

Sustainability

Approach to Sustainability

In order to fulfill its purpose (raison d'être) * as a corporate group centered on specialty chemicals, the UBE Group aims to achieve sustainable growth by effectively utilizing its management resources and creating new value for society. The cornerstone of our efforts is a focus on realizing a sustainable world. Toward that end, we work to ensure that all executives and employees of the UBE Group are fully aware of the UBE Group Basic Policies for Sustainability, identifying material issues in the areas of growth, environment, society, and governance, and proactively seeking solutions to these issues.

***UBE Group's Purpose (raison d'être)**

Leveraging the manufacturing technologies the UBE Group has cultivated throughout its long history, create the value equired by society, in the safe and environmentally friendly manner demanded by society, and deliver that value to the people. And by doing so, help to solve global environmental issues, which have become a common issue for all humankind, and contribute to people's lives and health, and an enriched future society.

UBE Group Basic Policies for Sustainability

The UBE Group lives up to its founding spirit and corporate philosophy by pursuing Group sustainability through its business activities. At the same time, we are focused on strengthening our efforts to address global environmental issues and contributing to the realization of a sustainable world that exists in harmony with nature.

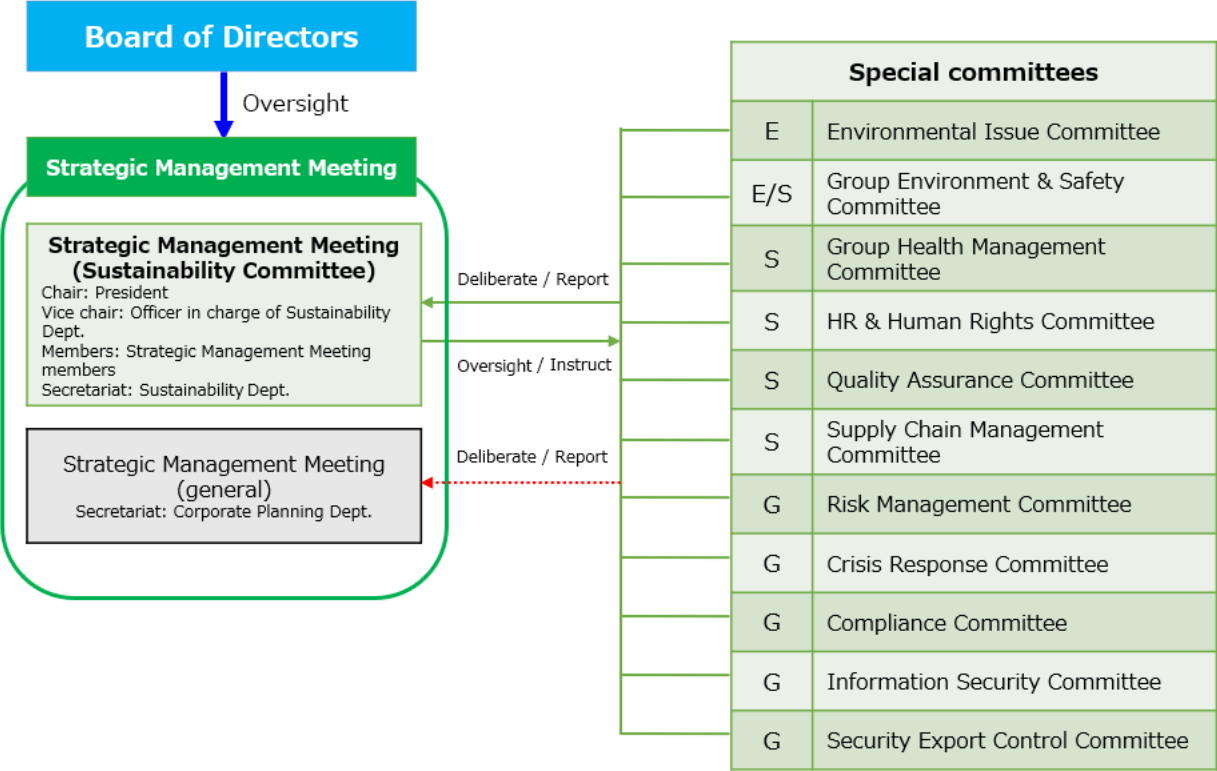
1. We will secure safety and quality in providing products and technologies that contribute to the environment.
2. We will practice appropriate information disclosure for all stakeholders and readily communicate with society.
3. We will pursue corporate governance that is in keeping with the demands of society and strive to continuously expand revenues and enhance our corporate value.
4. In accordance with laws and regulations at home and abroad, and international norms and guidelines that should be observed, and with respect for human rights, we will pursue our corporate activities in a sound and fair manner.
5. We will respect the culture and customs of all countries and regions and contribute to the development of local communities.

Our Sustainability Promotion Structure

The UBE Group considers promoting sustainability to be an integral part of corporate management. In order to fulfill its purpose (raison d'être) as a corporate group centered on specialty chemicals, the UBE Group aims to achieve sustainable growth by effectively utilizing its management resources and creating new value for society. The cornerstone of our efforts is a focus on realizing a sustainable world. Toward that end, we work to ensure that all executives and employees of the UBE Group are fully aware of the UBE Group Basic Policies for Sustainability. At the same time, we actively identify material issues in the areas of growth, environment, society, and governance and proactively seek solutions to these issues.

In April 2024, we established the Sustainability Committee* to secure a management-level body that meets to promote sustainability activities across the UBE Group and, to this end, exercises overall supervision of the special committees tasked with deliberating individual sustainability issues and formulating countermeasures for each. This committee is chaired by the President, with the officer in charge of the Sustainability Promotion Department acting as a vice chair, while the Board of Directors supervises the status of its activities. Consisting of general members of the Strategic Management Meeting, the

Sustainability Committee meets twice a year in principle, and is also supported by the Sustainability Department serving as its secretariat. In addition, the committee acts in collaboration with the Risk Management Committee to deal with sustainability-related risks and opportunities identified in the course of business execution.



* In accordance with the UBE Group Basic Policies for Sustainability, the committee formulates Group policies regarding sustainability as well as medium- to long-term and annual plans related to this subject while determining Group responses for such matters as the identification of issues confronting the Company, including material issues. Special committees tasked with handling each material issue related to sustainability serve as subcommittees under the Sustainability Committee, and are tasked with planning various measures to address material issues in accordance with the aforementioned policies, executing such measures and otherwise promoting sustainability initiatives.

Materiality

In light of environmental and other risks, global social trends, and its history of more than 120 years, the UBE Group identifies and focuses on tackling materiality impacts that affect its sustainable growth.

We will continue to help realize the Sustainable Development Goals (SDGs) by addressing these issues.

Determining Materiality

The UBE Group's materiality encompasses growth as well as ESG factors which were reported to Board of Directors' meetings. In determining materiality, the Group endeavors to contribute to social progress by employing the following two evaluation axes.



