

UBE Group CSR Report 2017

Focusing on Harmonious Coexistence
with All Stakeholders

UBE INDUSTRIES, LTD.

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Creating One-of-a-Kind Industrial Machinery to Generate Customer Value around the World

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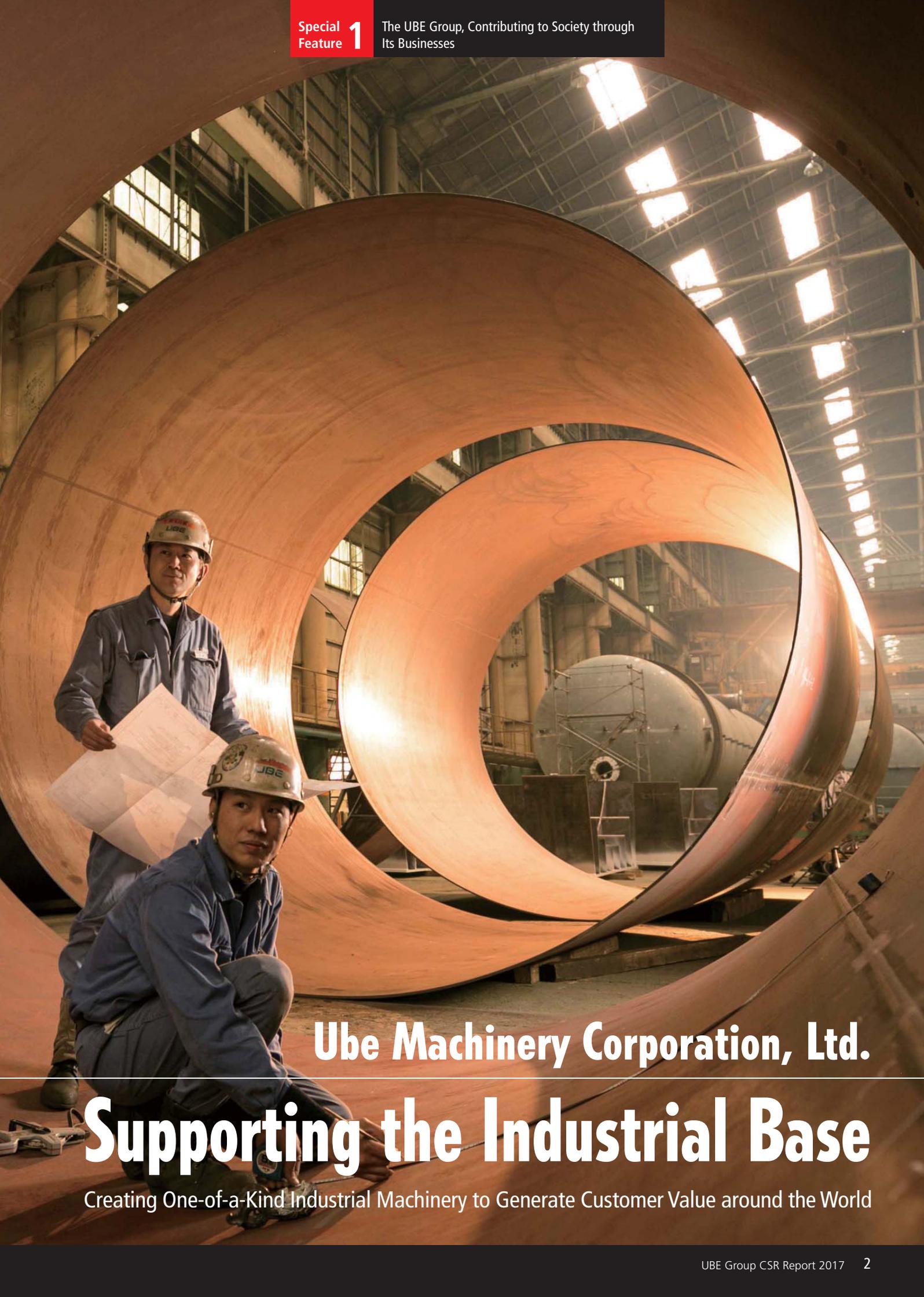
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Industrial scale

Machinery is one of UBE's core businesses. UBE's operations in this area developed out of the manufacture and repair (after-sales service) of machinery for coal mining. Ube Machinery Corporation (UMC) was founded in 1914 and has been true to its mission of supporting the industrial base ever since. In the course of making machinery for many types of manufacturing processes, including winches, conveyers, grinders and crushing machines, UMC built a wealth of technologies and know-how, which helped it to create more sophisticated pulverized coal firing systems.*1 These systems, in turn, played an essential role in supporting industrial development, but the business environment changed enormously with the shift in energy generation from pulverized coal to oil in the 1950s. Through a process of trial and error, UMC found two new applications for its technologies: water screen equipment*2 and vertical roller mills,*3 establishing the industrial machinery business that continues today. In the molding machine business, anticipating that the increased use of aluminum would be essential to the development of the automotive and housing industries, the company used imported technologies to begin producing die-casting machines*4 and extrusion presses.*5 This was followed by the development of numerous sophisticated technologies and the addition of such products as injection molding machines,*6 building UMC's business into what it is today. UMC presently manufactures made-to-order products, the market for which is directly impacted by the industrial life cycle.*7 Leveraging its ability to create large, high-performance products and provide excellent after-sales service, UMC has created customer value globally by developing one-of-a-kind products tailored to customer needs.

Glossary

- *1 Pulverized coal firing system: A boiler system that combines a pulverizing mill and combustion chamber. These products utilized thermal power generation technologies for using low-grade coal from the Okinoyama Coal Mine at UBE's thermal power stations for power generation.
- *2 Water screen equipment: Systems installed at water intake points for power stations, foundries, petrochemical plants and other facilities to provide a supply of clean water by removing such foreign objects as jellyfish, seaweed and plastic bags.
- *3 Vertical roller mills: Machines for processing a variety of materials into fine powder. Used in ceramics and other fields to process materials that include minerals, metals, chemical products and fibers.
- *4 Die-casting machines: Machines used to form metal products, such as engines and drive-train parts for automobiles and motorcycles.
- *5 Extrusion presses: Machines used to form a wide variety of metal products, including window sashes and curtain wall members used in applications ranging from housing to automobiles and train cars.
- *6 Injection molding machines: Machines used to form a wide range of plastic products, including auto parts, home appliances, medical devices and housewares.
- *7 Industrial life cycle: A concept that divides the stages of development of an industry into conception, growth, maturity and decline. Machinery demand in an industry is high during the growth phase and begins to decrease in the maturity stage.



Ube Machinery Corporation, Ltd.

Supporting the Industrial Base

Creating One-of-a-Kind Industrial Machinery to Generate Customer Value around the World



Energy-saving

省エネ



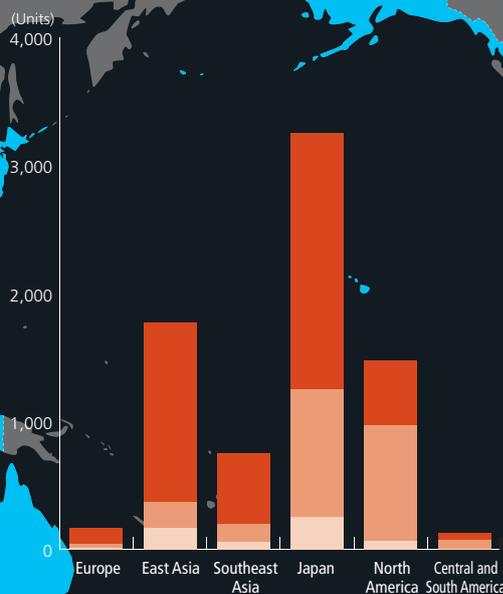
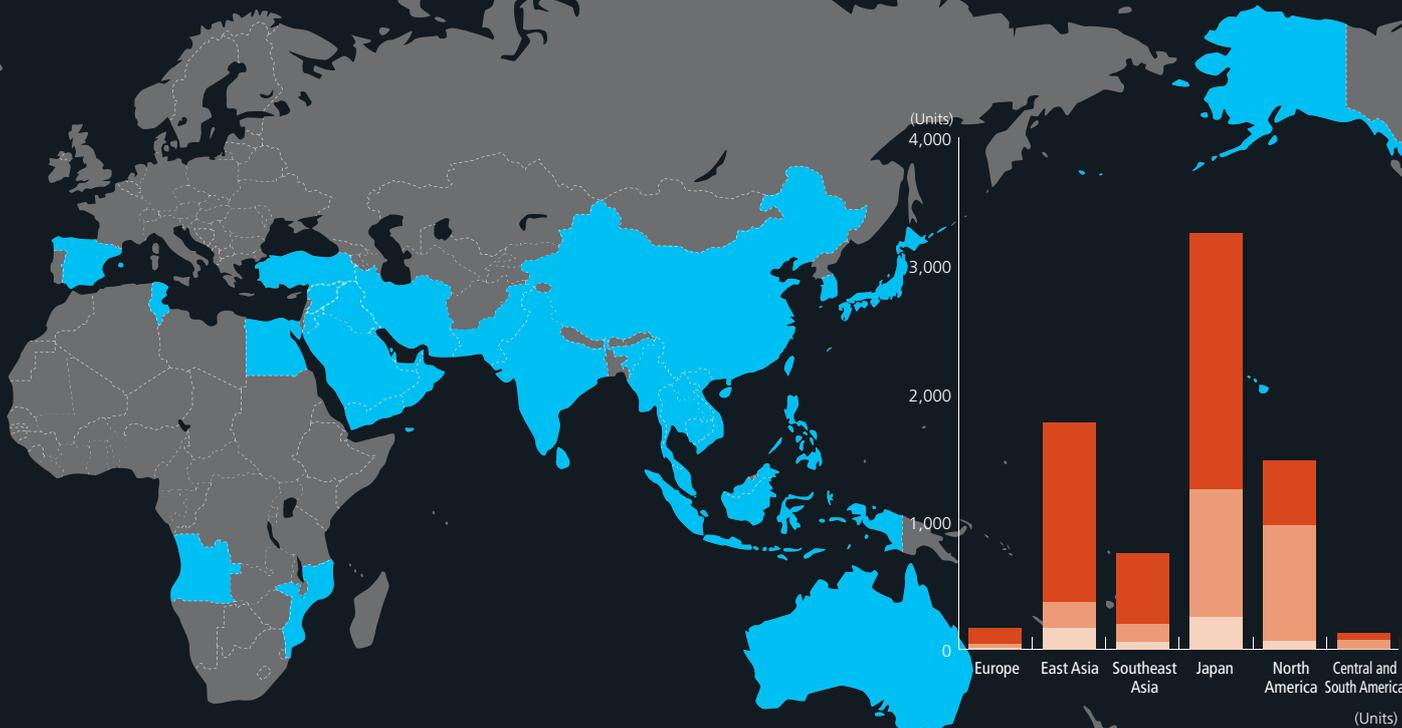
After-sales service

アフターサービス



Industrial Machinery Units Delivered

■ Countries to which UMC has delivered industrial machinery



	Europe	East Asia	Southeast Asia	Japan	North America	Central and South America
■ Molding machines (cumulative)	170	1,770	750	3,250	1,470	125
■ Die-casting machines	130	1,400	550	2,000	500	50
■ Injection molding machines	30	200	140	1,000	900	70
■ Extrusion press	10	170	60	250	70	5

* Approximate figures



In step with industrial and social development, UMC has delivered numerous one-of-a-kind products to customers around the world. This special feature looks at the defining characteristics that have garnered UMC widespread praise within the industry.

Aiming for No. 1—The world's greatest clamping force in the smallest installation space, with industry-leading energy efficiency

The production of one-of-a-kind products in UMC's molding machine business means creating machinery of previously unseen size and functionality. Our die-casting machines consistently lead the global industry in clamping force, keeping up with demand associated with the manufacture of lighter weight, larger engine blocks and other automotive parts. In recent years, we have successfully developed hybrid models combining hydraulics and electric motors. These machines offer top-of-class specifications while requiring the least installation space of any comparable product in the industry.

Extrusion presses form heated aluminum and copper into long thin uniform shapes to create a wide range of products, including aluminum sashes, curtain walls, and parts for automobiles and train cars. As the only manufacturer of extrusion presses in Japan, UMC carries out an important social responsibility in supporting the livelihood of people across the country.

UMC was also ahead of the curve in developing large electric injection molding machines to meet growing demand for plastic-based automobile bumpers, interior panels and other parts. In 2002, these machines received the Agency of Natural Resources and Energy Director's Award from the Japan Machinery Federation's 22nd annual Energy-Efficient Machinery Award program for their excellent energy efficiency.

We also develop one-of-a-kind industrial machinery with excellent environmental performance. In 2016, we developed kiln fuel conversion facilities using petroleum coke left over from oil refining. These facilities received the 44th annual Sasaki Award from the Japan Technical Association of the Pulp and Paper Industry for their dramatic cost savings realized through fuel conversion.

Production Base Capable of Building Large Machinery

The Heavy Machinery Works and Industrial Machinery and Steel Structure Works make possible the production of machinery on an extremely large scale. These works comprise two buildings, each 130m wide by 350m long, making them among the largest in Western Japan. The buildings are outfitted with large-scale cutters, machine tools, cranes and other equipment to regularly produce ultra-large one-of-a-kind machinery that other companies cannot. Because large shipping vessels (vessels of over 3,000 metric tons) can berth alongside the works, we are able to effectively ship ultra-large products by sea.

Large machinery assembly line at the Heavy Machinery Works



After-Sales Service Creates Customer Value and Provides Ongoing Support

Careful after-sales service is essential to maintaining products in a condition that can withstand non-stop operation 24 hours a day, 365 days a year. Die-casting machines are used in harsh environments containing highly disparate materials, namely molten aluminum, cooling water and lubricant oil. Through after-sales service locations and an online remote trouble-shooting system, UMC provides service free of the inconvenience of distance or time differences. This service ensures that customers can constantly produce products to the same specifications no matter the variations in regional climate and no matter how harsh the operating conditions. Our database contains decades of maintenance records that enable us to accurately evaluate industrial machinery in order to ensure uninterrupted normal operations and extend its life. Furthermore, using insights gained by providing after-sales service, we develop new products to meet customer needs.



Product manufacturing

Technical skills

Industrial technologies advance and new, higher-performance industrial machinery is constantly being developed, but one thing never changes—machinery is built and repaired by technicians. Technicians stationed at each of our business bases handle the development, design, machining, assembly, installation and after-sales service of molding machines as well as the design, plate working, welding, installation and after-sales service of industrial machinery. These professionals make one-of-a-kind machinery, and the development of these professionals is at the core of product manufacturing.

Developing Outstanding People—A UMC Priority since Its Founding

The development of people has been a key priority of UMC since its founding. In order to secure human resources with both excellent technological skills and character (“outstanding people”) in the local Ube area, in 1914, UBE Group founder Sukesaku Watanabe established the Ube

Apprenticeship Private School, where students could learn technical skills, such as machinery design and technical drawing. The school, founded on the fundamental belief that it takes outstanding people to create outstanding products, produced excellent technicians every year. After contributing to the education of a generation of professionals, the school merged with Ubekogyo High School in 1948, and its tradition lives on.

Over the more than 20 years since peaking at 15.69 million in 1992, the number of people employed in manufacturing in Japan has steadily declined (to 10.41 million in 2016).*⁸ At the same time, highly experienced technicians over the age of 50 have come to make up a large portion of UMC’s employee base. One-on-one teaching and the passing along of expertise by experienced technicians, or on-the-job training, is at the heart of human resource development. However, over time, the incidence of workers performing their tasks alone has increased along with the prioritization of work efficiency, and the employee mix has skewed more toward older individuals. As a result, the traditional way of passing along skills has

Developing outstanding products = Developing outstanding people



Passing down know-how

become difficult. The wave of retirement around 2007 of employees who were part of Japan's first baby boom only exacerbated the urgency of this problem. To address this situation, in addition to revising on-the-job training practices, UMC began "outstanding people development" initiatives, incorporating off-the-job training efforts, such as establishing a Monozukuri Center, holding the UMC Technology/Skills Competition and participating in the National Skills Competition.*⁹

*8 2016 Labour Force Survey (Basic Tabulation, Yearly Average Results), Ministry of Internal Affairs and Communications Statistics Bureau.

*9 A competition in which young skilled workers, in principle age 23 or younger, selected from across the country compete for the title of most skilled in Japan.

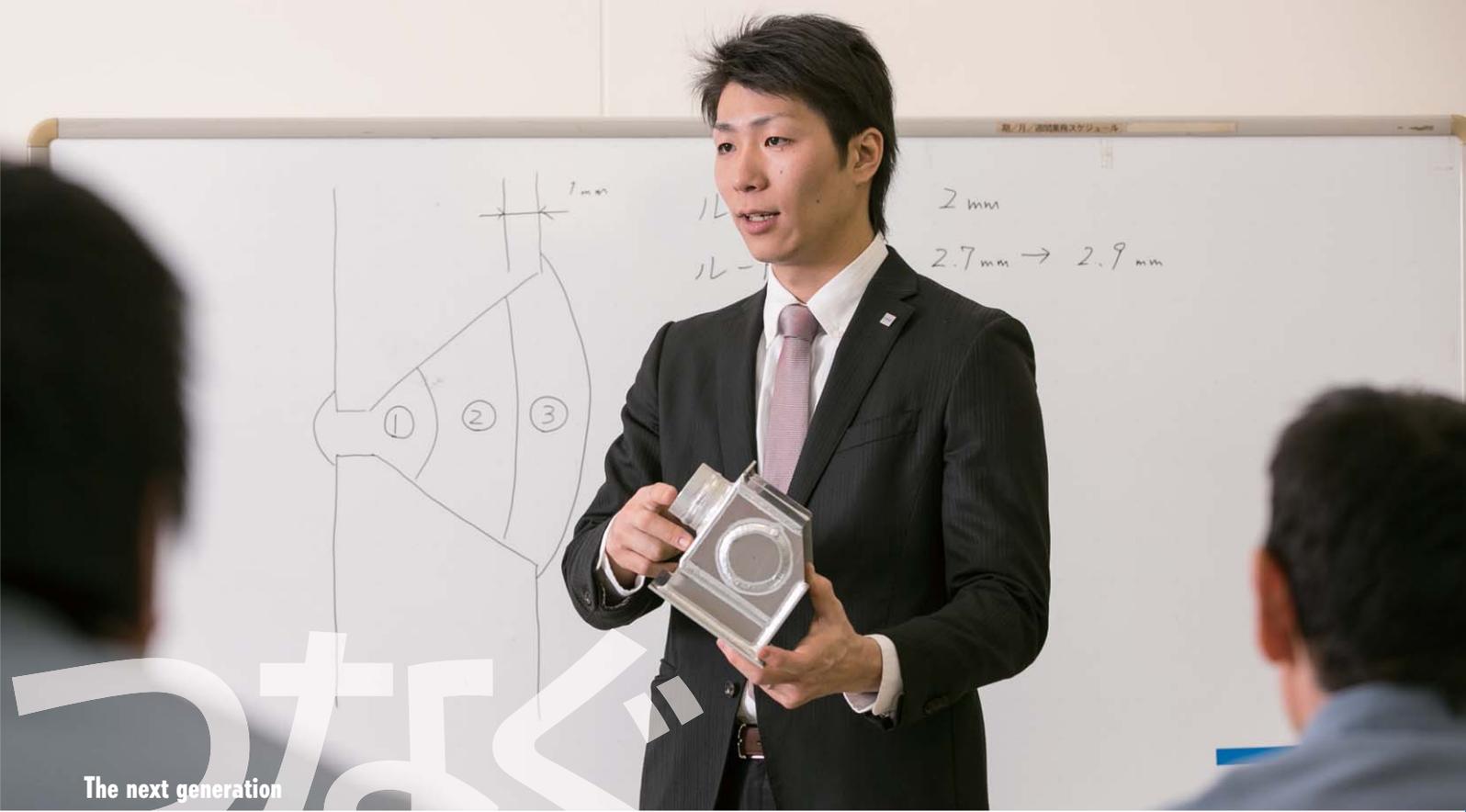
Reinforcing Front-Line Abilities through Job Rotation (On the Job Training)

To reinforce employees' front-line abilities in the areas of both molding machines and industrial machinery, we implement job rotation among a wide range of positions, from design to after-sales service. For example, we provide opportunities for employees to learn about differences that can arise in die-casting machine design, assembly and after-sales service as a result of variations in countries' automobile safety standards on the ground by working overseas. Such efforts also reinforce design and service perspectives for industrial machinery, spurring the development of new products based on experience in after-sales service. Furthermore, new

employees in development divisions are guided by their elder colleagues as they repeat the process of experimentation, evaluation and reporting, changing focus as needed, to learn everything from basic to advanced skills. In these ways, we strive to develop outstanding people.

Skill Improvement Dojo and UMC Technology/Skills Competition for Young and Mid-Level Employees (Off the Job Training)

As part of the Monozukuri Center, launched in 2007, we have established a machinery assembly dojo at the Heavy Machinery Works and a plate working/welding dojo (inspection dojo) at the Industrial Machinery and Steel Structure Works. At these dojos, we are focusing on employee development through three courses: the basic course, the training course and the skills transmission course. The basic course teaches basic knowledge and safety practices to new employees and provides follow-up to the on-the-job training of junior employees, aiming to improve skills and quickly prepare participants to contribute on the front line. The training course is aimed at training participants for the National Skills Competition and other competitions as well as training employees to acquire outside certifications. And, in the skills transmission course, highly experienced employees provide one-on-one instruction to mid-level employees in order to pass on technical skills.



The next generation

In addition, young employees in their first ten years at the company from all divisions, including production, technical, sales and purchasing, come together once a year for the UMC Technology/Skills Competition, in which they pit their mastery of job skills against each other. This event is aimed at encouraging the swift passing along of technical skills and knowledge and preparing young employees to contribute on the front lines. With experienced employees taking part in designing the competition's challenges, more than half of all employees take part in this major event, which is reminiscent of the Ube Apprenticeship Private School.

The Next Generation of Outstanding People

UMC seeks to create an environment in which its technicians can engage in friendly competition, striving to improve their skills. As part of these efforts, we have taken part in the Yamaguchi Welding Skills Competition since 1986, and our technicians have won numerous prizes in the shielded metal arc welding division. Furthermore, since 2004, UMC has participated in electric welding events at the National Skills Competition, where its young technicians have won bronze medals, proving their skill at the national level.

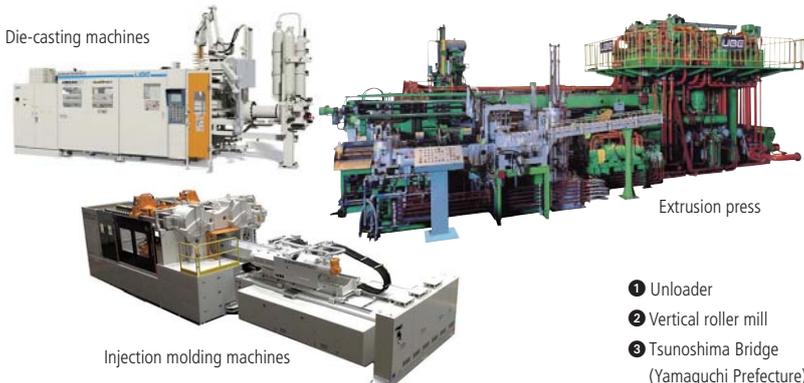
The education of the next generation is also an important aspect of developing outstanding people. UMC's National Skills Competition medalists take part in new employee training and internship-based training and serve as instructors in the development of the next generation of employees. Our instructors work with a strong sense of mission, with one saying the following. "I love welding. Why? Because welding offers the thrill of building huge structures and the joy of knowing that your work will last for decades.

That's why I was able to work tirelessly to improve my skills and endurance. My rapid improvement in skill, including sensory skills—knowing where to look and what to listen for—was the product of the instruction at the dojo and hard work. I hope that my junior colleagues will show the grit and desire to acquire the skills for themselves, but first, I want to communicate the appeal of welding to young people."

To help secure and educate next-generation technicians, medalists give talks at Ubekogyo High School and Tokuyama Shoko High School, and UMC holds lectures on the operations of companies specializing in made-to-order products at the National Institute of Technology, Ube College. In these and other ways, we are working to help develop the next generation of outstanding people.

UMC supports the industrial base with one-of-a-kind industrial machinery. For more than a century, UMC has developed and produced outstanding products—large-scale, energy-saving, high-performance machinery—and provided after-sales service to meet the needs of the times and industry. This has been made possible by the company's long history, going back to its founding, of passing along technical skills and knowledge in forms and by methods that have changed over time, aimed at developing technicians and outstanding people based on the spirit of coexistence and mutual prosperity.

Over the next century, we will continue to work to develop outstanding people, in Ube and locations around the world, in order to produce outstanding products and create value for customers globally.



- ① Unloader
- ② Vertical roller mill
- ③ Tsunoshima Bridge (Yamaguchi Prefecture)

In August 2016, UBE invited the media to visit a new building evocative of a modern art museum on the grounds of its Sakai Factory. Created to foster aggressive R&D, this new building was the Osaka R&D Center. The center's key concept is open communication. Within the center, virtually all walls separating researchers have been eliminated, and the new facility welcomes researchers from customers, suppliers, universities and research institutions, regardless of their nationality, to come and participate in cutting-edge materials development. This special feature offers a look at UBE's Osaka R&D Center, where the future is being created.



Exterior photo courtesy of Taisei Corporation

The Osaka R&D Center Creating the Future with Cutting-edge Materials

Aiming to be the hub of specialty materials development in Japan through aggressive R&D

UBE's full-fledged R&D began in 1951 with the opening of the Central Research Laboratory (now the Strategic Core Technology Research Laboratory and Pharmaceuticals Research Laboratory), followed by the Hirakata Laboratory in 1961 (closed in 1995) and the Polymers Laboratory in 1968 (now the Frontier Technology Research Laboratory). R&D at these facilities has supported the development of UBE's chemicals business ever since.

Opened more than 50 years after these efforts began, the Osaka R&D Center's mission is to advance aggressive R&D while fostering open communication between researchers, all with the aim of creating new specialty materials. The center's location in the Kansai area places it near the research facilities of numerous customers and academic institutions. Furthermore, Sakai, Senshu, where the center is situated, lies between the Kansai International Airport and Osaka City, making it easy to access. Every part of the building is designed to facilitate inter-departmental communication, help researchers think freely and promote the integration of knowledge, from laboratories with glass walls—which have been likened those of the Okinawa Churaumi Aquarium—to free address office space and a meeting room with Japanese design cues.



Three Features of the Osaka R&D Center

① Integrated R&D spanning basic research to mass production prototypes

The center offers an integrated framework encompassing research, development, production technologies, marketing, production (in coordination with the Sakai Factory), and intellectual property and analysis functions (with on-premises facilities for UBE Scientific Analysis Laboratory, Inc.). Using adjacent test production facilities, the center will seek to speed up and streamline UBE's R&D.

② Open lab approach supporting new value creation

By fostering collaboration with customers, suppliers, universities and research institutions, the open lab approach encourages innovation.

③ Layout conducive to R&D

The center's laboratories are organized by function to foster discussions that cross barriers separating research themes and organizational boundaries and give rise to a wide variety of new ideas. In addition,

laboratories are visible through glass walls from the office floor, helping to ensure safety (ensuring no researchers are left without backup) and helping to strengthen communication.

A Formidable Hub Backed by Individual and Organizational Strengths

Situated in Sakai, which offers benefits on both the business and R&D fronts, and designed with an integrated framework for aggressive R&D as well as cutting edge, open facilities, the Osaka R&D Center's location and facilities lend it considerable strength as a hub of scientific research. The core of this strength is open communication. Synergies generated by combining elements from in and outside the Group and the novel ideas generated by researchers here will lead to the creation of new specialty materials. By nurturing a free, unrestricted culture, we will further enhance the Center's strengths of place, aiming to make it the heart of specialty materials R&D in Japan.

FOCUS

Developing Cutting-edge Materials

In line with the principle of “from finite mining to infinite industry,” technologies developed in 1934 for the gasification of Ube coal enabled the manufacture of numerous products, such as ammonium sulfate, hydrogen peroxide and liquid carbon dioxide, that went on to become the bedrock of the UBE Group’s development. One such product, dimethyl carbonate (DMC), manufactured using UBE’s proprietary organic synthesis technologies, is now the de facto standard ingredient in electrolyte solutions* used in lithium-ion batteries (LIBs). Using DMC and other products, UBE went on to develop mixed-electrolyte solutions for LIBs and, in 1997, was the first in the world to release functional electrolyte solutions incorporating additives that enable battery functions tailored to purpose, such as electrode interface control and overcharge prevention (for safety). The inspiration for this technological development came from an UBE researcher noticing the word “electrolytes” printed on an intravenous (IV) bag. Realizing that fluid medicines with fever-reducing or cancer-fighting functions could be put into an IV bag, the researcher had a revelation, leading to the creation of the new products. Today, PURELYTE and POWERLYTE are widely used as key materials in the LIBs that power electric vehicles (EVs).

In 2011, UBE established UBE MAXELL, CO., LTD. as a joint venture with Hitachi Maxell, Ltd., also located in the Kansai region, to manufacture and sell separator films for lithium-ion batteries that combine proprietary UBE technologies developed at the former Hirakata Laboratory with Hitachi Maxell’s dispersion coating technologies. UBE MAXELL’s separators have been widely used for automotive applications, including in plug-in hybrid vehicles (PHVs) and EVs, in and outside Japan. Furthermore, in 2013, UBE began R&D focused on lithium titanate, combining UBE’s inorganic synthesis technologies with the robust technological development capabilities and materials evaluation technologies it had built up in the battery materials field. Currently, we are working to establish technologies to mass produce and commercialize lithium titanate (these efforts were selected to receive government support by the New Energy and Industrial Technology Development Organization (NEDO), a national research organization, under NEDO’s 2014 Strategic Energy-Saving Technological Innovation Program).

