Factory, Ube-Fujimagari Factory, Ube Research Laboratory, Chiba Research Laboratory, Pharmaceutical Research Laboratory, Osaka Research & Development Center, Meiwa Plastic Industries, Ltd. (now UBE Electronic and Industrial Materials Factory)

Environmental Preservation: Environmental Performance and Environmental Accounting

Environmental Performance

Overview of Group Environmental Impact (Fiscal 2017 through 2021)

	(FY)	2017	2018	2019	2020	Input 2021
Total energy	Crude oil equivalent (Thousands of MWh)	21,980	21,970	22,140	20,920	21,340
Total raw materials (Thousands of tons)		16,361	16,383	16,298	15,381	15,819
Water resources (Million m ³)	Fresh water used	94	92	97	94	96
	Seawater used	115	106	115	108	116

Water resource usage

[Page 7 shows water resource withdrawals by source and discharges by destination.](#)

Business activities (manufacturing) of the UBE Group

Output

	(FY)	2017	2018	2019	2020	2021
Airborne emissions	GHG (kt-CO ₂ e/y)	12,300	12,010	12,110	11,270	11,840
	SOx* ¹ (t)	2,839	2,873	2,652	2,589	2,296
	NOx* ² (t)	14,949	16,149	16,071	15,274	14,956
	Dust (t)	341	356	371	392	364
	PRTR substances* ³ (t)	212	255	226	238	194
Soil emissions	PRTR substances (t)	0	0	0	0	0
Waterborne emissions	Wastewater (Million m ³)	162	147	163	152	159
	COD* ⁴ (t)	747	642	705	658	687
	Total phosphorus (t)	11	9	11	10	11
	Total nitrogen (t)	519	468	466	420	455
	PRTR substances (t)	119	97	112	82	91
Industrial waste emissions	External landfill disposal amount (t)	6,561	6,730	6,463	6,347	5,895
	Recycled volume (t)	386,661	370,451	389,000	340,543	379,024

The UBE Group is committed to extensively managing atmospheric and water emissions of pollutants and contaminants, and endeavors to comply with agreements and voluntary standards. We are endeavoring to lower our environmental impact, managing it by checking progress with reduction plans in strategic management meetings and undertaking PDCA cycles. We will keep pursuing business activities that contribute to a circular economy by tackling environmental issues, lowering and using industrial waste, and constraining chemical substance emissions.

Environmental Accounting

Environmental Preservation Costs

Category	Main Activity	(FY)	(Hundreds millions of yen)					
			Capital Investment			Costs		
			2020	2021	Difference	2020	2021	Difference
Cost by business area	Pollution prevention	Investing in and maintaining air pollution prevention facilities and water pollution prevention facilities	12.2	13.6	1.4	43.8	44.2	0.4
	Global environment preservation	Investing in and maintaining energy-saving facilities	11.7	6.1	(5.6)	39.4	33.4	(6.0)
	Resource recycling	Recycling and reducing industrial waste	3.4	2.6	(0.8)	34.6	32.1	(2.5)
Upstream/downstream costs	Container/packaging recycling, green purchasing	0.0	0.0	0.0	4.8	9.0	4.2	
Costs of management activities	Acquiring, running, and maintaining environmental management systems	0.1	0.0	(0.1)	5.8	5.1	(0.7)	
Research and development costs	R&D of environmentally friendly products and technologies	0.0	0.0	0.0	2.9	1.7	(1.2)	
Costs of social activities	Greening and beautifying offices/facilities and their surroundings	0.0	0.2	0.2	2.4	3.9	1.5	
Costs of cleaning up environmental damage	Payment of environment-related levy	0.0	0.0	0.0	1.4	1.3	(0.1)	
Total			27.4	22.5	(4.9)	135.1	130.7	(4.4)

Economic Effect

Category	Main Activity	(FY)	(Hundreds millions of yen)		
			2020	2021	Difference
Income effect	Proceeds from sales of marketable waste products		45.0	42.1	(2.9)
Savings effect	Savings achieved through resource recycling and energy conservation		58.2	66.4	8.2

Glossary

*1 Sulfur oxides (SOx) originate in the sulfur (S) component of fuels. Boilers are our main source of these oxides.

*2 Nitrogen oxides (NOx) stem from fuel combustion, primarily from Group boilers and cement kilns.