Materiality within the UBE Group

Materiality	The UBE Group's Measures	SDGs Items to Which We Contribute
Growth	<p>Expanding the chemical business, centered on active growth businesses*</p> <p>We will drive the expansion of active growth businesses and increase their weight in our business portfolio in an effort to build an operating structure that generates stable growth regardless of economic trends and improve profit margins. Active growth businesses encompass many operations that generate minimal GHG emissions, such as specialty chemicals. We look to lower emissions rates by lifting the contributions to sales of such businesses.</p> <p><small>* Nylon, fine chemicals, high-performance coatings, synthetic rubber, polyimide, separation membranes, separators, magnesia and calcia, biomass fuel, and resource recycling</small></p> <p><small>Please see pages 26-27, 30-31, and 34-35 for details.</small></p>	   
Environment	<p>Tackling environmental challenges</p> <p>The key environmental challenges for the UBE Group are to help resolve global warming, safeguard biodiversity, address the issue of marine plastics, and conserve water resources. We consider it particularly important to deal with global warming. As well as lowering GHG emissions from our plants, we will help decarbonize the economy through ongoing efforts to cut these emissions across our supply chain.</p> <p><small>Please see pages 15-19, 30-31, and 58 for details.</small></p>	   
Society	<p>Hiring and cultivating people who can drive growth and innovation</p> <p>People will be the engine of the UBE Group's growth over the medium and long terms. We will hire more women and foreign nationals while educating employees to cultivate people with diverse values and perspectives, thereby enabling us to respond swiftly to changes in the business climate and pursue sustainable growth.</p> <p><small>Please see pages 28-29 and 50-53 for details.</small></p>	
Governance	<p>Strengthening our business foundations</p> <p>In fiscal 2018 and 2019, we strengthened proactive and reactive governance by revamping our corporate philosophy and management principles, transitioning to a Company with Audit & Supervisory Committee, and reorganizing into a three-company operating structure. In pursuing progress from these efforts, we will endeavor to strengthen our business foundations for further growth.</p> <p><small>Please see pages 40-49 for details.</small> <small>Please see page 13 for information on stronger internal controls for quality.</small></p>	



Supported Initiatives

The UN Global Compact

In April 2021, UBE signed [the United Nations Global Compact](#)^① and joined the UN Global Compact Network Japan, the local network of Global Compact participants in Japan.

WE SUPPORT



① The UN Global Compact

UBE participates in 13 subcommittees as part of the Global Compact Network Japan. At quarterly cross-departmental meetings, the Company shares corporate best practices for the sustainability issues being addressed by each subcommittee. These efforts demonstrate the Company's active approach to carrying out group-wide sustainability management.

14 subcommittees in which UBE participates

Supply Chain Working Group, Environment Management Working Group, GC Internal Promotion Working Group, Kansai Area Working Group, Human Rights Due Diligence (HRDD) Working Group "Guiding Principles on Business and Human Rights", Human Rights Education Working Group, Anti-Corruption Working Group, Disaster Risk Reduction (DRR) Working Group, SDGs Working Group, ESG Working Group, Creating Shared Value (CSV) Working Group (Management Framework), Women's Empowerment Principles (WEPs) Working Group "Women's Empowerment Principles", Reporting Working Group, Circular Economy Working Group

Support for TCFD Recommendations

The UBE Group expressed its support for TCFD proposals in April 2020. We will assess and analyze the business risks and opportunities of climate change to the Group, reflecting these factors in our business strategy and disclosing information.



[TCFD](#)

External Assessments



FTSE4Good

The FTSE4Good Index Series is a series of stock indexes developed by FTSE Russell, a subsidiary of the London Stock Exchange Group. Companies that demonstrate strong environmental, social and governance (ESG) practices are selected for the index based on a rating model that is highly aligned with international standards for each aspect of ESG including the United Nations Sustainable Development Goals (SDGs).



FTSE Blossom Japan

The FTSE Blossom Japan Index is a stock index developed by FTSE Russell comprised of Japanese companies that demonstrate strong environmental, social and governance (ESG) practices. The Government Pension Investment Fund (GPIF), one of the largest public pension fund in the world, has selected FTSE Blossom Japan Index as its stock index for ESG investment.



FTSE Blossom Japan Sector Relative Index

The FTSE Blossom Japan Sector Relative Index*, developed by Global Index Provider FTSE Russell, is designed to measure the performance of Japanese companies that have relatively strong Environmental, Social, and Governance (ESG) practices in individual industries or sectors. This index is constructed so that industry or sector weights align with the Japanese equity market. In addition, this index supports the transition to a low carbon economy by selecting companies with high GHG emissions as constituent stocks only if they have achieved a reduction in GHG emissions based on the TPI Management Quality Score. The Government Pension Investment Fund (GPIF),

one of the largest public pension funds in the world, has selected FTSE Blossom Japan Sector Relative Index as its stock index for ESG investment.

*FTSE Russell (registered trademark of FTSE International Limited and Frank Russell Company) hereby confirms that UBE Corporation has been independently assessed and found to satisfy the requirements for inclusion in the FTSE Blossom Japan Sector Relative Index. The FTSE Blossom Japan Sector Relative Index is widely used in the creation and evaluation of sustainable investment funds and other financial products.

2023 CONSTITUENT MSCI JAPAN ESG SELECT LEADERS INDEX

The MSCI Japan ESG Select Leaders Index is designed to indicate companies that have high environmental, social and governance (ESG) performance and is based on data from MSCI ESG Research of Morgan Stanley Capital International, Inc. Constituent selection is based on a comprehensive evaluation of ESG-related risks, and companies with high ESG performance relative to their sector peers are selected from among the top 700 listed companies in Japan by market capitalization. The Government Pension Investment Fund (GPIF), the largest public pension fund in the world, has selected MSCI Japan ESG Select Leaders Index as its stock index for ESG investment.

*The inclusion of UBE Corporation in any MSCI index, and the use of MSCI logos, trademarks, service marks or index names herein, do not constitute a sponsorship, endorsement or promotion of UBE Corporation by MSCI or any of its affiliates. The MSCI indexes are the exclusive property of MSCI. MSCI and the MSCI index names and logos are trademarks or service marks of MSCI or its affiliates.

2023 CONSTITUENT MSCI JAPAN EMPOWERING WOMEN INDEX (WIN)

The MSCI Japan Empowering Women Index, developed by Morgan Stanley Capital International, Inc., is designed to select companies that lead their sector groups in terms of promoting and maintaining gender diversity among the top 700 listed companies in Japan by market capitalization. These companies are selected based on data regarding the employment of women disclosed in accordance with Japan's Act on Promotion of Women's Participation and Advancement in the Workplace. The Government Pension Investment Fund (GPIF), one of the largest public pension funds in the world, has selected MSCI Japan Empowering Women Index as its stock index for ESG investment.

*The inclusion of UBE Corporation in any MSCI index, and the use of MSCI logos, trademarks, service marks or index names herein, do not constitute a sponsorship, endorsement or promotion of UBE Corporation by MSCI or any of its affiliates. The MSCI indexes are the exclusive property of MSCI. MSCI and the MSCI index names and logos are trademarks or service marks of MSCI or its affiliates.



The S&P/JPX Carbon Efficient Index is jointly developed by S&P Dow Jones Indices and the Japan Exchange Group. The weighting in the index is determined by the degree of disclosure of environmental information and the evaluation of carbon efficiency (tonnes of CO₂e per sales revenue) for constituent stocks of the Tokyo Stock Price Index (TOPIX). The Government Pension Investment Fund (GPIF), one of the largest public pension funds in the world, has selected S&P/JPX Carbon Efficient Index as its stock index for ESG investment.

2023



Sompo Sustainability Index

Selected as a member of SOMPO Sustainability Index operated by Sompo Asset Management Co., Ltd., an index comprised of approximately 300 member companies demonstrating excellent ESG performance.

