

Meeting society's needs with nature's blessings



AIR WATER BUSINESS GUIDE 2020

Meeting society's needs with nature's blessings



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Contributing to Manufacturing and Supporting Lifestyles

Meeting Society's Needs with Nature's Blessings

The Air Water Group's corporate slogan is "meeting society's needs with nature's blessings." It speaks of our strengths and the social value we provide, such as how our technologies, expertise, and business model combine seamlessly to transform air and water into a stable, sustainable supply of invaluable products, services, and solutions for industries and lifestyles.

Indeed, it encapsulates our determination to serve as a valued partner, providing essential resources from the earth in ways that meet the requirements of all people, communities, and industries.



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Timeline of "Value Creation" to Enrich Society

Bringing together its diverse expertise and technologies, the Air Water Group makes effective use of the earth's precious resources—air and water, which can be found in its name—to support lifestyles and industries, and respond to the needs of society.



P.3

Industrial Gas Business

Our ability to harness the qualities of oxygen, nitrogen, argon, and other gases to benefit everything from manufacturing to everyday life supports the very foundation of society. The Air Water Group stably supplies various industrial gases that meet customer needs through its sales bases and nationwide production network extending from Hokkaido to Kyushu.



P.5

Chemical Business

We are not simply suppliers; we strive to add real value for customers. Through the proprietary technologies of each of our group companies—which encompass electronic materials, circuit products and materials, substrate materials, and precision polishing pads—we support every process in the manufacturing and installation of semiconductors. Among others, we also provide organic acid and quinone-based products, food additives such as sodium acetate, and pharmaceutical and agricultural chemical intermediates.



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Medical Business

Besides provision of medical gases, Air Water offers comprehensive medical solutions from advanced medical care to everyday, general medical care. The group has expanded its business domain to include the construction of hospital facilities such as operating rooms, respiratory and other medical equipment, SPD and contract sterilization, and medical, as well as sanitary products, injection needles, and dental materials.



P.7

Energy Business

The Energy Business began in Hokkaido in 1955 with the goal of enriching people's lives. Today, Air Water operates the LP Gas and Kerosene businesses under the Hello Gas brand, still with the same aspiration. The company is also engaged in various other energy businesses, such as supplying LNG, manufacturing and selling LNG tank containers, and retailing electricity, as a comprehensive energy service provider.



P.8

Agriculture and Food Products Business

The Food Products Business, which started with the sales of frozen foods utilizing liquid nitrogen, commenced full-scale participation in the agriculture sector in 2009. Our operations in this area now span three domains relevant to ensuring a secure supply of safe food for consumers. These are: processed agricultural products, which covers everything from plant cultivation to procurement, including products such as ham, deli food, frozen food, and confectionery; beverages, covering fruit, vegetables, and juice; and independent food and farming, covering produce retail and agriculture machinery.



P.9

Logistics Business

We operate a comprehensive range of logistics businesses, including container transport between Hokkaido and Honshu, and—taking advantage of the low-temperature transportation technology accumulated in the transportation of high-pressure gases such as oxygen and nitrogen—distribution services with warehouse functions, food logistics for retaining freshness through nuanced temperature control, medical logistics for transporting blood (plasma), and even the manufacturing of vehicles



P.10

Seawater Business

Recognizing further potential in industries where air and water combine, we made a capital investment in Tateho Chemical Industries Co., Ltd. in 1988. Since then, we have pursued seawater as a business to effectively harness its resources and create an extensive range of products, including industrial and household salt (in which we have the dominant Japanese market share) as well as high-value-added magnesia products.



P.11

Other Businesses

Unique technologies and products such as aerosols, O-rings, ECOROCA® building material made from recycled wood, and NV metal surface treatments underpin the growth of the Air Water Group. We are also pursuing new businesses in order to drive the future growth of the group, such as power generation using woody biomass, high-power uninterruptible power supplies (UPS), and our engineering and equipment ventures predominantly in North America.



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Major Group Companies / Major Global Sites / Corporate Profile / Principal Shareholders

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Timeline of “Value Creation” to Enrich Society

Air Water Inc. was established in 2000 through the consolidation of three companies—Hoxan Corporation, Daido Sanso Co., Ltd., and Kyodo Oxygen Co., Ltd.—each with different histories and cultures, to begin a new mission and purpose: to provide services that innovate industry and society through “air and water.” Since then, the new company has conducted aggressive M&A activities to reinforce its business foundation, expand its business areas, and improve the comprehensive strength of the group. Air Water will continue taking on businesses that are ahead of their time, in keeping with the spirit of its founder, which has been passed down in an unbroken line.