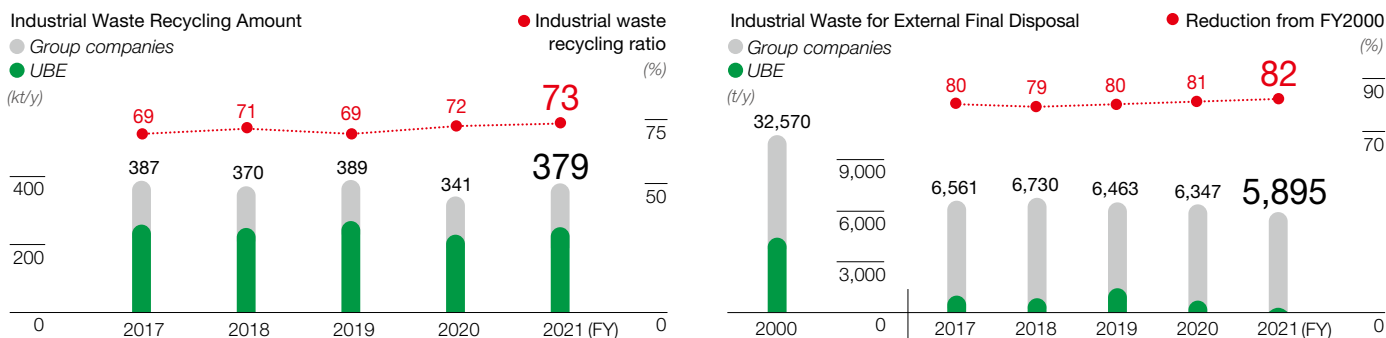
*3 PRTR (Pollutant Release and Transfer Register) Law: Please see the Glossary on page 2.

*4 Chemical Oxygen Demand (COD): This is an indicator of water pollution by organic substances and represents the amount of oxygen consumed in the chemical oxidation of organic matter.

Environmental Preservation: Industrial Waste and PCB Waste

Reducing Industrial Waste

Data covers [UBE factories, laboratories, and key domestic consolidated subsidiaries with factories shown on page 16](#), representing 70% of such subsidiaries.

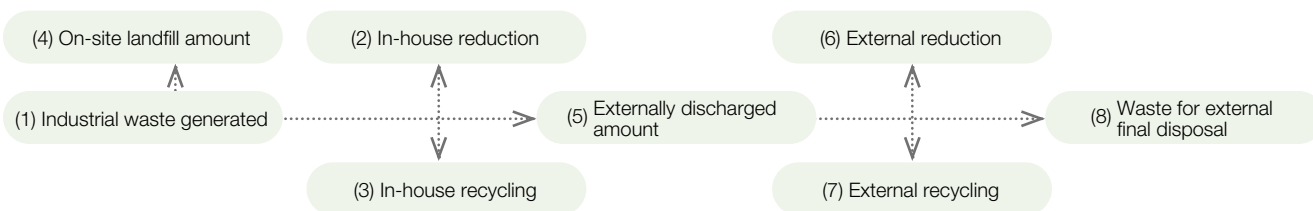


Waste for External Final Disposal

Fiscal 2024 target: 87% reduction from fiscal 2000 level

We are reducing and recycling industrial waste to help create a circular economy. Our medium-term goal is to cut external final disposal by 87% from the fiscal 2000 level by fiscal 2024. We have taken steps to reach that target. In fiscal 2021, our external landfill disposal amount was 82% below that of fiscal 2000. We will keep striving to reduce industrial waste.

Overall Flow of Industrial Waste



(FY)	In-house				External				
	(1) Industrial waste generated	(2) Reduction	(3) Recycling	(4) Final disposal	(5) Discharged amount	(6) Reduction	(7) Recycling	(8) Final disposal	
2017	556,522	142,646	254,896	284	158,696	20,370	131,765	6,561	
2018	518,791	120,718	242,835	207	155,031	20,685	127,616	6,730	
2019	561,591	145,425	247,568	263	168,335	20,440	141,432	6,463	
2020	476,127	105,940	220,559	126	149,502	23,171	119,984	6,347	
	Chemicals Business	163,447	46,372	29,034	75	87,966*	22,245	65,335	386
	Machinery Company	54,088	0.0	29,835	0.0	24,253	166	20,298	3,789
	Construction Materials Company	305,109	68,494	174,306	52	62,257	321	60,216	1,720
	Total	522,644	114,866	233,175	127	174,476	22,732	145,849	5,895

* The figure with "+" mark was assured by the third party assurance. Please see the assurance statement on page 13.

Data covers [UBE factories, laboratories, and key domestic consolidated subsidiaries with factories shown on page 16](#), representing 70% of such subsidiaries.

Polychlorinated Biphenyl (PCB) Waste Disposal

We thoroughly audit stabilizers and other equipment using PCBs. In addition, we are endeavoring to complete PCB waste disposals by the deadline set under the amended Act on Special Measures for Promotion of Proper Treatment of Polychlorinated Biphenyl. We comply with storage and disposal laws and ordinances processing, and utilize Japan Environmental Storage & Safety Corporation (JESCO) and certified detoxification contractors to systematically dispose of PCB waste.