Morningstar Japan ex-REIT Gender Diversity Tilt Index

Morningstar Japan ex-REIT Gender Diversity Tilt Index, built with the data and scoring methodology of Equileap, is designed to emphasize the stocks of companies that have strong gender diversity policies embedded in their corporate culture and that ensure equal opportunities to employees, irrespective of their gender. The Government Pension Investment Fund (GPIF), one of the largest public pension funds in the world, has selected Morningstar Japan ex-REIT Gender Diversity Tilt Index as its stock index for ESG investment.

Nikko Investor Relations Co., Ltd. Corporate Website Ranking

Selected as an AAA Website in the 2022 All Japanese Listed Companies' Website Ranking conducted by Nikko Investor Relations Co., Ltd.

Stakeholder Engagement

The UBE Group recognizes that opportunities for stakeholder engagement are important for the Group to coexist with society, and actively pursues the following five initiatives.

Stakeholders	UBE Group's Mission	Means/Opportunities of Engagement
Customers	Provide safe, high-quality products and services that are useful to society at fair prices and swiftly respond to customer needs	Communication through sales activities and information disclosure through various means (including the UBE Group website and product catalogs)
Suppliers	Engage in fair, honest transactions	Communication through purchasing activities
Employees	Provide fair pay and stable employment, develop human resources, properly manage work hours, and support work-life balance initiatives	Corporate briefings, the Central Labor-Management Conference, training, reporting and counseling systems, internal publications, and the Company intranet
Local communities and governments	Provide stable, fair employment, pay taxes appropriately, and engage in dialogue with local communities and society	Regional dialogue meetings, Tsubasa community gazette, charity concerts, industry-academia collaboration projects
Shareholders and investors	Continuously raise corporate value; provide timely, appropriate information disclosure; and maintain shareholder returns through stable, appropriate dividends and stock buybacks	IR activities (results briefings, investor briefings, facility tours, etc.), the General Meeting of Shareholders, and information disclosure through various means (the UBE Group website, the Integrated Report and the UBE Business Report)

Global Environmental Issues

UBE Group Policy for Achieving Carbon Neutrality by 2050

Taking a further step forward from the UBE Group Environmental Vision 2050 that was announced in May 2020, the UBE Group in April 2021 announced [a policy to achieve carbon neutrality by 2050](#). The policy calls for the UBE Group to achieve net-zero emissions of greenhouse gases (GHGs) from its business activities. The Group will also strive to help the broader society become carbon neutral by pursuing R&D for products and technologies that are beneficial for the environment and the practical application of eco-friendly innovations. The UBE Group will work as a leading solution provider to help realize a decarbonized society.

UBE Group Policy for Achieving Carbon Neutrality by 2050

1. Achieve carbon neutrality for the Group's business activities (minimizing GHG emissions and developing innovative technologies), by:

1. Practicing rigorous energy conservation and making process improvements
2. Maximizing the use of CO₂-free energy
3. Realigning the business structure to reduce dependency on fossil resources (minimize the use of fossil resources)
4. Pursuing R&D and bringing products to market in fields such as CO₂ utilization technology and non-fossil raw materials

2. Help the broader society become carbon neutral, by:

1. Supplying products that, when used, contribute to reduction of CO₂ emissions
2. Contributing to reduction of CO₂ emissions in customer supply chains (supplying products such as biomass-derived polymers, biodegradable polymers, and polymers with both of those properties, as well as recycled and re-used chemicals)

UBE Group Announces New Medium-Term Targets by 2030 for Achieving Carbon Neutrality by 2050

In April 2022, the UBE Group has revised its medium-term environmental targets for fiscal 2030 and set new targets to reduce greenhouse gas (GHG) emissions by 50% by fiscal 2030 (compared to fiscal 2013) and raise the share of environmentally friendly products and technologies it sells to at least 60% of consolidated net sales.

In 2021, the UBE Group announced its Policy for Achieving Carbon Neutrality by 2050, setting out the goal of achieving net-zero emissions of GHGs from its business activities. Also, as medium-term targets on the road to carbon neutrality, the group set the targets of achieving an 20% reduction in GHGs emissions in the chemicals segment by 2030 (compared to fiscal 2013).

The UBE Group, which spined-off and transferred its cement business to Mitsubishi UBE Cement Corporation and shifted to a business portfolio focused on the specialty chemicals business, reviewed its previous targets. The Group further strengthen its efforts to address global environmental issues, and strive to help the broader society become carbon neutral.

Fiscal 2030 Targets

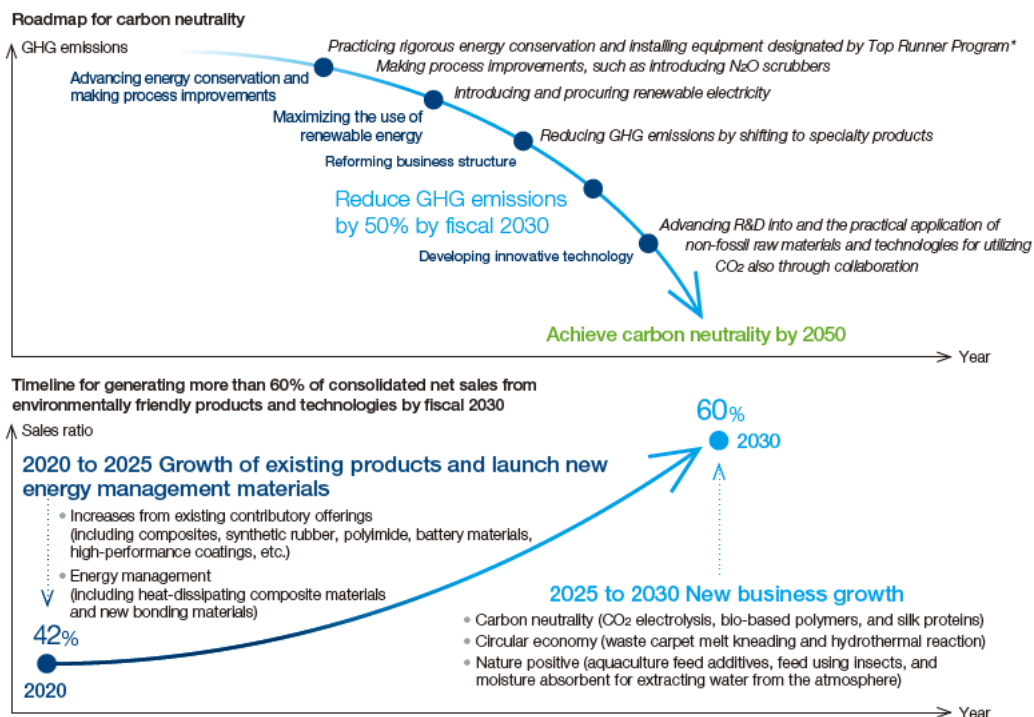
1. GHG emission reduction targets:
50% reduction compared to FY2013 (previously 20% reduction in the chemicals segment)
2. Target percentage of consolidated net sales comprising environmentally friendly products and technologies:
60% or more (previously 50% or more)

Measures for Carbon Neutrality

1. Advancing energy conservation and making process improvements
The Group will minimize the use of fossil resources by continuously working on practicing rigorous energy conservation and making process improvements.
2. Maximizing the use of renewable energy
The Group will maximize the use of renewable energy by introducing solar power generation systems in its factories and procuring electricity generated by utilizing renewable energy such as wind power, solar power and biomass power.
3. Reforming business structure
The shift to specialty products, which have a relatively low energy burden, will help reduce the Group's GHG emissions by minimizing the use of fossil resources, and will also facilitate the development of a resilient business structure that is not greatly influenced by market conditions for raw materials and fuel. The UBE Group aims to create a business structure with a low environmental impact focused on specialty products to drive profitability and growth potential, while creating high added value for basic chemicals and carrying out business structure reforms.
4. Innovative technology development
Innovative technological development is essential to achieving carbon neutrality by 2050. Accordingly, with a medium- to long-term outlook, the Group will also work on research and development into and the practical application of non-fossil raw materials and technologies for utilizing CO₂, and these efforts may involve collaboration with other companies.