Before Air Water

In 1993, Daido Sanso Co., Ltd. and Hoxan Corporation merged to form Daido Hoxan Inc., setting a precedent for reorganization within the industry. Later, in 2000, Air Water Inc. was established with the consolidation of Daido Hoxan and Kyodo Oxygen Co., Ltd.

1929 Hokkaido Sanso Co., Ltd. is established.

(Company renamed Hoxan Corporation in 1966)

Aiming to save lives and help develop local industries



In the years before the war, a certain individual passed away due to poor transportation conditions and the inability to receive sufficient oxygen inhalation. The deceased's elder brother, the then head of the Chamber of Commerce and Industry of Sapporo City, poured his efforts into founding Hokkaido Sanso Co., Ltd.

- 1929 Operation of 30 m³/h oxygen production machinery begins.
- 1955 Begins sales of LPG.
- 1963 Production and sales of Bath-All prefabricated bath units begins.
- 1979 Frozen foods business utilizing liquid nitrogen launched.

1933 Daido Sanso Co., Ltd. is established.

Founded in the spirit of a united front and collaboration



At the time, industrial gas was distributed to the military-support industry, and difficult to obtain for smaller businesses. Daido Sanso was established when oxygen-using businesses decided to take matters into their own hands, and band together and produce it themselves.

- 1933 Operation of 60 m³/h oxygen production machinery begins.
- 1970 On-site supply for chemical manufacturers begins.
- 1983 V1 high-purity nitrogen gas generator is developed.
- 1988 Industrial magnesia business launched.

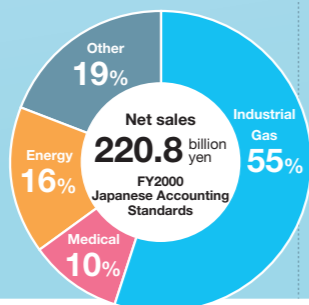
1962 Kyodo Oxygen Co., Ltd. is established.

Supporting Japan's rapid economic growth with oxygen



Kyodo Oxygen was established in the midst of the Japanese economic miracle. Sumitomo Metal Industries established Kyodo Oxygen inside its Wakayama Ironworks to meet rapidly increasing steel demand, and the supply of oxygen for converter steelmaking began.

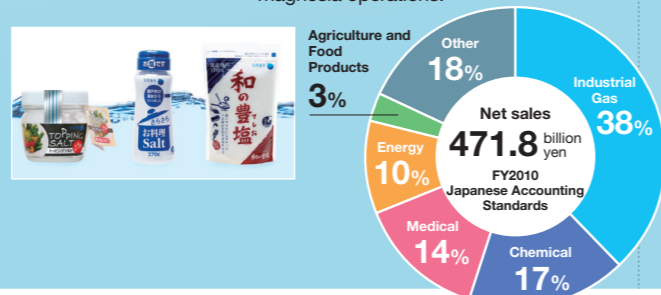
- 1962 Supply of gas to Kokura Ironworks begins.
- 1978 Production and sales of ELNACKS® welding argon begins.



Active Merger-Based Expansion Strategy

Starting in the 2000s, we have expanded our business in scale and scope through a series of mergers and acquisitions, particularly in areas such as industrial gas and medical domains, while ventures in new areas like agriculture and food, and seawater, have built the foundations for our diverse business interests.

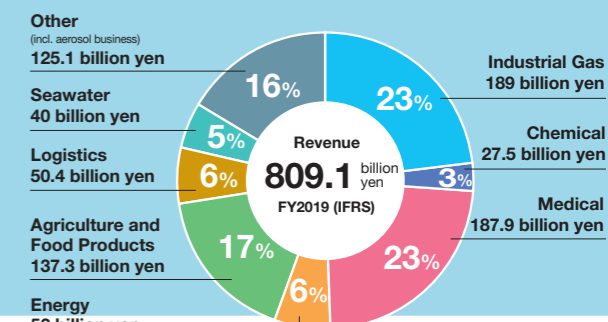
Industrial Gas	2001	Carbon dioxide and hydrogen gas businesses launched.	
	2004	No. 1 VSU unit (high-efficiency, compact liquefied oxygen/nitrogen production plant) begins operations. KOBELCO Air Water Cryoplant, Ltd. established.	
Chemical	2002	Coal chemical business begins.	
Medical	2001	Medical-related services business (SPD) launched.	
	2005	Medical piping facilities business launched.	
	2007	Injection needles business launched.	
	2010	Hospital facility (e.g., operating rooms, ICU) installation business launched.	
Energy	2004	Increased momentum for LNG tank container business.	
	2009	Sales of VIVIDO, a hybrid water warming and heating system, begins.	
Agriculture and Food	2002	Ham and sausage business begins.	
	2009	Air Water Farm established; production business begins.	
Other	2002	Expands aerosol business.	
	2007	Seawater business established with salt production and industrial magnesia operations.	
	2008	Electronic material business launched.	