Number of Units of Equipment Incorporating PCB Stored (As of April 2022 for UBE Corporation)

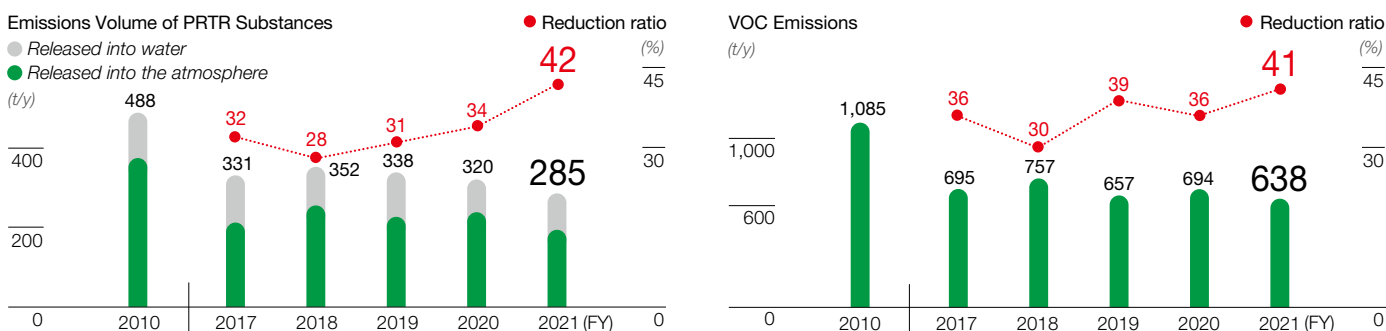
	In use	In storage	Total
High-concentration PCB	0	0	0
Low-concentration PCB	23	25	48

UBE Corporation completely disposed of high-concentration PCB waste in fiscal 2021. It is endeavoring to systematically collect and dispose of all low-concentration PCB waste to by the deadline set under the amended Act on Special Measures for Promotion of Proper Treatment of Polychlorinated Biphenyl.

Environmental Preservation: Suppressing Chemical Substance Emissions and Emissions of Substances Covered by PRTR Law

Suppressing Chemical Substance Emissions

Data covers [UBE factories, laboratories, and key domestic consolidated subsidiaries with factories shown on page 16](#), representing 70% of such subsidiaries.



Total Emissions of 20 Chemical Substances

Fiscal 2024 Target: 32% reduction from fiscal 2010 level

The UBE Group accorded Companywide priority to 20 key chemical substances*³ with high emission volumes from among those subject to the PRTR Law*¹ and VOCs*², and endeavors to control their emissions. In fiscal 2021, we reduced the total emissions of 20 chemical substances by 24% from the fiscal 2010 level (in terms of PRTR substances and VOC emissions reductions, as shown above, down 42% and 41%, respectively, from fiscal 2010). The reduction target for fiscal 2024 is 32%. We will continue to cut our emissions.

Total Volume of PRTR Substances Emitted/Transferred in Fiscal 2021	Handling Volume (t)	Emissions Volume (t)				Increase/Decrease Rate Compared with Fiscal 2020 (Total Emissions)	Transfer Volume (t)	Number of PRTR Substances
		Atmosphere	Public Water	Soil	Total			
UBE	197,015	87.9	80.9	0.0	168.8	12.1 %	1,999.0	40
Other Group companies	143,448	105.4	10.6	0.0	116	(31.6)%	2,025.6	29
Total (UBE Group)	340,463	193.3	91.5	0.0	284.8	(11.0)%	4,024.6	58

Volumes of Individual PRTR Substances Emitted/Transferred in Fiscal 2021 (Substances emitted 1 ton or more per year and dioxins)

Ordinance Designation No.	Chemical Substance	CAS No.* ⁴	Handling Volume (t)	Total Emissions Volume (t)				Increase/Decrease Rate Compared with Fiscal 2020 (Total Emissions)	Transfer Volume (t)
				Atmosphere	Public Water	Soil	Total		
300	Toluene	108-88-3	956	72.2	15.4	0.0	87.6	9.5 %	284
76	Epsilon-caprolactam	105-60-2	136,689	0.0	67.5	0.0	67.5	5.3 %	698
134	Vinyl acetate	108-05-4	5,649	22.5	0.0	0.0	22.5	(9.3)%	0.0
392	Normal-hexane	110-54-3	185	15.7	0.0	0.0	15.7	6.8 %	12.2
80	Xylene	—	160	13.1	0.0	0.0	13.1	(37.9)%	9.9
104	Chlorodifluoromethane	75-45-6	12.7	12.3	0.0	0.0	12.3	0.0 %	0.4
128	Chloromethane	74-87-3	12.2	12.2	0.0	0.0	12.2	37.1 %	0.0
53	Ethylbenzene	100-41-4	23.5	10.5	0.0	0.0	10.5	(39.3)%	8.9
400	Benzene	71-43-2	72.1	10.3	0.1	0.0	10.4	8.3 %	0.0
213	N,N-dimethylacetamide	127-19-5	755	9.8	0.0	0.0	9.8	5.4 %	296
240	Styrene	100-42-5	200	7.4	0.0	0.0	7.4	(82.7)%	0.5
405	Boron compound	—	55.7	0.1	6.1	0.0	6.2	55.0 %	5.9
349	Phenol	108-95-2	79,353	2.0	0.1	0.0	2.1	6.1 %	1,026
374	Hydrogen fluoride and its water-soluble salts	—	4.1	0.0	1.9	0.0	1.9	(17.4)%	0.3
13	Acetonitrile	75-05-8	563	1.5	0.0	0.0	1.5	47.1 %	392
297	1,3,5-Trimethylbenzene	108-67-8	35.9	1.3	0.0	0.0	1.3	—	3.4
243	Dioxins ^(Note) mg-TEQ/year	—	—	444.2	8.9	0.0	453.1	144.1 %	0.0

Note: Contains various compounds

Data covers [UBE factories, laboratories, and key domestic consolidated subsidiaries with factories shown on page 16](#), representing 70% of such subsidiaries.