Percentage of consolidated net sales comprising environmentally friendly products and technologies

The UBE Group has formulated guidelines based on the revised ISO 14001:2015, and has defined environmentally friendly products and technologies. The Group aims to help the broader society become carbon neutral by further driving the development of environmentally friendly products and technologies and providing them to more customers.



Governance Structure

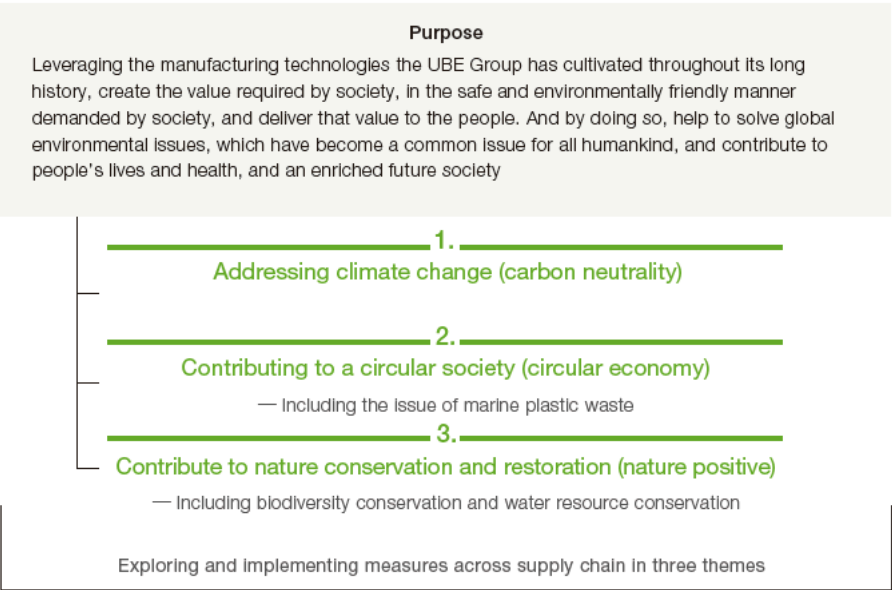
The UBE Group established the Environmental Issues Committee to identify and act on problems in that regard. The President and CEO chairs Strategic Management Meeting, which receives deliberation reports from the Environmental Issues Committee, provides instructions as needed, and constantly monitors countermeasures progress. A report on important matters goes to the Board of Directors once annually.

Environmental Issues Governance Structure



Basic Guidelines for Addressing Global Environmental Issues

The UBE Group focuses on responding to climate change (carbon neutrality), and on contributing to a circular economy and nature conservation and restoration (nature positive). We are helping resolve environmental issues by steadily implementing strategic measures. These include reducing GHG emissions across the value chain, providing environmentally friendly products, technologies, and services, and engaging with stakeholders.



Basic Activities Policy on Environmental Issues

To realize “Addressing climate change (carbon neutrality),” “Contributing to a circular society (circular economy),” and “Contributing to nature conservation and restoration (nature positive),” we have formulated the following strategies and KPIs and are steadily implementing them.

- Ensuring that the management cycle works properly by analyzing materiality, identifying risks and opportunities, formulating strategies and KPIs, and disclosing information
- Minimizing the impacts of internal operations
- Continuing to engage
- Reach out to entire value chain (suppliers, employees, customers, investors, and communities) to resolve issues in everything from product and services purchases to in-house manufacturing and product processing, usage, and disposal
- Disclose information appropriately to all stakeholders and encourage collaboration to resolve environmental issues

1. Addressing climate change (carbon neutrality)

【Strategy】

- Reduce internal GHG emissions.
- Keep developing and providing environmentally friendly products and technologies that help cut GHG emissions.

【Targets and Business Plan】

We have formulated a business plan that encompasses overhauling our business structure reforms and deploying measures to conserve energy so we can reach our fiscal 2030 target of halving GHG emissions from fiscal 2013 levels to aim for becoming carbon neutral by 2050.

【Significance】

- The increase of GHG emissions into the atmosphere due to human activities is causing global warming and major changes in the climate.
- This could transform the natural environment and degrade ecosystem services. Rapid climate change could profoundly affect lives and businesses. It is our social responsibility and mission to tackle these changes as swiftly as possible.

【Initiatives】

Please see Addressing Climate Change (Carbon Neutrality) on pages 54–55.

2. Contributing to a circular society (circular economy)

【Strategy】

We will tap discarded and other resources effectively and recycle them. We will develop and provide circular materials, products, and technologies.

【Targets and Business Plan】

Our goal is to increase the sales ratio of environmentally friendly products and technologies, including products that contribute to the realization of a circular economy, to 60% by 2030. In addition, we aim to effectively utilize and reduce waste such as plastics generated by our own operations.

3. Contribute to nature conservation and restoration (nature positive)

【Strategy】

We will identify the impacts and dependencies of our business activities on nature, identify risks and opportunities, and contribute to the conservation and restoration of the natural environment and the sustainable use of ecosystem services. We also provide products, technologies, and services that help realize nature positive.

【Targets and Business Plan】

- Water sources: We analyze water stress trends based on the water conditions (context) and water supply and demand scenario at each site. At sites where water stress is expected to rise, we will reduce water withdrawal and improve water recycling rates by formulating water use strategies and monitoring KPIs.
- Environmental impacts of our operations, including from air, water, and soil pollution: We monitor and reduce pollutant emissions to eliminate environmental incidents.
- Engagement: We will work with the supply chain (environmental impact assessment), employees (education), customers (provision of environmentally friendly products and technologies), investors (provision of information and exchange of opinions), and local communities (environmental improvement activities). We will verify adverse effects (trade-offs) on the natural environment and minimize negative impacts.

【Significance】

A lot of the products, services, and energy supporting our lives are the fruits of nature. Protecting the environment, restoring nature, and preserving ecosystem services will help safeguard our living environment and livelihoods. Nature conservation and restoration can reduce weather related disasters while protecting cultures and traditions, landscapes, and our diets.

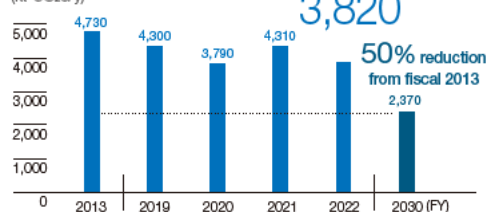
Addressing climate change

Initiatives to Reduce GHG Emissions

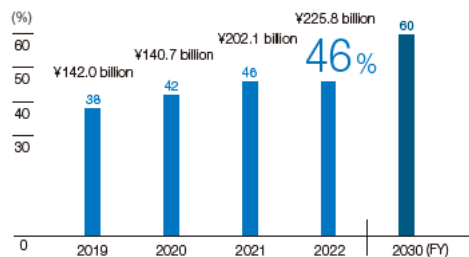
Progress toward GHG Emissions Reduction Targets**

GHG Emissions

(kt-CO₂e/y)



Sales of Environmentally Friendly Products and Technologies**



*1 Excluding cement-related business transferred to Mitsubishi UBE Cement Corporation.