In these ways, UBE’s advanced materials development makes full use of a wide range of technologies amassed over the years that spans molecular design, organic synthesis, electrochemistry, analysis and materials assessment, molding and processing technologies and film technologies, valuing researchers’ insights to create new value through R&D.

*Electrolyte solutions for LIBs: A liquid solution of electrolytes (substances that dissociate into positive and negative ions) in an organic solvent. A necessary material for the movement of lithium ions between positive and negative battery electrodes.



Message from the President

Q1. The medium-term management plan states that “what we want to become in 10 years” is an “enterprise that continues to create value for customers.” What does this mean to you?

A1. Customer needs are changing at an ever-increasing rate. As these needs change, so too do the answers to these needs and the sources of value. We must apply our technologies, abilities and know-how to take advantage of these changes and find ways to continue providing value. By doing so, we will generate profit. I hope that over time this basic commitment to continuous value creation will become entrenched in our corporate culture and continue to be passed down in twenty and thirty years.

Q2. The idea that environmental, social and governance (ESG) perspectives are necessary for long-term corporate growth is becoming increasingly common. What is the UBE Group doing in these areas?

A2. The UBE Group emits a large volume of greenhouse gases, so finding ways to reduce these emissions and increase energy efficiency are the main environmental challenges we face.

Addressing these challenges will require far-reaching investment in efficiency and technological innovation. For fiscal 2021, the medium-term management plan targets a 15% reduction in greenhouse gas emissions compared with the fiscal 2015 level. It is important to move toward such goals incrementally. To provide value to customers, we must create products, and in creating products, we cannot avoid emitting a certain amount of greenhouse gases. At the same time, there is great opportunity for improvement in the volume of such emissions generated when customers use UBE products, so expanding our lineup of environment-friendly products offers an important means of reducing overall emissions.

Moreover, another of our goals for fiscal 2021 is to derive 30% of total net sales from businesses that contribute to the environment. We expect growth in business related to high-performance coatings and lithium-ion battery materials to help us reach this goal.

In terms of social initiatives, developing human resources is essential. Specifically, we must nurture people who embody the culture of value creation and can carry it on to the next generation. We are currently implementing a variety of internal programs, and among the excellent programs specific to each plant are initiatives to pass on technical expertise at the front lines. We continually work to enhance these programs. Going forward, I hope to focus especially on developing effective managers.

We are also working to help women succeed and hiring non-Japanese nationals globally in the interest of diversity. It is my impression that communication with employees at our overseas bases is increasing. I hope that the full utilization of a diverse workforce will result in the mixing of cultures and ways of thinking, leading to fresh, new ideas.

Our target is to raise the proportion of annual career-track hires who are women to at least 20% of the total and to increase the portion of all management positions held by women to at least 3% in four to five year's time.

In terms of social contribution activities, above all, we seek to make ongoing contributions to culture and local communities in ways that make sense for us. It may take time, but it is important that we make such contributions part of our corporate culture and continue such efforts.

Looking at governance, internal control and legal compliance are fundamental and are basic requirements for all corporate activities. Improving management transparency and ensuring timely disclosure to ensure these requirements are met entails ongoing effort. Processes that help us sustain such initiatives, avoid dishonesty and misrepresentation, and take swift, appropriate action to address risks are particularly crucial.

Q3. What is the purpose of the Risk Management Office established within the CSR Department?

A3. We already had a Group CSR Committee and Compliance Committee, but we also needed a body to oversee management risk. Although both committees preside over a number of bodies, we felt that none of these specific bodies was positioned to provide the necessary systematic rigor. Specifically, we needed a body that could systematically identify the various risks surrounding the Group and determine which the UBE Group as a whole should be particularly aware of. We expect the Risk Management Office to begin by reevaluating and reorganizing the committees' current activities. For example, I imagine that the office will examine legal and regulatory requirements, take steps to reinforce any operational shortcomings it identifies, and assess the efficiency of operations that are being handled as they are due to institutional inertia.

Furthermore, we must consider preventive measures for risks that could arise in the future. And, of course, we must also further clarify which committees or bodies are to deal with risks that actually do materialize.

Q4. What are your thoughts on the Sustainable Development Goals adopted by the United Nations?

UBE Group Medium-term Management Plan

What we want to become in 10 years

An enterprise that continues to create value for customers

“Change & Challenge 2018”

Toward Sustainable Growth

(Environmental, Social and Governance Initiatives)

Environmental: Address global environmental issues while raising corporate value by reducing greenhouse gas emissions and expanding environmental businesses.

Social: Increase confidence from all stakeholders through a comprehensive commitment to environmental safety, health management, and compliance under the business principles of coexistence and mutual prosperity.

Governance: Further enhance the transparency of management and reduce management risks.



A4. Initiatives aimed at the Sustainable Development Goals (SDGs) are becoming a yardstick by which investors evaluate companies. In fields that impact the efficiency of people’s daily lives—food, clothing, housing and the environment—the UBE Group’s businesses are directly or indirectly related to the 17 SDGs (see page 17).

With SDGs becoming a benchmark for corporate activities, we must quickly get to work ensuring that our employees are aware of the SDGs in order to match our vision for the Company 10 years from now with them.

Q5. Do you have any remarks on the UBE Group’s 120-year anniversary?

A5. By coincidence, this year also marks my 40th year with the Company. The 120-year point is just another milestone, but it is rather amazing to consider how long the UBE Group has been around. Our predecessors’ hard work and determination to overcome a wide range of challenges has become the basis of our corporate culture and the cornerstone of our businesses today. This culture is, without doubt, an invaluable asset for the Group.

The Group has marked one year at a time and has now reached its 120th. I hope that, as the years continue to pass, UBE will continue its businesses to the 150- and 200-year marks, growing long into the future.

Lastly, with regard to the UBE Group going forward, I think that the most important thing is that each employee truly feels that both they themselves and the businesses they are a part of are growing. We must continue corporate activities that give rise to that feeling, creating a place where employees always feel that what they are doing now is a step ahead of what they were doing yesterday, where they feel like things really change—this is the kind of corporate group I want UBE to be.

August 2017

Yuzuru Yamamoto
Ube Industries, Ltd. President and Group CEO,
Representative Director

Strengthen the business foundation to enable sustainable growth

- Strong focus on profitability. Comprehensive cost reductions. Increase revenues from existing products.
- Continue emphasizing cash flow and implement investments to achieve growth. Make certain to generate results from investments.
- Expand the network of international business locations and foster greater coordination between Group companies in and outside of Japan. Rapidly respond to shifting business conditions globally.
- Restore results from the Chemicals segment and secure further growth. Restore operating income to the ¥20 billion level as a launch pad for the next stage of growth.

Address and be part of the solution for resource, energy, and global environmental issues

- Reduce greenhouse gas emissions throughout supply chains by reducing energy consumption and increasing recycling.
⇒ **FY2021 target:** Reduce greenhouse gas emissions by 15% compared with FY2005 levels
- Develop and extend technologies and products that help reduce environmental impact.

Corporate Profile

Corporate Information

Company Name: Ube Industries, Ltd.

Head Office: Tokyo Head Office

Seavans North Bldg., 1-2-1, Shibaura,
Minato-ku, Tokyo 105-8449, Japan

Ube Head Office

1978-96, Kogushi, Ube,
Yamaguchi 755-8633, Japan

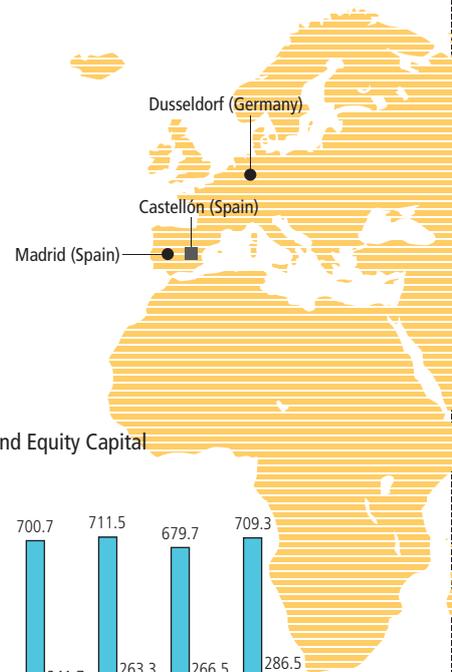
Founded: June 1, 1897

Consolidated: March 10, 1942

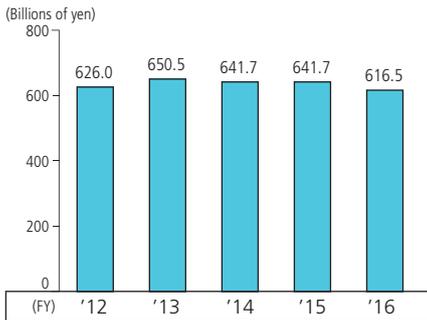
President and Group CEO: Yuzuru Yamamoto

Capital: ¥58.4 billion (as of March 31, 2017)

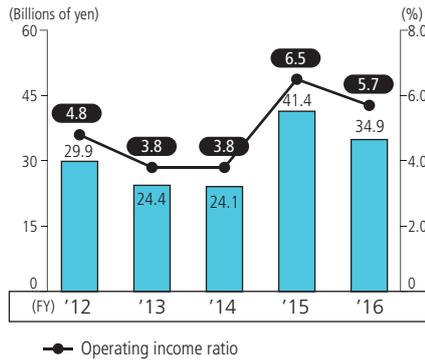
No. of Employees: 10,928 consolidated;
3,612 unconsolidated
(as of March 31, 2017)



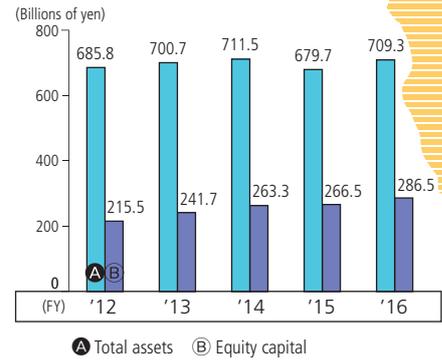
Net Sales



Operating Income and Operating Margin



Total Assets and Equity Capital



Business Profile

The history of the UBE Group stretches back more than a century. Since beginning coal mining operations in Ube, Yamaguchi Prefecture, we have adapted to social and industrial change, continually innovating and evolving. Through all this, certain values at UBE—technology and innovation—have never changed.

Today, UBE is active around the world. We pursue business based on product manufacturing backed by innovative technologies and an entrepreneurial spirit that anticipates evolving needs and embraces change. These values are etched deeply into the entire Group and continue to be passed down.

Centered on chemistry, UBE Group operations encompass the fields of cement and construction materials, machinery, pharmaceuticals, and energy and the environment. UBE's products and technologies in these fields are used in a wide variety of applications, from those close at hand, including home appliances, household goods, automotive components and pharmaceuticals, to such areas as infrastructure and state-of-the-art applications in space.

Segments



Chemicals

UBE manufactures nylon resins widely used in packaging materials and automotive components as well as caprolactam, a material used to make nylon resins. Operating globally, UBE produces both types of products in three regions. In addition, ammonium sulfate produced as byproduct of caprolactam is used in variety of agricultural fertilizers.

UBE's polybutadiene rubber is used by some of the world's top tire manufacturers and enjoys a strong reputation.

Ammonia and various other industrial chemicals as well as ABS resin and polyethylene for general-use plastics support industry and modern lifestyles in a wide variety of applications.

UBE's specialty chemicals and products lineup includes lithium-ion battery separators and electrolyte solutions, heat-resistant polyimide resin for use in

circuit substrates for flat-screen displays and other advanced materials as well as a large number of environment-friendly products, such as materials for waterborne coatings, resins and fragrances. UBE's silicon nitride for use in bearings for wind power, machine tools and other applications and explosion-proof nitrogen separation membranes are used worldwide.

The UBE Group offers high-value-added materials that leverage its unique technologies. Many of these products are unmatched by any competitor or boast high market share, demonstrating the Group's technical strengths.

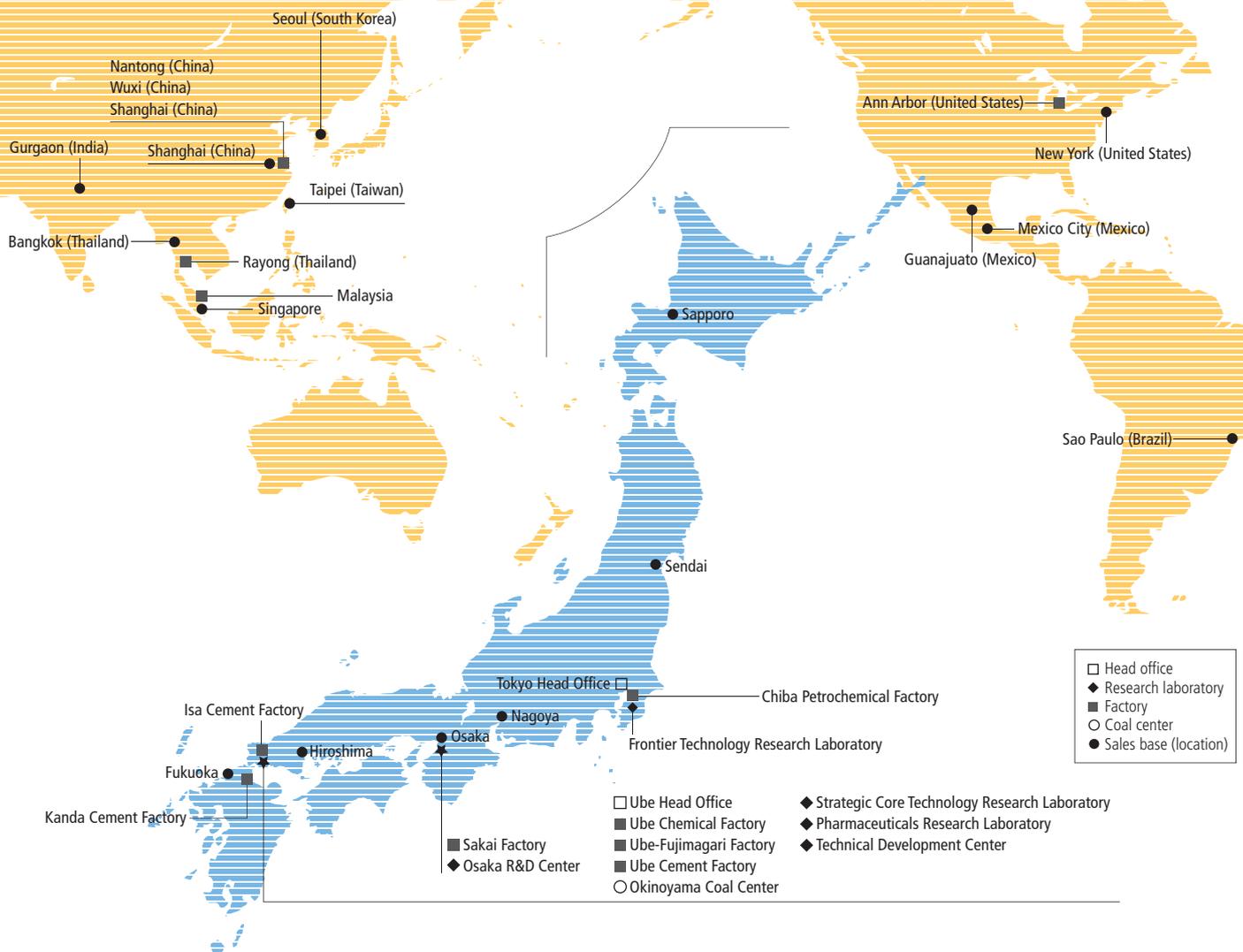


Pharmaceutical

UBE began pharmaceutical R&D in the 1980s, building on its abundant organic synthesis technologies nurtured in other businesses. Today, UBE partakes in drug discovery, developing active pharmaceutical ingredients in-house and in collaboration with other pharmaceutical manufacturers, as well as the contract manufacturing of active ingredients and intermediates, in which the Company undertakes production process development and manufacturing on behalf of pharmaceutical companies. These two areas are the pillars of UBE's pharmaceutical business.

The UBE-produced anti-allergy agent *Talion*, (marketed by Mitsubishi Tanabe Pharma Corporation), antihypertensive agent *Calblock* (marketed by Daiichi Sankyo Company, Limited) and antiplatelet agent *Effient* (marketed by Daiichi Sankyo Company, Limited and Eli Lilly and Company) are already on the market, helping to improve users' health.

Business Bases in Japan and Overseas



Cement & Construction Materials

The UBE Group meets a wide range of needs in the areas of civil engineering and construction by constantly introducing new products with excellent functions and has earned a strong reputation for reliability.

UBE-Mitsubishi Cement Corporation provides a stable supply of UBE brand cement throughout Japan. From ordinary cement to specialty cement and solidification agents, the broad spectrum of UBE brand cement products supports the formation of infrastructure.

UBE's cement factories accept various waste materials, including waste plastic, sewage sludge and ash from incinerated municipal waste, for reuse as fuel through high-temperature calcining. UBE also boasts an extensive lineup of construction materials, including interior and exterior decorating, waterproofing, flooring and plastering materials. In recent years, the Group's *DESIGN FIT Method* seismic retrofitting technologies have been widely adopted in schools, hotels and other buildings.



Machinery

UBE brand molding machines and industrial machinery, including die-casting machines, injection molding machines and extrusion presses, enjoy an excellent reputation in the global market. UBE supplies die-casting machines primarily to the automotive industry in and outside Japan, and boasts a particularly outstanding global track record in large machines. In addition, the Company offers an industry-leading lineup of injection molding machines with mold clamping force ranging from 650 tons to 3,000 tons, among the strongest in the world.

By strengthening and enhancing the linkage of products and services, UBE is reinforcing its ability to meet the needs of customers in the global market. In 2017, an UBE Group subsidiary merged with Mitsubishi Heavy Industries Plastics Technology Co., Ltd. to form the injection molding machine company U-MHI PLATECH Co., Ltd. and launch a new company, U&M Plastic Solutions Co., Ltd.



Energy & Environment

In addition to the UBE Group's overall energy infrastructure, which includes coal-related businesses that provide a stable supply of imported coal and the supply of electricity from in-house power stations, the Group operates such businesses as the independent power producer (IPP) business and solar power (megasolar) business. In 2015, the UBE Group established Yamaguchi-Ube Power Generation Co., Ltd. as a joint venture with Electric Power Development Co., Ltd. and Osaka Gas Co., Ltd. This joint venture is advancing preparations for the construction of a large-scale coal-fired power plant.

UBE's annual coal handling capacity is 7.3 million tons. The Okinoyama Coal Center in Ube City is one of Japan's largest. UBE stores coal at the center. From there, it distributes coal to users throughout the country.



Organizational Governance

The UBE Group's Management Philosophy and CSR

This is UBE's founding philosophy and core CSR concept and has been passed down for over 120 years

The Spirit of “Coexistence and Mutual Prosperity”

■ Coexistence and Mutual Prosperity: a Management Philosophy Born from a Commitment to Local Communities

Sukesaku Watanabe, the founder of UBE Kosan, was a businessman who loved his hometown. Believing in the importance of maintaining close links with local communities while pursuing business development, Watanabe undertook various initiatives to upgrade the civil and social infrastructure of the region. Such initiatives included establishing an electric company that provided the region's first electric lighting, constructing water supply facilities and railroads, and setting up schools to foster the development of human resources. Sukesaku Watanabe's favorite phrase, “coexistence and mutual prosperity,” forms the basis of the UBE Group's CSR activities.

■ Promoting the Management Philosophy “From Finite Mining to Infinite Industry,” to Foster a Frontier Spirit

Anticipating a future in which there would be no coal left to mine, Watanabe espoused the philosophy of “from finite mining to infinite industry” in order to ensure the continuing prosperity of local communities. Consequently, he focused his efforts on making the transition from the coal mining industry to new, developing industries. In particular, Sukesaku Watanabe had the foresight to use soil removed from mines to create waterfront landfills that could serve as industrial sites. In addition, he established harbor jetties and railroads while opening steel, cement and chemical factories. Such facilities form the foundation of the present UBE Group. In line with Watanabe's philosophy of taking on new business challenges, UBE cultivates a corporate culture that encourages a spirit of challenge that fosters a frontier spirit in every employee.

These two founding philosophies are the starting point of the UBE Group's CSR, and, having been handed down since the Company's founding, are now our Management Philosophies.

Group Vision:

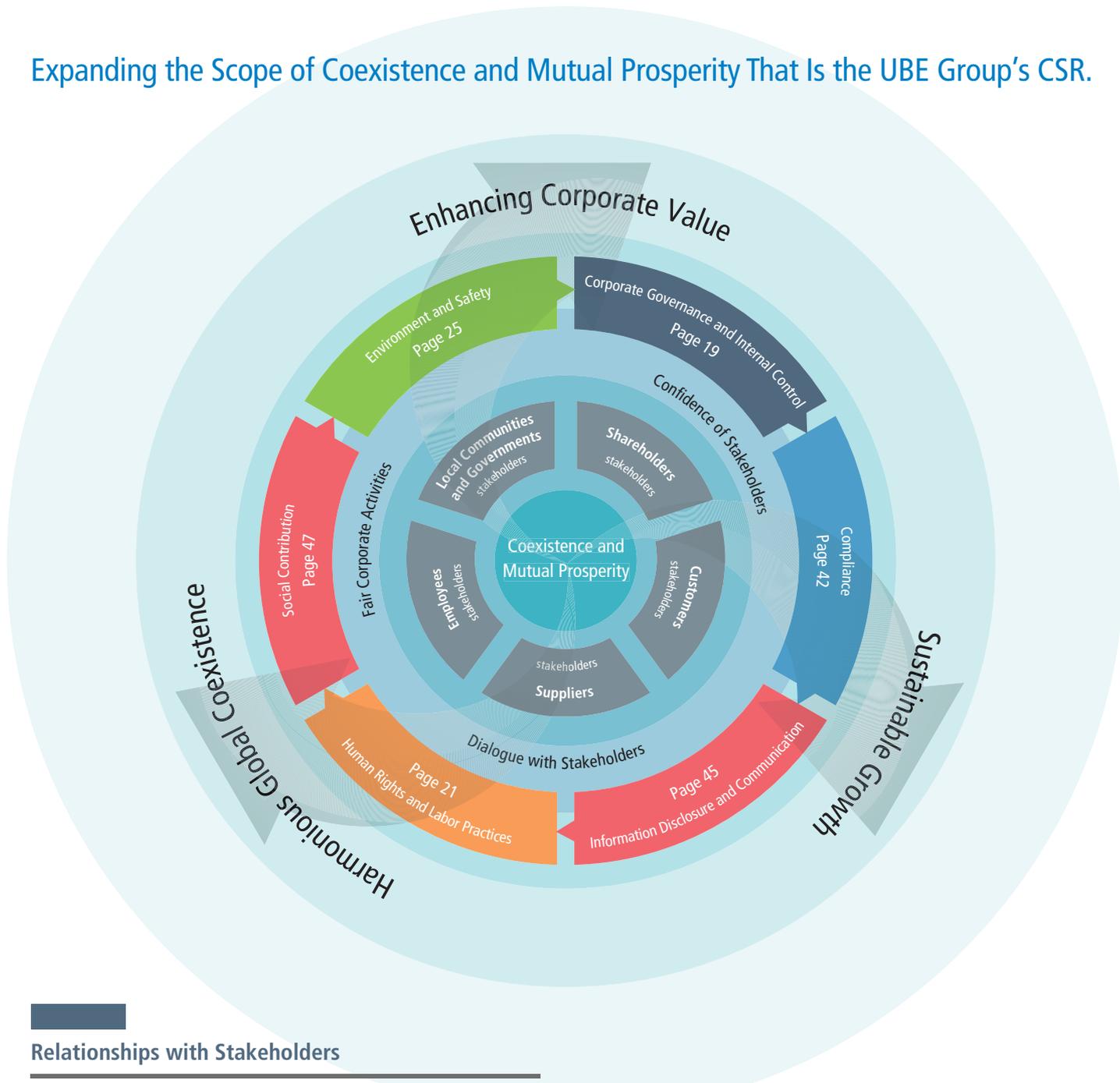
Wings of Technology and Spirit of Innovation This is the heritage driving our global success.

The UBE Group will embrace a frontier spirit in seeking to achieve coexistence with the global community driven by the limitless possibilities of technology, while continuing to create value for the next generation through product manufacturing.

The UBE corporate philosophy, “coexistence and mutual prosperity,” and a spirit of unremitting self-reform comprise the UBE Group vision. This Group vision is being passed along to every employee. The UBE Group's strengths lie in business activities centered on product manufacturing through the use of original technology as well as a proactive approach that meets the needs of the age. Expanding these strengths worldwide, we will work to realize sustainable development around the globe with the aim of achieving global coexistence.

The UBE Group works to achieve sustainable business and social development by positioning its **Basic CSR Policies** (see page 18) at the center of its business activities. In so doing, we are fulfilling our responsibility to maintain coexistence between business and society. In addition, we adhere to the **UBE Action Guidelines** (see page 18) in order to realize proactive CSR activities and, in turn, attain the trust of all stakeholders.

Expanding the Scope of Coexistence and Mutual Prosperity That Is the UBE Group's CSR.



Relationships with Stakeholders

UBE identifies five types of stakeholders with whom it maintains deep relationships. In the course of achieving sustainable growth, the Group actively strives to fulfill its corporate social responsibilities with regard to these stakeholders.

The UBE Group will continue to value engagement with stakeholders as it implements CSR activities and works to coexist harmoniously with society.

Stakeholders	Ube's Mission	Main Means of Engagement
Customers	Provide safe, high-quality products and services that are useful to society at fair prices and swiftly react to customer needs	Communication through sales activities and providing information by various means (including the UBE website and product catalogs)
Suppliers	Engage in fair, honest transactions	Communication through purchasing activities
Employees	Provide fair pay and stable employment, develop human resources, share information and tasks, and support improvement in quality of life	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, the local newsletter "Tsubasa," the CSR Report and charity concerts
Shareholders	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 providing information by various means (the UBE website, the <i>Annual Report</i> and the <i>UBE Business Report</i>)

CSR Challenges for the UBE Group

1. The UBE Group’s CSR activities comprise a variety of initiatives to strengthen the management base and deepen stakeholder trust in line with the Group’s overarching goal of being an enterprise that continues to create value for customers.
2. UBE’s CSR activities are organized into ESG categories, short for environmental, social and governance. The three areas defined by ESG

categories play a vital role as the Group’s business foundation, which supports its sustainable growth.

3. The UBE Group’s current key ESG initiatives are based in part on the goals of the medium-term management plan. The Group has set goals for these initiatives that are defined by KPIs, *1 as shown below.

	Key Initiatives	KPI	SDGs*2
Environmental	<ol style="list-style-type: none"> ① Reducing greenhouse gas emissions ② Expanding businesses that contribute to the environment ③ Safety and health 	<ol style="list-style-type: none"> ① 15% reduction from fiscal 2015 by fiscal 2021 ② 30% or more of overall sales by fiscal 2021 ③ Zero major facility accidents 	  
Social	<ol style="list-style-type: none"> ① Helping women succeed ② Employment of people with disabilities ③ Work-life balance 	<ol style="list-style-type: none"> ① Average rate of 20% or more women among new graduate hires for generalist positions ② 3% or more employment rate of people with disabilities by fiscal 2023 ③-a Paid vacation usage rate of 70% or above ③-b Childcare leave usage rate among eligible male employees of 30% or above 	 
Governance	<ol style="list-style-type: none"> ① Compliance (enhancing education/training and improving employee awareness) ② Risk management (preparation and appropriate use of BCPs) 	<ol style="list-style-type: none"> ①-a 100% participation in basic education ①-b 100% participation in e-learning course ② Establish BCPs at 100% of Group companies by fiscal 2018 	

*1 KPI: Key Performance Indicator

*2 SDGs (Sustainable Development Goals): The common name for “Transforming Our World: The 2030 Agenda for Sustainable Development,” adopted at the UN Sustainable Development Summit at the United Nations headquarters in New York City, attended by leaders from over 150 nations. The SDGs consist of 17 goals and 169 targets.

SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD



UBE Action Guidelines (See page 42)

UBE has established the UBE Action Guidelines as a code of conduct that embodies the philosophy of “coexistence and mutual prosperity” to guide the Group to engage in business activities in line with relevant laws around the world, the Company’s internal rules, and social mores.