Glossary

*1 PRTR (Pollutant Release and Transfer Register) Law: Please see the Glossary on page 2.

*2 Volatile organic compounds (VOCs): Please see the Glossary on page 2.

*3 UBE's 20 voluntary selected chemical substances: Please see the Glossary on page 2.

*4 CAS No.: Chemical Abstract Service registry number

Environmental Preservation: Environmental Impact Data by Facility

Fiscal 2020 and 2021 Environmental Impact Data by Facility

(FY)	Emissions into the Atmosphere (t/y)							Emissions into Water (t/y)						
	SOx*1		NOx*2		Dust		COD*3		Total Phosphorus		Total Nitrogen			
	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021		
In Japan														
Chemicals Business	UBE	Chiba Petrochemical Factory*	0.6	—	30	—	0.2	—	12	—	0.1	—	3.6	—
		Sakai Factory / Osaka Research & Development Center	0.0	0.0	1.4	1.6	0.1	0.1	1.0	0.6	0.1	0.0	0.8	0.6
		Ube Chemical Factory	1,572	1,495	3,331	3,327	118	97	415	424	5.1	5.3	359	393
		Ube-Fujimagari Factory*	451	335	295	363	1.3	1.5	205	226	4.3	5.1	51	53
		Ube Research Laboratory* / Pharmaceutical Research Laboratory	—	—	—	—	—	—	0.2	0.2	0.1	0.0	0.2	0.1
		Chiba Research Laboratory*	—	—	—	—	—	—	0.0	0.0	0.0	0.0	0.0	0.0
		Subtotal	2,024	1,830	3,657	3,692	120	99	634	651	10	10	415	447
		UBE Elastomer Co. Ltd. Chiba Factory*	—	0.7	—	37	—	0.2	—	12	—	0.1	—	3.5
		UBE Film, Ltd.	—	—	—	—	—	—	—	—	—	—	—	—
		Meiwa Plastic Industries, Ltd.*	—	—	—	—	—	—	0.0	0.0	0.0	0.0	0.0	0.0
		Ems-Ube, Ltd.	0.0	0.0	2.5	2.8	0.0	0.0	5.6	5.9	0.0	0.0	1.3	1.1
		UBE-MC Hydrogen Peroxide, Ltd.	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.0	0.4	0.3	0.4
	UBE EXSYMO CO., LTD.	0.0	0.0	0.5	0.6	0.1	0.1	3.5	3.4	—	—	—	—	
	Total (Chemicals Business)	2,024	1,831	3,660	3,732	120	99	643	673	10	11	417	452	
Machinery Company	UBE Machinery Corporation, Ltd.*	0.1	0.1	—	—	—	—	1.4	1.2	0.3	0.2	2.1	1.7	
	UBE Steel Co., Ltd.	12	12	70	88	6.9	7.7	2.3	2.1	—	—	—	—	
	Fukushima, Ltd.	—	—	—	—	—	—	—	—	—	—	—	—	
	Total (Machinery Company)	12	12	70	88	6.9	7.7	3.7	3.3	0.3	0.2	2.1	1.7	
Construction Materials Company	UBE	Ube Cement Factory	41	17	1,246	1,656	40	37	7.9	7.7	—	—	—	—
		Isa Cement Factory	355	345	7,080	6,151	171	175	0.1	0.1	—	—	—	—
		Kanda Cement Factory	5.0	2.4	2,437	2,417	46	35	2.4	2.5	0.1	0.1	0.4	0.5
		Technical Development Center	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
		Okinozawa Coal Center	—	—	—	—	—	—	—	—	—	—	—	—
		Subtotal	401	364	10,763	10,224	257	247	11	10	0.1	0.1	0.4	0.5
		UBE Material Industries, Ltd.	152	89	781	912	8.4	10	0.6	0.5	0.0	0.0	1.0	0.9
	UBE Construction Materials Sales Co., Ltd.	—	—	—	—	—	—	—	—	—	—	—	—	
	Total (Construction Materials Company)	553	453	11,544	11,136	265	257	11	11	0.1	0.1	1.4	1.4	
Total (UBE Group)		2,589	2,296	15,274	14,956	392	364	658	687	10	11	420	455	
Overseas														
Spain	UBE Corporation Europe, S.A. Unipersonal		80	84	497	443	9.0	8.6	277	145	1.4	0.9	170	31
Thailand	UBE Chemicals (Asia) Public Company Limited		4.8	6.8	40	32	5.1	3.3	42	36	1.3	0.6	8.6	2.7
	THAI SYNTHETIC RUBBERS COMPANY LIMITED		0.0	0.0	0.0	0.0	0.6	0.9	19	21	0.0	0.0	0.0	0.0
	UBE Fine Chemicals (Asia) Co., Ltd.		0.0	0.0	4.6	5.5	0.1	0.2	—	—	—	—	—	—
Total		85	91	542	481	15	13	338	202	2.7	1.5	179	34	

* We reorganized or renamed these sites in fiscal 2021 or 2022. See Reorganizations and Renamings on page 16.