Reinforcing the All-Weather Management System

Since 2010, our M&A-based expansion into new lifestyle-related business domains like agriculture and food, and “lifestyle medical,” has been designed to ensure Air Water continues to grow in a stable manner. The result is our All-Weather Management System, a finely balanced portfolio covering industrial and lifestyle-related businesses.

Industrial Gas	2014	VSUA, capable of producing argon, goes into operation in Vietnam.	
	2016	Equipment manufacturing business launched in Malaysia.	
Chemical	2015	Naphthoquinone-led quinone business launched.	
	2019	Transfers coal chemical business.	
Medical	2011	Dental business launched.	
	2013	Expands home medical care and SPD business.	
	2016	Sanitary products business launched.	
	2017	Hospital interior and facility installation business launched in Singapore.	
Energy	2012	LP gas-powered mobile power source cars developed.	
	2019	LP gas business launched in Vietnam.	
Agriculture and Food	2011	Fruit and vegetable wholesale and processing business launched.	
	2012	Contract production of beverages business launched.	
	2013	Manufacture and sales of agriculture machinery business launched.	
	2015	Fruit and vegetable retail business launched.	
Logistics	2011	Vehicle body mounting business launched.	
	2013	Low-Temperature Logistics Center opened; increased momentum for low-temperature logistics business.	
	2015	Woody biomass power generation business launched.	
Other	2013	Water treatment facility and pipe renewal business launched.	
	2015	Woody biomass power generation business launched.	



Industrial Gas Business

The Industrial Gas Business delivers a stable supply of industrial gases, such as oxygen, nitrogen, argon, and carbon dioxide, by the optimum supply method, ranging from supply using cylinders or tank trucks to on-site supply. The Industrial Gas Business also offers gas applications, as well as engineering and industrial equipment, by making effective use of technologies developed in-house.

Types of Gas

Oxygen	Nitrogen	Welding gas
Argon	Carbon dioxide	ELNACKS® DIE ARGON AW SHIELD HOKUSEAL
Hydrogen	Helium	Others
Rare gas	Cutting gas	Specialty chemicals Ethylene oxide Semiconductor specialty gas Stable isotopic gases, etc.
Xenon Krypton Neon	DIETHYLENE DIE CUT® DIE LASER Acetylene	



Chemical Business



From electronic materials and pharmaceutical and agricultural chemical intermediates, to quinone-based products (produced by Kawasaki Kasei Chemicals) and phthalic anhydride, we produce and offer a stable supply of various high-value-added chemical products. Further, in 2019, we acquired Daito Chemical, a leading manufacturer of sodium acetate; FILWEL, a manufacturer of precision polishing pads; and Shin-etsu Lead, a company predominantly engaged in the installation of trial substrates.

Air Water	Kawasaki Kasei Chemicals	Daito Chemical	FILWEL	Printec Shin-etsu Lead
Functional chemicals	Organic acid-based products	Food additives	Electronic materials	Electronic components
Electronics materials	Phthalic anhydride	Sodium acetate	Precision polishing pads	Circuit products
Pharmaceutical intermediates	Fumaric acid	Contract organic synthesis		Circuit materials
Agricultural chemical intermediates	Succinic acid			Trial substrate installation
	MAXIMOL			
	Quinone-based products			
	Naphthoquinone			
	Naphthoquinone derivatives			

Industrial Gas



On-site Supply

Air Water installs gas generation equipment on the premises of factories that consume a large volume of gas—such as those producing steel, chemicals, and electronics—and provides gas supply through pipelines.



Supply by Tank Trucks

Air Water delivers various types of liquefied gas produced at manufacturing plants to customers' plants via tank trucks. Thanks to its supply network covering the whole of Japan, Air Water has established a secure and safe supply structure.