- Chapter 1 Corporate Mission and Social Responsibility
- Chapter 2 UBE Group and the Law
- Chapter 3 Business Activities and Creating Value
- Chapter 4 Fairness and Integrity
- Charter 5 Safety and the Environment
- Chapter 6 UBE Group and Human Rights
- Chapter 7 UBE Group and Information
- Chapter 8 UBE Group and the International Community
- Chapter 9 Summary: Building a Firm Foundation of Corporate Ethics

 UBE Action Guidelines (full text)
http://www.ube-ind.co.jp/ube/en/csr/compliance/compliance_policy.html

UBE Group Basic CSR Policies

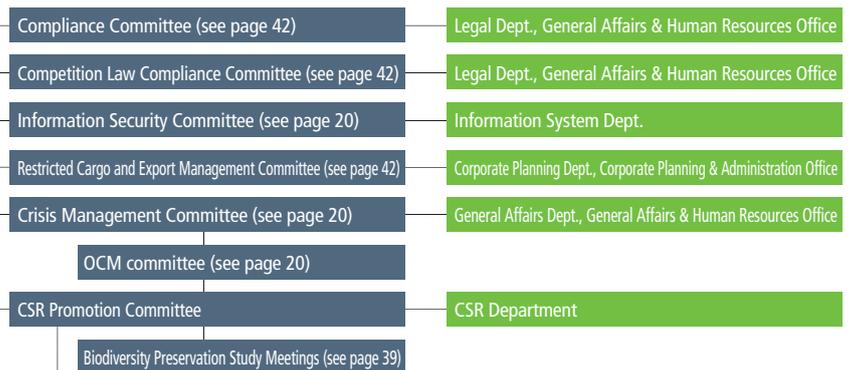
- Continually improve profits and earnings and maintain a sound financial position in order to increase corporate value
- Provide products, services and systems that contribute to safety and the environment, reduce the use of harmful materials and waste, and institute policies for the prevention of global warming in order to contribute to the conservation of the global environment
- Establish compliance procedures to improve corporate governance and create a better working environment as a part of our activities to contribute to society

Established July 2005

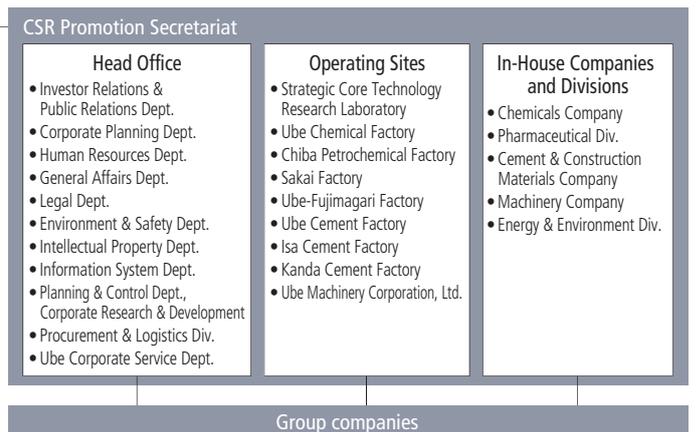
Group CSR Committee



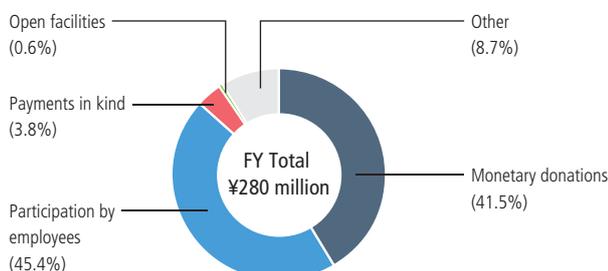
CSR Promotion Committee



Secretariat (Supervised by): CSR Department



Breakdown of Spending on Social Contribution Activities in Fiscal 2016



CSR Promotion Initiatives

CSR is an approach to corporate management that defines such management as a company’s actions to fulfill its role as a member of society.

The UBE Group’s CSR activities encompass increasing the Group’s corporate value and purpose; ensuring sustainable growth; deepening the confidence of stakeholders and broadly working to coexist harmoniously with society through day-to-day dialogue with its stakeholders; and globally expanding the scope of “coexistence and mutual prosperity” through business activities going forward.

● Group CSR Committee

CSR activities are promoted by the Group CSR Committee, which is composed of members of the Group Strategic Management Committee and chaired by the Group’s CEO. In line with the Group’s Basic CSR Policies, the Group CSR Committee makes decisions on and revises important matters related to CSR activities and assesses the results of the Group’s CSR-related activities.

Under the Group CSR Committee are six specialized committees, namely the Compliance Committee, the Competition Law Compliance Committee, the Information Security Committee, the Restricted Cargo and Export Management Committee, the Crisis Management Committee and the CSR Promotion Committee. Each of these undertakes deliberations, reporting and revisions related to concrete action plans based on the CSR matrix.*

*CSR matrix: A table based on UBE’s CSR mission that clearly lays out the CSR issues, broken down by stakeholder, for each UBE Group executive and employee to address. The UBE Group works to ensure thorough awareness of the CSR matrix throughout the Group, and the Group CSR Committee periodically reviews initiatives undertaken in line with the CSR matrix.

● Initiatives to Establish and Maintain Corporate Governance

The UBE Group’s basic mission is to promote sustainable growth and increase corporate value over the medium to long term for the entire Group.

To that end, we believe that we must establish and maintain effective corporate governance in order to sustainably conduct proper business activities and thereby fulfill our duties toward and earn the trust of all the Group’s stakeholders, including shareholders, suppliers, employees and local communities.

Board of Directors

To bring a third-party perspective to decision making, thereby ensuring efficiency, transparency and objectivity in management, four of the eight corporate directors that make up the Board of Directors are appointed from outside the Company. Furthermore, the Board of Directors is chaired by a director who, in principle, is not an executive officer. In addition, UBE has positioned a Nominating Committee and an Evaluation and Compensation Committee as subsidiary entities of the Board of Directors. Both committees comprise six directors and are chaired by outside directors.

Audit System

UBE has a Board of Corporate Auditors. Together with the Board of Directors, this board works to enhance the supervision of management and ensure management fairness and transparency.

The Board of Corporate Auditors consists of four corporate auditors, of whom two are appointed from outside the Company. The task of corporate auditors is to ensure that directors and executive officers perform their duties appropriately by attending and offering their views at important meetings, including meetings of the Board of Directors, by examining important approval documents and by receiving reports on operations from directors and other officers.

The corporate auditors also regularly meet with the independent auditors to hear about their auditing plans and the status of their implementation. In addition, corporate auditors work to maintain effective communication with the internal auditing departments and the corporate auditors of Group companies through regular exchanges of information.

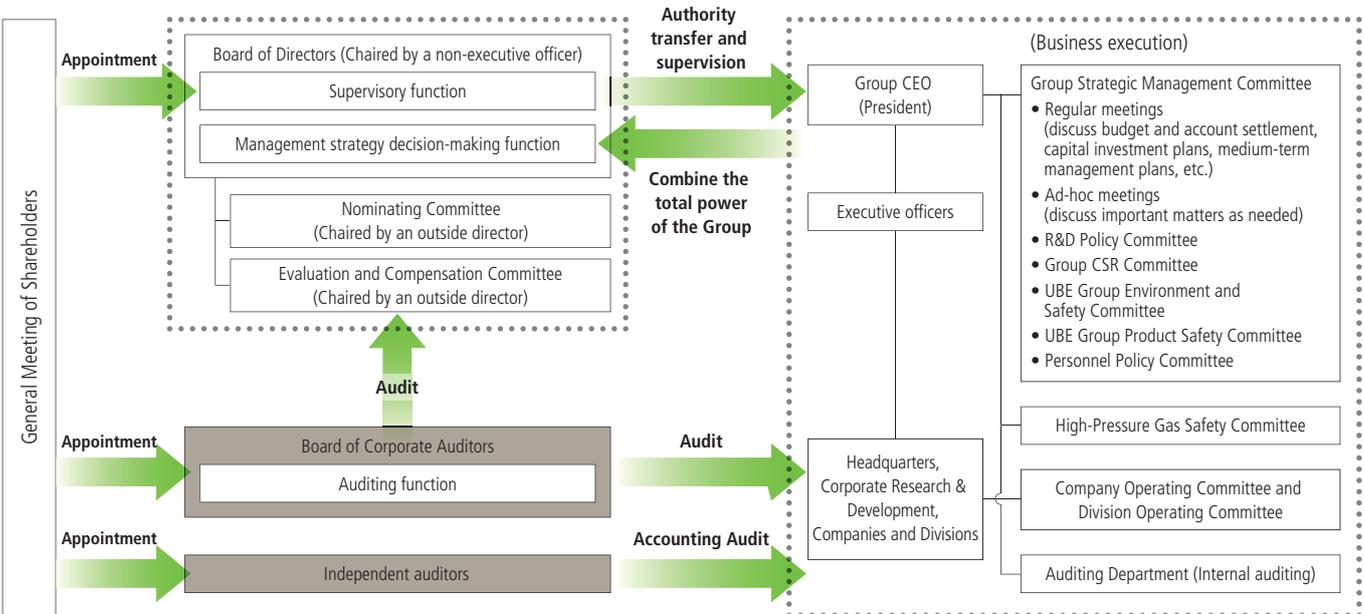
At UBE, internal audits are conducted by the Auditing Department, which reports directly to the President as an independent organization. Audits cover the entire UBE Group, including UBE’s overseas subsidiaries. By checking the status of internal control and compliance with laws and regulations as well as adherence to manuals, UBE endeavors to identify potential risk across all areas of its business activities. The Auditing Department and the corporate auditors regularly exchange information and work in close cooperation with each other; for example, when the auditors conduct audits, some of the Auditing Department staff may accompany and support them as required. As a member of Companywide risk management organizations, such as the Compliance Committee, the head of the Auditing Department collaborates with each committee and works to strengthen risk management systems.

Executive Officer System

In June 2001, UBE adopted an executive officer system with the aim of separating governance and management functions. As of June 2017, the Group has 24 executive officers, of whom three are also directors. Executive officers carry out business operations in accordance with management policies determined by the Board of Directors, exercising the authority delegated to them by the President and Representative Director.

To realize flexible personnel matters with regard to officers and fully enforce a performance-related rewards system, director and executive officer terms of service are set at one year.

Corporate Governance Structure



Decision-Making System

● Board of Directors

On behalf of shareholders, the Board of Directors discusses and makes decisions on the issues provided for by the Companies Act, the basic policies of the Company and important executive issues from medium- to long-term perspectives.

● Group Strategic Management Committee

The Group Strategic Management Committee is responsible for discussing and making decisions on key matters concerning resource allocation, items that need to be adjusted from an overall Group perspective, and other key matters that affect the Group as a whole in accordance with the Group Management Guidelines and Group Strategic Management Committee rules.

● Company Operating Committee and Division Operating Committee

The Company Operating Committee and the Division Operating Committee are responsible for discussing and making decisions on key matters, such as business strategy, at their respective levels. They engage in these activities for Ube Industries and other UBE Group companies in accordance with the Group Management Guidelines and Company/Division Operating Committee rules that govern their operations.

● Risk Management Systems

The UBE Group is developing and reinforcing its risk management systems so that it can identify and assess the probability and impact of risks that might prevent the attainment of its business objectives and implement appropriate risk countermeasures.

In April 2017, UBE established the Risk Management Office within the CSR Department to strengthen the Group's risk management framework. The new office is advancing a variety of initiatives. In addition, UBE maintains specialized committees to address specific types of risk in accordance with the CSR matrix. These include the Compliance Committee (see page 42), Competition Law Compliance Committee (see page 42), Information Security Committee and Crisis Management Committee. Furthermore, to promote environmental safety and product safety, we have established the UBE Group Environment and Safety Committee and the UBE Group Product Safety Committee (see page 26), which formulate policy for the entire Group and implement various related measures.

Information Security Committee

Due to the digitization of a wide range of information, companies are facing risks of information leakage, falsification and loss, and these risks can have a serious influence on their corporate activities. In particular, protecting trade secrets is crucial to maintaining competitiveness globally.

In Japan, the Unfair Competition Prevention Act was amended in July 2015 (promulgated in January 2016), and the Ministry of Economy, Trade and Industry fully revised its Trade Secrets Management Guidelines and published the *Trade Secret Management Handbook*.

In light of these developments, UBE has revised its system for protecting trade secrets, amended related rules and standards, appointed trade secret management officers, implemented related education and performed checks of the implementation of related measures at all of its divisions. Currently, we are working to expand these initiatives to Group companies.

Furthermore, the UBE Group strives to ensure information security. To this end, in accordance with the Basic Law on Cybersecurity (enacted in November 2014) and the Ministry of Economy, Trade and Industry's Cybersecurity Management Guidelines (published in December 2015; amended in December 2016), the Group examines security measures for its control systems, creates and maintains frameworks for minimizing harm from security incidents and is reinforcing security systems at overseas Group companies.

Crisis Management Committee

The UBE Group has established the Crisis Management Committee to discuss and make decisions regarding basic matters related to the handling of unforeseen circumstances that could seriously impact the Group's businesses. The committee maintains the Group crisis management regulations and crisis management manual and determines yearly tasks to address.

In fiscal 2016, the committee addressed the key tasks of natural disaster response, infectious disease response, Companywide response to disaster at a factory and BCM*1 improvement.

Moreover, the Overseas Crisis Management Committee has been established within the Crisis Management Committee to examine safety management for employees who are on business trips or stationed overseas and family members who are stationed with them.

● Business Continuity Framework: BCPs*2 and BCM

UBE has formulated business continuity plans (BCPs) that lay out frameworks and procedures for minimizing the impact on the Group's ability to carry out business activities, maintain business continuity and quickly restart operations caused by such unforeseen circumstances as an earthquake, an outbreak of infectious disease or a major industrial accident. Through business continuity management (BCM), including regular education and drilling to review and improve the BCPs, we are working to improve our ability to maintain business continuity.

In particular, we are focusing efforts on education and training. In addition to repeated training to improve employees' mastery of response procedures, we are implementing such measures as simulations aimed at improving employees' ability to respond to unforeseen events, workshops to foster new insights and media training to improve their ability to handle the mass media. Through these and other measures, we endeavor to ensure comprehensive drilling and preparedness.

Furthermore, to flexibly respond to changes in the environment surrounding business continuity in recent years, we are considering ways to improve our BCP and BCMs.

● Main Risk Response Drills in Fiscal 2016

Disaster response drills	3 times
Disaster response BCP briefings	10 times
Media training	6 times
Data center disaster drills	3 times

Staff Message

What Does Risk Mean to You?



Takuji Takahashi
Manager, Risk Management Office
CSR Department

The Risk Management Office, established on April 1, 2017, has just begun operations.

The Risk Management Office regards CSR activities as synonymous with business continuity activities. As its name suggests, we are working to make the office into a body that will identify and consider ("manage") various uncertainties ("risk") that may arise in the course of business activities.

Up until now, we had various committees that each formulated countermeasures to specific types of risk. These included the Group Environment and Safety Committee, Group Product Safety Committee, Compliance Committee, Competition Law Compliance Committee, Information Security Committee, Restricted Cargo and Export Management Committee and Crisis Management Committee. On top of these functions, the new office aims to also address such risks as the impact of market changes.

In fiscal 2017, as the first steps toward this goal, we have been working to identify risks at the Company Headquarters and key business divisions, and have started working to identify the especially significant risks among these.

Glossary

*1 BCM (business continuity management): Management designed to promote the ongoing improvement of an enterprise's ability to sustain operations through the formulation of BCPs, the regular implementation of education and drills, and the verification, evaluation and revision of such BCPs, education and drills.

*2 BCP (business continuity plan): A plan, including policy, systems and procedures, devised to prevent the suspension of principal businesses in the event of unexpected events and, should businesses be suspended, recover their functions as quickly as possible.

Human Rights and Labor Practices

Human Rights and Labor Practices

Fundamental Philosophy

Respect for Human Rights

The UBE Group Action Guidelines for Business Conduct state that “We will respect human rights and create healthy and positive workplaces that are comfortable to work in.” We regard respect for human rights as a fundamental rule guiding the corporate activities of the UBE Group.

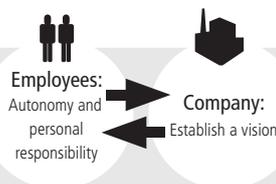
Ideal Personnel

The UBE Group gives top priority to human resources among its management assets, and it is committed to developing highly skilled professionals who can act independently and produce results. The basic image that the UBE Group promotes for individual employees is that of someone who has unparalleled skills, sets their own goals, works independently and takes on new challenges while being unafraid of change.

Personnel System

UBE has introduced an evaluation system that incorporates a goal management system and a performance-based component. By organically linking the development, evaluation, qualification and compensation systems, and impartially evaluating individual efforts, UBE seeks to create a workplace that is challenging and motivating for every employee.

The Interconnecting Aims of Each System



Qualification System	Courses are divided by expected role and qualitative differences in positions
Development System	Training professionals who will generate profit
Evaluation System	Results and expertise evaluations
Compensation System	Compensation that stresses results and ability

Human Resource Development Initiatives

In order to develop superior human resources, we work to enhance the following key areas: 1) on-the-job training (OJT), 2) off-the-job training (workshops, etc.) and 3) self-improvement support programs. At the same time, we maintain support systems so that all UBE employees can fully exercise their abilities in carrying out their work. Specifically, to assist in employee career development, every year employees prepare Career

Development Sheets. Opportunities are provided for interviews about their careers with their superiors using these sheets, and employees are rotated through various posts to enable them to gain a broad perspective and expand their areas of expertise. Furthermore, UBE updates the content of off-the-job training, consisting mainly of workshops, based on changes in the external environment.

Strengthening Global Human Resource Development

Because overseas operations are expanding throughout the UBE Group’s businesses, the Group is actively fostering globally capable human resources. The key points of these efforts are 1) raising the level of language abilities, 2) enhancing opportunities for overseas experience, 3) reinforcing cultural sensitivity and 4) cultivating global business leaders. Based on these points, we are conducting various types of global training to increase awareness and ambition among employees with regard to foreign languages and global business.

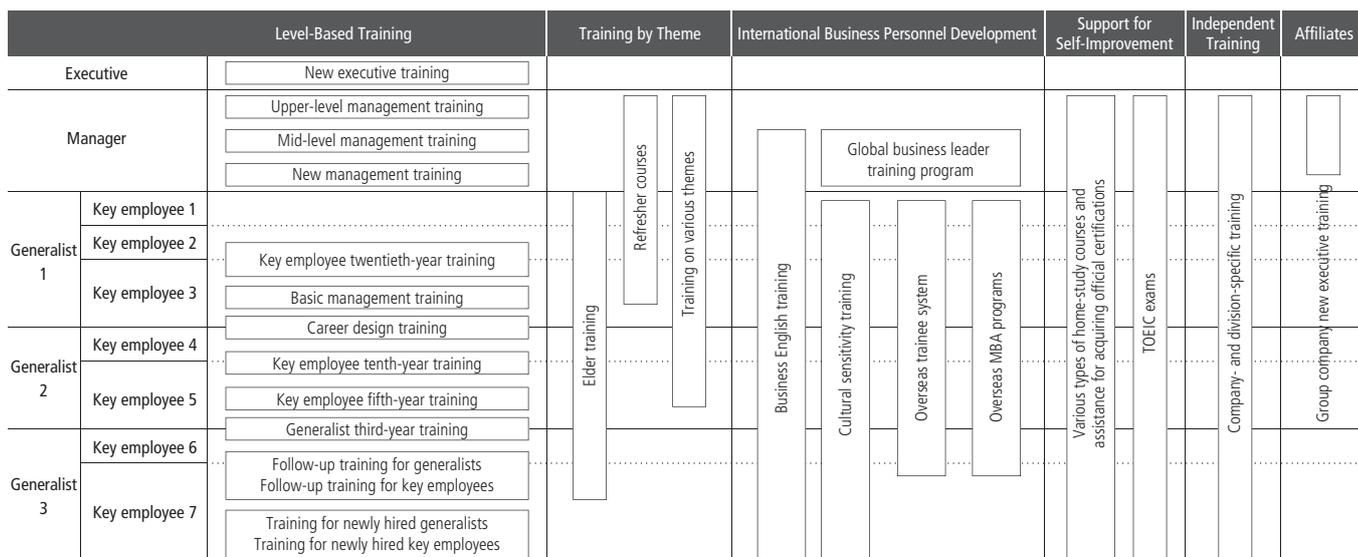
In addition, human resource managers from Thailand, Spain and Japan gather at the Group’s annual Global Human Resources Meeting to exchange information on human resource development and personnel systems. Furthermore, by reviewing personnel and evaluation systems, we are responding to globalization on the human resources front. In fiscal 2014, we established a set of human resource principles for the entire UBE Group to clearly state our Groupwide approaches to human resource management and promote the sharing of relevant values across the global UBE Group.

We are also actively promoting personnel exchanges with the UBE Group overseas. Through joint training, exchanges and dispatches to Japan of young employees, we provide Group employees with real work experience in other countries, helping to cultivate global mindsets.



Global business leader training (fiscal 2016)

Training System Overview



● Diversity Initiatives

UBE positions diversity as a key management strategy. We are working to create a corporate culture that respects diverse individuality and values and abounds with creativity and ambition.

In October 2013, we established the Diversity Promotion Office within the Human Resources Department as a dedicated unit that promotes the diversity of human resources and working styles.

Human Resource Diversity Initiatives

UBE recruits and hires people across a wide range of fields, regardless of personal history, nationality, gender or other such factors, striving to create workplace environments where all employees can utilize their individual abilities and succeed.

UBE Employee Data (as of March 31, 2017)

	Number of Employees (% of total)		Number of Managers (% of total)		Average Age	Average Number of Years at UBE
Male	3,358	93.0%	901	98.6%	41.6	15.4
Female	254	7.0%	13	1.4%	40.4	15.4
Total	3,612	100.0%	914	100.0%	41.5	15.4

Hiring Breakdown

(Number of People)

Fiscal year	2014		2015		2016	
New graduate hires (generalist positions)	50	(7)	46	(12)	42	(9)
New graduate hires (key employee positions)	30	(2)	17	(2)	43	(5)
Mid-career hires	26	(2)	53	(4)	34	(2)
Hires with disabilities	2	(0)	5	(0)	2	(0)
Hires of non-Japanese nationals	1	(1)	2	(2)	1	(1)

Numbers in parentheses are the number of female hires

Helping Women Succeed

As of March 31, 2017, the percentage of UBE employees who are women stood at 7.0% (up from 6.7% a year earlier) and the percentage of managers who are women stood at 1.4% (up from 1.1% a year earlier). To facilitate the success of women in the Company, since fiscal 2014 we have held training for managers and female employees, working to change mindsets. Furthermore, under our three-year action plan, launched in fiscal 2016 based on the Act on Promotion of Women's Participation and Advancement in the Workplace, we have set three concrete targets and are working to expand promotion and other opportunities for women and to improve the culture and atmosphere of our workplaces.

Targets Under UBE's Ordinary Employer Action Plan Based on the Act on Promotion of Women's Participation and Advancement in the Workplace

- (1) Achieve an average rate of 20% or more women among new graduate hires for generalist positions over the period of the plan
- (2) Achieve a paid vacation usage rate of 70% or above
- (3) Achieve a childcare leave usage rate among eligible male employees of 30% or above

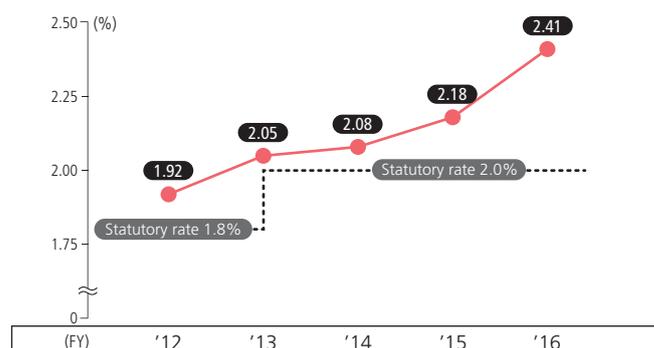


"Brush up" training for female employees (fiscal 2016)

Employment of People with Disabilities

The UBE Group actively undertakes measures to promote the employment of people with disabilities. The Group has organized a network to support the employment of people with disabilities and leverages the expertise accumulated by our special-purpose subsidiary, Libertas Ube, Ltd., established in 1991, to promote the Groupwide employment of such individuals.

Percentage of Employees with Disabilities



Leveraging Non-Japanese Human Resources

As globalization continues, we are expanding personnel exchanges with the Group's non-Japanese employees based overseas and actively hiring foreign nationals in Japan in order to leverage their experience with different value systems and cultures.

Employing Seniors

We are adjusting workplace environments to make it easier for employees who have reached standard retirement age to be rehired and work as senior employees so that they can take advantage of their experience and skills to work with enthusiasm and dedication. 86.1% of new retirees in fiscal 2016 were rehired and are now working within the UBE Group.

● Work-Life Balance

We are working to improve systems to allow employees, regardless of gender, to continue working in ways that make sense for them at various stages of their lives and to create a climate that ensures that employees are able to take advantage of such systems.

Support for Childcare and Nursing

UBE has in place several systems to accommodate employees who require time to take care of their children or other family members. These include childcare leave, nursing care leave and reduced working hours.

Furthermore, based on the Act on Advancement of Measures to Support Raising Next-Generation Children, UBE has developed a main activity plan for general businesses to help ensure an employment environment that allows employees to use their abilities to the fullest while both working and raising children.

To this end, UBE also strives to ensure that work conditions are wide-ranging and flexible. Part of childcare leave is paid, and UBE has undertaken initiatives to allow male employees to actively participate in child rearing. In 2013 and again in 2015, UBE received "Kurumin" next-generation certification as a company that is friendly to child rearing. Under the four-year

action plan launched in fiscal 2015, we are working toward the following three goals: 1) implement measures to firmly establish support systems for employees that are taking care of children or other family members while working and facilitate the flexible use of such systems, 2) enhance childcare support and 3) expand social contribution programs related to raising the next generation.

In July 2017, UBE adopted a reinstatement registration system (career resumption system) for employees who leave the company due to marriage, childbirth, childrearing responsibilities, nursing responsibilities, the transfer of their spouse to a new workplace or other unavoidable family circumstances.

Reforming Work Styles

Reforming work styles is an important management task. To achieve higher productivity, we are reexamining work practices through the Company and striving to enhance the abilities of all employees. We aim to create work environments that facilitate effective, efficient work and make it easy for employees to take time off and leave work on time.

Encouraging Employees to Take Annual Paid Vacation

To encourage employees to systematically take their annual paid vacation and reduce working times, we ask employees to select scheduled vacation dates in advance for every six-month period and we have set an annual recommended paid vacation day, among other measures.



The "Kurumin" Next-Generation Certification Logo

Flexible Working Systems

We have introduced flextime, self-managed work,* a system for taking annual paid vacation in half-day units and other systems to enable employees to work in a flexible and efficient manner.

*Self-managed work: A system that entrusts employees to make their own decisions regarding how to undertake their duties and the allocation of work time in order to achieve work-related goals.

Paid Vacation and Overtime Hours at UBE

Fiscal year	2014	2015	2016
Annual paid vacation usage	64.2%	66.5%	70.1%
Overtime hours worked (annual average)	185	199	199

Leave for Volunteer Activities

The Group has established a system that enables UBE employees to use accumulated leave time for volunteer activities that contribute to society or local communities.

Usage of Main Work-Life Balance System (Fiscal 2016)

System	Description	Number of Employees Who Used It
Childbirth leave	• Employees whose spouses have given birth can take four days of paid leave.	111 (77.1% of those eligible)
Childcare leave	• Leave can be taken until the day before the child's first birthday (or the child's second birthday, in certain circumstances).	66 (including 56 men)
	• The first seven days of leave are fully paid.	
Family nursing leave	• Employees can take leave to provide nursing care for family members (up to a total of 365 days)	2 (including 1 man)
Child nursing leave	• Employees can take leave to nurse children in the third grade of elementary school or younger. (Five days per child can be taken each year, up to a maximum of ten days a year)	3 (including 2 men)
	• Employees can use this leave in half-day units.	
Shortened working time	• The working hours of employees caring for children in the third grade of elementary school or younger or nursing family members can be shortened by up to two hours per day.	12 (including 0 men)

● Quality Working Environments

Respect for Human Rights at Workplaces

The UBE Group Action Guidelines state that the Group shall respect the dignity of individuals, including their individual personalities and qualities, while promoting mutual understanding and refraining from discrimination. Furthermore, the Guidelines state that the Group shall refrain from all inhumane activities, including forced labor, child labor and human trafficking and, further, shall have no connection whatever with individuals or entities who commit such activities.

We have established the Human Rights Education Promotion Committee as part of efforts to provide human rights education to employees, including training for company officers, training divided by workplace and rank, and lectures by external instructors. We implement Groupwide training programs via e-learning to ensure that all employees have a proper understanding of and fully recognize human rights issues. Such initiatives help ensure work environments where all employees are respected as human beings.

Working with the Labor Union

The UBE Group respects the basic workers' rights, including the freedom of association and right of collective bargaining. UBE maintains labor agreements with the Ube Industries labor union and seeks to promote smooth labor-management relations. Through the Central Labor-Management Conference, in which members of top management participate, we engage in open discussion aimed at promoting understanding of management policy and plans while reflecting the opinions of union members in management.

Developing a Comfortable Workplace and Undertaking Initiatives to Maintain and Improve Employee Health

● Reducing Days Lost to Non-Occupational Injuries and Illnesses

To curb the number of days lost to non-occupational injuries and illness, we implement countermeasures to the top three factors that result in lost time at UBE: 1. mental illness, 2. cerebral and cardiac disease and 3. neoplasms.

1. Mental Health Countermeasures

Based on the results of workplace stress checks implemented in fiscal 2016, we are working with industrial physicians, nurses and other health specialists to maintain the mental health of employees by improving work environments. We have adopted external EAPs* and are using them with systems for counseling and support for returning to the workplace after leave that employees can utilize on their own. In addition, we are implementing related e-learning and self care seminars. In these and other ways, we seek to enhance measures to promote mental health.

Furthermore, to foster active communication and an open workplace atmosphere, we conduct the Meet and Greet Campaign, encouraging employees to exchange words of greeting and encouragement, every year.