Data covers [UBE factories, laboratories, and key domestic consolidated subsidiaries with factories shown on page 16](#), representing 70% of such subsidiaries.

Glossary

*1 Sulfur oxides (SOx): Please see the Glossary on page 9.

*2 Nitrogen oxides (NOx): Please see the Glossary on page 9.

*3 Chemical Oxygen Demand (COD): Please see the Glossary on page 9.

Independent Assurance Statement

October 18, 2022

Mr. Masato Izumihara
President & Representative Director
UBE Corporation

1. Purpose

We, Sustainability Accounting Co., Ltd., have been engaged by UBE Corporation (“the Company”) to provide limited assurance on the Company's chemical and machinery categories (domestic and global) following data during 2021, 2,163kt-CO₂ of energy-derived CO₂ emission, domestic 200 million m³ of water intake and, 88.0kt of waste emissions (2.19kt of plastic waste) (collectively, “the Environmental performance data”). The purpose of this process is to express our conclusion on whether the Environmental performance data were calculated in accordance with the Company's standards. The Company's management is responsible for calculating the Environmental performance data. Our responsibility is to independently carry out a limited assurance engagement and to express our assurance conclusion.

2. Procedures Performed


We conducted our assurance engagement in accordance with International Standard on Assurance Engagement 3000 (ISAE 3000) and International Standard on Assurance Engagement 3410 (ISAE 3410). The key procedures we carried out included:

- Interviewing the Company's responsible personnel to understand the Company's standards and reviewing the Company's standards
- Visiting a factory
- Performing cross-checks on a sample basis and performing a recalculation to determine whether the Environmental performance data were calculated in accordance with the Company's standards.

3. Conclusion

Based on the procedures performed, nothing has come to our attention that causes us to believe that the Environmental performance data have not been calculated in all material respects in accordance with the Company's standards.

We have no conflict of interest relationships with the Company.



Takashi Fukushima
Representative Director
Sustainability Accounting Co., Ltd.

Using Resources Effectively

Our cement factories recycle diverse waste and by-products as raw materials for cement and thermal energy alternatives. Our cement kilns operate at up to 1,450°C, so they can burn and detoxify substances that conventional counterparts could not handle. They can also process large waste volumes. It is also possible to use ash from incineration as an alternative to the clay used in cement, thereby eliminating the need to maintain final disposal sites.

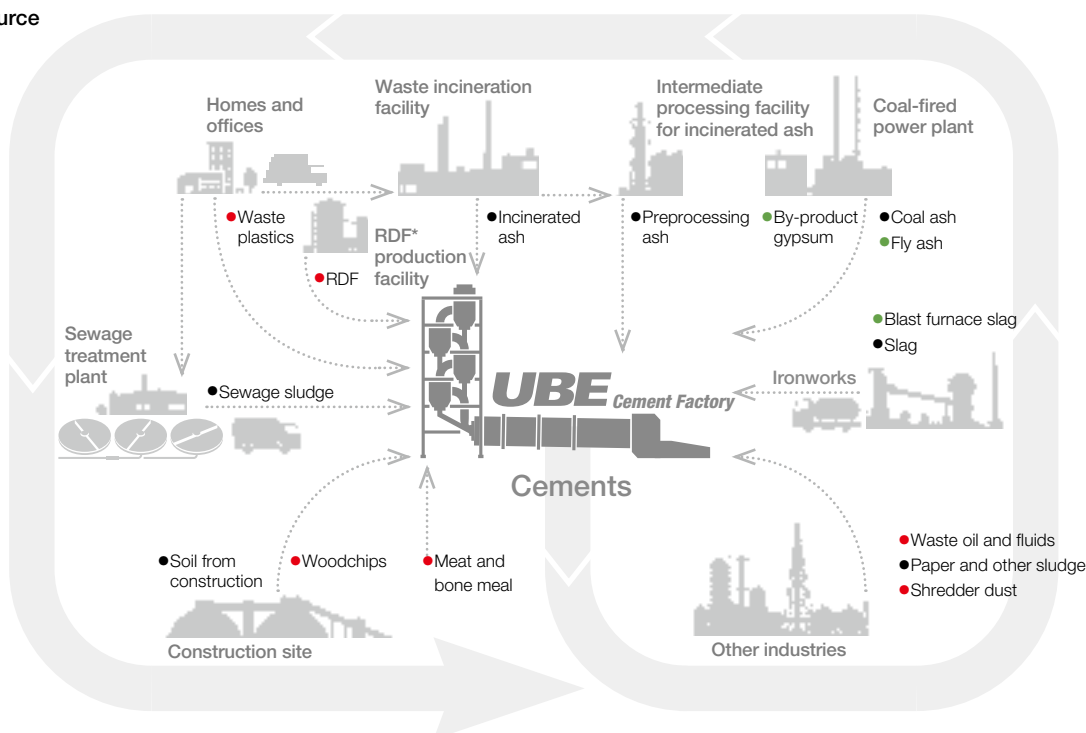
In fiscal 2021, our three cement factories harnessed 3.18 million metric tons of waste and by-products, 2.82 million metric tons of which we sourced externally, contributing considerably to a recycling-oriented society.