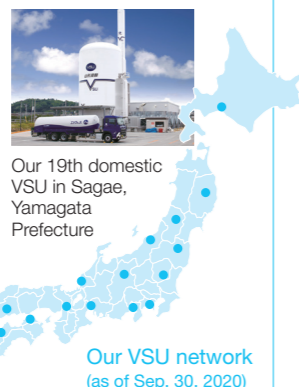
Cylinder Supply

Air Water supplies cylinders, gas cylinder bundles, LGC (ultra-low-temperature liquefied gas containers), etc., to various local industries by the method most appropriate to usage and purpose.

VSUs

Balancing Clients' Requirements with Stability of Supply

High-efficiency, compact liquefied oxygen/nitrogen production plants—known as VSUs—are a handy way to produce just the right amount of industrial gas close to the point of demand. Through this business model, we are building safe and stable supply systems in regional areas together with our partners. Our 19 VSUs nationwide help make our supply network more resilient in disaster and emergency situations, and the shorter distribution distances mean reductions in energy consumption, decreased carbon dioxide emissions, and robust business continuity planning—all of which contribute to the SDGs.



Our 19th domestic VSU in Sagae, Yamagata Prefecture

Our VSU network (as of Sep. 30, 2020)

Global

Expanding into the Indian Market Where Demand for Industrial Gas Is Expected to Grow

In 2013, the Air Water Group acquired a local industrial gas company in India. Further, when Praxair (USA) and Linde (Germany) merged in 2019, we acquired some of their industrial gas operations in India. We are currently engaged in onsite gas supply business for ironworks, and cylinder and tank truck supply.



Equipment and Construction



Industrial Equipment

Air Water supplies industrial equipment related to welding and cutting, such as ELNACKS®, an argon-based gas for welding, and offers welding solution services.



Gas Applications

Air Water develops and proposes gas equipment and systems that effectively use the diverse properties of industrial gases to contribute to its customers' improvement of production efficiency or sophistication of technology.



Engineering

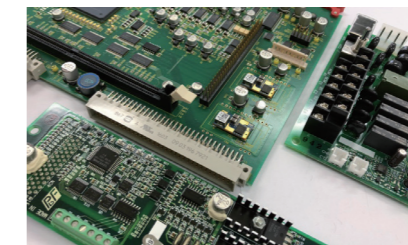
Air Water offers integrated solutions based on the process engineering of cryogenic air separation systems, from design and fabrication to safety management.

Electronic Materials



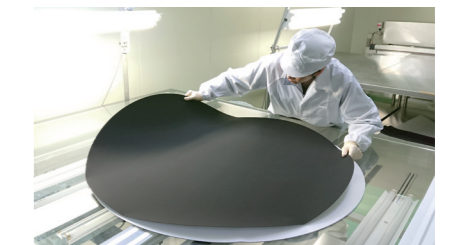
Electronic Materials

We leverage liquid-phase air oxidation, nitration, and other synthesizing technologies to manufacture and sell a variety of products to satisfy customers' needs, such as the semiconductor sealant SK Resin.



Circuit Products

Printec designs high-density circuits and manufactures and sells high-density mounting boards such as servo motor control boards.



Precision Polishing Pads

FILWEL manufactures and sells precision polishing pads which are used in the manufacture of electronic devices and others that require ultra-precise surface finishing.

Functional Materials



Thermally Expandable Graphite (TEG)

We manufacture and sell TEG, a material with a wide range of applications. When the material undergoes compression molding, it becomes a material used in seal components, and when mixed with flammable substances such as rubber and urethane resin, it functions as a flame retardant.



Pharmaceutical and Agricultural Chemical Intermediates

The group's strong arsenal of heterocyclic compounds, which play an important physiological role, are used in the synthesis of various derivatives to meet the diverse development needs of customers.



Quinone-Based Products

Kawasaki Kasei Chemicals is the only company in the world to successfully produce quinone-based products such as naphthoquinone at commercial scale. The unique properties of these products make them ideal for use in diverse fields such as agrochemicals, medicine and electronic materials.

Core Businesses



Organic Acid-Based Products

We manufacture and sell phthalic anhydride used in vinyl chloride plasticizers, organic acid products such as succinic acid and fumaric acid used in food additives, and organic acid-based derivatives such as Maximol, which is used in the urethane-based materials for heat insulating agents.