*2 Electricity purchased from external sources was renewables based.

GHG Emissions in Fiscal 2022

Business sites	kt-CO ₂ e/y		
	Scope 1	Scope 2	Total
Chemicals business	3,230	400	3,630
Japan	2,360	110	2,470
Thailand	600	280	880
Spain	270	10 ^{*2}	280
UBE Machinery Group	170	20	190
Total	3,400	420	3,820

Note: Numbers may not add up due to rounding.

Estimated Contributions to GHG Emissions Reductions of Environmentally Friendly Products and Technologies Fiscal 2021: Approx. 11,800 kt-CO₂e/y

Note: Calculations based on the UBE Group's market shares and sales volumes of environmentally friendly products based on CO₂ reductions in usage stages compared with conventional counterparts for end products incorporating UBE Group environmentally friendly products (based on CO₂ reductions for one year of use based on volumes of end products used during fiscal 2021).

Commitment Letter Submitted to Science Based Targets Initiative

In March 2023, the UBE Group submitted a commitment letter to the Science Based Targets initiative. We made this move to secure certification from that body for our targets for reducing GHG emissions across our supply chain over the next five to 10 years in keeping with the criteria of the Paris Agreement, an international treaty on climate change. We made this move in view of growing interest in environmental protection and sustainability in recent years. Our efforts to reduce our environmental impact extend beyond in-house operations to encompass our whole supply chain, from raw materials procurement through product use and disposal.

Deploying System to Calculate Product GHG Emissions Data

UBE and NTT DATA Japan Corporation jointly created a system to calculate product GHG emissions. In January 2023, we began providing data from that system to customers. This information makes it easy for customers to assess GHG emissions across their supply and value chains and contribute to efficiently implement measures to reduce these emissions.

We are using this system for some Ube Chemical Factory offerings, and look to extend its product and plant coverage.

Participating in GX League's Emissions Trading Scheme

In October 2022, we announced our endorsement of the GX (for green transformation) League. Japan's Ministry of Economy, Trade and Industry leads that initiative, which aims to reach the nation's GHG emissions goals by 2030 and achieve carbon neutrality by 2050. We also announced our participation in the league's voluntary emissions trading schemes, which will be fully operational from 2026. We consider our involvement in the league an opportunity to grow sustainably by reducing our GHG emissions while becoming more competitive.

Initiatives to a circular society (circular economy)

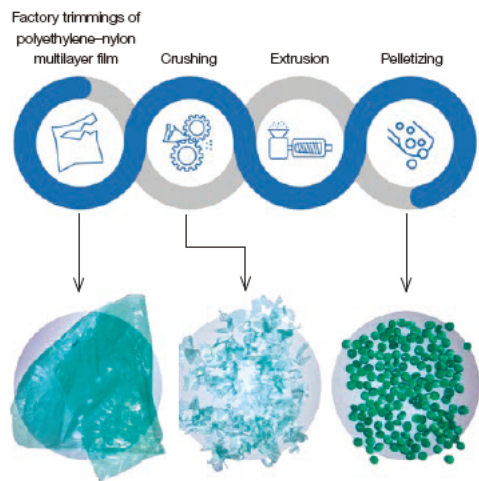
About UBECycle Recycled Multilayer Film

Contemporary social demands and regulations are driving the use of raw materials derived from recycled materials across the industry landscape. Prime examples are the packaging, automotive, electrical, electronics, construction, and other sectors. It is against this backdrop that the UBE Group seeks to recycle offerings incorporating its nylon while drawing on its end-product expertise, partner company network, and technical prowess.

A good example of Group endeavors was UBE Corporation Europe, S.A. Unipersonal (UCE)'s launch of UBECycle. This product is recycled from multilayer film waste. UCE will collect the factory trimmings of the film from film manufacturers to recycle (crush, extrude, and pelletize) them. The UBE Group plans to upcycle materials, including this nylon, for in-house production and commercialization.

UCE has earned certification of this innovative polyethylene–nylon multilayer film from recycling bodies such as [RecyClass](#) and [APR](#).

UBECycle Material Recycling Flowchart



Developing Upcycling Technology for Composite Plastics

As most waste plastics are composites, they cannot be reused in regular recycling processes, so they are mostly incinerated. UBE is developing upcycling technologies for composites, adding new features to aluminum and plastic of pharmaceutical press-through-pack sheets. We are collaborating with aluminum manufacturers and recyclers to create an efficient system to collect these sheets. We are employing proprietary upcycling technology to cultivate applications for the collected sheets.

In coming years, we look to refine our composites upcycling technologies. We will endeavor to grow as a chemicals manufacturer that helps resolve environmental issues, such as by cutting CO2 emissions by reducing the use of petroleum-derived raw materials and tackling marine plastic waste.



Initiatives to nature conservation and restoration (nature positive)

To respond to the conservation of the natural environment (biodiversity) and water resources, we conduct risk analysis at each business site.

Water Risk Assessment Results

We maintain five water risk levels for our key business sites. We take into account information we secure from the World Resources Institute’s Aqueduct water risk atlas and other external sources, as well as by our sites.

Water Risks	Business Sites	Key Risk Factors
High	Not applicable	
High to moderate	Not applicable	
Moderate	Key sites in Thailand	Constraints on water supply and demand and droughts
Low to moderate	Key sites in Spain Key sites in Japan	Flooding
Low	Not applicable	

Key business sites in Thailand and Spain formulated the following KPIs, and are addressing projected increases in water stress from 2030.

Business Sites	KPIs
Key sites in Thailand	Reduction in water consumption per unit of production By 2024, down 5% from the 2021 level Water recycling rate As of 2024, 26%
Key sites in Spain	Reduction in water consumption per unit of production By 2030, down 10% from the 2022 level Water recycling rate As of 2030, 10%

We draw on the Integrated Biodiversity Assessment Tool and local information to check the proximity of key business sites to nature conservation areas and locations that are important for conserving biodiversity and constantly check potential impacts and extents.

- Not near Ramsar Sites
- The sea level near the Ube area is in the International Union for Conservation of Nature's management category VI for protected areas.
- The Ube-Fujimagari area borders key biodiversity areas (Suonada and the Koto River estuary).
- The national government regulates the seawater area bordering the Ube area, fishing rights there.