As well as using gypsum recycled from waste gypsum board as a raw material for cement, we are cultivating new businesses, including for applications other than for raw materials for cement. We are doing so by assessing the use of recycled gypsum at Group companies while evaluating on-site sewage sludge treatment with other companies. In April 2022, we merged our cement business with that of Mitsubishi Materials Corporation. It will strive to enhance and expand recycling businesses by taking advantage of their collective expertise to maximize the use of waste materials.

Cement Factory Resource Recycling

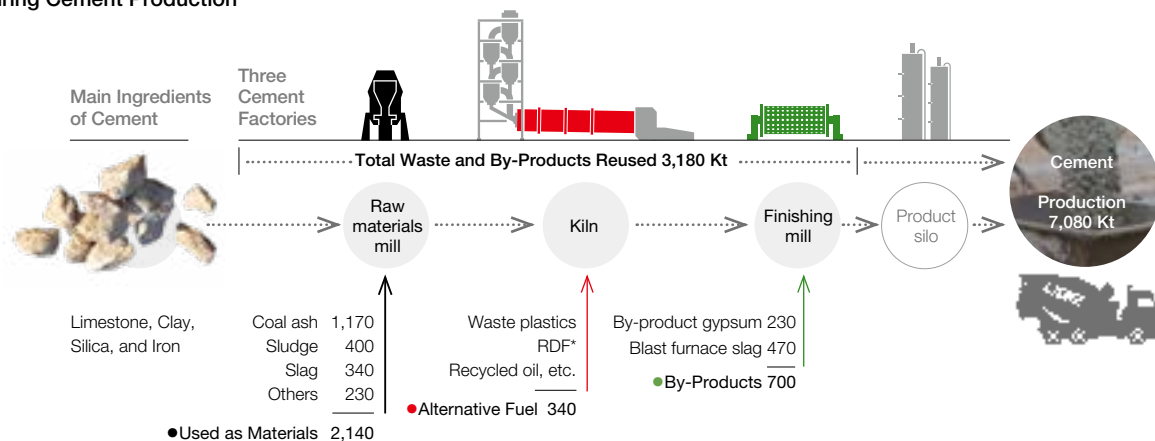
Legend

- Used as Materials
- Alternative Fuel
- By-Products



Overview of Waste and By-Products Usage Flows during Cement Production

(kt/y)
(Fiscal 2021)



Glossary

* Refuse-derived fuel (RDF): A solidified fuel made of waste plastic, woodchips, and household waste.

Management System Acquisitions (For environment and occupational safety and health)

(As of April 2022)

ISO14001 (Environment) and ISO45001 (Occupational Safety and Health) Acquisitions