Meet and Greet Campaign (West gate of Ube Chemical Factory East)

2. Cerebral and Cardiac Disease Countermeasures

To reduce the risk of illness related to the brain or heart, UBE takes steps to prevent employees from developing high levels of disease risk. These efforts include strongly encouraging employees to follow the specific health guidance provided them following their annual check-ups and to undergo secondary examinations when warranted to prevent work-related illnesses. In addition, in the Ube District, we work with the arteriosclerosis special outpatient unit of the Ube Industries Central Hospital to implement measures to help prevent the development of illnesses related to arteriosclerosis.

Furthermore, at our offices and facilities, we implement dietary education events aimed at raising employee health awareness as well as walking events aimed at fostering positive exercise habits.



Ube Chemical Factory Health Festival (nutritional education using food models with IC tags)

3. Neoplasm Countermeasures

As one measure toward the early detection of neoplasms, which can be cancerous, beginning in fiscal 2016, we added tests to regular employee health checks, including tumor marker exams and stomach cancer risk analyses. We also have begun work with our health insurance union (the "collabo-health" program) to implement cancer-related seminars and related measures.

● Smoking and Secondhand Smoke Countermeasures

In fiscal 2016, we conducted a survey of measures taken to prevent secondhand smoke exposure in UBE offices and facilities. The survey gathered information on efforts made to date to encourage employees to quit smoking and the establishment of designated smoking areas, and this data was used to help formulate appropriate measures for each site. UBE continues efforts to limit smoking to designated areas and offers seminars to support employees who want to quit.

● Overwork Countermeasures

As part of measures to reduce health risks associated with overwork, we have instituted meetings with industrial doctors for employees working significant overtime. These meetings are optional for those working more than 45 hours of overtime per month and mandatory for those working more than 80. We also implement no-overtime days and "premium Friday" initiatives, in which employees are encouraged to leave work early once a month.

● Recognized Under the 2017 Certified Health and Productivity Management Organization Recognition Program

UBE was recognized for its health-related initiatives under the 2017 Certified Health and Productivity Management Organization Recognition Program (White 500 large enterprise category). Companies are selected for this certification jointly by the Ministry of Economy, Trade and Industry and the Nippon Kenko Kaigi. We will continue to implement a variety of measures to maintain and improve employee health going forward.



2017 Health and Productivity Management Organization Certificate

Staff Message

Offering Support Whenever Needed



Yoshiko Maeda

Public Health Nurse
Health Management Office, Health Care & Support Center,
General Affairs & Human Resources Office

Working with people is not enjoyable all the time; I'm sure all of us have had times when such work didn't go smoothly or was difficult. Not every moment in the ten years since I joined UBE as a public health nurse, a job that involves working with people, has been enjoyable; I often worry about my patients and struggle to find the best ways to help each individual. There are times when, looking back, I wish I'd done something differently. Rather than internally relegating such experiences as useless regrets, I share them with my fellow staff, who do the same, so that we can use them in the future.

I often want to tell the people I work with all kinds of things, out of a desire to see things get better. But I try my best to avoid one-way foisting of knowledge upon them, instead seeking to build a rapport that lets us share our worries and think of solutions together. I want to be a source of support that employees can rely on any time, whether in a hands-off way or right up close.

Glossary

*External EAP (Employee Assistance Program): Programs through external institutions to support employees' mental health. These programs help provide more specialized mental health care from experts, including industrial counselors and clinical psychologists.



03



Environment and Safety

Environment and Safety Management

At the UBE Group, conserving the environment and protecting health and safety come first in business operations.

This emphasis is necessary in order to provide products and services that make people's lives better and to achieve solid and sustainable growth.

UBE Group Environmental and Safety Principles

As members of society, corporations must be fully conscious of their responsibilities regarding contributions to society, environmental preservation and the maintenance of health and safety in carrying out their corporate activities.

The UBE Group shall pursue the following vision in order to fulfill its leadership role and shall work to improve the safety and the quality of the environment among all of its Group companies through the publication of performance reports and the implementation of dialogues with society.

- **Operational Safety**

Ensuring operational safety shall be the priority in all areas and activities under UBE's commitment to respect human life.

- **Process Safety**

Maintenance of process safety shall be part of the UBE Group's basic mission as a manufacturer.

- **Environmental Preservation**

As a responsible corporate citizen, the UBE Group shall act positively to protect and improve both community and regional conditions and work for the preservation of the global environment.

- **Product Safety**

The UBE Group shall pursue its corporate responsibility in providing its customers and the public with safe and reliable products.

- **Health Management**

The UBE Group recognizes that maintaining and promoting the health of its employees is the basis of corporate and social vitality.

Revised in April 2015

Yuzuru Yamamoto

President and Group CEO, Representative Director

Environment and Safety Promotion System

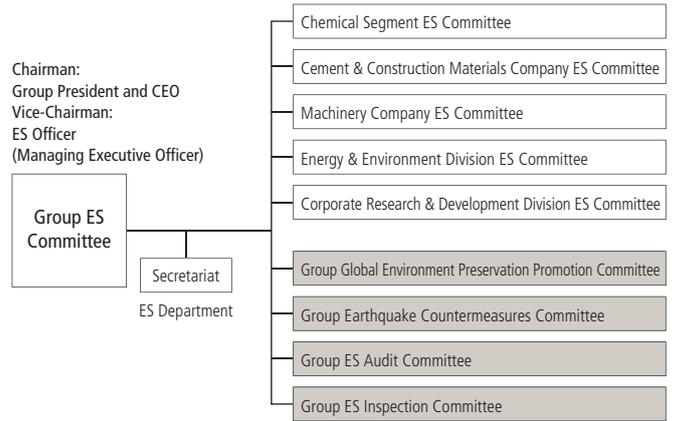
The UBE Group has established the Group Environment and Safety (ES) Committee and the Group Product Safety (PS) Committee as the top decision-making organizational units for the promotion of the Environmental and Safety Principles. In addition, the Group has established the Group High-Pressure Gas Safety (HPGS) Committee for decision-making regarding the process safety measures outlined in the ministerial order related to the High Pressure Gas Safety Act. These committees comprise members of the Group Management Committee, which is headed by the Group CEO (the president), and decide and revise policy and measures related to Group issues in the areas of the environment, safety and health, product safety, and process safety.

The Group ES Committee and the Group PS Committee have established subcommittees for each segment. These subcommittees are involved in translating the policies of Group-level committees into concrete initiatives appropriate to segment business activities. In addition, the Group ES Committee maintains four other subcommittees charged with implementing activities across the Group based on their specific areas of responsibility.

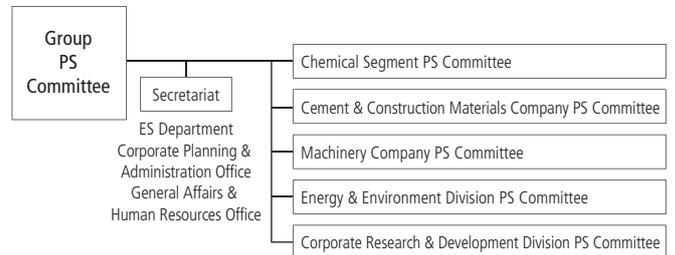
Responsible Care Management System

Aiming for continuous improvement in areas related to the environment, occupational safety and health, product safety, and process safety, the UBE Group pursues responsible care (RC)* initiatives in all its business areas and aims for constant enhancement through the PDCA cycle.

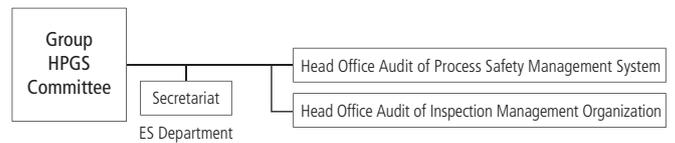
Organization of Environment and Safety-Related Committees



Chairman: Group President and CEO
Vice-Chairman: ES Officer (Managing Executive Officer)



Chairman: Group President and CEO
Vice-Chairman: ES Officer (Managing Executive Officer)

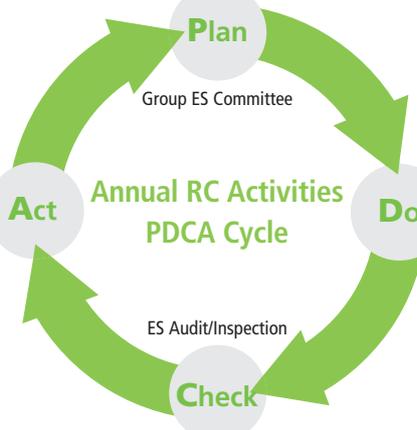


Measures to be applied during the fiscal year are established through deliberations and decisions made by the Group ES Committee. Each office and facility formulates action targets and schedules for the year based on these measures.

Each office and facility makes corrections to problem areas identified in audits and inspections. Audit and inspection results are reported to the Group ES Committee and then reflected in the next fiscal year's measures.

The status of implementation is checked through environment and safety audits and inspections, and problem areas are identified.

Each office and facility autonomously carries out activities in accordance with its schedule.



Glossary

*RC (responsible care): Under RC, corporations that manufacture and/or handle chemical substances work voluntarily to preserve "safety, health and the environment" throughout product life cycles, from the development of chemicals through their manufacture, distribution, use and final consumption to disposal and/or recycling. These commitments must be clearly reflected in the corporations' management policies. Activities are carried out in the areas of environmental protection (protect people's health and the natural environment worldwide); disaster prevention (work to prevent accidents at facilities and counter natural disasters); occupational safety and health (ensure the safety and health of workers); chemical and product safety (clarify chemical products' properties and handling methods and thereby protect the safety and health of all handlers, including customers, while preserving the environment); logistics safety (strive to prevent logistics-related accidents and disasters); and communication (announce activity details and results and promote social dialogue).

Outline of Environment and Safety Activities

The UBE Group's Medium-Term Environmental & Safety Policy (Fiscal 2016–2018)

Continually improving the quality of RC.

In order to advance its medium-term environment and safety policy, each fiscal year the UBE Group strives to improve its environment and safety activities by formulating action plans in line with its Responsible Care Code and through the use of the PDCA cycle.

Fiscal 2016 evaluation: Plans were achieved or mostly achieved in all categories.

Responsible Care Code		FY2016 Action Plans
Process Safety and Disaster Prevention	Reinforcing process safety frameworks	<ol style="list-style-type: none"> 1. Further enhance the collection and horizontal sharing of accident data 2. Utilize information to enhance internal process safety certification 3. Enhance ability to respond to irregularities and emergencies
	Earthquake and tsunami readiness	<ol style="list-style-type: none"> 1. Implement Earthquake and Tsunami Countermeasure Plans and formulate worksite recovery plans
Occupational Safety and Health	Health management	<ol style="list-style-type: none"> 1. Curb days lost to non-occupational injuries and illnesses 2. Respond to regular health check results 3. Implement initiatives to raise internal awareness of "Health and Productivity Management"
	Occupational safety	<ol style="list-style-type: none"> 1. Implement activities to develop a culture of safety 2. Identify and provide support for workplaces that need improvement 3. Promote on-the-job training (OJT) that includes key safety points and enhance on-site management capabilities
Environmental Preservation	Global warming countermeasures	<ol style="list-style-type: none"> 1. Consider and implement initiatives aimed at meeting targets at each company, division and facility <ol style="list-style-type: none"> 1-1. Greenhouse gas (GHG) emissions: Down 15% compared with the fiscal 2005 level (including major overseas facilities) 2. Expand businesses that contribute to the environment <ol style="list-style-type: none"> 2-1. Aim for environment-friendly products and technologies to account for 30% of total net sales 3. Promote understanding and knowledge of global warming (including information related to medium- and long-term plans; adaptive measures in and outside Japan; and biodiversity preservation)
	Reduce emissions of environmentally hazardous substances	<ol style="list-style-type: none"> 1. Steadily respond to environmental laws and regulations and reduce risk 2. Steadily reduce emissions of chemical substances 3. Promote recycling of industrial waste and steadily reduce its external final disposal
Chemicals and Product Safety (Transportation Safety)	Chemical and product safety	<ol style="list-style-type: none"> 1. Reinforce chemical management systems through training, auditing and other measures <ol style="list-style-type: none"> 1-1. Implement education on chemical laws and regulations 1-2. Implement expert internal audits 2. Improve preparation environments for domestic and overseas SDSs*³ and labels and promote correct usage <ol style="list-style-type: none"> 2-1. Confirm the legal compliance of SDSs and labels 2-2. Implement education on SDS preparation 3. Coordinate local subsidiary and business units in and outside Japan to respond to new chemical-related laws 4. Evaluate product safety activities at facilities, prevent complaints and promote appropriate response to laws and regulations
	Transportation safety	<ol style="list-style-type: none"> 1. Ensure compliance with internal operating rules and transportation safety management guidelines and continually reinforce the operating system
Dialogue with Communities		<ol style="list-style-type: none"> 1. Promote dialogue with communities 2. Ensure information disclosure and transparency
Management Systems		<ol style="list-style-type: none"> 1. Implement environment and safety audits and inspections and quality and product safety audits

Glossary

- *1 IoT (Internet of Things): Network connectivity linking a wide variety of physical objects, enabling these “things” to communicate with one another and via the Internet to perform automatic sensing, control and other functions.
- *2 Irregular HAZOP: Short for irregular hazard and operability study. A method for identifying hidden process risks in operations at times of irregular operation, such as plant startup or shutdown.
- *3 SDS (Safety Data Sheet): Documentation containing the product name, physicochemical properties, hazard and toxicity information, usage, and related laws and regulations.
- *4 TSCA (Toxic Substances Control Act): A law in the United States administered by the United States Environmental Protection Agency to restrict and manage the manufacture and import of chemicals.

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

FY2016 Results		Self Evaluation	See Page(s)
<ul style="list-style-type: none"> 1. The Accident Information Liaison Group shared accident data from in and outside the Company 2. The Process Safety Management Liaison Group shared examples of facility accidents as well as process safety management technologies and IoT*¹ technologies 3. Continued using irregular HAZOP*² 	★★	P29	
<ul style="list-style-type: none"> 1. Implemented Earthquake and Tsunami Countermeasure Plans at each department and location in light of revisions to earthquake resistance standards and government notices 	★★		
<ul style="list-style-type: none"> 1. Implemented mental health initiatives, including the Companywide adoption of external EAPs and utilization of results generated by the stress check system 2. Used results from health examinations to implement health risk diagnoses and responses, lifestyle-related disease countermeasures, overwork countermeasures and dietary environment improvement initiatives 3. UBE's health-related initiatives were recognized under the 2017 Certified Health and Productivity Management Organization Recognition Program (White 500 large enterprise category) 	★★	P24	
<ul style="list-style-type: none"> 1. Made clear the eight parts of safety culture throughout the Company and evaluated facility safety using environment and safety audits. Used quantitative evaluations to identify strong and weak points and promote safety enhancement. 2. Selected workplaces where multiple occupational accidents have occurred in the past several years and workplaces as where safety activities have stalled as workplaces that need improvement and promoted improvement 3. Began to incorporate key safety points into on-the-job training (OJT) at offices and facilities. Promoted the enhancement of on-site management capabilities. 	★★	P30	
<ul style="list-style-type: none"> 1. Consider and implement initiatives aimed at meeting targets at each company, division and facility <ul style="list-style-type: none"> 1-1. Greenhouse gas (GHG) emissions: Down 14% compared with the fiscal 2005 level 2. Expand businesses that contribute to the environment <ul style="list-style-type: none"> 2-1. Environment-friendly products and technologies accounted for 25% of total net sales 3. Promote understanding and knowledge of global warming (including information related to medium and long-term plans and adaptive measures in and outside Japan and biodiversity preservation) <ul style="list-style-type: none"> 3-1. Provided information on responding to global warming and related topics at meetings of each business division's energy saving promotion committee and elsewhere 3-2. Shared information through biodiversity preservation study meetings and participated in woodland conservation activities 	★★	P33-34	
<ul style="list-style-type: none"> 1. Steadily implemented response to the Fluorocarbon Emission Restriction Law and other environmental regulations 2. Emissions of 20 voluntarily selected chemical substances (see glossary on page 37): Reduced 35% compared with fiscal 2010 3. External final disposal: Reduced 81% compared with fiscal 2000 	★★★	P36-37	
<ul style="list-style-type: none"> 1. Reinforce chemical management systems through training, auditing and other measures <ul style="list-style-type: none"> 1-1. Implemented internal education activities organized around seven themes related to chemical substance laws and regulations in and outside Japan at 45 locations, with 769 attendees. Also held monthly meetings on legal changes related to chemical substances in order to quickly respond to legal changes. 1-2. Implemented a voluntary management system using expert internal audits of offices and facilities 2. Improve preparation environments for domestic and overseas SDSs and labels and promote correct usage <ul style="list-style-type: none"> 2-1. Confirmed the legal compliance of 231 SDSs and 93 labels 2-2. Implemented study meetings and individual instruction on SDS preparation at facilities. Also implemented instruction at Group companies tailored to the business of each company. 3. Coordinate local subsidiary and business units in and outside Japan to respond to new chemical-related laws <ul style="list-style-type: none"> 3-1. Responded to the amendment of the TSCA*⁴ in the United States 3-2. Built a cooperative framework with local Thai companies related to new laws in Thailand. Quickly responded to the promulgation of the new laws and provided customer support. 3-3. Outsourced chemical substance management to a local company in Taiwan and built legal compliance and customer support frameworks 4. Implemented quality improvement initiatives by gathering and sharing data about the status of responses to laws and regulations at offices and facilities, product quality complaints and product liability-related accidents 	★★★	P40	
<ul style="list-style-type: none"> 1. Provided support for the preparation of Yellow Cards containing information on handling in the event of a truck accident and confirmed the status of operations based on rules and policies 	★★		
<ul style="list-style-type: none"> 1. Promote dialogue with communities <ul style="list-style-type: none"> 1-1. Held 14th RC Regional Dialogue Conference in the Ube District 1-2. Held 11th RC Regional Dialogue Meeting in the Chiba District 1-3. Published local newsletter <i>Tsubasa</i> (released semiannually) 2. Published <i>UBE Group CSR Report 2016</i> and received third-party verification related to RC and third-party opinions 	★★★	P47 P57	
<ul style="list-style-type: none"> 1. Implement environment and safety audits and inspections and quality and product safety audits <ul style="list-style-type: none"> 1-1. UBE and its divisions implemented environment and safety audits at 18 facilities and Group companies 1-2. UBE implemented quality and product safety audits at 12 facilities and Group companies 1-3. Implemented environmental safety inspections at eight facilities and Group companies 	★★★	P25-26	

● Initiatives for Industrial Safety

In light of damage to petrochemical complexes due to the Great East Japan Earthquake and numerous serious accidents at chemical plants, industrial process safety has become a major social issue. Aware of such risks and based on reports from the Ministry of Economy, Trade and Industry as well as action plans and guidelines recommended by industry organizations, the UBE Group incorporated further enhancing the collection and horizontal sharing of accident data, utilizing information to enhance internal process safety certification, and enhancing its ability to respond to irregularities and emergencies as well as implementing Earthquake and Tsunami Countermeasure Plans and formulating worksite recovery plans as key measures in its fiscal 2016 action plans (see pages 27 to 28), and continues to work to prevent industrial accidents.

The table below outlines UBE’s response to the Japan Petrochemical Industry Association’s fiscal 2016 Industrial Process Safety Action Plan.

UBE is also using the Japan Chemical Industry Association’s Process Safety and Accident Prevention Guidelines at certified sites for high-pressure gas. In addition, we use educational DVDs about actual accidents in our Chemicals Production Division, Cement & Construction Materials Company, and Energy & Environment Division. We will continue to make effective use of these resources in future training on process principles and safety design.

Building a Companywide Response System for Large-Scale Disasters

Because large-scale accidents are likely to cause significant harm that extends beyond the facility where they occur, rapid and precise conveyance of information and response are particularly important. To that end, UBE maintains a practical manual that clarifies the role of each organization as well as topics related to the internal contact system and external response.

Earthquake and Tsunami Readiness

In light of governmental guidance and revised earthquake resistance standards, the Group Earthquake Countermeasures Committee discusses

overall policy. Divisions and offices formulate and implement Earthquake and Tsunami Countermeasure Plans.

Emergency Drills

The Group regularly implements emergency drills, including such responses as reporting, issuing alerts, and extinguishing fires at its facilities. We have also secured evacuation sites and conduct evacuation drills in preparation for an earthquake or tsunami.

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 2016, the UBE Group carried out 89 such safety assessments.

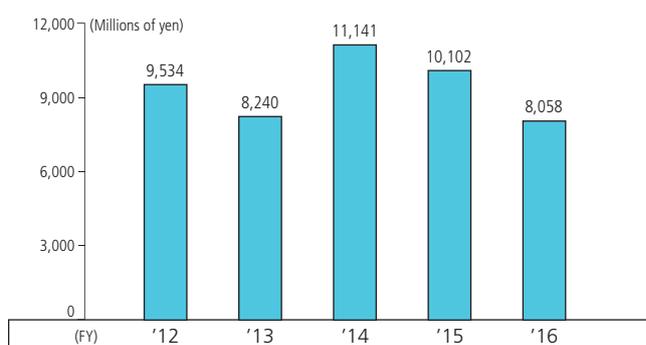
UBE Group Facility-Related Accidents

(Number of accidents)

FY	2012	2013	2014	2015	2016
UBE	3	2	4	7	2
Group companies	3	2	1	2	0

In fiscal 2016, the UBE Group recorded two accidents, investigated their causes and implemented recurrence prevention measures.

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



Response to the Japan Petrochemical Industry Association’s Industrial Process Safety Action Plan

	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 Group Environmental and Safety Principles and UBE Action 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	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	Implementing risk assessments of the adoption of new facilities and processes as well as irregular operations (operations not in manuals, operations performed infrequently, emergency situations, etc.)
	(2) Education and training to develop human resources	Implementing education on basic principles and key safety points as well as utilizing experiential training facilities
	(3) Utilize information about accidents	Horizontally sharing information on accidents in 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	Sharing information on facility failure, problems and process safety technology through the Process Safety Management Liaison Group
	(6) Maintain and enhance earthquake resistance of high-pressure gas facilities	Implementing Earthquake and Tsunami Countermeasure Plans and formulating worksite recovery plans as Companywide initiatives Action plans formulated for each facility to evaluate compliance with high-pressure gas facility earthquake resistance standards and formulate countermeasures
	(7) Incorporate new methods and technologies to enhance safety	Incorporating operational data to analyze operational patterns, introducing fluctuation prediction systems and utilizing smart devices
	(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) Evaluation of achievements and response to results	Progress is checked and evaluated through annual audits Environment and safety committees consider the results of the year’s activities when discussing measures for the next year
5. Initiatives to advance each company’s own process safety activities	(1) Systems for promoting initiatives	Recognition by the president at Group safety and health rallies of individuals, small groups for safety, facilities and partner companies that achieved excellent results
	(2) Develop a culture of safety (utilize conferences, etc.)	Continued evaluations begun in fiscal 2013 under the Process Safety Enhancement Center’s Process Safety Evaluation System

● Measures to Prevent Occupational Accidents

Developing a Culture of Safety

To make existing safety activities more comprehensive and effective, in fiscal 2016 we launched initiatives aimed at developing a culture of safety. Such a culture of safety is composed of eight parts, namely organizational governance, positive involvement, resource management, work management, motivation, learning and knowledge transmission, risk perception and mutual understanding. We are examining existing activities in light of these eight items and working to thoroughly reinforce and concentrate on weak areas.

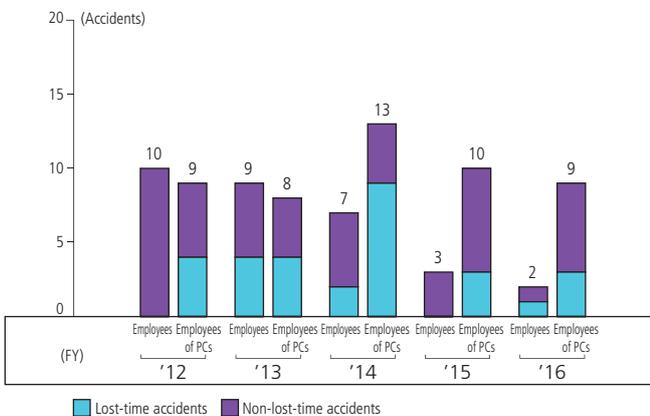
Utilizing Occupational Accident-Related Information

UBE compiles occupational accident-related information into a database that is made available via the Company intranet. Examples of countermeasures are shared horizontally within offices and facilities, and are used as important data in risk assessments of facilities and operations, helping to prevent the occurrence of similar accidents.

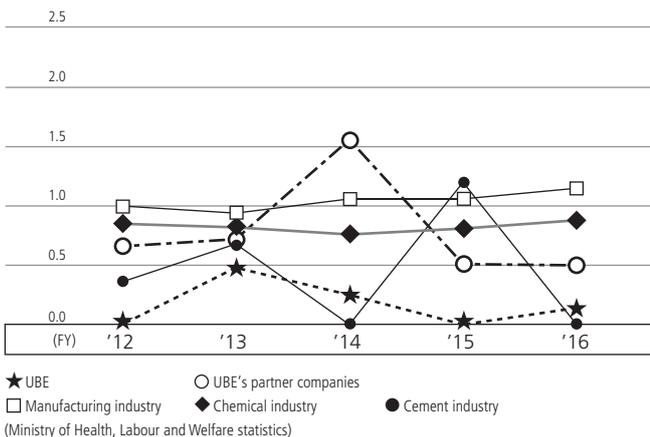
Measures against Asbestos

UBE provides asbestos-related health examinations for employees who have handled asbestos-related products. The Group cooperates in the submission of industrial accident reports by individuals whose examination results warrant medical attention. The Group also appropriately treats problems at locations where a high rate of asbestos diffusion has been found. In addition, the Group is promoting systematic measures for the disposal and replacement of asbestos materials. Insulation and gasket packing are replaced regularly with substitute materials when piping and reactors are opened.

Number of Occupational Accidents (Involving Employees of UBE and Those from Partner Companies (PCs))



UBE Lost-Time Injury Frequency Rate



Confirmation via Audits and Inspections

We implement audits and inspections of each office and facility individually. Audits are performed by auditors comprising environment and safety staff from the Head Office and other offices and facilities. Each audit consists of a quantitative assessment using a checklist of items related to such topics as the site's policies, environmental and safety management plan and its implementation, communication with employees and partner companies, and accident and disaster countermeasures. In fiscal 2018, the results of evaluations organized by the eight aspects of the culture of safety helped identify strong and weak points, details of which are included in feedback provided to the sites. Since fiscal 2013, excellent initiatives undertaken at offices and facilities are compiled into a collection of best practices and reflected in the Safety and Health Guidelines, which are shared via the Company intranet, helping to raise the level of safety within the Group.

Inspections are conducted by members of the Group Strategic Management Committee (chaired by the president), who visit offices and facilities to confirm the results of audits and achievements of initiatives and provide feedback.

The results of these audits and the feedback from these inspections helps offices and facilities improve any weak points and increase their level of safety.

UBE Group Safety and Health Rally

The Ube Group holds a safety and health rally every July. Over 400 UBE Group managers and employees as well as partner companies from across Japan participate, sharing information and fostering motivation. In addition, individuals and groups that have made particularly outstanding contributions to safety and health receive recognition from the Group president. The event also features presentations from small groups for safety teams on their experiences and special lectures from outside instructors about safety and health management, helping to raise safety awareness.

At the end of the rally, all participants, including managers, join together in reciting our safety pledge, renewing their commitment to eliminating accidents and improving work environments.



UBE Group Occupational Safety and Health Rally

Environmental Accounting

Since fiscal 1999, the UBE Group has employed environmental accounting as a tool for quantitatively understanding and evaluating the costs and effects of environmental preservation in Group business activities while promoting more efficient, sustained environmental preservation.

The results for fiscal 2016 are as shown in the following tables.



Facilities for quantitative supplying of waste
(Isa Cement Factory)



Newly planted trees (Osaka R&D Center)

Neutralizing facilities (Osaka R&D Center)

● Environmental Preservation Costs

Capital investment in fiscal 2016 totaled ¥1,960 million. This was primarily attributable to construction aimed at increasing efficiency and the installation of facilities for quantitative supplying of waste at the Isa Cement factory, greening measures and the installation of neutralizing facilities at the Osaka R&D Center and the installation of an electrostatic precipitator at Ube Material Industries, Ltd.

Costs fell ¥130 million compared with those of fiscal 2015 to ¥11,240 million.

● Economic Effect

The income effect amounted to ¥2,200 million. This figure includes proceeds from the sale of marketable waste.

The savings effect was ¥6,310 million, due to the promotion of resource reuse and energy conservation.

Environmental Preservation Costs

(¥100 million)

Category	Main Activity	Capital Investment			Costs			
		FY2015	FY2016	Difference	FY2015	FY2016	Difference	
Cost by business area	Pollution prevention	Investing in and maintaining energy-saving facilities	11.8	12.6	0.8	46.9	47.8	0.9
	Investing in and maintaining air and water pollution prevention facilities	Resource recycling	47.5	3.9	(43.6)	8.9	10.5	1.6
	Global environment preservation	Recycling and reducing industrial waste	6.4	2.3	(4.1)	36.9	32.3	(4.6)
Upstream/downstream costs	Container/packaging recycling, green purchasing	0.0	0.0	0.0	5.3	6.2	0.9	
Costs of management activities	Acquiring, running and maintaining environmental management systems	0.2	0.3	0.1	4.9	5.5	0.6	
Research and development costs	R&D of environment-friendly products and technologies	0.4	0.2	(0.2)	6.1	5.7	(0.4)	
Costs of social activities	Greening and beautifying offices/facilities and their surroundings	0.0	0.3	0.3	2.2	2.1	(0.1)	
Costs of cleaning up environment damage	Payment of environment-related levy	0.0	0.0	0.0	2.5	2.3	(0.2)	
Total			66.3	19.6	(46.7)	113.7	112.4	(1.3)

Economic Effect

(¥100 million)

Category	Effect	FY2015	FY2016	Difference
Income effect	Proceeds from sales of marketable waste products	23.2	22.0	(1.2)
Savings effect	Savings achieved through resource recycling and energy conservation	77.2	63.1	(14.1)

UBE Group Environmental Accounting Method

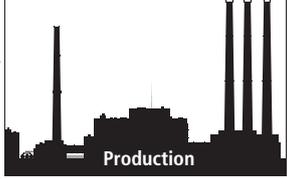
- Companies covered: UBE Group companies (only consolidated subsidiaries described under "Companies covered" on page 57, except for Ems-Ube, Ltd. and UBE-MC Hydrogen Peroxide, Limited).
- Calculations are based on Environmental Accounting Guidelines (Ministry of the Environment, 2005 edition).
- The economic effect is the effect obtained in fiscal 2016 as a result of environmental protection activities. This is limited to what can be calculated rationally and excludes hypothetical calculations, such as the avoidance of the cost of cleaning up environmental damage.
- Internal transactions within the UBE Group are eliminated.