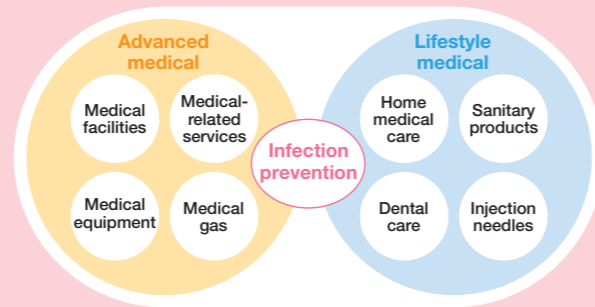


Food Additives (Sodium Acetate)

Sodium acetate is used as an agent to increase the longevity of food additives, and as a raw material in dialysis agents. Daito Chemical is a leading manufacturer of sodium acetate—it was the first company in Japan to successfully mass-produce the chemical, and it also has its own particle control technologies.

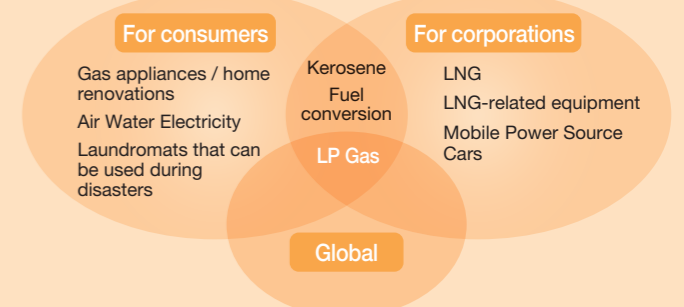
Medical Business

We offer a broad spectrum of products and services, from sophisticated medical solutions underpinning the increasingly advanced medical sector to lifestyle medical solutions. The former includes state-of-the-art medical facilities, medical gas supplies, contract hospital services, and equipment maintenance, while the latter includes dental supplies, sanitary products, injection needles, and other items needed by local clinics and home care providers.



Energy Business

Air Water has been supplying LP gas and kerosene as energy for daily life to general households, commercial facilities, hospitals, and other public facilities, and also as energy for industrial uses to plants. Air Water is also engaged in the supply of LNG as well as the manufacture and sale of LNG-related equipment, playing an essential role in community life.



Advanced Medical



Medical Facilities and Equipment

We have the largest market share for the design and installation of operating rooms, ICUs, and medical gas piping systems in Japan. We combine the advanced medical equipment and systems required for ICUs to propose treatment environments with enhanced functionality and comfort.



Medical-related Services

Air Water helps hospitals to operate more efficiently by providing medical outsourcing services to support hospital management and operations, including in-hospital logistics management and the sterilization or disinfection of medical instruments.



Medical Gas

From medical oxygen (for which we have the top share of the Japanese market) to nitric oxide formulations, liquefied helium for use in MRIs, and carbon dioxide for use in endoscopic surgeries, we offer a stable supply of medical gas.

For Consumers



LP Gas

With a focus on Hokkaido, Air Water delivers LP gas under the Hello Gas brand as environmentally friendly, clean energy essential for regional communities.



Kerosene

In Japan, kerosene is just as important an energy source as LPG, as it is used daily for water and heating. We work hard to maintain our framework for safe, stable, direct delivery of kerosene to households.



Gas Appliances / Home Renovations

In addition to supplying gas, kerosene, and electricity, we also sell energy-related solutions such as VIVIDO—a hybrid air conditioning and water heating system—while also providing services relating to home renovations.

Lifestyle Medical



Home Medical Care

Air Water helps patients with respiratory problems to live comfortably every day through home oxygen therapy, which involves the use of an oxygen concentrator for the stable inhalation of high-concentration oxygen.



Dental Care

We manufacture and sell dental and orthodontic equipment and materials, as well as oral care products, for dental clinics and dental labs, and offer online sales of dental care products in general. We are also working to commercialize regenerative treatments using dental pulp stem cells.



Injection Needles

We manufacture high-quality, Japan-made hypodermic needles for general, dental, aesthetic and veterinary purposes, exporting them to over 80 countries around the world. In June 2020, we completed the construction of a new plant to reinforce our production system.

Infection Prevention



Infection Prevention Products

To counter the spread of COVID-19, we are reinforcing our production and supply systems for sanitary products, a lineup that includes face masks, gloves, hand and finger sanitizers, and gauzes. In addition to these sanitary products, we are also helping to prevent the spread of the virus in other ways. We have developed an AI-based, non-contact body temperature measurement solution; a remote medical support system that allows hospital wards to communicate with remote medical offices, and that enables doctors to remotely monitor the condition of patients; a UV irradiation device that rapidly disinfects frequently touched surfaces; partitions; and negative pressure ventilation equipment.