Company/Site	Registration Number		Registration Agencies
	ISO14001	ISO45001	
UBE Corporation			
Ube Chemical Factory	ISO14001-0077385	ISO45001-0077387	LRQA Limited
Ube Chemical Factory, Fujimagari Area	ISO14001-0076815	ISO45001-0076816	LRQA Limited
Sakai Factory	ISO14001-0077356	ISO45001-0077357	LRQA Limited
UBE Electronic and Industrial Materials Factory	02ER-236	20HR/009	ISO Inspection Center of The High Pressure Gas Safety Institute of Japan
Power Management Dept.	JQA-EM7039	JQA-OH0099	Japan Quality Assurance Organization
Ube Research Laboratory and Pharmaceutical Research Laboratory	ISO14001-00032763	ISO45001-00032764	LRQA Limited
Chiba Research Laboratory	JP28400-E-4	JP28400-S-4	GCC Japan
Ube Logistic Service, Ltd.			
Ube Site*1	ISO14001-0077385	ISO45001-0077387	LRQA Limited
Sakai Site*2 and Nagoya Site*2	ISO14001-0077356	ISO45001-0077357	LRQA Limited
Chiba Site*3	JCQA-E-0072	JCQA-O-0030	Japan Chemical Quality Assurance Ltd.
UBE Film, Ltd.			
Headquarters and Onoda Factory	C2018-01123	C2018-01124-R3	Perry Johnson Registrars, Inc.
Narita Factory	C2019-02417	—	Perry Johnson Registrars, Inc.
UBE-MC Hydrogen Peroxide, Ltd.			
Ube Factory	JCQA-E-0515	JCQA-O-0044	Japan Chemical Quality Assurance Ltd.
UBE EXSYMO CO., LTD.			
Gifu Site*1 and Fukushima Site*2	JQA-EM2069	JQA-OH0097	Japan Quality Assurance Organization
UBE MAXELL CO., LTD.			
Ube Site*1	ISO14001-0077385	ISO45001-0077387	LRQA Limited
Sakai Site*2	ISO14001-0077356	ISO45001-0077357	LRQA Limited
UBE SCIENTIFIC ANALYSIS LABORATORY, INC.			
Ube Area*4 and Chiba Area*4	JP28400-E-4	JP28400-S-4	GCC Japan
Ems-Ube, Ltd.			
Lauro lactam Factory*1	ISO14001-0077385	ISO45001-0077387	LRQA Limited
UBE Elastomer Co. Ltd.			
Chiba Factory	JCQA-E-0072	JCQA-O-0030	Japan Chemical Quality Assurance Ltd.
UBE-MARUZEN POLYETHYLENE Co., Ltd.			
Chiba Factory*3	JCQA-E-0072	JCQA-O-0030	Japan Chemical Quality Assurance Ltd.
MU Ionic Solutions Corporation			
Sakai Factory*2	ISO14001-0077356	ISO45001-0077357	LRQA Limited
UBE Machinery Corporation, Ltd.			
Headquarters Factory and Nagoya Site	ISO14001-0076688	ISO45001-0076687	LRQA Limited
T&U Electronics, Co., Ltd.			
Headquarters Factory	JP24476-E-2	JP24476-S-2	GCC Japan
UBE Steel Co., Ltd.			
Headquarters Factory	ISO14001-0077051	ISO45001-0077052	LRQA Limited
Fukushima, Ltd.			
Headquarters Factory and Tokyo Office	JQA-EM7691	—	Japan Quality Assurance Organization
Headquarters Factory	—	H004	JIC Quality Assurance Ltd.
Coverage ^(Notes)	92%	90%	

Note: Percentage of domestic factories, laboratories, and other facilities of UBE Corporation and consolidated subsidiaries using relevant management systems.

*1 Included in certification scope for UBE Corporation's Ube Chemical Factory.

*2 Included in certification scope for UBE Corporation's Sakai Factory.

*3 Included in certification scope for UBE Elastomer Co. Ltd.'s Chiba Factory.

*4 Included in certification scope for UBE Corporation's Chiba Research Laboratory.

Scope of This Report

Period Covered	From April 1, 2021 to March 31, 2022		After April 1, 2022
Companies Covered ^(Note 1)	UBE Corporation (12 operational sites)	Sakai Factory, Ube Chemical Factory, Ube-Fujimagari Factory* ¹ , Ube Research Laboratory* ² , Chiba Research Laboratory* ³ , Pharmaceutical Research Laboratory, Osaka Research & Development Center	UBE Corporation
		Three cement factories (Ube, Isa, and Kanda), Technical Development Center, Okinoyama Coal Center	Mitsubishi UBE Cement Corporation
	Domestic Group companies (12)	Ube Film, Ltd., UBE Elastomer Co. Ltd.* ⁴ , UBE-MARUZEN POLYETHYLENE Co., Ltd.* ⁵ , Ems-Ube, Ltd., Meiwa Plastic Industries, Ltd.* ⁶ , UBE-MC Hydrogen Peroxide, Ltd., UBE EXSYMO CO., LTD., UBE Machinery Corporation, Ltd.* ⁷ , UBE Steel Co., Ltd., Fukushima, Ltd.	Transition to Mitsubishi UBE Cement Group
Overseas Group companies (4) ^(Note 2)	UBE Corporation Europe, S.A. Unipersonal (Spain), UBE Chemicals (Asia) Public Company Limited (Thailand), THAI SYNTHETIC RUBBERS COMPANY LIMITED (Thailand), UBE Fine Chemicals (Asia) Co.,Ltd. (Thailand)		
<p>Note 1: The domestic data covers UBE's domestic factories, laboratories, and key domestic consolidated subsidiaries with factories. For equity-method affiliates, the data also encompasses factories included in the scope of ISO14001 certifications obtained by UBE or consolidated subsidiaries (see page 15 for ISO14001 situations).</p> <p>Note 2: Data for the four overseas Group companies is in Environmental Impact Data by Facility on page 12.</p>			
Definitions	UBE: Refers to UBE Corporation (unconsolidated) The UBE Group: Refers to the UBE Group companies, including UBE Corporation		

Reorganizations and Renamings

*1 We integrated the Ube-Fujimagari Factory within the Ube Chemical Factory on April 1, 2022. The Ube Chemical Factory continues production as the Fujimagari area.