Fiscal 2022 Initiatives

Ube Chemical Factory

Marine Plastic Waste

- Participated in year-end street cleanup that an Ube City volunteer group organizes
- Patrolled waste storage sites every quarter
- Recycled waste plastic

Biodiversity Conservation

- Participated in Mine Agriculture, Forestry and Fisheries Office's forestation initiatives to protect water
- Helped exterminate Argentine ants by contributing to administrative reports and exterminated nests to prevent infestations from spreading beyond business sites

Sakai Factory

Marine Plastic Waste

- Undertook joint cleanups with neighboring companies

Biodiversity Conservation

- Took part in forestation initiative on January 14, 2023
- Attended Osaka metropolitan government and Sakai City government seminars

Water Resource Conservation

- Implemented measures to conserve water, including by installing sensors on office washing basin faucets

UBE Machinery Group

Marine Plastic Waste

- Separately disposed of plastic bottle caps

Water Resource Conservation

- Upgraded waterworks facilities and stepped up wastewater management



Employees participating in the 15th Forest Creation
Experiential Activity for Water Conservation

Environmental Performance Data

GHG Emissions

(FY)	kt-CO ₂ e/y			
	2020	2021 ^{*2}	2022 ^{*2}	
Scope 1	10,690	3,790	3,400 ^{*1}	Direct GHG emissions from a reporting entity, due to fuel use, etc.
Scope 2	580	520	420 ^{*1}	Indirect GHG emissions from electricity and heat purchased from other entities
Scope 3	13,460	13,410	12,230	Indirect GHG emissions throughout the supply chain, such as those that occur during material procurement, transport and product processing, use and disposal
Total	24,730	17,720	16,050	

*1 The figure with "†" mark was assured by the third party assurance. Please see the assurance statement on page 14.

*2 Data for fiscal 2021 and beyond is aggregated and excludes the former Construction Materials Company.

Scope 3 Emissions by Category		GHG Emissions (kt-CO ₂ e/y)		
Category	(FY)	2020 ^{*1}	2021	2022
1 Purchased goods and services		2,040	3,080	2,490
2 Capital goods		100	40	70
3 Fuel and energy-related activities not included in Scope 1 or Scope 2		460	350	300
4 Upstream transportation & distribution		700	160	140
5 Waste generated in operations		10	20	40
6 Business travel		0	0	10
7 Employee commuting		0	10	10
8 Upstream leased assets		0	0	0
9 Downstream transportation & distribution		540	70	70
10 Processing of sold products		180	450	460
11 Use of sold products		7,650	1,510	1,630
12 End-of-life treatment of sold products		1,760	1,100	910
13 Downstream leased assets		No relevant activities		
14 Franchises		No relevant activities		
15 Investments		20	6,620 ^{*2}	6,110 ^{*2}
Total		13,460	13,410	12,230

Note: Numbers may not add up due to rounding.

*1 Domestic activities only in fiscal 2020

*2 Category 15 for fiscal 2021 and beyond includes equity-based shares of GHG emissions of Mitsubishi UBE Cement Corporation (former Construction Materials Company).

GHG Emissions by Sector in Fiscal 2022

Business Sites	kt-CO ₂ e/y		
	Scope 1	Scope 2	Total
Chemicals Business	3,230	400	3,630
Domestic	2,360	110	2,470
Thailand	600	280	880
Spain	270	10*1	280
Machinery Business	170	20	190
Total	3,400*2	420*2	3,820

Note: Numbers may not add up due to rounding.

*1 Electricity purchased externally is renewables-based.

*2 The figure with “†” mark was assured by the third party assurance. Please see the assurance statement on page 14.

Emissions Data by GHG Category

GHG Categories	kt-CO ₂ e/y			
	(FY)	2020	2021*2	2022*2
CO ₂		10,410	3,390	3,140
CH ₄ *1		10	0	0
N ₂ O		850	920	680
HFC*1		0	0	0
PFC		0	0	0
SF ₆ *1		0	0	0
NF ₃		0	0	0
Total		11,270	4,310	3,820

*1 Less than 10,000 t-CO₂e/y

*2 Data for fiscal 2021 and beyond is aggregated and excludes the former Construction Materials Company.

GHG Emission Intensity (GHG emissions per unit of production)

	t-CO ₂ e/t-Lc			
	(FY)	2020	2021*	2022*
GHG emission intensity		3.263	2.521	2.733

* Data for fiscal 2021 and beyond is aggregated and excludes the former Construction Materials Company.

Energy Consumption Data

	MWh/year						Notes
	2020		2021*		2022* (FY)		
	Total	Derived from Renewable Energy	Total	Derived from Renewable Energy	Total	Derived from Renewable Energy	
Fuel consumption	19,030,000	670,000	8,417,000	0	6,131,000	0	Biomass
Purchased electricity consumption	840,000	60,000	800,000	176,000	629,000	160,000	Power from renewable energy
Purchased steam consumption	1,050,000	0	1,425,000	0	1,079,000	0	
Private power generation (renewable energy)	2,000	2,000	2,000	2,000	2,000	2,000	Solar power
Total	20,920,000	730,000	10,644,000	178,000	7,841,000	162,000	

Note: Numbers may not add up due to rounding.

* Data for fiscal 2021 and beyond is aggregated and excludes the former Construction Materials Company.

Energy Type Consumption Data

Energy Type	MWh/year			
	(FY)	2020	2021*	2022*
Thermal coal		16,170,000	6,963,000	5,144,000
Kerosene and light oil		370,000	263,000	157,000
Liquefied natural gas		650,000	626,000	391,000
Liquefied petroleum gas		130,000	138,000	129,000
Petroleum coke		520,000	0	0
Heavy oil		270,000	201,000	122,000
Gas and oil by-products		250,000	226,000	188,000
Biomass		670,000	0	0
Total		19,030,000	8,417,000	6,131,000

* Data for fiscal 2021 and beyond is aggregated and excludes the former Construction Materials Company.

Water Resource Usage

UBE Group Water Resource Usage (Fiscal 2018 through 2022)

		(FY)	2018	2019	2020	2021	2022
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	2.2	2.0
		Industrial water	79	84	81	83	64
		Seawater	105	114	107	115	302*1
		Subtotal	186	200	190	200	369**2
	Machinery Business	Tap water	0.1	0.1	0.2	0.1	0.1
		Groundwater	0.0	0.0	0.0	0.0	0.0
		Industrial water	0.9	1.0	1.0	0.9	0.8
		Seawater	0.0	0.0	0.0	0.0	0.0
		Subtotal	1.0	1.1	1.2	1.0	1.0
Total (UBE Group)		187	201	191	201	370	

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	2.2	2.1
		Ocean areas	140	156	145	152	342*1
		Subtotal	142	158	147	154	345
	Machinery Business	Sewers**3	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	0.8	0.9	0.8	0.8	0.7
		Subtotal	0.8	0.9	0.8	0.8	0.7
Total (UBE Group)		143	159	148	155	345	

*1 Including cooling seawater for private power generation

*2 The figure with "†" mark was assured by the third party assurance. Please see the assurance statement on page 14.