Environmental Performance

Note 1: See page 57 for details on the scope of environmental performance data.

The UBE Group recognizes that environment-oriented business practices are vital to its continued growth. We will continue to promote measures to prevent global warming, reduce emissions of chemical substances, and reduce and effectively use industrial waste in order to continuously foster business activities that contribute to the formation of a recycling-based society.

Overview of the UBE Group's Environmental Impact in Fiscal 2016

Input		UBE Group Business Activities 	Output	
			Airborne Emissions	Waterborne Emissions
Total Energy				
● As crude oil 2,220,000 kl			● GHG 11,100,000 t-CO ₂ e	● Wastewater 156,000,000 m ³
Total Raw Materials			● SOx* ¹ 3,002 t	● COD* ⁴ 724 t
● 16,209,000 t			● NOx* ² 14,861 t	● Total phosphorus 10 t
Water Resources			● Dust 393 t	● Total nitrogen 500 t
● Water used 204,000,000 m ³			● PRTR substances* ³ 203 t	● PRTR substances 129 t
			Soil Emissions	Industrial Waste Emissions
			● PRTR substances 0 t	● Off-site disposal volume 6,130 t
				● Recycled volume 421,128 t

Fiscal 2015 and 2016 Environmental Impact Data by Facility

(tons/year)

		Emissions into the Atmosphere						Emissions into Water						
		SOx Emissions		NOx Emissions		Dust Emissions		COD Emissions		Total Phosphorus Emissions		Total Nitrogen Emissions		
		2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	
In Japan	Chiba Petrochemical Factory	0.7	1.0	34	34	0.2	0.2	12	12	0.1	0.1	3.5	3.5	
	Sakai Factory	0.0	0.0	2.8	2.4	0.0	0.1	7.9	4.8	0.4	0.3	7.0	3.9	
	Ube Chemical Factory	1,692	1,814	3,612	3,623	116	120	455	420	6.5	5.1	472	426	
	Ube-Fujimagari Factory	615	608	528	357	5.3	2.8	241	270	4.5	4.5	66	60	
	Ube Cement Factory	31	25	1,439	1,437	53	55	8.0	8.1	—	—	—	—	
	Isa Cement Factory	366	340	6,830	6,676	157	158	0.0	0.0	—	—	—	—	
	Kanda Cement Factory	6.2	5.1	2,494	1,681	37	28	1.4	1.9	0.1	0.1	1.3	2.7	
	Technical Development Center	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	
	Okinoyama Coal Center	—	—	—	—	—	—	—	—	—	—	—	—	
	Ube District Research Laboratories	—	—	—	—	—	—	0.2	0.2	0.1	0.1	0.2	0.2	
	Organic Specialty Materials Research Laboratory	—	—	—	—	—	—	0.0	0.0	0.0	0.0	0.0	0.0	
	Subtotal	UBE	2,711	2,793	14,940	13,810	369	364	726	717	12	10	550	496
		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	2.9	2.2	0.0	0.0	6.6	3.8	0.0	0.0	1.3	1.2	
	UBE-MC Hydrogen Peroxide, Limited.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	
	Ube Exsymo Co., Ltd.	0.0	0.0	0.4	0.6	0.1	0.2	2.1	0.4	—	—	—	—	
	Ube Material Industries, Ltd.	119	194	893	900	28	22	0.7	0.6	0.0	0.0	0.9	0.9	
	Ube Machinery Corporation, Ltd	0.1	0.1	—	—	—	—	0.9	0.8	0.2	0.2	1.3	1.3	
	Ube Steel Co., Ltd.	14	14	45	122	12	6.5	0.6	0.6	—	—	—	—	
	Fukushima, Ltd.	0.5	0.4	29	26	0.1	0.1	—	—	—	—	—	—	
	Subtotal	Group companies	134	209	970	1,051	40	29	11	6.4	0.2	0.2	3.5	3.4
	Total	UBE Group	2,845	3,002	15,910	14,861	409	393	737	724	12	10	554	500
Overseas	Thailand	5.0	3.5	46	51	10	40	104	101	2.4	0.1	7.2	20	
	Spain	51	56	446	633	9.2	14	78	90	1.3	0.9	120	66	

Note 2: The Organic Specialty Materials Research Laboratory was reorganized and renamed the Frontier Technology Research Laboratory in April 2016.

Glossary

*1 SOx: Sulfur oxides originate in the sulfur (S) component of fuels. Boilers are UBE's main source of SOx.

*2 NOx: Nitrogen oxides originate when a fuel is combusted in the air. Boilers and cement kilns are UBE's main sources of NOx.

*3 The 462 substances specified under the Japanese PRTR Law, on an aggregate basis (see page 37).

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

Measures to Mitigate Global Warming

Medium-Term Management Plan

Change & Challenge 2018

● UBE Group Greenhouse Gas (GHG) Emissions Reduction Targets

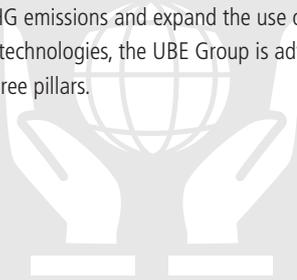
The UBE Group in Japan and main Group business locations outside Japan plan to reduce GHG emissions by 15% from the fiscal 2005 level by fiscal 2021.

● Creating and Expanding Products and Technologies That Reduce Environmental Burden

We aim for such products and technologies to account for 30% or more of overall sales by fiscal 2021.

● Policy for Addressing Global Warming

The Paris Agreement, signed by more than 190 countries, took effect in November 2016, marking a historic step toward the reduction of GHG emissions. Reducing such emissions will remain an important task going forward. To reduce GHG emissions and expand the use of environment-friendly products and technologies, the UBE Group is advancing initiatives based on three pillars.



① Directly Reducing GHG Emissions

By setting energy consumption and GHG emission reduction targets at the company and division level and then taking such measures as steadily implementing energy saving and expanding the use of waste materials, we are working to further reduce GHG emissions resulting from the product manufacturing stage at our factories.

② Contributing to the Control of GHG Emissions

By expanding the use of environment-friendly products and technologies and streamlining logistics, we strive to help reduce GHG emissions throughout the supply chain.

③ Restoring and Adapting to Changes in the Global Environment

We continue to consider the risks and opportunities posed by climate change from a medium- and long-term perspective and are developing technologies to help reduce the burden on the global environment.

The UBE Group offers products that help reduce environmental burden and that reduce GHG emissions generated by the use of finished products in such areas as water resources and agriculture. By expanding the use of such products in and outside Japan, we are playing one small part in the effort to reduce the impact of climate change on the global environment.

Initiatives to Reduce Greenhouse Gas Emissions

The UBE Group's Progress toward GHG Reduction Targets

Fiscal 2016 emissions were 12,100 kt-CO₂e, down 14% from fiscal 2005.

Progress in Creating and Expanding Products and Technologies That Reduce Environmental Burden

The portion of net sales accounted for by environment-friendly products and technologies in fiscal 2016 was 25% (¥152.0 billion).

● Efforts in Logistics

The UBE Group's Logistics Re-Engineering Project, which aimed to reduce energy usage in logistics, ended September 30, 2016, at which time the Group Logistics Efficiency Liaison Group was established with the aim of improving logistics efficiency.

The UBE Group continues to work to reduce energy use in logistics through such means as improving load ratios by using larger lots and co-loading in coordination with customers, using shipping ports closer to Group factories and adopting larger vehicles for transport between Group facilities.

● Efforts in Factories

The UBE Group is working to reduce energy consumption through far-reaching energy-saving measures being undertaken at all factories. Exhaust heat power generation facilities that came online in December 2015 at the Kanda Cement factory have reduced GHG emissions by 50,000 tons-CO₂e per year. Furthermore, at our offices and facilities, we have reduced annual GHG emissions by approximately 40,000 tons-CO₂e per year by reducing steam use and by cutting electricity use through facility streamlining.

The Ube Chemical Factory is currently advancing construction of facilities that will enable it to change its method of producing cyclohexanone, an intermediate used to make caprolactam. The switch to the new method is expected to reduce annual GHG emissions approximately 190 kt-CO₂e. Construction is expected to be completed by the end of fiscal 2017.

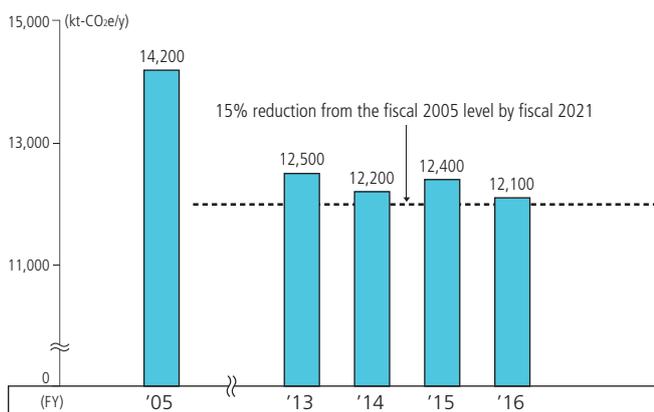
At the Kanda Cement Factory and Isa Cement Factory, we are planning to increase the efficiency of facilities that convert waste into materials and fuel as well as that of electric facilities as part of ongoing efforts to reduce GHG emissions. Furthermore, plans to install exhaust heat power generation facilities like those at the Kanda Cement Factory at the Isa Cement Factory have been finalized. Said facilities are scheduled to go online in January 2020.

Understanding GHG Emissions throughout the Supply Chain

To understand and work to reduce GHG emissions throughout the supply chain, the UBE Group measures scope 3 emissions.*³

Total scope 3 emissions in fiscal 2016 were calculated at 15,380 kt-CO₂e. A large portion of this was accounted for under Category 11, "Use of sold products." To reduce these emissions and its environmental burden, the UBE Group is advancing initiatives to utilize biomass, enhance the energy-saving functions of die-casting machines and other products, and expand sales of high-performance coatings (PCD and PUD), which help reduce the use of volatile organic compounds (see page 37) when used as ingredients in resins for waterborne coatings.

GHG Emissions



■ GHG Emissions: kt-CO₂e/ly

Scope 3 Emissions (Domestic UBE Group)

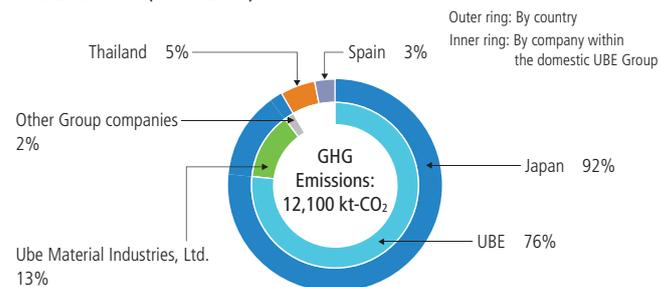
Category	GHG Emissions (kt-CO ₂ e)	Note
1 Purchased goods and services	800	
2 Capital goods	120	
3 Fuel- and energy-related activities not included in Scope 1 or Scope 2	410	
4 Upstream transportation and distribution	850	
5 Waste generated in operations	10	
6 Business travel	10	
7 Employee commuting	—	
8 Upstream leased assets	—	Included in Scope 1 and Scope 2*
9 Downstream transportation and distribution	510	
10 Processing of sold products	40	
11 Use of sold products	10,910	Sold coal, machinery, etc.
12 End-of-life treatment of sold products	1,670	
13 Downstream leased assets	—	Not applicable
14 Franchises	—	Not applicable
15 Investments	50	
Total	15,380	

*Scope 1: Direct GHG emissions from a reporting entity, due to fuel use, etc.

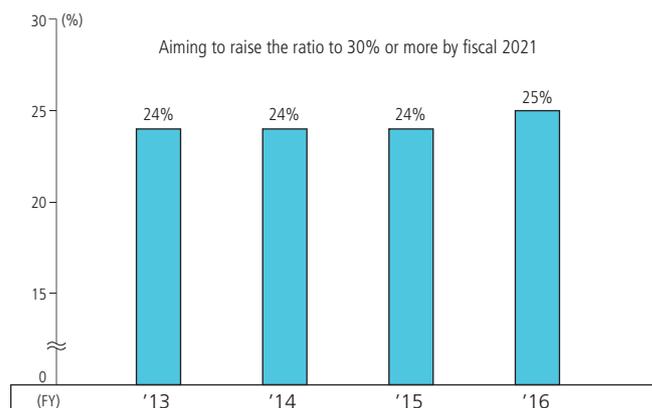
*Scope 2: Indirect GHG emissions from electricity and heat purchased from other entities

*Scope 3: Indirect GHG emissions throughout the supply chain, such as those that occur during material procurement, transport and product processing, use and disposal

GHG Emissions (Fiscal 2016)



Ratio of Environment-Friendly Products and Technologies to Total Net Sales



Staff Message

Project-Led Energy-Saving Activities



Makoto Muraoka

Rationalization Promotion Project
Isa Cement Factory

To help reach the UBE Group target of reducing GHG emissions 15% compared with fiscal 2005, we at the Isa Cement Factory are carrying out a range of initiatives. Even before we launched the current Rationalization Promotion Project, we set up the Energy Saving Project within the factory and brought in external consultants for a full year in fiscal 2016 to help us select energy-saving initiatives.

We also solicited ideas more broadly, including from employees and partner companies, gathering more than 1,500 suggestions for a wide variety of energy saving initiatives that ranged from the far-reaching to the small in scale. From these, we selected and implemented a number that were most achievable and have so far reduced annual CO₂ emissions by approximately 20,000 tons. Another major benefit of these activities has been the increase in awareness of energy saving among everyone working at the factory. The energy-saving initiatives we selected may have only a small effect when taken individually, but through steady implementation, they are all helping to reduce CO₂ emissions.

We are planning even greater energy-saving initiatives for fiscal 2017 and onward. These include increasing the use of waste materials in place of coal as fuel for cement kilns as well as recovering unused kiln exhaust heat to generate electricity and thus reduce the amount of electricity we need to purchase externally. Though these measures, we aim to reduce total CO₂ emissions by more than 150,000 tons per year and thus do our part to help meet the UBE Group reduction target.

Using Waste

Waste Recycling at Cement Factories

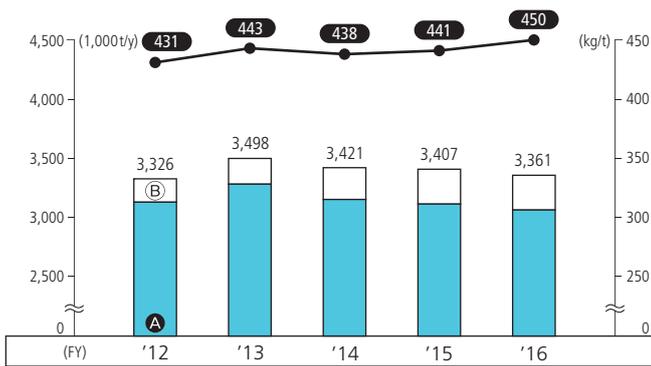
Cement Factories Are the Ultimate Resource Recycling Factories

UBE uses a wide range of waste materials as raw material (material recycling) and alternative fuel (thermal recycling) at its cement factories. Cement kilns operate at a very high internal temperature (1,450°C), where substances that cannot be disposed of by ordinary incinerators can be burned and detoxified, while enabling high-volume waste processing. Ash produced by incineration can also be used as an alternative to clay, a component of cement, eliminating the need for final disposal sites for incineration ash.

In fiscal 2016, the three UBE cement factories made effective use of around 3.36 million tons of waste and byproducts. Of this, about 2.98 million tons was sourced from outside of the UBE Group. This is one way the UBE is significantly contributing to the formation of a recycling-based society.

In addition, we are developing new businesses to use waste materials in applications other than as materials for cement, focusing on materials for which recycling demand is expected to grow, such as plasterboard and coal ash. UBE will continue to strengthen its systems for dealing with a variety of waste and work to expand its recycling business.

Waste and Byproduct Use



(A) Waste and byproducts used as raw materials
 (B) Waste used as alternative fuel
 ● Usage amount per ton of cement (kg/t)

History of UBE's Waste Treatment Facility Installations

FY	Alternative Fuels	Raw Materials
1998	Kanda Factory: Waste oil treatment facility	Isa Factory: Chlorine bypass system
1999		Ube/Isa/Kanda Factories: Wastewater receiving treatment facility
2000	Ube Factory: Waste plastic treatment facility (1st train)	
2001		Ube Factory: Sewage sludge treatment facility
2002	Kanda Factory: Waste plastic treatment facility (1st train)	Isa Factory: Sewage sludge waste treatment facility (1st train)

Guest Message

Working Together to Promote Recycling



Kenitsu Kizaki

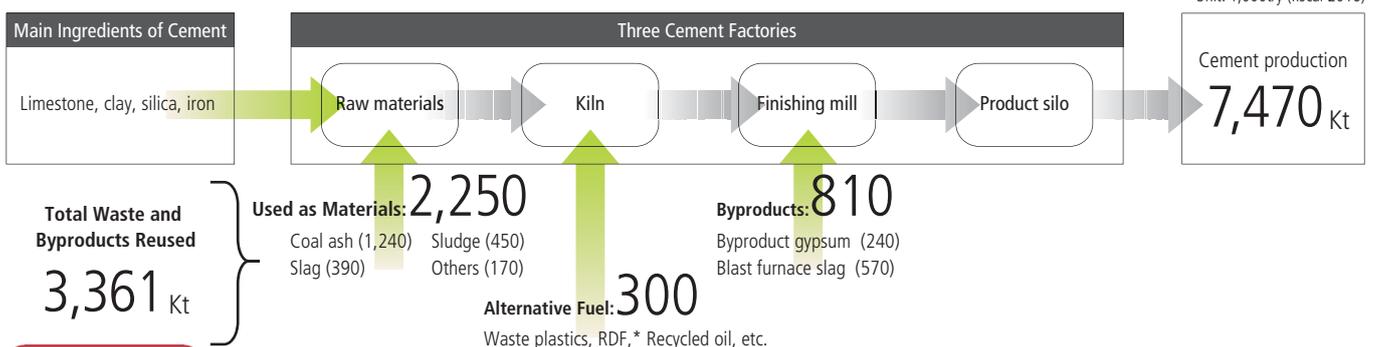
General Manager Kitakyushu Office
 Asahi Pretec Corp.

Since its founding in 1952, Asahi Pretec has been engaged in metal recycling and, since the enactment of the Wastes Disposal and Public Cleansing Act in 1971, has operated an environmental preservation business aimed at reducing the environmental burden created by society. For more than half a century, we have taken the lead with regard activities that preserve the Earth's natural environment, which we see as borrowed from future generations. We are very proud of these activities.

Operations at our Kitakyushu location, while mainly centering on waste incineration, include the crushing of waste plastic and other materials. Ube Industries accepts waste plastic and other materials not suited for direct recycling at our facilities and recycles them as alternative fuels at its cement factories. In addition, in our mixed sludge production business, which we began in 2014, UBE has assisted us with human resource development through technical instruction, helping us reach the point we are at today. Going forward, I hope to continue our productive relationship with Ube Industries to achieve greater advances in resource recycling.

FY	Alternative Fuels	Raw Materials
2002		Ube Factory: Chlorine bypass system Ube/Isa/Kanda Factories: Meat and bone meal treatment facility
2003	Isa Factory: Waste plastic treatment facility (1st train)	
2004	Isa Factory: Wood chip co-combustion facility for in-house power generation Isa Factory: Waste plastic treatment facility (2nd train)	
2005		Kanda Factory: High-chlorine bypass system
2006	Kanda Factory: Waste plastic treatment facility (2nd train)	
2007	Ube Factory: Waste plastic treatment facility (2nd train)	Isa Factory: Sewage sludge waste treatment facility (2nd train)
2008	Isa Factory: Waste plastic treatment facility (3rd train)	Kanda Factory: Waste for raw material loading facility
2009	Kanda Factory: Waste plastic treatment facility (3rd train)	Kanda Factory: Ash pretreatment facility
2011	Kanda Factory: Waste plastic pretreatment facility	
2012	Isa Factory: Sludge drying equipment	Ube Factory: Ash pretreatment facility Ube Factory: Closed sludge injection facility
2013-2014	Isa Factory: Waste plastic treatment facility Enhanced shredding capability (1st and 2nd trains)	
2015	Kanda Factory: Enhanced plastic processing capacity (1st train)	

Flow of Cement Production



Glossary

*Refuse Derived Fuel (RDF): Solid fuel made by compressing waste plastic, scrap wood and general garbage

Reduction of Industrial Waste

Industrial Waste Reduction

The Voluntary Action Plan on the Environment put forward by Nippon Keidanren (the Japan Business Federation) includes the target of a 70% reduction from the 2000 level in the final disposal volume of industrial waste by 2020. The UBE Group strives to recycle industrial waste and reduce its final disposal volume to help create a recycling-based society as a participant in such industry-led initiatives.

Industrial Waste Recycling

The UBE Group's chemical factories, in-house power stations, machinery factories and other facilities produce a wide variety of industrial waste (including sludge, waste plastic, coal ash, waste oil, metal scraps and waste sand). Most of this industrial waste is recycled at cement factories and other facilities within the Group.

Industrial Waste for External Final Disposal

In fiscal 2016, we recorded an 81% reduction in industrial waste for external final disposal compared with the fiscal 2000 level. In fiscal 2017 and onward, we will continue to strive toward further reductions.

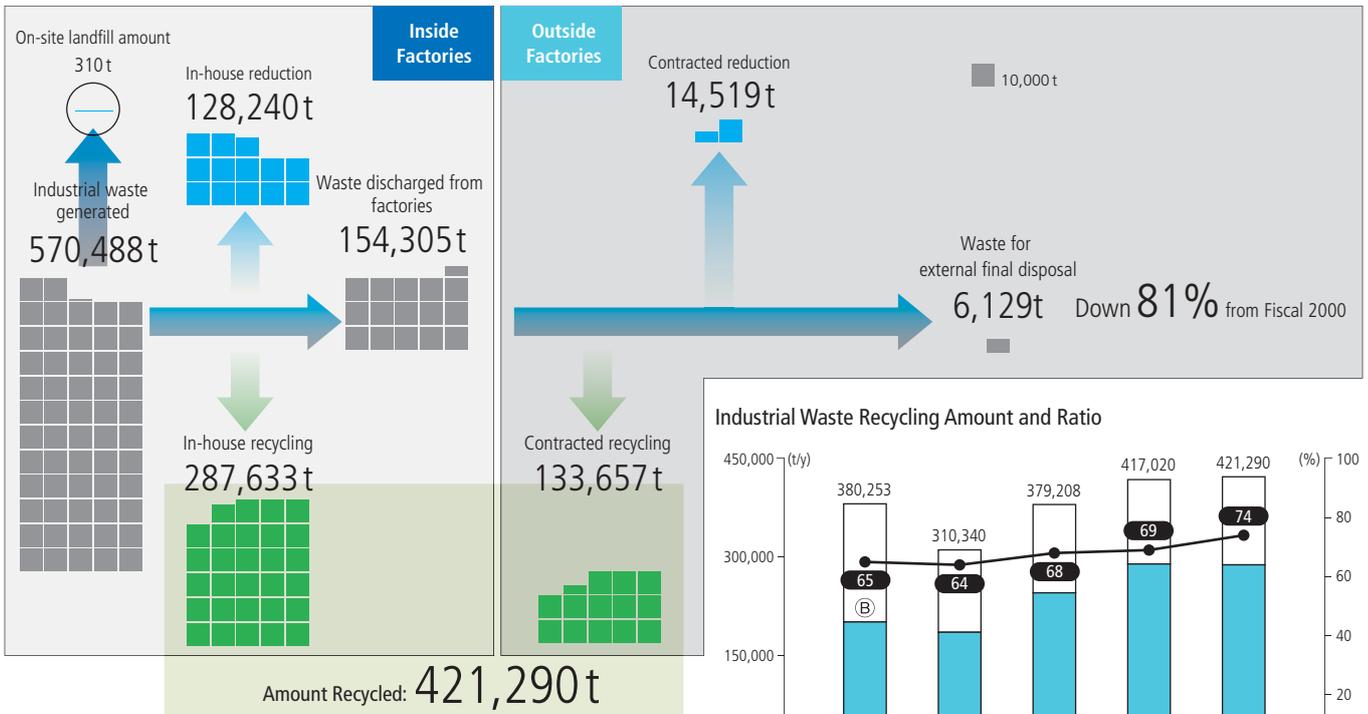
Industrial Waste Discharged from Factories

When contracting waste treatment or disposal outside the Group, the UBE Group utilizes industrial waste management forms (a waste manifest system) in compliance with waste treatment and clean-up laws (namely the Wastes Disposal and Public Cleansing Act) and carefully manages the entire process.

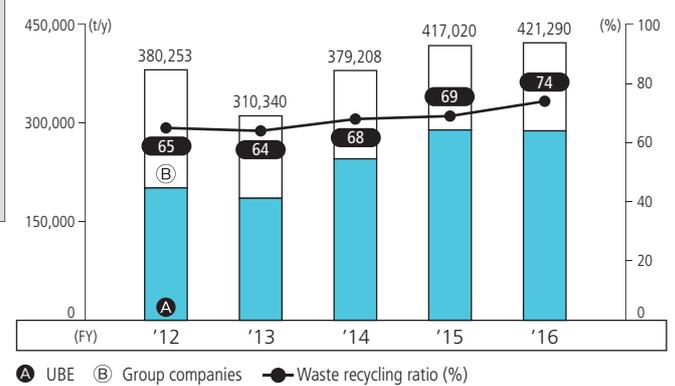
Disposal of Polychlorinated Biphenyl (PCB) Waste

The amended Law Concerning Special Measures against PCB Waste, promulgated in August 2016, has set deadlines for the disposal or consigning of a party for the disposal of highly concentrated PCB waste. The UBE Group is maintaining strict compliance with the amended law, and is systematically advancing the treatment of such waste in coordination with the Japan Environmental Storage & Safety Corporation and certified detoxification processing operators.

Overall Flow of Industrial Waste in Fiscal 2016

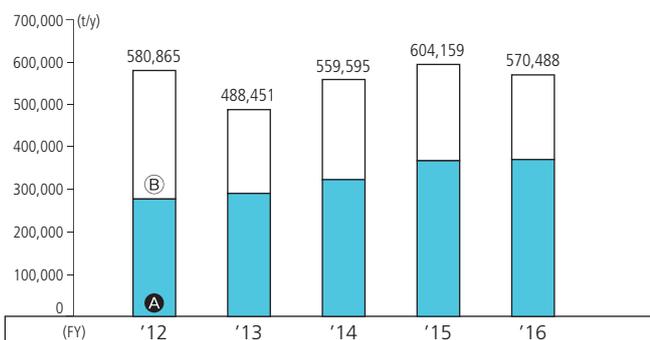


Industrial Waste Recycling Amount and Ratio

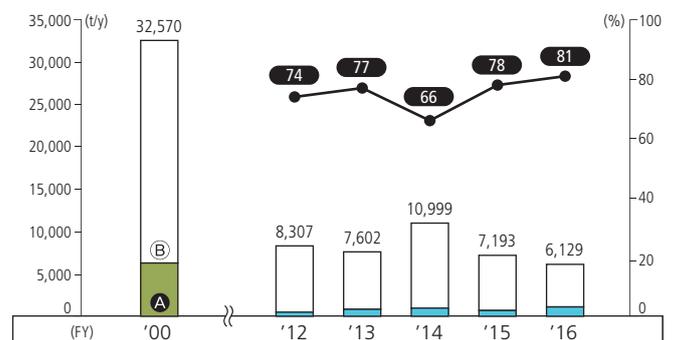


Industrial Waste Generated and That Disposed of Outside the Group

Industrial Waste Generated



Industrial Waste for External Final Disposal



Reducing Chemical Substance Emissions

● Response to the Japanese PRTR Law*1 and VOC*2 Emissions Restrictions

The Japanese government is advancing chemical substance emissions reductions in accordance with a policy of seeking an optimal mix of legal regulations and voluntary initiatives. Even after meeting the government's goal for volatile organic compound (VOC) emissions reductions by fiscal 2010, industrial emitters have continued reduction initiatives.

In line with national and industry-led initiatives, the UBE Group has voluntarily selected 20 substances*3 that it emits in relatively large amounts and particularly strives to reduce its emissions of these substances. The 20 substances comprise substances subject to the Japanese PRTR Law as well as a number of volatile organic compounds (VOCs).