*2 On April 1, 2022, we renamed the Strategic Core Technology Research Laboratory the Ube Research Laboratory.

*3 On April 1, 2022, we renamed the Frontier Technology Research Laboratory the Chiba Research Laboratory.

*4 On October 1, 2021, we established UBE Elastomer Co. Ltd., through a split-up of the synthetic rubber business. The Chiba Petrochemical Factory continues operating as the Chiba Factory of UBE Elastomer. Data for fiscal 2021 was calculated for UBE Elastomer's Chiba Factory for the full year.

*5 UBE-MARUZEN POLYETHYLENE Co., Ltd., is included in the data of UBE Elastomer Co. Ltd., as it is located on the premises of the latter company.

*6 On April 1, 2022, UBE Corporation absorbed Meiwa Plastic Industries, Ltd., which continues production as UBE Electronic and Industrial Materials Factory.

*7 We changed the Japanese name of UBE Machinery Corporation, Ltd., on April 1, 2022.

Product Safety

UBE Group Product Safety (Chemical Substance Management) Structure

We established a management structure to ensure that all business units manage chemical substances properly. In view of the regional nature of chemical substance control laws and regulations, UBE (in Japan) oversees operations across Asia, while UBE Corporation Europe (Spain), our European manufacturing site, looks after Europe and North America. In Japan, we standardized our annual schedule for complying with Chemical Substances Control Act, the Industrial Safety and Health Act, and other laws and regulations to ensure full adherence. Export volumes are increasing in China, Taiwan, and South Korea, so we work closely with specialists at each local subsidiary to ensure compliance with revisions to national laws and regulations.

Complying with Chemical Substance Management Laws and Regulations

Product safety is part of quality, and we work to manage this in line with our quality management system. We use our SDS*¹ production support system, as well as UBE-CHEMical Regulation Information Platform (U-CHRIP), a comprehensive database developed by UBE, for managing information about chemical substances, and other ICT to manage hazard information*² of substances we use and the compliance status of substances we handle to ensure that we adhere to laws and regulations. Each year, we improve U-CHRIP by identifying issues and functional shortfalls while enhancing functions to reflect revisions to national chemical control laws and regulations.

Supply Chain Communication

We supply local-language versions of SDSs and product labels for all products, complying with regulations in each country to ensure the safe use of chemical products throughout the life cycle of products, and maintain websites for key product SDSs. To realize green procurement*³, we are identifying hazardous chemical substances in our products and informing customers.

We maintain logistics safety by preparing emergency contact numbers for use in the event of accidents during transportation. In fiscal 2021, we prepared to extend our 24-hour emergency contact service to encompass the world, with operations beginning in fiscal 2022.

Cooperating with Industry Associations

Since fiscal 2011, we have participated in the Japan Chemical Industry Association (JCIA)'s voluntary chemical substance risk management activities while gathering and disseminating hazard information and risk assessments.

We support the International Council of Chemical Association (ICCA)'s voluntary Long-Range Research Initiative, which focuses on the effects of chemical substances on human health and the environment.

Glossary

*1 Safety Data Sheet (SDS): Documentation containing hazard and toxicity information about chemical substances that manufacturers disclose when supplying chemical substances and products incorporating them.

*2 Hazard information: Information on the inherent risks of chemical substances.

*3 Green procurement: Corporate purchases of raw materials, parts, and manufacturing facilities with minimal environmental footprints.

Quality Assurance

Former Chemicals Division

From Ongoing Efforts with Measures to Prevent Issue Recurrences to Improving Quality Management

The former Chemicals Division steadily undertook steps to prevent quality inspection issues experienced in fiscal 2018 from recurring, and restored trust among all stakeholders. To meet quality requirements specific to pharmaceuticals, the Pharmaceutical Division will remain committed to its Pharmaceutical Quality Policy through its proprietary pharmaceutical quality system.

We will continue to implement measures to prevent such issues from recurring and step up our efforts to improve the quality of our quality management.

Former Construction Materials Company

Continuing to Provide Products that Satisfy Customers

The Construction Materials Company engages in cement, resource recycling, and energy businesses. It also supplies ready-mixed concrete, magnesia and calcia, and construction material products in Japan and abroad. The company's Quality Assurance Department oversees quality assurance

and product safety systems. It conducts quality and product safety audits, and has reinforced its training programs to prevent incidents from recurring. Mitsubishi UBE Cement will maintain its quality efforts and focus on fostering a culture that emphasizes an awareness of safety among executives and employees alike, contributing to society by continuing to provide products that satisfy customers.

UBE Machinery Group

Continuing to Supply Quality Products and Services that Satisfy Customers and Build Trust

The UBE Machinery Group develops products from customer-centric perspectives by amply identifying diverse needs and their underpinnings. It continues to provide safe and secure products and services across various fields, including molding machines, industrial machinery, bridges, and steel products. The company developed human resources to comply with and uphold regulations and standards relating to business activities while continuing to enhance quality management systems as part of an ongoing Groupwide pursuit of outstanding quality.