*3 Wastewater volume 10,000 m3 or less

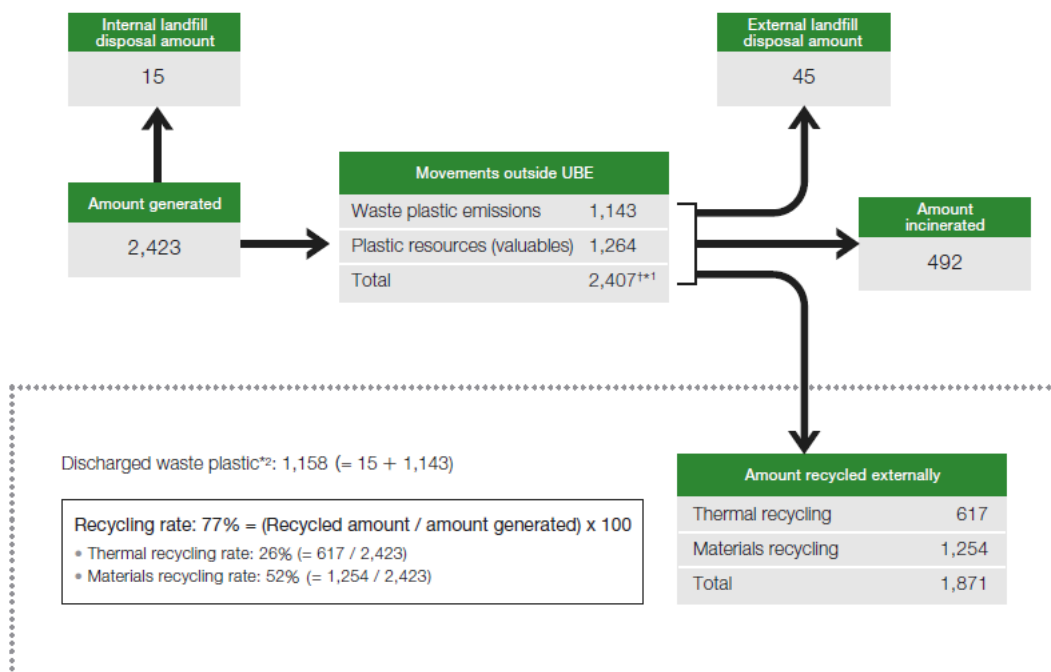
Response to the Fluorocarbon Emission Restriction Law

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.

Flow of Plastic Resources (UBE Corporation, Fiscal 2022)

(t)



*1 The figure with "†" mark was assured by the third party assurance. Please see the assurance statement on page 14.

*2 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 77% recycling rate in fiscal 2022. We will continue to push ahead with plastic recycling.

Data covers eight UBE business sites. These are the Sakai Factory, Ube Chemical Factory, Ube Chemical Factory Fujimagari Area, Ube Electronic and Industrial Materials Factory, Ube Research Laboratory, Pharmaceutical Research Laboratory, Future Tech Laboratory, and Osaka Research & Development Center.

Environmental Performance

Overview of Group Environmental Impact (Fiscal 2018 through 2022)

							Input
		(FY)	2018	2019	2020	2021	2022 ^{Note 2}
Total energy	Crude oil equivalent (Thousands of MWh)		21,970	22,140	20,920	21,340	7,841
Total raw materials (Thousands of tons)			16,383	16,298	15,381	15,819	2,177
Water resources (Million m ³)	Freshwater used		92	97	94	96	68
	Seawater used		106	115	108	116	302 ^{Note 1}
							Output
		(FY)	2018	2019	2020	2021	2022
Airborne emissions	GHG (kt-CO ₂ e/y)		12,010	12,110	11,270	11,840	3,820
	SO _x *1 (t)		2,873	2,652	2,589	2,296	1,095
	NO _x *2 (t)		16,149	16,071	15,274	14,956	3,275
	Dust (t)		356	371	392	364	115
	PRTR substances*3 (t)		198	180	190	194	143
Soil emissions	PRTR substances (t)		0	0	0	0	0
Waterborne emissions	Wastewater (Million m ³)		147	163	152	159	345 ^{Note 1}
	COD*4 (t)		642	705	658	687	1,347
	Total phosphorus (t)		9	11	10	11	18
	Total nitrogen (t)		468	466	420	455	466
	PRTR substances (t)		97	112	82	91	72
Industrial waste emissions	External landfill disposal amount (t)		6,730	6,463	6,267	5,895	5,159
	Recycled volume (t)		370,451	389,000	340,543	379,024	214,755

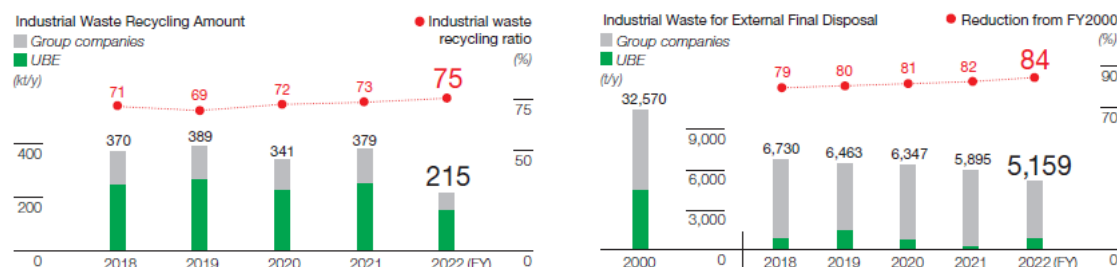
Page 8 of Integrated Report Supplementary Information (Environment and Safety / Quality Assurance) shows water resource withdrawals by source and discharges by destination.

Notes:

1. Fiscal 2022 data includes cooling seawater for private power generation.
2. Fiscal 2022 data excludes the former Construction Materials Company.

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.

Reducing Industrial Waste



Waste for External Final Disposal

Fiscal 2024 target: 87% reduction from fiscal 2000 level

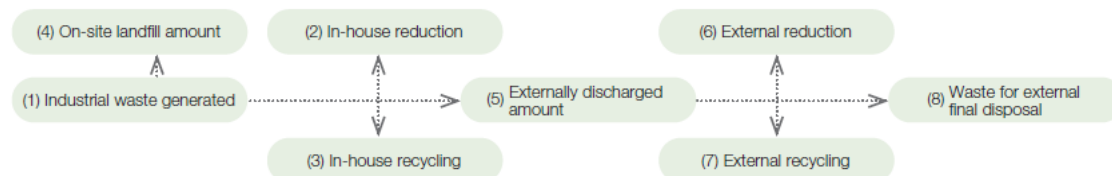
The UBE Group is reducing and recycling industrial waste to help create a circular economy. Our medium-term goal is to cut external final disposal by 87% from the fiscal 2000 level by fiscal 2024. We have taken steps to reach that target. In fiscal 2022, our external landfill disposal amount was 84% 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
2018	517,033	120,719	242,835	207	155,272	20,685	127,616	4,971
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
2021	522,644	114,866	233,175	127	174,476	22,732	145,849	5,895
Chemicals Business	234,247	46,743	9,180	706	177,618**	18,239	158,523	856
2022 Machinery Business	51,534	0	31,476	0	20,058	179	15,576	4,303
Total	285,780	46,743	40,656	706	197,676	18,418	174,099	5,159

* The figure with “†” mark was assured by the third party assurance. Please see the assurance statement on page 14.

Scope of coverage: UBE's domestic plants and laboratories and key domestic consolidated subsidiaries with plants. See page 16 for details.



Polychlorinated Biphenyl (PCB) Waste Disposal

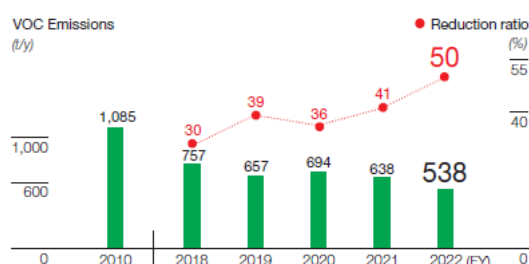
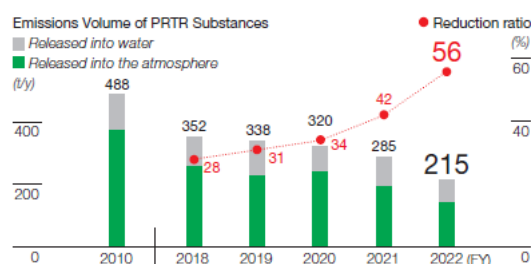
We thoroughly audit stabilizers and other equipment using PCBs. In addition, we are endeavoring to complete PCB waste disposals by the deadline set under the amended Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes. We comply with storage and disposal laws and ordinances 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 2023 for UBE Corporation)

	In Use	In Storage	Total
High-concentration PCB	0	0	0
Low-concentration PCB	23	26	49

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 by the deadline set under the amended Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes.