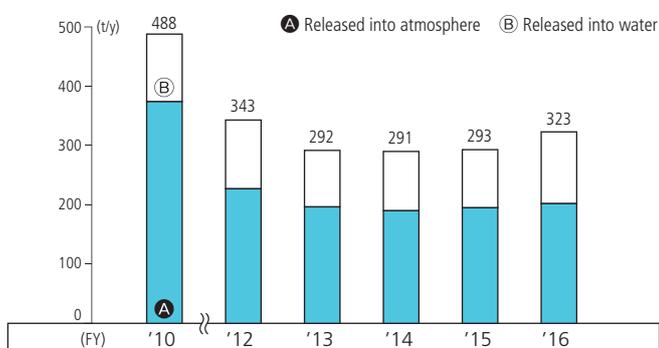
The UBE Group's fiscal 2016 emissions of substances subject to the Japanese PRTR Law and of VOCs were down 34% and 39%, respectively, from the levels it recorded in fiscal 2010.

● Response to the Fluorocarbon Emission Restriction Law

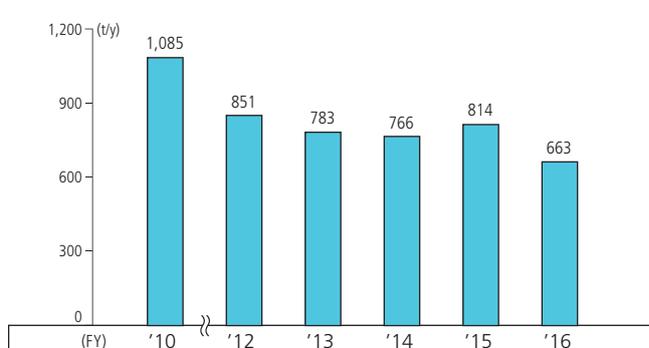
Promulgated in April 2015, the Fluorocarbon Emission Restriction Law is aimed reducing leaks of fluorocarbon refrigerants to help prevent global warming and the further destruction of the ozone layer.

The UBE Group is compliant with this law and performs basic and regular inspections of commercial refrigeration and air conditioning equipment, among other measures. We continue to improve fluorocarbon recovery and filling methods and reinforce the management of equipment in operation to prevent fluorocarbon leaks.

Emissions Volume of PRTR Substances



VOC Emissions



Total Volume of PRTR Substances Emitted/Transferred in Fiscal 2016

	Handling Volume	Emissions Volume				Increase/Decrease Rate Compared with Fiscal 2015 (Total Emissions)	Transfer Volume	Number of PRTR Substances
		Atmosphere	Public Water	Soil	Total			
UBE	255,476	99.7	113.7	0.0	213.4	11.8%	1,099.6	57 substances
Other Group companies	28,890	101.8	8.2	0.0	110.0	7.6%	813.6	25 substances
Total (UBE Group)	284,366	201.5	121.9	0.0	323.4	10.3%	1,913.2	69 substances

Volumes of Individual PRTR Substances Emitted/Transferred in Fiscal 2016 (Top 10 by UBE's Emission Volumes and Dioxins)

Ordinance Designation No.	Chemical Substance	CAS No.	Handling Volume	Total Emissions Volume				Increase/Decrease Rate Compared with Fiscal 2015 (Total Emissions)	Transfer Volume
				Atmosphere	Public Water	Soil	Total		
300	Toluene	108-88-3	1,011	82.5	28.7	0.0	111.2	11.6%	367.5
76	ε-Caprolactam	105-60-2	133,989	0.0	87.1	0.0	87.1	24.6%	352.0
80	Xylene	—	187	28.3	0.0	0.0	28.3	-20.9%	13.2
134	Vinyl acetate	108-05-4	5,472	21.1	0.0	0.0	21.1	-20.4%	0.0
392	n-Hexane	110-54-3	216	15.2	0.0	0.0	15.2	7.6%	19.2
53	Ethylbenzene	100-41-4	39	13.5	0.0	0.0	13.5	-31.9%	11.3
240	Styrene	100-42-5	214	11.0	0.0	0.0	11.0	633.3%	0.1
104	Chlorodifluoromethane	75-45-6	9	8.6	0.0	0.0	8.6	1,236.5%	0.4
400	Benzene	71-43-2	85	7.6	0.1	0.0	7.7	-2.3%	0.0
213	N,N-dimethylacetamide	127-19-5	476	5.4	0.0	0.0	5.4	-8.0%	206.4
243	Dioxins	*	—	94.0	3.9	0.0	97.9	-66.0%	0.0

CAS No.: Chemical Abstract Service registry number

Unit for dioxins: mg-TEQ/year

*Contains various compounds

Glossary

*1 PRTR (Pollutant Release and Transfer Register): A registration system for emissions and transfers of chemical substances. Involves conducting voluntary surveys to assess the volume of chemical substances that are emitted into the environment (atmosphere, water, soil) and transferred outside in the form of waste from company facilities during business activities and reporting survey findings to national and other governments while undertaking full public disclosure. The aim of PRTR is to take steps to control and reduce environmental burden through the appropriate use and management of chemical substances.

*2 Volatile Organic Compounds: Organic chemicals that evaporate or sublimate easily, entering the atmosphere as gases. Includes a wide variety of substances, such as toluene and xylene. VOCs are one of the various causes of suspended particulate matter and photochemical oxidant pollution.

*3 UBE's 20 voluntarily selected chemical substances: methyl alcohol, butyl alcohol, toluene, ε-caprolactam, cyclohexane, ammonia, vinyl acetate, xylene, N,N-dimethylacetamide, 2-hexanone, ethylbenzene, n-hexane, benzene, water-soluble zinc compounds, 1,3-butadiene, cis-2-butene, boron compounds, cyclohexanone, hexadecyltrimethylammonium chloride and dichloromethane

Measures to Prevent Air and Water Pollution

Measures to Prevent Air Pollution

The UBE Group monitors pollutants at the source, and appropriate pollution control is undertaken based on levels established in agreement with governments and its own voluntary pollution prevention management standards. All of these measures are reflected in our factory operations.

Measures to Prevent Odors

The UBE Group is working together with governments on odor counter-measures, installing odor reducing equipment and building proprietary odor monitoring systems in the UBE District.

Measures to Prevent Water Pollution

The UBE Group has installed systems to monitor water pollutants in emissions to bodies of water. UBE Group factories, which can have a serious impact on public water quality, purify wastewater through the use of wastewater treatment facilities.

In addition to measures to address emission water quality, the UBE Group strives to promote the effective use of water resources by managing the volume of water it uses and emits.

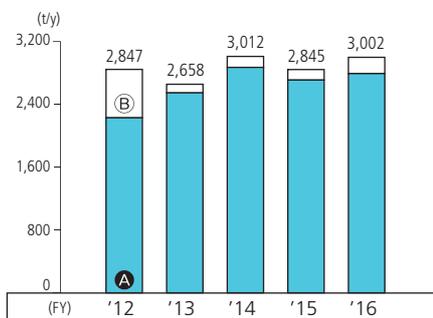
Measures to Prevent Soil and Groundwater Pollution

The UBE Group performs surveys and takes appropriate measures in accordance with the regulations set forth in the Soil Contamination Countermeasures Law and ordinances established by local governments.

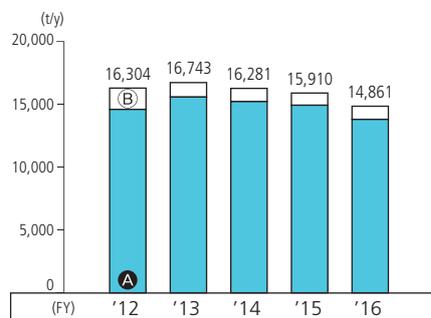
Emissions to the Air

Ⓐ UBE Ⓑ Group companies

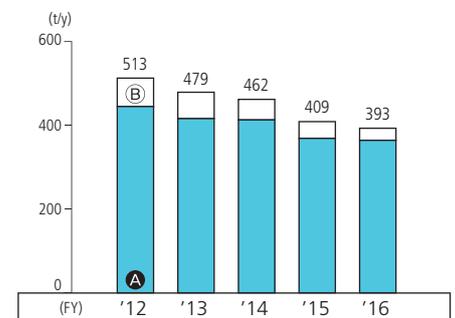
SOx Emissions*1



NOx Emissions*2



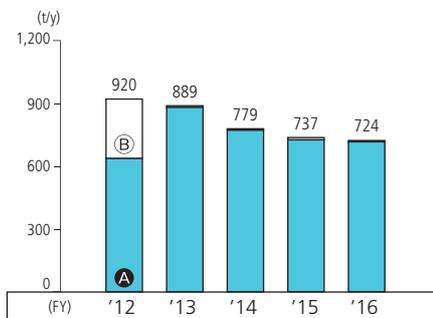
Dust Emissions



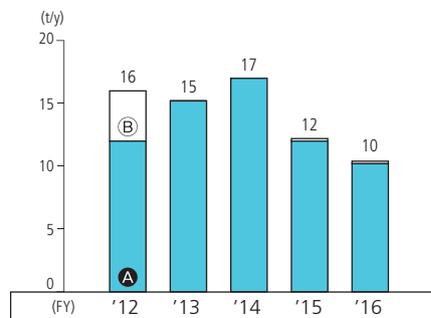
Emissions to Bodies of Water

Ⓐ UBE Ⓑ Group companies

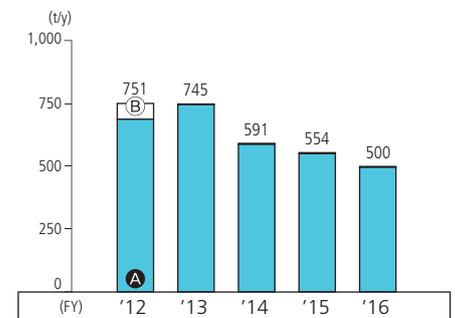
COD Emissions*3



Total Phosphorus Emissions



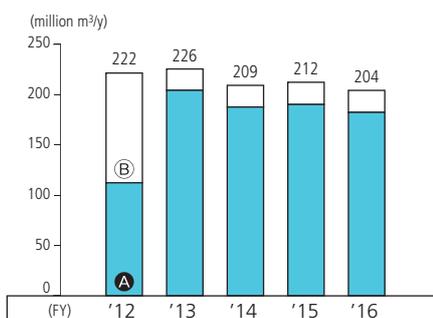
Total Nitrogen Emissions



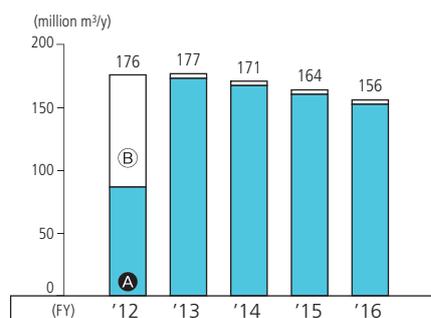
Water Usage and Wastewater Emissions

Ⓐ UBE Ⓑ Group companies

Water Usage



Wastewater Emissions



Reference: Please refer to page 32 for environmental impact data by facility

Note: The factory operations of Ube Ammonia Industry, Ltd. have been contracted to UBE's Ube-Fujimagari Factory since fiscal 2013. Accordingly, the environmental impact of Ube Ammonia Industry, Ltd. for fiscal 2013 onward is calculated as part of UBE's impact.

Glossary

*1, *2, *3 See the Glossary on page 32

Biodiversity

● Private Business Partnership to Preserve Biodiversity

UBE has supported Nippon Keidanren (the Japan Business Federation)'s "Declaration of Biodiversity by Keidanren" since January 2010 and works as part of a related private business partnership to conserve biodiversity, aiming to more actively engage in initiatives to preserve biodiversity.

● Environmental Study Meetings to Promote Activities

The UBE Group's Environmental and Safety Principles state that "As a responsible corporate citizen, the UBE Group shall act positively to protect and improve both community and regional conditions and work for the preservation of the global environment." The UBE Group has established Environmental Study Meetings as a horizontal Companywide organization. Through these meetings, we are working to understand and evaluate the impact of UBE's business activities on biodiversity, gather and share information, and discuss the development of environment-friendly products and technologies and businesses.

In fiscal 2016, UBE Group Employees contributed approximately 1,100 man-hours to initiatives to preserve biodiversity, and the Group spent some ¥7.5 million on efforts that included forest maintenance and tree planting at former limestone quarries.

● Forest Conservation Initiatives

In fiscal 2016, the UBE Group participated in the Ninth Forest Creation Experiential Activity for Water Conservation, sponsored by the Mine City Office of Yamaguchi Prefecture's Agriculture, Forestry & Fisheries Department, with 128 employees taking part in the thinning and logging of bamboo over about two hectares. Furthermore, UBE employees participated in activities to protect and nurture the Akiyoshidai plateau in Mine (hosted annually by the Akago Area Community-Building Council). In addition, some of the management of forest and water sources undertaken by Yamaguchi Prefecture is paid for by UBE.

Ninth Forest Creation Experiential Activity for Water Conservation



We are also implementing greening activities at former limestone quarries. Since fiscal 2008, we have planted citrus trees, vines, and other plants on the slopes of the Kanda Mine's Taihei and Amakubo quarries. Since fiscal 2011, we have planted wild cherry trees (*Prunus jamasakura*) and round leaf holly (*Ilex Rotunda*) on the slopes of the Maruyama Quarry at the Ube Isa Mine.



Trees planted at the Ube Isa Mine Maruyama Quarry

● Initiatives at UBE Group Companies: Ube Construction Materials Sales Co., Ltd.

Ube Construction Materials Sales Co., Ltd. supports the Aoi Mori Kokudo Hozen Kyodo Kumiai. This organization makes charcoal chips from unused materials resulting from forest thinning in the Tsugaru mountains, including the Shirakami-Sanchi forest, a UNESCO World Heritage Site, and promotes their use. These charcoal chips can be plowed into the soil on farms as fertilizer or used to purify agricultural wastewater, and are expected to contribute to the conservation of forests, woodlands and rivers. In addition, using charcoal as a soil additive sequesters carbon in a stable state, helping to reduce atmospheric CO₂.



Using charcoal chips in agricultural wastewater



Consumer Issues

Customer and Business Partner Relationships

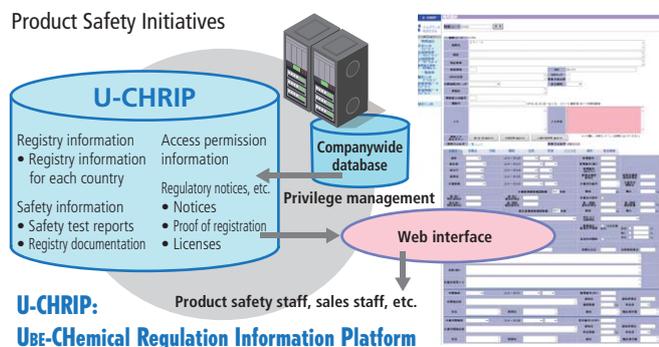
Product Safety Initiatives

UBE maintains strict compliance with the chemical-related laws and regulations of Japan and the other countries it operates in, carries out exacting chemical product management throughout distribution and proactively discloses safety information about its chemical products via SDSs and its website. Through such efforts, we practice product stewardship of chemical substances throughout their life cycles from the perspectives of health, safety and the environment.

● Systemization of Chemical Regulation Information Management and SDSs/Product Labels

UBE has developed a database system, U-CHRIP, for managing safety and regulatory information about chemical substances. Using this system since June 2012, we have built a framework for ensuring compliance in and outside Japan.

Product Safety Initiatives



U-CHRIP:
UBE-Chemical Regulation Information Platform

We update our SDSs and product labels as needed in response to changes in the laws of European nations, the United States, China, South Korea, Taiwan and other countries. To ensure the safe use of our chemical products, we actively provide SDSs for all of our products to our customers and disclose SDSs for our main products on our website. In addition, as part of efforts to ensure that customers are provided with appropriate information, our system allows sales and technical staff to use our product SDS database, which contains information about product hazards and toxicity, relevant laws and regulations, use, storage, transport and disposal procedures.

● Transportation Safety

We strive to ensure safety in chemical substance transportation, aiming to prevent transportation accidents and improve the quality of transportation operations. To this end, we maintain Yellow Card*¹ and transportation labeling systems, have established a physical distribution committee with transportation companies to which we contract operations and engage in safety initiatives based on annual plans.

● Response to Green Procurement*²

Particularly in the electric and electronic device and automotive industries, we are seeing advances in products designed for easier recycling and the reduced use of harmful materials. As a provider of raw materials, UBE responds enthusiastically to its customers' green procurement efforts. With regard to its own raw materials procurement, the Company has set internal standards and monitors procured parts, materials and products for harmful materials.

● Advance Safety Assessments of Chemical Substances

We conduct advance safety assessments of newly developed chemical substances and chemical substances that we will be handling in factories for the first time. In fiscal 2016, the UBE Group performed 103 advance safety assessments of chemical substances.

● Participation in Chemical Safety Management Initiatives in Japan and Overseas

UBE actively gathers and communicates hazard information about its chemical products, taking part in the International Council of Chemical Associations (ICCA)'s HPV Program*³ and the Japan Challenge Program.*⁴ Since fiscal 2011, we have been participating in the Japan Chemical Industry Association (JCIA)'s voluntary chemical substance risk management activities while promoting the gathering and communication of hazard information and risk assessments. The results of this participation include the publishing of Safety Summary Sheets*⁵ for twelve substances.

We also actively participate in the ICCA's voluntary Long-Range Research Initiative (LRI), which focuses on the effects of chemical substances on human health and the environment. Through these efforts, we support research at universities and other research institutions that includes the development of new risk assessment methods and the study of the safety of chemical substances for infants and the elderly.

Glossary

- *1 Yellow card: A card for use in case of an accident during transport that displays product information, including product name, relevant laws, attributes, handling procedures, accident response procedures and emergency contact information
- *2 Green procurement: Procurement of materials conducted by companies based on their individual safety and environmental criteria established to meet the requirements of relevant legal regulations, including the EU RoHS Directive, which restricts the use of certain hazardous substances in electrical and electronic equipment
- *3 High Production Volume Chemicals Program (HPV): An international chemical safety management initiative that gathers safety information about, conducts toxicity assessments of, and shares information regarding mass-produced chemical substances. Begun by the OECD, it is now carried out by the ICCA.
- *4 Japan Challenge Program: A domestic chemical safety inspection program. The Japanese version of the High Production Volume Chemicals (HPV) Program that gathers and communicates information on the hazards and toxicity of chemical substances in Japan and internationally in coordination with industry and the national government.
- *5 Safety Summary Sheet: A document summarizing the results of in-house chemical substance risk assessments that reflects the results of GPS initiatives. These sheets are published on the ICCA's website (<https://www.icca-chem.org/>) via its GPS portal. GPS (Global Product Strategy) is a voluntary industry initiative led by the ICCA aimed at minimizing the negative impacts of chemical substances.

Quality Assurance

The UBE Group carries out quality assurance initiatives tailored to each of its businesses.

● Chemicals Company

Enhancing Customer Satisfaction through a Fully Integrated QMS

In fiscal 2015, we unified the quality management systems (QMSs) that had operated independently at each of our four chemical factories into a single system for the entire "Chemicals Company" that went into force as "Business Leading Quality Assurance System" in April 2016. In December 2016, we acquired ISO 9001:2015 certification via transition and expansion processes, and we have been standardizing jobs for quality assurance activities.

Going forward, to enhance customer satisfaction, we will create value that is unique to UBE, pursue competitiveness and reinforce the global quality assurance organizational structure and etc. Furthermore, we are implementing new activities to acquire IATF16949 and JISQ 9100 certifications to meet specific requirements of each industrial sector.



● Pharmaceutical Division

Committed to the Pharmaceuticals Quality Policy

To assure the efficacy, safety and quality of pharmaceutical products, consistent compliance with laws and regulations, spanning manufacturing through sales and post-market safety measures, is necessary. The managers of our pharmaceutical business have fully committed to our Pharmaceuticals Quality Policy in order to meet such strict pharmaceutical quality requirements.

Furthermore, to realize this policy, we have set up concrete initiatives under a pharmaceutical quality system (PQS). We comply with relevant



regulatory requirements, ensuring that production sites enforce manufacturing and quality management. At the same time, we appropriately operate and constantly improve the PQS. In these ways, we secure customer satisfaction and external trust.

● Cement & Construction Materials Company

Striving to Provide Stable Quality

The Cement & Construction Materials Company meets a wide range of needs in such areas as civil engineering and construction both in and outside Japan with an extensive product lineup that includes ordinary Portland cement, specialty cement and soil stabilizing cement.

While the specific levels of quality and performance required vary by customer, the need for consistent quality does not. To meet this need, we have established quality policies and implement quality assurance in line with ISO 9001.

At the same time, we make adjustments as needed in response to changes in overseas standards, such as those of the ASTM,^{*3} BS-EN^{*4} and API^{*5} (for oil-well cement), and environmental laws and regulations, carrying out quality assurance activities that are resilient to changes in the business environment.



● Machinery Company

Delivering Outstanding Products to the World

The Machinery Company provides a wide array of products and services, such as molding machines and industrial equipment, to customers in Japan, Europe, the Americas, Asia and the Middle East. To meet the laws and regulations of each country as well as our customers' various specifications, we maintain strict quality management in line with standards that include ISO 9001 and ISO 14001. By doing so, we deliver environment-friendly products and services.

We plan to complete our transition to the 2015 versions of ISO 9001 and ISO 14001 by the end of fiscal 2017. To do so, we are working to identify hidden risks through process risk assessment based on a risk management approach and to formulate and implement appropriate countermeasures.

To earn customer satisfaction around the world, we will maintain and further improve our existing quality assurance activities and thus continue to supply facilities with consistently high quality.

Glossary

- *1 IATF 16949: A standard for quality management systems within the automotive industry
- *2 JISQ 9100: A standard for quality management systems that includes requirements for the aerospace and defense fields
- *3 ASTM (ASTM International): An international standards organization that sets standards for industrial materials
- *4 BS-EN: British Standards Institution-European Standards (a set of unified standards used in Europe)
- *5 API: American Petroleum Institute



Fair Business Practices

Compliance

● Measures to Ensure Compliance

A company and the executives and employees that work there must provide value for society. In addition to the basics of not engaging in illegal activities, such as falsifying data or forming unsanctioned cartels, a company must function with a firm sense of ethics and comply with laws and other social rules. To live up to the trust and expectations of its stakeholders, the UBE Group maintains an effective system for ensuring compliance and is working to enhance employee education.

● Compliance Policy and Standards

UBE Group Action Guidelines

The UBE Group has established the UBE Group Action Guidelines (see page 18), comprising nine chapters, as a code of conduct for all its executives and employees to follow. The guidelines have been distributed in booklet form to all members of the Group. The guidelines, together with additional explanations and examples of how they might apply in real situations employees could encounter, are made available on the Group intranet. Through these and other measures, we promote awareness of and compliance with the UBE Group Action Guidelines.

Protection Against Anti-social Elements

The UBE Group has established a Basic Policy with Regard to Anti-Social Elements that states that, to ensure the safety and soundness of civil society, the UBE Group will neither maintain relations with nor bow to improper demands from anti-social elements. Furthermore, the Group takes measures to ensure that even in the event of unintentional dealings with anti-social elements it can swiftly end such relationships, for example, by including cancellation clauses in contracts. The Group promotes coordination with local police and works to collect information that will facilitate its proper response to any contact from anti-social elements.

Conflict Minerals

The UBE Group's policy is to seek to quickly cease procurement of raw materials in the event that it finds that such materials contain conflict minerals (namely, certain minerals mined and sold under the control of armed groups in the Democratic Republic of the Congo and surrounding region).

● Compliance System

Organization

The UBE Group has established compliance officers (COs),*¹ who are responsible for initiatives to ensure compliance throughout the Group, as well as the Compliance Promotion Secretariat,*² which develops and implements compliance-related measures. Furthermore, the Compliance Committee,*³ an advisory body to the COs, approves annual compliance plans, confirms their implementation, exchanges information about compliance problems and considers preventive measures. Compliance

facilitators assigned to each division and Group company promote compliance and work with the Compliance Promotion Secretariat to solve any problems.

Competition Law Compliance Initiatives

In 2014, the UBE Group established the Competition Law Compliance Committee to create systems to prevent cartel activity and other such issues in line with competition law in and outside Japan. In particular, because meetings between sales employees and other companies in the same business as their own may lead to cartel activity, such employees must obtain prior approval for such meetings from their managing division and submit a report afterward. Through these and other measures, UBE has adopted rules to ensure that potential violations are nipped in the bud.

Control of Restricted Cargo

The UBE Group maintains that the basic purpose of export management is to prevent the illegal export or supply of goods and technologies that are subject to export controls under laws and regulations designed to maintain international peace and stability, such as Japan's Foreign Exchange and Foreign Trade Act. We strive to promote awareness of related issues throughout the Group.

Group Consultation Hotlines

UBE has established Group Consultation Hotlines through its divisions that handle environment and safety, intellectual property, labor issues and other such areas important to compliance. By enabling easy consultation regarding questions and compliance-related concerns that arise in the course of day-to-day operations, we aim to stop compliance violations before they occur.

Internal Reporting System (UBE C-Line)

The UBE Group has established compliance hotlines (UBE C-Line) inside and outside the Group, so that anyone who discovers an actual or potential compliance-related problem can report it directly. Issues reported through UBE C-Line are handled by the Compliance Promotion Secretariat, which works in cooperation with the parties involved to conduct rapid and careful fact gathering and work toward a solution.

Number of Internal Notifications in Fiscal 2016

Classification	Cases
① Violations of business procedures	6
② Bullying, sexual harassment, etc.	7
③ Other	6

● Employee Training and Development

Compliance Workshops

Since April 2015, compliance workshops previously organized by the Head Office have been led by instructors selected from within each office or facility in an effort to provide training better rooted in the needs of each business. We also hold regular workshops to deepen understanding of laws that apply to our business activities, including the Antimonopoly Act and other competition laws, the Act against the Delay in Payment of Subcontract Proceeds, etc., to Subcontractors, and the Unfair Competition Prevention Act.

Compliance Training Via e-Learning

Twice a year, we hold online training aimed at increasing compliance awareness among management and employees. The e-learning materials used in this training are mainly based on themes of major social significance and actual issues that have arisen in and outside the UBE Group. In fiscal 2016, the training included topics related to harassment, workplace safety and labor management.

Sharing Information and Raising Awareness

To nurture a sense of responsibility for assuring compliance among employees and management, information about actual compliance issues that have occurred within the UBE Group is made available on the Group intranet along with explanations of what the problems were in each case as part of efforts to share information and raise awareness.

Staff Message

Promoting Full Participation to Ensure Compliance



Nobuaki Inoue

Manager, Planning & Control Dept.
Cement & Construction Materials Company

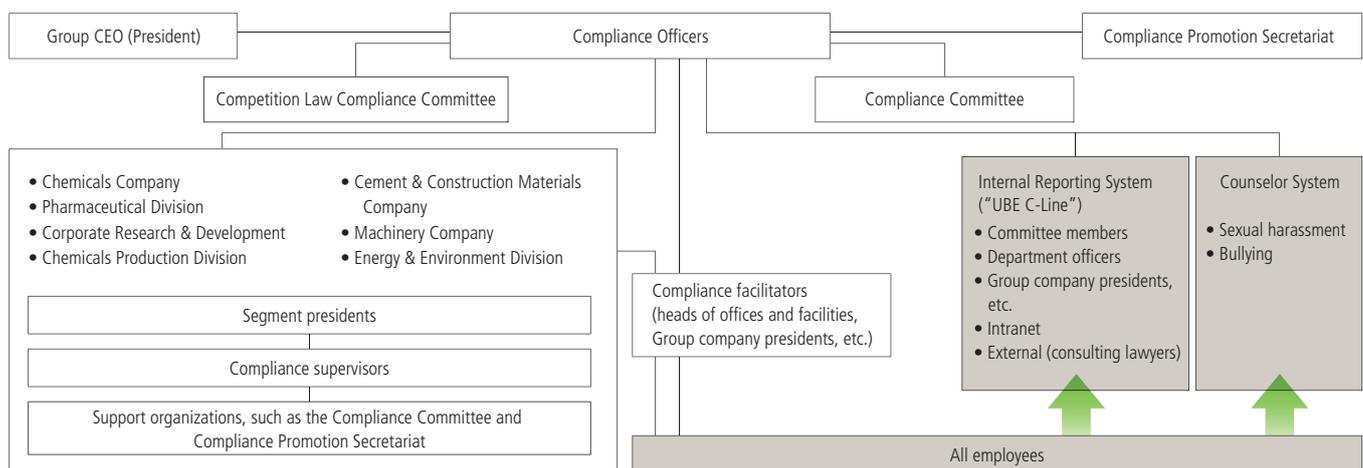
The Cement & Construction Materials Company oversees numerous Group companies across Japan, including many small facilities and workplaces that do not have computers.

Given these circumstances, to improve compliance awareness throughout the company, we work to thoroughly ensure that appropriate knowledge reaches everyone so that they can understand compliance issues and follow rules appropriately. For example, we implement workshops and e-learning and share information about problems, taking such steps as printing out e-learning content so that employees at workplaces without computers can learn the same content.

At the same time, for ordinary operational reporting, consultation and notification mechanisms to function correctly, it is vital that we create an open organization where employees feel free to consult with others. To this end, we strive to promote daily communication and implement activities to encourage employees to actively greet and interact with one another.

In our compliance assurance initiatives, we aim not to develop just one or two highly knowledgeable individuals but to raise awareness throughout the company by steadily implementing daily activities.

Compliance System



*1 Compliance Officers (CO)

Two executive officers have been appointed as Compliance Officers (one of whom was appointed Chief Compliance Officer, or CCO). Their task is to promote and ensure compliance throughout the UBE Group by supervising compliance-related activities.

*2 Compliance Promotion Secretariat

This unit administers compliance-related activities under the direction and supervision of the COs.

*3 Compliance Committee

The Compliance Committee advises the Compliance Officers and deliberates on important compliance-related issues. To ensure transparency, a legal adviser (a consulting lawyer) is invited to serve as an outside committee member.

● Respect for Intellectual Property

UBE respects newly created value (property) and engages in just, fair intellectual property activities.

UBE's Intellectual Property

Intellectual property rights, including patents, utility models, designs, trademarks, copyrights and know-how (trade secrets), are valuable assets that legally reinforce the market exclusivity of our products and services. Patents are created on a regular basis out of UBE's R&D, production technology development and other activities, and UBE applies for hundreds of patents in and outside Japan every year.

	Japan	United States	Europe	China	South Korea	Taiwan	Other areas
Patents received (fiscal 2015)	Over 230	40	30	60	20	30	20
		Overseas: Over 190					
Total	2,500	2,000					

*Numbers are approximate

Protection and Use of Intellectual Property and Infringement Countermeasures

Due to revisions to business policy or R&D themes, some of our patents sometimes become unnecessary. We therefore evaluate the necessity of maintaining each of our patents every year and confirm that we are maintaining necessary rights Companywide.

Patent infringement can lead to serious problems, such as the suspension of product manufacturing or demands for large compensatory payments. The infringement of other companies' valid rights is, of course, also a problem in terms of CSR, so we carefully examine other companies' patents and the scope of their rights. To engage in business that falls within the scope of the rights of another company, when necessary, we may negotiate to license the rights or legally nullify the patents in question. However, these methods take time and money and are not guaranteed to succeed. UBE therefore works to steadfastly protect its own network of patents so that it can engage in business outside the scope of other companies' patents.

In recent years, means other than patents to address intellectual property issues, such as preventing unfair competition and protecting trade secrets and copyrights, have grown in importance. We are working to respond to such changes in international business conditions. In fiscal 2016, we revised our system for protecting trade secrets and guidelines accordingly. We will utilize these as a unified policy within the UBE Group and advance related initiatives.

Incentive System

To encourage new inventions and facilitate the smooth usage of intellectual property rights, UBE has established internal rules compliant with the Revised Patent Law regarding employee inventions and pays multiple types of monetary rewards to inventors. Of these, rewards based on actual business results serve as a barometer indicating the extent that a patent is being put to effective use in business. The ongoing creation of numerous incentivized patents is essential to the strong growth and development of UBE's business.

Purchasing

● UBE Engages in Purchasing That Thoroughly Adheres to Its Purchasing Policies

The UBE Group works to build fair and honest business relationships. The UBE Group's purchasing adheres to the Basic Purchasing Policies shown below.

Approach to Green Purchasing*1

In line with the Law on Promoting Green Purchasing, the UBE Group encourages its employees to choose eco-friendly products. We aim to increase the use of eco-friendly copy paper to 100%; UBE's percentage already stands at 100%, while the UBE Group's percentage stands at 89%. The UBE Group's green purchasing rate stands at 69%.

Measures Concerning CSR Procurement**2

The UBE Group has established a CSR procurement policy and guidelines and is promoting CSR procurement throughout its supply chains. In fiscal 2016, we aggregated and analyzed the results of a second survey of our business partners, covering 211 companies (of which 208, or 99%, returned the survey) that account for more than 90% of our materials and construction transactions on a monetary basis, and provided feedback to all of the respondents. This survey was intended to help us better understand the status of our business partners' CSR activities and enable us to request improvements where needed. We have consulted with business partners who scored poorly and offered support for improvement.

Basic Purchasing Policies

Fair and Unbiased Transactions

We are committed to treating our suppliers in a fair and unbiased manner based on free competition and constantly search for opportunities to deal with new suppliers. We will cooperate with suppliers on a fair and equal footing and promote mutual understanding and relationships of trust on a long-term basis.

Objective Selection of Suppliers

We will choose suppliers from the viewpoint of economic rationality by comprehensively examining their quality, prices and delivery schedules.

Compliance with Laws and Regulations, and Confidentiality

We will comply with all relevant laws and regulations and with social norms, and we will protect all confidential information obtained through our purchasing activities.

Green Procurement and Purchasing

We will give due consideration to environment-friendliness in our product selection and purchasing activities.

CSR Procurement

UBE is advancing CSR procurement at all stages of the supply chain, including with suppliers, to increase its social credibility.

The UBE Group gives priority to suppliers that meet the following criteria.

- Have in place an internal framework for promoting CSR
- Emphasize quality and maintaining a stable supply
- Conduct business in a fair manner that honors corporate ethics, laws and societal standards
- Prioritize environmental considerations
- Exercise respect for human rights and safety and hygiene management
- Emphasize contributing to and communicating with society as well as information management and disclosure

Glossary

*1 Green purchasing: To purchase products and services that have minimal environmental impact from suppliers who are committed to reducing their environmental impact, considering not only the quality and price of the products, but also the environment.

*2 CSR Procurement: The procurement of goods and other items by companies using a set of criteria based on the status of supplier's CSR measures.

Community Involvement and Development

Information Disclosure and Communication

Relationships with Shareholders and Investors

● Interactive Communication through IR Activities

UBE always conducts its IR activities in good faith, striving to promote understanding of the UBE Group's management strategy and business conditions in capital markets and to implement transparent management in order to earn the trust of the market. To this end, we disclose information in a timely, appropriate and fair manner. In addition, we are actively increasing opportunities for interactive communication with market participants, such as shareholders, investors and securities analysts, thereby promoting mutual understanding and incorporating market perceptions and evaluations into our management.

The following were the main IR activities conducted in fiscal 2016.

- Results briefings for institutional investors and securities analysts (held after full-year results were announced)
- Web-based conferences for institutional investors and securities analysts (held on the days that quarterly results were announced)
- Published an *Annual Report* (in Japanese and English, one time)
- Results briefings for individual investors (two times)
- Overseas IR (individual visits to institutional investors in Europe, the United States and Asia, three times)
- Domestic IR (individual visit to an institutional investor in Japan, one time)
- Small-scale meetings held with the President (four times)
- Individual meetings with institutional investors and securities analysts (approximately 200 during the year)
- Facility tours (four times) and business briefing sessions (one time)
- The 110th General Meeting of Shareholders (1,359 attendees)

UBE creates many opportunities for direct dialogue with investors in and outside Japan, including conferences and individual meetings. In addition, UBE also provides a wide range of information through its website.

Furthermore, in the semiannual *UBE Business Report* for individual investors, UBE's business content and strategies are explained in an easy to digest format. UBE will continue to adhere to its commitment to timely, appropriate and fair information disclosure, and it will enhance interactive communication with stakeholders from a medium- to long-term perspective.

● Ordinary General Meeting of Shareholders

UBE holds its annual ordinary general meeting of shareholders in Ube City, Yamaguchi Prefecture, where the Company was founded, in late June. More than 1,000 shareholders attend this meeting each year. At the annual meeting, the president tells attendees about progress made under the current medium-term management plan and offers details as to UBE's business operations.

● Shareholder Returns (Dividend Policy)

UBE regards stable and sustainable dividends as the basis of shareholder returns. Our basic policy is to balance the need to maintain financial soundness and enhance shareholders' equity in preparation for future investments against the stable payment of dividends. We also consider share repurchases in light of profit and cash flow. Under the medium-term management plan, UBE seeks to maintain, in principle, a consolidated dividend payout ratio of at least 30%. The fiscal 2016 annual dividend per share was ¥6, up ¥1 from the previous fiscal year.

Main External Awards and Recognitions (Fiscal 2016)

● Overall CSR

Ratings	Japan Credit Rating Agency, Ltd.: A- Rating and Investment Information, Inc.: A-
SRI indices	FTSE4Good: Selected for the FTSE4Good Global Index since 2004 Morningstar Japan K.K.: Selected for Morningstar Socially Responsible Investment Index since 2009

● Human Resources

October 2016	Received the 2016 Governors' award for excellent employees with disabilities from the Japan Organization for Employment of the Elderly, Persons with Disabilities and Job Seekers as an excellent business in the provision of employment for people with Disabilities Recipient: Hisashi Ohama, Libertas Ube, Ltd.
October 2016	Received the 2016 President's award for effort from the Japan Organization for Employment of the Elderly, Persons with Disabilities and Job Seekers as an excellent business in the provision of employment for people with Disabilities Recipient: Kenichiro Kawano, Libertas Ube, Ltd.
November 2016	Received the Special Achievement Prize from the Japan Fine Ceramics Association Recipient: Tetsuo Yamada (Former manager, Intellectual Property Dept.)

● Environment, Safety and Technology

May 2016	Received the 44th Japan Cement Association Award Recipient: Keisuke Takahashi, Technical Development Center, Cement & Construction Materials Company
June 2016	Received the Production Technical Award in the 57th Society of Inorganic Materials, Japan Awards Recipient: Masaaki Nagai, Technical Development Center, Cement & Construction Materials Company
June 2016	Received the 2016 Encouragement Award from the Japan Concrete Institute Awards Recipient: Keisuke Takahashi, Technical Development Center, Cement & Construction Materials Company
June 2016	Received the Japan Association for Safety of Hazardous Materials President's Award at the 2016 Japan Association for Safety of Hazardous Materials Conference Recipient: Takashi Matsunaga, Ube-Fujimagari Factory, Chemicals Company
July 2016	Received the 44th annual Sasaki Award from the Japan Technical Association of the Pulp and Paper Industry Recipient: Ube Machinery Corporation, Ltd.

July 2016	Received the fiscal 2015 Ministry of Land, Infrastructure, Transport and Tourism Maritime Bureau Director-General's award for excellent eco-ship/modal shift business operators Recipient: Material Recycling Division, Cement & Construction Materials Company
July 2016	Received the Grand Prize (Minister of Land, Infrastructure, Transport and Tourism's prize) in the 18th Infrastructure Technology Development Awards Recipient: SLIM-Crete Ultra high-strength fiber-reinforced concrete cured at normal temperatures (Obayashi Corporation, Ube Industries, Ltd.)
November 2016	Received the 2016 Technology Award from the Kyushu Branch of the Society of Synthetic Organic Chemistry, Japan Recipient: Tatsuya Kawaguchi, Organic Chemistry Research Laboratory
November 2016	Received the Excellent Boiler Engineer award at the 54th All-Japan Boiler Conference Recipient: Hiroshi Oshita, Sakai Factory, Chemicals Company

● Main Tools of Communication

Website

The UBE Group's website delivers the latest information about UBE to its stakeholders in Japanese and English. The website is divided into sections, namely, About Us/Investor Relations, New Releases, Products, Research & Development and CSR Activities.



www.ube-ind.co.jp/ube/en/

Corporate Brochure

The corporate brochure summarizes the UBE Group's business activities and is available in Japanese, English and Chinese. The brochure includes a concise message and overview of the UBE Group today. It is also available as a PDF in Japanese and English on UBE's website.



Annual Report

The Company's annual report targets mainly institutional investors and is printed every August, in Japanese and English. The report mainly covers management strategy, results and financial information. The report is available in PDF format in Japanese and English on UBE's website.



UBE Business Report

This report, intended mainly for individual investors, is printed semi-annually in Japanese only. The report explains UBE's businesses and strategies in an easy to understand way and also explains various procedures related to holding shares. The *UBE Business Report* is also available as a PDF in Japanese on UBE's website.



Corporate Brochure

An abridged version of the corporate brochure, prepared mainly for individual investors, is available in Japanese only. The brochure offers a brief, easy to follow overview of UBE's history and businesses for readers not well acquainted with UBE. It is presented on UBE's website as a three-minute guide to UBE (not available as a PDF online).



Relationships with Local Communities

Responsible Care (RC) Regional Dialogue Meetings

Local member companies of the Japan Chemical Industry Association (JCIA) RC Committee hold RC Regional Dialogue meetings every two years in each of the Committee's districts with the purpose of building relationships of trust with local residents. UBE's chemical factories are members in the Yamaguchi western district, the Sakai/Senboku district and the Chiba district. The 11th RC Regional Dialogue Meeting was held in the Chiba district in February 2017.

Furthermore, in addition to the biannual RC Regional Dialogue meeting, the members in Ube City hold an RC Regional Dialogue Conference in the Ube district every year, providing a valuable forum for interaction between industry, government, academia and the public. The 14th annual conference was held in February 2017. Following an explanation of RC activities undertaken in the last year by participating companies, the Environmental Policy Office of the Ube City Environmental Department gave a presentation on environmental preservation initiatives in Ube City. Afterward, group discussions on chemical substance management and factory emissions (to air and water) were held.

Going forward, we will continue to prioritize dialogue with local communities and implement RC activities to foster harmonious coexistence and mutual development with local communities.



RC Regional Dialogue Conference in the Ube district

Hosting Local Events

The Ube Chemical Factory held the 11th UBE Chemical Summer Festival in August 2016, welcoming more than 2,900 people, including nearby residents and families. The event featured a stage show by UBE employees, a yosakoi dance and a performance by the UBE Kosan Mixed Chorus Group.



11th UBE Chemical Summer Festival

Tours of Local Industrial Facilities

The UBE Group once again participated in tours of local industrial facilities entitled "Social Tours for Grownups" in fiscal 2016. These tours are conducted by a local council established to promote industrial tourism in the cities of Ube, Mine and Sanyoonoda. Various tours were undertaken at UBE Group facilities, with 1,216 participants. Activities included a tour showcasing the production of cement (Isa Cement Factory and highlighting roads used exclusively by UBE) and another highlighting the Okinoyama Coal Mine and its founder Sukesaku Watanabe (UBE-i-Plaza and the Okinomiya Coal Mine electric powered mine shaft).

Participation in Local Events (Main Events)

UBE's offices and facilities participate in various local events to promote harmonious coexistence with local communities.

Chiba Prefecture: 2016

June:
UBE participated in a campaign to promote seatbelt use.



June:
12 UBE Group employees participated in the Goi-Rinkai Festival.



Yamaguchi Prefecture: 2016

July:
128 UBE Group employees, divided into 14 teams, competed in the 23rd Annual Ube City Marine Day Cutter Race.



September:
25 UBE Group employees participated in the 3rd Annual Mine Lantern Night Festival (Mine City).



November:
Around 1,000 participants from the UBE Group, comprising Group employees and their families, took part in the 65th Ube Festival.



Business Facility Tours

We invite various stakeholders, beginning with nearby schools, to tour our business facilities and hold family workplace tours.

Main Facility Tours (Fiscal 2016)

	Participants
Tokyo Head Office	9
UBE-i-Plaza (Ube District)	8,039
Chiba Petrochemical Factory	350
Sakai Factory	199
Kanda Cement Factory	356



Facility tour (Ube-Fujimagari Factory)



Family workplace tour (Tokyo Head Office)

Other Community Activities

At all our offices and facilities, we strive to promote harmonious coexistence with local communities through such efforts as the cleanup of areas near our facilities and participation in blood donation programs.



Greening activities in the local community (Kanda Cement Factory)



Volunteering to clear illegally dumped garbage (Ube Industries Consulting, Ltd.)

Local Newsletter *Tsubasa*

Since 2012, the UBE Group has been issuing *Tsubasa*, a newsletter for Ube City residents twice annually.



Tsubasa No. 10

Social Contribution

Support of Culture and Art

Based on the spirit of "coexistence and mutual prosperity," the core of its CSR, UBE supports the activities of the UBE Foundation and the Watanabe Memorial Culture Association, ongoing contributors to local communities and society, through donations and human support.

● The UBE Foundation

With an eye to promoting academic research, the UBE Foundation (Director: Michio Takeshita) offers grants to numerous researchers. The foundation was established in 1959 as the Watanabe Memorial Science

Foundation as a bequest of the late Takaji Watanabe, the first chairman of UBE, and renamed the UBE Foundation in 1997. In fiscal 2016, the 57th annual Ube Foundation Grant was awarded to 13 researchers selected from a total of 195 applicants.



The Ube Foundation Grand Prize awards ceremony

● **Watanabe Memorial Culture Association**

The Watanabe Memorial Culture Association (Director: Michio Takeshita) supports a variety of activities related to culture and the arts, including lectures and musical performances. The association was established in 1936 as a private bequest of the late Sukesaku Watanabe, the founder of UBE, in order to promote the welfare of the citizens of UBE City and enhance local culture. The association makes ongoing donations to organizations with strong track records in culture and arts-related activities in the Ube District as well as to the Watanabe Memorial Book Collection at the Ube City Library and the Watanabe Memorial Culture Association Picture Book Collection. In October 2016, the Watanabe

Memorial Culture Association received the 4th annual meritorious activity award from the Yamaguchi Library Association. In addition, the association is broadening the scope of its activities, including by hosting community concerts by the Japan Philharmonic Orchestra.



Support funds donation ceremony



In October 2016, we invited the Japan Philharmonic Orchestra to UBE City to perform in the 9th annual UBE Group Charity Concert. The day before the main performance, members of the orchestra participated in a hands-on concert (hosted by UBE) and a community concert (hosted by the Watanabe Memorial Culture

Association). All the proceeds from the concert were donated to local organizations and to support the recovery of communities affected by the 2016 Kumamoto Earthquake.



"Tanpopo Concert"
(Ube Industries Central Hospital)



"Hands-on concert"
(Yamaguchi University Hospital)



The 9th annual UBE Group Charity Concert



Dress rehearsal (before the main concert)



Community Concert Held by the Watanabe Memorial Culture Association
(Ube City Kuroishi Junior High School)



Joint performance by members of the Japan Philharmonic Orchestra and local junior high students



Music clinic for members of brass band clubs at local municipal junior high schools

Education and Social Contributions

Chemistry Experiment Events for Children

Every year, UBE invites schoolchildren to attend chemistry experiment programs aimed at helping children experience the fascinating world of chemistry by introducing them to UBE's advanced technologies.

Main Chemistry Experiment Events (Fiscal 2016)

Theme	Event	UBE staff	Month
Making batteries and testing them against each other	Summer Holiday Junior Science Lesson (at Ube Industries in Ube City, Yamaguchi)	Advanced Energy Materials R&D Center (Osaka R&D Center)	July
	Summer Holiday Science Lesson in Sakai (Sakai City, Osaka)		August
Making colorful kaleidoscopes using transparent polyethylene film	Dream/Chemistry-21 Children's Chemistry Experiment Show (Chiyoda-ku, Tokyo)	Organic Specialty Materials Research Laboratory; UBE-MARUZEN POLYETHYLENE Co., Ltd.; others	August
	Minamihatogaya Elementary School Travelling Experiment Show (Kawaguchi City, Saitama)	Chemicals Company; others	November



Minamihatogaya Elementary School



Osaka R&D Center

● Super Science High School Advanced Scientific Technology Experience

In August 2016, we held the Super Science High School (SSH) Advanced Scientific Technology Experience, inviting to our laboratories 12 local high school students who aspire to be researchers. There, the students heard a talk from staff at UBE Scientific Analysis Laboratory, Inc. about what chemistry research is and what makes it interesting. Afterward, they received training that included using a scanning electron microscope. Participants commented that the experience provided very useful information with regard to becoming a researcher.



Organic Chemistry Research Laboratory

Topics

Helping Promote the National Trade Skill Test System

Employees of Ube Machinery Corporation, Ltd. have for many years served as commission members and assistants for the National Trade Skill Test system, striving to help smoothly implement fair, robust testing and promote the use of the system. As a result of these efforts, employees received recognition from the governor of Yamaguchi Prefecture and the chairman of the Yamaguchi Vocational Ability Development Association for efforts related to the trade skill test.



● Internships

The UBE Group offers internships for undergraduate and graduate university students, technical college students and high school students.

Main Internships (fiscal 2016)

		Number of participants
Tokyo Head Office		8
Ube Chemical Factory		17
Chiba Petrochemical Factory		5
Sakai Factory		1
Ube Cement Factory		6
Isa Cement Factory		4
Kanda Cement Factory		1
Energy & Environment Division		5
Research centers (Ube)		1
Group companies	Ube Corporation Europe, S.A. Unipersonal	49
	Libertas Ube, Ltd.	9
	Ube Machinery Corporation, Ltd. and other Group companies	71



Ube Chemical Factory



Ube Cement Factory

● Volunteering in Afforestation and Flower Campaigns

In November 2016, the UBE Group participated in the Ninth Forest Creation Experiential Activity for Water Conservation, held in the Akiyoshidai International Art Village and sponsored by the Mine City Office of Yamaguchi Prefecture's Agriculture & Forestry Department, with 128 employees taking part in the thinning and logging of bamboo. These activities help to improve the water retention of the woodlands around Ono Lake, an important source of water for local residents and companies, and prevent flooding. In addition, the gardens planted every year by employees within the premises of UBE Group sites won seven awards in flowerbed contests held by Ube City in fiscal 2016.

Fiscal 2016 Ube City Flowerbed Contests

UMG ABS Ltd.*	Spring, Autumn	Ube City Mayor's Award	Flower gardening master division
Ube Chemical Factory	Spring	Ube City Greening Promotion Committee Award	
	Autumn	Ube-Onoda Landscapers Association Prize/Ganbare Kumamoto Prize	
Ube Material Industries, Ltd.	Spring, Autumn	Ube City Greening Promotion Committee Award	
Ube Machinery Corporation, Ltd.	Spring	Third Place Award (Spacious flowerbed division)	

* UMG ABS Ltd. was inducted into the contest's hall of fame in the autumn contest.



Recipient of the Ube-Onoda Landscapers Association Prize (Ube Chemical Factory)



Spain

Initiatives in Spain

● Relationships with Local Communities

Almazora is the neighboring town to the south of UBE's plant in Spain and home to a significant portion of the company's employees. During fiscal 2016 UBE funded a program in cooperation with the local authorities to improve the nesting habitat of bats in the area as a way to promote the biological control of mosquitoes. With the participation of 370 citizens, some 80 nests were made and installed in the area, and also 300 school children took part in environmental awareness workshops. In addition, UBE donated 20 bicycles to the local Traffic Educational Park and sponsored the town's soccer and *pilota valenciana* (a traditional handball sport) teams as well as a popular traditional summer season race organized by one of the local residents' associations.

The city of Castellón surrounds UBE to the north and west. It is the provincial capital and site of a university and various other important institutions. In August the Castellón Vice-Mayor travelled to Ube City to promote bilateral exchanges between the two cities. UBE Industries and UBE Corporation Europe are supporting this initiative and together with the universities of Yamaguchi and Castellón are studying the possibility of setting up some type of academic exchange program.

UBE has continued to support NGOs located in Castellón (like Afanías, the Down Syndrome Foundation, the Multiple Sclerosis Foundation and the Red Cross Society) and also local schools, which have promoted painting contests for students and other activities. In the field of amateur sports, local basketball, soccer and futsal teams as well as the UBE-L'illa-Grau volleyball team, comprising more than 1,300 members in total, received sponsorship from the company.



Pilota game



Volleyball team

● Promoting Interest in Innovation

UBE officials have taken part in several conferences and panel discussions organized by community institutions like the Destaca Technology Promotion Fair, the networking session of CSR Forum of Castellón (to train disadvantaged people for job hunting), the Castellón Work Forum (to promote employment) as well as seminars organized by the local newspaper *Mediterraneo*.

In October 2016, UBE inaugurated a new R&D Center, inviting some 90 visitors to an open house, including representatives from the governmental authorities, R&D institutions and the media. This event showcased the innovation processes carried out in the fields of fine chemicals and polyamides and helped to foster a better understanding of the role of the manufacturing industry in Castellón society.

All these activities were appreciated by the members of the Castellón Port community, which decided to award UBE the Innovation Prize of 2016 for its commitment to R&D activities.

In fiscal 2016, our company kept its doors open to visits by high school and university students as usual, receiving a total of 150 people, including groups from the local schools as well as from the University of Valencia Chemistry Master Course.

Another line of support to our community was the sponsoring of a contest for technical high school students, and the master course on energy efficiency in the manufacturing industry, both organized by Jaume I University in Castellón, as well as the Electric Car Team of Benicarló High School.



Job hunting training



Professional school visit



Electric car team

● Activities by Employees

UBE volunteers organized an annual blood donation campaign and food gathering drive to support the social canteen of Father Ricardo. The company also took steps, together with the Adecco Foundation, to internally promote the *Family Plan*, offering counseling to assist in providing for the special needs of disabled relatives of employees. This program is currently providing support to five families.



Food gathering campaign



Thailand

Initiatives in Thailand

● Interacting with Local Communities

The UBE Group's Asia Operational Unit (AOU) companies in Thailand* strive to actively maintain communication with local communities based on the idea that the UBE Group is an integral part of the community.

Open House

On April 8, 2016, we held an open house that a total of 60 people attended, including local residents and municipal employees. Held every year, the open house provides an opportunity to share information, allowing us to hear the opinions of local community members and explain the status of our factories.



Open House

* UBE Group Thailand companies: UBE Chemicals (Asia) Public Company Limited
THAI SYNTHETIC RUBBERS COMPANY LIMITED
UBE Fine Chemicals (Asia) Co., Ltd.
UBE Technical Center (Asia) Limited
RAYONG FERTILIZER TRADING CO., LTD.
UBE (Thailand) Co., Ltd.

● Support for Education and Culture

The AOU takes part in initiatives to provide opportunities to students. We show high school and university students who normally would not have such a chance around our factories and provide opportunities for them to interact with plant employees, thus contributing to their education. On October 4, 2016, 30 graduate students of chemistry at Chulalongkorn University visited AOU and were given a factory tour that included Innovation Plaza, an exhibit about the company and its products. In addition, on October 21, 60 students from 12 countries participating in Thailand Asean Youth Camp 2016 as well as three of their instructors visited the company. AOU gave them a presentation titled "Environment & Green Industry" about its environment-conscious business activities.

Local Environmental Cleanup and Protection Activities

The AOU actively takes part in local environmental cleanup and protection activities. On July 2, 2016, 20 employees and 70 other volunteers comprising students of Rayong Vittayakom School and their guardians cleaned up the Mae Run Pueng beach near AOU's factories. The volunteers picked up garbage and debris that had washed up, helping to beautify the local environment. In addition, on November 26, 2016, 20 volunteers comprising employees and their families took part in afforestation efforts at Rayong

Botanical Garden. On January 29, 2017, 25 volunteers comprising employees and their families participated in coral planting in the nearby Chonburi Province.



Coastal cleanup



Coral planting



Dialogue with graduate students at Chulalongkorn University



Students participating in Thailand Asean Youth Camp 2016

UBE Group Social Contribution Activities



Yamayo Trading Co., Ltd.

Locations: Head Office (Mine City); Sales Office (Ube City)

● Doing Business with an Emphasis on Communication with Customers and Local Residents



Author:
Kazunari Otsuji
General Manager, Sales Department (CSR Officer)

Yamayo Trading was founded in 1950 as Sanyo Anthracite Fuel Industries Co., Ltd., producing and selling charcoal briquettes. Since then, we have expanded our business with the times. Today we are a general fuel trading company that mainly handles coal. Our businesses include the processing and sale of small lots of coal and coke for such uses as powering steam locomotives and metal casting; the manufacture and sale of concrete retaining walls; and the rental and sale of cleaning equipment in the local community.

In our coal and coke business, we select from among the many products handled at UBE's coal center the specific items that will meet our customers' needs. The high-quality coal produced by our proprietary processing methods has earned a strong reputation among customers, and we boast the top market share in Japan for steam locomotive coal. We also strive to reduce the environmental burden of our business, to this end, sprinkling exposed products with water to prevent the generation of airborne dust and employing seepage pits to prevent coal dust runoff from contaminating waterways.

Our Head Office in Mine is situated at the base of the spoil tips (piles of waste rock generated during coal mining) from Omine coal mine. Under contract with UBE to manage the spoil tips, we work to maintain regular communication with the local community, inspect the settling basin for runoff from the spoil tips and maintain the access roads. Currently, solar power facilities are being constructed on the site by another company, and we are serving as an intermediary with the local community with regard to such issues as the leasing of the land and setting up explanatory meetings and facility tours for residents. Furthermore, we value our direct relationships with individuals and businesses, mainly the UBE Group, as we rent and sell cleaning equipment in Mine and Ube.

Going forward, we will continue to emphasize communication with customers and local residents as we seek to contribute to the community.



Company logo at its founding



A Class D51 locomotive loaded with coal supplied by Yamayo Trading Co., Ltd.

Asia Operational Unit

● Being a Good Corporate Citizen by Fulfilling our Social Responsibilities



Author:
Bhasin Ruangsri
Corporate Social Responsibility Manager

The Asia Operational Unit (AOU) currently comprises six companies in Thailand, including an R&D company. These companies produce caprolactam, ammonium sulfate, nylon, 1,5-pentanediol, 1,6-hexanediol, polycarbonatediol and polybutadiene rubber. Presently, our CSR is centered on managing four types of risks with significant impact. These are safety and occupational health risk, environment risk, compliance risk and community reputation risk. The AOU's basic CSR policy is to strive to be "a good citizen with continuous emphasis on social responsibility." This policy is the basis of our practices and guidelines relating to environmental conservation, occupational health and safety.

Safety and Occupational Health Risk: As most of us spend at least one third of our day in the workplace, safety and occupational health measures must be our top priority while working. Therefore, we compile and analyze accident statistics to identify risks and establish AOU safe work practice standards to prevent the recurrence of past incidents. These measures have led us to achieve a record of 33 million man-hours without any lost time accidents as of January 31 2017. This result shows that we have established a good safety culture in the petrochemical field.