Suppressing Chemical Substance Emissions



Data covers UBE factories, laboratories, and key domestic consolidated subsidiaries with factories shown on page 16 of Integrated Report Supplementary Information (Environment and Safety / Quality Assurance), 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 2022, we reduced the total emissions of 20 chemical substances by 38% from the fiscal 2010 level (in terms of PRTR substances and VOC emissions reductions, as shown above, down 56% and 50%, 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 2022	Handling Volume (t)	Emissions Volume (t)				Transfer Volume (t)	Number of PRTR Substances
		Atmosphere	Public Water	Soil	Total		
UBE	186,418	94.4	71.6	0.0	166.0	3,462	55
Other Group companies	107,397	49.0	0.0	0.0	49.0	262	13
Total (UBE Group)	293,816	143.4	71.6	0.0	215.0	3,724	68

Volumes of Individual PRTR Substances Emitted/Transferred in Fiscal 2022
(Substances emitted 1 ton or more per year and dioxins)

Ordinance Designation No.	Chemical Substance	Handling Volume (t)	Total Emissions Volume (t)				Transfer Volume (t)
			Atmosphere	Public Water	Soil	Total	
300	Toluene	835	55.4	13.9	0.0	69.3	203.3
76	Epsilon-caprolactam	97,916	0.0	49.9	0.0	49.9	251.3
104	Chlorodifluoromethane	20	20.3	0.0	0.0	20.3	0.0
400	Benzene	66	12.9	0.1	0.0	13.0	0.0
128	Chloromethane	12	12.3	0.0	0.0	12.3	0.0
80	Xylene	128	10.4	0.0	0.0	10.4	11.4
53	Ethylbenzene	23	9.4	0.0	0.0	9.4	10.7
213	N,N-dimethylacetamide	605	8.2	0.0	0.0	8.2	267.6
240	Styrene	186	4.9	0.0	0.0	4.9	0.6
405	Boron compound	27	0.1	4.3	0.0	4.4	6.2
374	Hydrogen fluoride and its water-soluble salts	5	0.0	2.6	0.0	2.6	0.4
349	Phenol	76,213	1.9	0.1	0.0	2.0	1,342.1
13	Acetonitrile	525	1.8	0.0	0.0	1.8	426.1
296	1,2,4-Trimethylbenzene	123	1.6	0.0	0.0	1.6	3.1
351	1,3-Butadiene	105,045	1.6	0.0	0.0	1.6	0.0
243	Dioxins ^(Note) mg-TEQ/year	—	83.3	2.5	0.0	85.8	0.0

Note: Contains various compounds

Scope of coverage: UBE's domestic plants and laboratories and key domestic consolidated subsidiaries with plants (see page 16), representing 70% of such subsidiaries

*1 Pollutant Release and Transfer Register (PRTR) 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.

*2 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.

*3 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

Fiscal 2022 Environmental Impact Data by Facility

			Emissions into the Atmosphere (t/y)			Emissions into Water (t/y)		
			SOx* ¹	NOx* ²	Dust	COD* ³	Total Phosphorus	Total Nitrogen
In Japan								
Chemicals Business	UBE	Sakai Factory / Osaka Research & Development Center	0.0	1.4	0.0	0.7	0.0	0.7
		Ube Chemical Factory east and west area	17	59	2.1	398	5.5	352
		Ube Chemical Factory Fujimagari Area	530	333	2.5	203	5.0	50
		Power Management Dept. (private power generation)	532	2,755	100	713	6.4	48
		Ube Electronic and Industrial Materials Factory (Former Meiwa Plastic Industries, Ltd.)	—	—	—	0.0	0.0	0.0
		Ube Research Laboratory / Pharmaceutical Research Laboratory	—	—	—	0.2	0.0	0.2
		Future Tech Laboratory (Former Chiba Research Laboratory)*	—	—	—	0.0	0.0	0.0
	Subtotal		1,079	3,149	105	1,315	17	451
	API Corporation		2.6	5.9	0.1	12.6	0.3	10.2
	UBE Elastomer Co. Ltd.		0.6	31.7	0.2	11.5	0.1	3.3
	Ube Film, Ltd.		—	—	—	—	—	—
	UBE Hydrogen Peroxide, Ltd.*		0.0	0.0	0.0	0.4	0.0	0.3
	UBE EXSYMO CO., LTD.		0.0	0.6	0.1	3.7	0.0	0.0
Total (Chemicals Business)		1,082	3,187	105	1,343	17	465	
Machinery Business	UBE Machinery Corporation, Ltd.		0.1	—	—	1.1	0.2	1.4
	UBE Steel Co., Ltd.		13	88	9.4	2.6	—	—
	Fukushima Ltd.		—	—	—	—	—	—
	Total (Machinery Business)		13	88	9.4	3.7	0.2	1.4
Total (UBE Group)			1,095	3,275	115	1,347	18	466
Overseas								
Spain	UBE Corporation Europe, S.A. Unipersonal		8	442	5.5	130	1.0	58
Thailand	UBE Chemicals (Asia) Public Company Limited		3.5	20	4.7	29	0.7	1.9
	THAI SYNTHETIC RUBBERS COMPANY LIMITED		0.0	0.0	1.1	18	0.0	0.0
	UBE Fine Chemicals (Asia) Co., Ltd.		0.0	4.8	0.2	—	—	—
Total			11	468	11	177	2	60

* These sites reorganized or changed their names in fiscal 2023. See Reorganizations and Renamings on [page 16 for details](#).

Scope of coverage: UBE's domestic plants and laboratories and key domestic consolidated subsidiaries with plants (see page 16), representing 70% of such subsidiaries

*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 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.

Internal Carbon Pricing

The UBE Group sets internal carbon pricing as a guideline for evaluating carbon prices in capital investment.

Objectives	<ol style="list-style-type: none"> 1. Raise awareness of importance of CO₂ measures 2. Promote investments to reduce CO₂ such as energy conservation and fuel conversion
Start date	April 1, 2010
Targeted greenhouse gas	Energy-related CO ₂
Listed items	Increase/decrease in CO ₂ , economic indices when CO ₂ is considered (CO ₂ increase/decrease of 1,000t-CO ₂ or more per year)
Materials and text covered	<ol style="list-style-type: none"> 1. Descriptions of facility plans to be discussed by Strategic Management Meeting members 2. Written requests for approval (at time of execution)
Carbon price	<p>10,000 yen/t-CO₂ (~FY2023)</p> <p>However, notifications will be issued as needed in the even of significant changes brought about by regulatory trends, etc. Carbon pricing subject to change.</p>

ESG Data


Environment

[ESG Data \(Environment\)](#)  (PDF : 259KB)

Society

[ESG Data \(Society\)](#)  (PDF : 244KB)

Governance

[ESG Data \(Governance\)](#)  (PDF : 155KB)