Environmental Risk: For environmental preservation, we promote environmental knowledge to employees at all levels throughout the organization with the goal of preventing and controlling our environmental impact. In fiscal 2016, a project to reduce outside waste disposal reduced such waste 34% compared to fiscal 2015. UBE Chemicals (Asia) Public Company Limited and THAI SYNTHETIC RUBBERS COMPANY LIMITED are members of the Responsible Care Management Committee of Thailand (RCMCT) and one of the former's representatives was nominated to be chairman of a working group on the Responsible Care code of management practice in 2015.

Compliance Risk: The AOU has announced its compliance policy as a key part of the company vision to ensure that compliance with laws, regulations and relevant standards as well as our social commitments shall not be forgotten.

Community Reputation Risk: Communication with external parties to create a common understanding and ensure consistent practice across the organization in both normal situations and during crises is our key strategy. When each incoming project is introduced, public opinion and community expectations are surveyed as part of an initial environment examination (IEE) or an environmental impact assessment (EIA). This is a key strategy by which the AOU mitigates community reputation risk. We also offer factory internship opportunities for vocational and undergraduate students. Furthermore, we participate in and support sports, religious, afforestation and other activities undertaken together with communities to build good relationships.



Satisfaction hearing of community near AOU's factories



Public hearing as part of environment assessments

Site Reports — UBE Group's Principal Manufacturing Bases —

Ube Chemical Factory



Location: 1978-10 Kogushi, Ube City, Yamaguchi Prefecture

Start of operations: 1933

No. of employees: 1,315

Main products: Caprolactam, ammonium sulfate, nylon resins, industrial chemicals, fine chemicals, high-purity chemicals, polyimide, separation membranes, separators, new materials, active pharmaceutical ingredients, intermediates

As the mother factory for the chemical business, this factory produces a wide range of value-added products, with due consideration given to the environment, product quality, safety and operating stability. The factory houses a number of complex plants handling a wide range of chemical substances. Accordingly, to help all employees develop better front-line capabilities and comply with basic rules and principles while teaching them to think for themselves, we place emphasis on education and training. At the Chemical Training Center, established to ensure that skills are passed down, we are enhancing our experiential training equipment every year to develop employees with solid skills. By strengthening risk assessments and improving facilities and operations, we are working to reinforce self-managed process safety capabilities and further reduce chemical substance emissions.

Chiba Petrochemical Factory



Location: 8-1 Goi Minami Kaigan, Ichihara City, Chiba Prefecture

Start of operations: 1964

No. of employees: 284

Main products: Polyethylene, polybutadiene rubber, waterproofing materials

To fulfill our promise to ensure the safety and security of local communities and customers, we strive to anticipate every possible risk and promote related prevention measures. Regarding our environmental initiatives, we are significantly reducing the factory's environmental impact by ceasing the use of highly harmful solvents and putting in place countermeasures in such areas as exhaust gas and the incineration of waste solvents in boilers. In addition, we regularly monitor the water and gas discharged from the factory, striving to identify irregularities early on. With the aim of encouraging interaction between the local community and UBE, we participate in the Goi-Rinkai Festival, hold factory tours for local elementary school students and engage in other events. Through such efforts, we support active exchange with the local community. 2014 marked the factory's 50th anniversary. Going forward, we will continue to contribute to the development of the local community.

Sakai Factory



Location: 3-1 Chikko Shinmachi, Nishi-ku, Sakai City, Osaka

Start of operations: 1967

No. of employees: 205

Main products: Polyimide, separation membranes, electrolyte solutions, separators

Our factory is located in Sakai City, which, as an environment-friendly model city, has announced the "Cool City Sakai" concept. The factory manufactures chemical products and specialty products and is taking proactive steps to conserve energy and resources. In fiscal 2016, we once again invited local residents to the factory to exchange opinions, enhancing our relationships with them. Going forward, we will continue aiming to contribute to the local community through dialogue with local residents and cooperation with the government while maintaining safe and secure operations. In August 2016, the Osaka R&D Center opened on the factory premises. Conducting integrated R&D ranging from battery materials and other functional products to production technologies, this center aims to operate as a central base for efficient product creation.

Ube-Fujimagari Factory



Location: 2575 Fujimagari, Ube City, Yamaguchi Prefecture

Start of operations: 2013

No. of employees: 97

Main products: Ammonia, liquid carbon dioxide

This factory was established in October 2013, taking over the factory operations of Ube Ammonia Industry, Ltd., which had been in operation since 1969. The Ube-Fujimagari Factory is the only factory in Japan that produces ammonia, an ingredient of lactam and nylon chains, from petroleum coke. In fiscal 2014, the factory received Accreditation of Process Safety Inspection in accordance with the High Pressure Gas Safety Act. Following this accreditation, the factory completed two years of uninterrupted operation, until the periodic inspection in fiscal 2016. Over the two years until the next periodic inspection in fiscal 2018, all employees will work together and with partner companies to maintain safe, stable operations while maintaining zero occupational accidents and zero environmental irregularities. Going forward, we will continue to enhance our safety technologies as we strive to provide peace of mind for the local community.

Ube Cement Factory



Location: 1978-2 Kogushi, Ube City, Yamaguchi Prefecture

Start of operations: 1923

No. of employees: 238

Main products: Cement, limestone

The Ube Cement Factory is a manufacturing and shipping base for cement and limestone products produced in the Ube and Isa regions and produces specialty cement that meets various customer needs. We use waste plastic chips and wood biomass as alternative fuels in our manufacturing processes and actively work to save energy as part of regular efforts to realize a low-carbon society. Through the provision of cement, the factory contributes to recovery from earthquakes and other disasters, helps prevent and mitigate future disasters, and helps address the problem of aging infrastructure. Furthermore, the reuse of waste materials and byproducts in cement manufacturing promotes the creation of a recycling society. In addition, all employees work together and with partner companies to prevent operational accidents and accidents related to process safety with the aim of making this the safest cement factory in Japan.

Isa Cement Factory



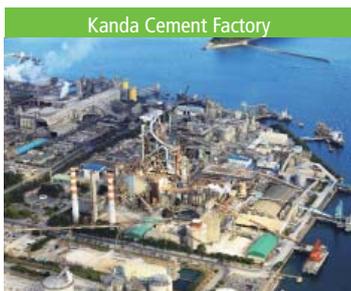
Location: 4768 Isa, Isa-cho, Mine City, Yamaguchi Prefecture

Start of operations: 1948

No. of employees: 232

Main products: Cement, limestone

Located in Mine City, home of Akiyoshidai Quasi-National Park—famous for its karstic (limestone) topography—Isa Cement Factory has one of the largest cement manufacturing and limestone mining operations in Japan. In fiscal 2016, the mine's total cumulative output surpassed the 500 million ton mark. With our factory and mine situated close to the local community, we have established and operate within voluntary managerial targets that are stricter than existing laws and regulations in such areas as noise, vibrations and water discharge. We also recognize the importance of maintaining smooth communication with the local community. We seek to become an "eco factory trusted by the community" by paying the utmost attention to environmental protection while participating in various local events and operating factory tours. In recent years, we have received favorable reviews for tours of our industrial facilities, which highlight roads used exclusively by UBE.



Kanda Cement Factory

Location: 7 Nagahama-machi, Kanda-cho, Miyako-gun, Fukuoka Prefecture

Start of operations: 1964

No. of employees: 119

Main products: Cement, limestone

The Kanda Cement factory is a leader in waste processing. In 2005, we installed a world-class high-chlorine bypass system. In 2012, we commenced operations of facilities that process waste plastic for use as fuel, pre-treating high-chlorine waste so that it can be used as a source of thermal energy. Furthermore, in December 2015, the factory's exhaust heat power generation facilities came online. The power generated by these facilities is used within the factory, helping to reduce CO₂ emissions that result from fossil fuels burnt to generate purchased electricity. Since its founding, the Kanda Cement Factory has striven to beautify and contribute to the greenery on its grounds. Furthermore, in recent years, we have also worked to green former mining sites, undertaken cleanup activities along public roads around the factory and actively accepted guests for facility tours. Through such efforts, we are proactively working to promote harmonious coexistence with local communities.



Okinoyama Coal Center

Location: 1980-29 Okinoyama, Kogushi, Ube City, Yamaguchi Prefecture

Start of operations: 1980

No. of employees: 35

Main products: Storage and distribution of coal and petroleum coke

Although UBE started out in the coal mining business, the Company completely withdrew from such operations in 1977, having closed the Okinoyama Coal Mine in 1967. However, in 1980 the Okinoyama Coal Center commenced activities focused on such coal-related businesses as operating Japan's largest fuel coal import transshipment station (annual amount handled: 7.3 million tons), which provides a stable supply of coal, an important energy source for Japan. In particular, the importance of coal as fuel for thermal power generation has been reevaluated in light of the suspension of nuclear power generation since the Great East Japan Earthquake. Aiming to maintain the trust of the local community, we are working in unison with employees and partner companies in the areas of health and safety, environmental preservation, and process safety and disaster prevention.



Ube Machinery Corporation, Ltd.

Location: 1980 Okinoyama, Kogushi, Ube City, Yamaguchi Prefecture

Start of operations: 1914

No. of employees: 996

Main products: Die-casting machines, injection molding machines, extrusion presses, crushing machines, ceramic machines, transportation equipment, water screen equipment, bridge members, floodgates, steel structures, and the manufacture, sale, servicing and maintenance of other industrial machinery

Ube Machinery Corporation marked its 100th anniversary in 2014. We continue to evolve the company's manufacturing prowess, which has been handed down over generations. By doing so, we are reinforcing our ability to meet diversifying needs. We are integrating and globalizing manufacturing, sales and service operations, and delivering valuable products that satisfy the expectations of customers around the world. At the same time, through technological innovation, we are further advancing the development of environment-friendly products and reducing the environmental impact of our manufacturing and service operations. Our fundamental policy is to become a company with an exemplary safety record by fostering a culture that makes safety its highest priority. Accordingly, we are working to ensure that all employees have a sense of responsibility for safety and to implement truly effective safety measures. We are also actively promoting employee health maintenance and improvement activities. Through these efforts, we are creating work environments that are safe and healthy for all employees.



Thailand

UBE Chemicals (Asia) Public Company Limited

Location: Rayong, Thailand

Start of operations: 1997

No. of employees: 480

Main products: Caprolactam, ammonium sulfate, nylon 6 resin, nylon compounds

The UBE Group (Thailand) gives highest priority to occupational safety and health and environmental preservation in daily production operations. We have been working to reduce costs through such measures as improving cyclohexane production facilities and replacing ammonia compressors. By increasing efficiency and reducing energy use, we expect these efforts to improve our competitiveness. In fiscal 2016, we brought odor-reducing equipment online as part of measures to reduce our environmental burden, and we have successfully reduced emissions of harmful gases, odors and VOCs. To promote smooth communication with local communities, we implement ongoing social contribution activities, including open houses and providing support for education. We encourage all employees to engage in self-directed study to learn new skills and knowledge, and we actively carry out training programs internally and overseas in addition to knowledge-sharing programs. These initiatives are part of our internal human resource development and help us meet the needs presented by rapidly evolving technologies.

THAI SYNTHETIC RUBBERS COMPANY LIMITED

Location: Rayong, Thailand

Start of operations: 1998

No. of employees: 65

Main products: Polybutadiene rubber

UBE Fine Chemicals (Asia) Co., Ltd.

Location: Rayong, Thailand

Start of operations: 2011

No. of employees: 29

Main products: Polycarbonatediol, 1,5-pentanediol, 1,6-hexanediol



Spain

UBE Corporation Europe, S.A. Unipersonal

Location: Castellón, Spain

Start of operations: 1967

No. of employees: 425

Main products: Caprolactam, ammonium sulfate, nylon 6 resin, copolymerized nylon, polycarbonatediol, 1,5-pentanediol, 1,6-hexanediol

UBE Corporation Europe (UCE)'s fiscal 2016 caprolactam and ammonium sulfate production volumes reached record highs thanks to the optimization of raw material and energy usage and reductions in avoidable losses. Aiming to apply an "Industry 4.0" approach, we introduced an Advanced Plant Control system for cyclohexane distillation processes, a UCE first. This innovative tool helps to stabilize production processes and reduce the specific consumption ratio. Furthermore, we have completed our first nylon compound production line, and energy use optimization at our cyclohexanone and caprolactam factories has further reduced steam consumption. In our R&D facilities, which occupy over 2,000 m², we have set up a pilot plant where a specialist team of approximately 30 researchers is working to develop new products and applications in the fields of fine chemicals and nylon.

Environmentally Valuable Products and Technologies of the UBE Group



▲ Facility to produce biomass fuel for power plants

A facility to produce wood biomass from such sources as construction waste for use in cofiring power generation with coal. Contributes to resource saving and the reduction of CO₂ emissions.

▼ Large die-casting machines UB-iV Series

Aluminum casting machines for manufacturing automotive components, such as engine blocks and transmission cases. Equipped with the newly developed "1-Stop Servo," an energy-saving servo pump that features an idling stop function and rotational speed control to supply oil in just the amount needed to the hydraulic power unit that powers the machine, achieving significant energy savings.



▼ Nylon 6 UBE Nylon, Nylon 12 UBESTA

UBE's nylon materials are used in various cutting-edge fields, including the mobility area, where the development and adoption of electric vehicles (EVs) and fuel cell vehicles (FCVs) is advancing. For example, these materials are used in a hydrogen tank liner jointly developed with Toyota Motor Corporation.



▲ High-purity silicon nitride powder

Featuring excellent purity and regularity of particle size, our silicon nitride powder is used in applications that include as a material in the bearing balls used in wind turbines, contributing to the expansion of renewable energy.



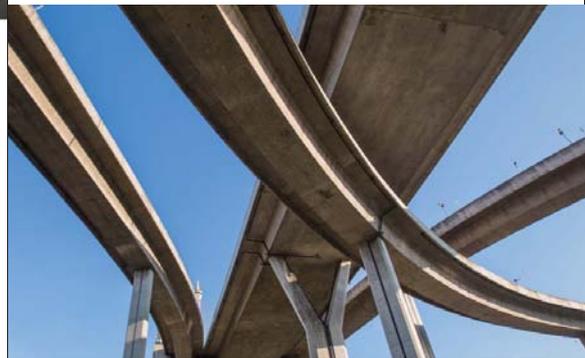
▲ Air Floating Conveyor

A belt conveyor that transports belts by supporting them with air. Compared to conventional roller-type conveyors, the unit operates at a much lower noise level and uses less energy. In addition, it has a completely sealed structure that prevents spills and dust emissions.



▼ Cement/waste processing technologies

We accept ash from incinerated urban waste, waste plastic, sewage sludge, coal ash and other waste that is difficult to process as resources. We use proprietary waste treatment technologies to pretreat this waste as necessary for reuse as materials and fuel for making cement.



◀ Raw material for waterborne coatings and artificial leather

Polyurethane dispersion (PUD): Contributes to the reduction of VOCs through use in waterborne coatings.

Polycarbonatediol (PCD): Contributes to the reduction of VOCs through use as an ingredient in resins for waterborne coatings and to resource saving as an ingredient in highly durable resins.

◀ Polybutadiene rubber (BR)

More elastic and abrasion resistant than natural rubber. Used in a wide variety of specialty products, including *UBEPOL VCR*, which enables the weight reduction of tires and thus reduces CO₂ emissions.

▼ Material for fragrance and toiletry products HELIOFRESH, HELIOTROPIN

An alternative to scents made with natural ingredients. These products prevent the deforestation of the sassafras tree (a member of the laurel family), helping to preserve woodlands.



Protecting a Beautiful

The UBE Group works constantly to develop products and technologies that address issues faced by the world today. This section features a number of products and technologies that are contributing to environmental conservation selected from among the more than 500 diverse products offered by the UBE Group.

▼ **Water and sediment quality environmental improvement agents**
CLEAR WATER, MINERAL CLEAR

Products that improve water and sediment quality and thus the environments of fish farms, enclosed water areas, etc. (sludge cleanup).



▼ **Gas separation membranes**
UBE organic solvent (alcohol) dehydration membranes
UBE carbon dioxide gas separation membranes

Used in applications related to bioethanol dehydration and to separate CO₂ from biogases, contributing to the development of environment-related businesses.

▼ **Exhaust gas processing facility UBE RID**

A high-efficiency facility that mechanically and chemically detoxifies various gases emitted by semiconductor manufacturing processes.



▼ **1,6-Hexanediol**

Used as a raw material for dry laminate adhesive for food packaging and also for UV-curing coating used in various items, including mobile phones. Use of 1,6-hexanediol requires no solvents and therefore contributes to VOC reduction.



▼ **Functional electrolyte solution for lithiumion batteries PURELYTE®**
Microporous polyolefin film UPORE®

This film is used in the lithium-ion batteries used in hybrid and electric vehicles, personal computers, mobile phones and other technologies.



▼ **Exhaust gas processing agents**
CALBREED® Sorbalit

Used to efficiently absorb harmful gases from waste incinerators and other sources.



▲ **POLYWRAP®**

An additive-free polyethylene wrap. Made without chlorine, this highly safe product releases no dioxins or chlorine gases when incinerated.

▼ **YASASHII KABE®**

Primarily made from natural diatomite. Capable of humidity conditioning and the absorption and decomposition of the VOCs that cause sick building syndrome, helping to maintain a pleasant living environment.



For an overview of UBE's socially valuable products and technologies, please see http://www.ube-ind.co.jp/ube/en/corporate/personal/ube_products.html

Future for the Planet



Third-Party Verification and Opinion



Objectives of CSR Report Verification

The Responsible Care Verification Center has verified the *UBE Group CSR Report 2017* (hereinafter, "the CSR Report"), created by Ube Industries, Ltd., in order to provide its opinion regarding the following items in its capacity as an expert in the chemical industry:

- 1) Rationality of the methods used to calculate and tabulate the performance indicators (numerical data) and accuracy of numerical data
- 2) Accuracy of the information other than numerical data provided in the CSR Report
- 3) Evaluation of Responsible Care (RC) and CSR activities
- 4) Characteristics of the CSR Report

Verification Procedures

• The Center staff visited the head office of Ube Industries, Ltd. and asked questions to verify the rationale of the methods the Company used to compile numerical data reported by each of its sites (offices and plants) and to check the accuracy of information provided in the CSR Report. Employees in charge of relevant business operations and those in charge of creating the CSR Report answered the questions of the Center staff, presented documentation, and gave explanations.

• The Center staff also visited the Sakai Factory and asked questions to verify the rationale of the methods the factory employed to calculate the numerical data reported to the head office and the accuracy of the numerical data and other information provided in the CSR Report. Factory employees in charge of relevant business operations and those in charge of creating the CSR Report answered the questions of the Center staff, presented documentation and providing explanations. The Center staff also checked the consistency of the items used with the material evidence submitted.

• The Center used sampling methods to verify the numerical data and other information contained in the CSR Report.

Opinions

1) Rationality of the methods used to calculate and tabulate the performance indicators and accuracy of the numerical data

• Both the head office and the Sakai Factory calculated and tabulated the performance indicators in a rational manner.

• Performance-related numerical data was accurately calculated and tabulated using data collection software.

2) Accuracy of the information other than numerical data provided in the CSR Report

• The information published in the CSR Report was accurate. The Center pointed out that some of the expressions used and the writing style in places made the draft CSR Report difficult to understand. These issues have been addressed in the final version of the report.

3) Evaluation of Responsible Care (RC) and CSR activities

• The Center commends the establishment of performance indicators for RC activities and steady operation of the PDCA cycle based on the quantitative understanding of results.

• UBE's segments, namely Chemicals, Pharmaceuticals, Cement & Construction Materials, Machinery and Energy & Environment, which operate in a range of sectors, all participate in the Accident Information Liaison Group to discuss the key points of information about accidents in and outside the Company to be shared horizontally within the Company and compile and share said information. The implementation of these efforts is confirmed through on-site checks performed by the Head Office. We commend these Company-wide efforts to prevent accidents and disasters.

• The Sakai Factory has published its own implementation procedures and key implementation points regarding specific initiatives under the annual environment, safety and health management plan via the Company intranet so that employees can view them at any time. We commend this information-sharing initiative.

4) Characteristics of the CSR Report

• We commend the report for clearly laying out which UBE Group activities correspond to which of the United Nations' Sustainable Development Goals. We hope see initiatives aimed at contributing to the creation of a sustainable society continued going forward.

• The report presented the results of a wide range of RC and CSR activities with numerous photos and messages from individual employees, making it easy to understand and relate to. The report will be thus be useful in dialogues with a wide variety of stakeholders.

Scope of This Report

Period Covered	Fiscal 2016 (from April 1, 2016 to March 31, 2017) (The report, however, does at times refer to activities conducted in fiscal 2017 and future plans.)		
Companies covered: • The UBE Group	Of which the following companies are covered in the reporting of major financial data (page 13)	Ube Industries, Ltd. and its consolidated companies (95)	Consolidated subsidiaries: 70 Equity-method affiliates: 25
	Of which the following companies are covered in the reporting of environmental performance data	Ube Industries, Ltd.	Four chemical factories (Chiba, Sakai, Ube and Ube-Fujimagari) Three cement factories and one research center (Ube, Isa and Kanda, and the Technical Development Center) The Okinoyama Coal Center Research laboratories in the Ube District (the Organic Chemistry Research Laboratory, Process Technology Research Laboratory and Pharmaceuticals Research Laboratory) The Organic Specialty Materials Research Laboratory
		Other Group companies (9)	Ube Film, Ltd., Meiwa Plastic Industries, Ltd., Ems-Ube, Ltd., UBE-MC Hydrogen Peroxide, Limited, Ube Exsymo Co., Ltd., Ube Material Industries, Ltd., Ube Machinery Corporation, Ltd., Ube Steel Co., Ltd., Fukushima, Ltd.
Definitions	UBE: refers to Ube Industries, Ltd. (unconsolidated) The UBE Group: refers to the UBE Group companies, including Ube Industries, Ltd.		
Areas covered	Japan and some locations overseas (including Thailand, Spain and others)		
Statistical data published in this report	<ul style="list-style-type: none"> • All statistical data and relevant descriptions published in this report, excluding the environmental performance data, cover all Group companies. • In principle, data is for the last five years (fiscal 2012 to 2016) • The scope of data, however, does vary in places. In such cases, the specific scope is noted on the relevant page. 		
Reference guidelines	This report was created with reference to the Japanese Ministry of the Environment's Environmental Reporting Guidelines (2012 edition). We also referred to the Ministry's Environmental Performance Indicators Guidelines for Organizations (2002 edition) for environmental performance data and to the Ministry's Environmental Accounting Guidelines (2005 edition) for environmental accounting standards.		

Note: In April 2017, the Organic Chemistry Research Laboratory and Process Technology Research Laboratory were reorganized as the Strategic Core Technology Research Laboratory, and the Organic Specialty Materials Research Laboratory was reorganized as the Frontier Technology Research Laboratory.

Editorial Policy

We began publishing an annual RC report in 1997 to introduce our environmental initiatives. We subsequently changed the name of the report to the CSR Report. This year, 20 years after the very first publication of the report, we have created the UBE Group CSR Report 2017 as our 13th such report. In our editing of this year's report, we have maintained a commitment to producing a readable document that is of interest to readers. The main features of the 2017 edition are as follows:

1. Special Feature: The UBE Group, Contributing to Society through Its Businesses

The UBE Group is developing new products and technologies to fulfill its role as a useful member of society and, to help solve various social issues through its business, is advancing a number of initiatives. The special features showcased examples of such initiatives, namely, 1) "Ube Machinery Corporation, Ltd., Supporting the Industrial Base" and 2) "The Osaka R&D Center: Creating the Future with Cutting-Edge Materials."

2. Relationships with Stakeholders and the Scope of Coexistence and Mutual Prosperity

Expanding the scope of "coexistence and mutual prosperity," a philosophy handed down since the Group's founding, through everyday business activities is the essence of the Group's CSR activities. We used an illustration to express this idea and indicated the means by which we pursue stakeholder engagement.

3. KPIs and SDGs

The UBE Group's targets, including those of the medium-term management plan, have been defined in terms of KPIs, and the report indicates which parts of the "Transforming Our World: The 2030 Agenda for Sustainable Development" (the SDGs) these targets directly relate to.

4. Easy-to-read page format

We once again structured the sections of this report to reflect the seven core subjects of ISO 26000* while also aligning its content with the UBE Group's existing CSR matrix to satisfy all of our stakeholders.

* The ISO 26000 core subject "the environment" is presented in this report as "Environment and Safety"

Third-Party Expert Comments

The UBE Group welcomes expert comments on its CSR report to enhance objectivity and identify new CSR challenges. We intend to reflect these opinions in future reports and take them into consideration when promoting UBE Group CSR activities.

Junko Nagata
Associate Professor
Graduate School for Creative Cities, Osaka City University

Six years have passed since I last evaluated the UBE Group's CSR activities, and I feel that, overall, the Group's initiatives have deepened. I'd like to bring up two main points specifically.

First, with regard to the link between companies and society, the focus of discussion has been shifting from corporate social responsibility (CSR) to creating shared value (CSV). This is often understood as helping to solve social problems while simultaneously enhancing corporate competitiveness. In this vein, under its Change & Challenge 2018 medium-term management plan, the UBE Group has set goals for reducing its GHG emissions, including those from its overseas locations, and made the expansion of products and technologies that help reduce environmental burden a key priority. This is one of the ways that UBE's initiatives have deepened. In fiscal 2016, the UBE Group realized a 14% reduction in GHG emissions from the fiscal 2005 level and 25% of its overall net sales were of environment-friendly products and technologies (compared with goals for fiscal 2021 of 15% and 30%, respectively). However, it seems that progress on both these fronts has plateaued in the past few years. As the Group gets closer to its targets, I hope it will make even greater efforts, implement ambitious initiatives that allow it to surpass its targets and achieve results.

Next, this year's report included KPIs that clarify the order of priority of UBE's CSR activities and their targets and incorporated the 2030 Agenda for Sustainable Development. These changes, which are fitting for the UBE Group, as it has both local and global businesses, represent the second way in which I feel that the Group's initiatives have deepened.

The interview with President Yamamoto gave me the impression that, in its business activities, while responding to conditions in the economy and larger world, UBE aims to help solve real-world problems in ways that align with its core businesses and respond to demand for new value while increasing the Group's competitiveness. In other words, it aims to carry out CSR from the perspective of business strategy. I think that the UBE Group's CSR framework and evaluation criteria meet the global standard. Going forward, the steady achievement of the targets it has set will be the key point in evaluating UBE's efforts in this area.

Given that the UBE Group has deepened its efforts in these ways, my request for the Group, which I know it can live up to, is that it set up advanced initiatives to reform work practices. Many companies are now discussing work practice reforms. The goal of such reforms is, I believe, not only to reduce working hours and enable employees to balance home and work responsibilities; such practices also aim to spur corporate and social innovation.

The idea presented in this year's special feature that developing outstanding people is essential to creating outstanding products is at the heart of corporate competitiveness. The stance of focusing on fostering front-line capabilities and developing professionals, including the younger employees who will be responsible for the Company's future, is a laudable and cherished part of the UBE Group's tradition that goes back to its founding. As such, I hope to see such efforts taken beyond just developing people by leveraging the idea of coexistence and mutual prosperity to reform employee work practices and spark innovation.



Junko Nagata
Associate Professor
Graduate School for Creative Cities,
Osaka City University

Dr. Nagata studied policy analysis and business at the Japan Coast Guard Academy, the Saitama University Graduate School of Policy Studies and

the Osaka University Graduate School of Economics. She took her current position at Osaka City University in 2003. She is engaged in initiatives aimed at helping companies and consumers create social change and value, including work as the lead researcher for the Okaimonokakumei! Project, which seeks to help solve environmental problems using a shopping-centered approach. Her recent books include titles related to creating social change through shopping and about working practices for women, based on her own experiences.

Website: <http://junko-nagata.com/> (Japanese language only)

Response to the Third-Party Comments

We very much appreciate Dr. Nagata's valuable insights with regard to the *UBE Group CSR Report 2017*. Dr. Nagata commented that, having read our CSR report for the first time in six years, she felt that the Group's CSR initiatives had deepened overall. This renews our conviction that our efforts have been on the right track.

Dr. Nagata recognized our goals of reducing greenhouse gas emissions and expanding businesses that contribute to the environment as ways of creating shared value (CSV). She also favorably evaluated the establishment of KPI-based targets and inclusion of the 2030 Agenda for Sustainable Development (the SDGs). We decided to include the SDGs in the report to communicate to stakeholders how the UBE Group's activities are related to solving global-scale problems.

The approach of carrying out "CSR from the perspective of business strategy" that Dr. Nagata perceived in the report is precisely the stance that we in management take and one that we value greatly. Fulfilling our corporate social responsibility through our businesses is vital to building a sustainable society and is connected to the spirit of "coexistence and mutual prosperity," a part of the UBE Group's Management Philosophy.

Dr. Nagata's suggestion of creating advanced initiatives to reform work practices is a task for us going forward. Promoting work practice reform not only improves employee work-life balance, but can improve labor productivity, so we are beginning a number of initiatives in this area.

Going forward, the UBE Group will work hard to continue to create value and further deepen the confidence of all its shareholders.



Hideo Tamada
Executive Officer with Responsibility for
Group CSR

UBE INDUSTRIES, LTD.



Seavans North Bldg.,
1-2-1, Shibaura, Minato-ku, Tokyo
105-8449, Japan
Phone: +81-3-5419-6118
Fax: +81-3-5419-6237
URL: <http://www.ube.co.jp>

Person responsible for editing and publishing this report:
Hideo Tamada, Executive Officer with Responsibility for Group CSR
Section responsible for editing this report:
CSR Department



UBE DOG
ロボくん

The UBE DOG was created in March 1997 as a character for the UBE Group's TV commercials.



The "Heartfelt Mark" logo affirms that this report was published by a company that proactively promotes the employment of persons with disabilities.



Responsible Care®