Air Water International Advanced Medical Center (Kobe)



The Air Water International Advanced Medical Center opened in May 2019 as a research and development hub for new products and services. It is also a place where individuals can see, experience, and learn about the Air Water Group's state-of-the-art technologies and services in the medical field.

For Consumers



Laundromats

In January 2020, we launched a laundromat business. So that it may still be used during times of disaster, we developed laundromats that use LP gas to ensure operation even during power outages. Through this development, we are providing a sense of security and comfort to regional communities.

Air Water Electricity



Electricity Retailing

Air Water Hokkaido, a regional business company of Air Water, collaborates with Hokkaido Electric Power to sell electricity generated by Hokkaido Electric Power under the label "Air Water Electricity Powered by Hokuden."

For Corporations



Fuel Conversion

We offer a distributed energy system that boasts low CO₂ emissions and provides power even in times of emergency. Through this system, we offer the conversion of heavy oil and other sources to LP gas and LNG for industrial use.



LNG-related Equipment and Facilities

Utilizing the ultra-low-temperature technology and unique expertise we have built up over many years, we manufacture LNG tanker trucks—for which we have the highest domestic share—and other equipment, while we also design and build facilities such as V Satellites to unload LNG delivered to areas of demand.

Global



LP Gas (Vietnam)

In 2019, we welcomed Pacific Petro to the Air Water Group through an M&A venture. In doing so, we are expanding our LP gas sales business in Vietnam, where the market is expected to grow due to the increasing population and expanding economy.



Emergency Power Generators / Mobile Power Source Cars

Mobile power supply vehicles generate electricity using easily procured LP gas as fuel, thereby playing an important role as emergency power providers during a disaster or power failure.

Agriculture and Food Products Business

The Agriculture and Food Products Business started with sales of frozen foods utilizing liquid nitrogen. Through the integration into the Air Water Group of functions ranging from vegetable production to the distribution of processed foods and beverage products across Japan, the Agriculture and Food Products Business is creating a new value chain that maximizes group synergies.

We provide retail services and food safety guidance, as well as manufacture and sell agricultural machinery.



Logistics Business

The Logistics Business started with the transportation of high-pressure gases, such as industrial and medical gases. Today, the business has expanded into a variety of fields, including food logistics (mainly 3PL), medical logistics for the transportation of blood, general cargo transport, container transport, and even design and mounting of truck bodies.



Agricultural and Processed Foods



Ham and Deli Meats

With the top share of Japan's cured/uncured hams market, we offer discerning customers throughout Japan top-quality ham and deli foods in three brands: Sunsetsu, Sagami Ham, and Daisen Ham.



Agricultural and Processed Foods

Predominantly for commercial use, we provide a range of precisely processed frozen foods, such as high-quality frozen vegetables including broccoli, sweetcorn, and pumpkin, and New Year's osechi dishes. By proposing new menus, we are satisfying the needs of professional chefs and the food service industry.



Sweets

Taking advantage of our strengths in product development, we offer a range of confectionery, mainly chilled desserts, for both general consumers and businesses. By decreasing the use of additives, as well as ensuring thorough hygiene management to extend consume-by dates, we are contributing to the reduction of food waste.

Agricultural and Processed Foods



Cultivation

At the Chitose Farm in Hokkaido, which has one of Japan's largest greenhouses, and the Azumino Farm in Shinshu, we cultivate tomatoes and other greenhouse vegetables. Mainly in Hokkaido, we are also involved in outdoor vegetable cultivation.



Procurement and Processing

With over 700 contracted farmers in Japan alone, we have considerable purchasing power, and provide customers nationwide mealtime favorites like frozen pumpkin from Hokkaido as well as grated daikon radish in volumes suitable for industry use.

Beverage



Vegetable and Fruit Beverages

Taking advantage of our ability to use vegetables cultivated in-house, we sell vegetable juices, for which we have the largest OEM production share in Japan, as well as other high-quality beverages, both on an OEM basis and under our own brands.

Beverage



Water Delivery

Air Water delivers snowmelt water from the Northern Alps to the homes of its customers by employing the non-heating method to maintain the original natural taste of the water.

Independent



Agricultural Machinery

Air Water manufactures and sells agricultural machinery that supports Hokkaido's industry, such as beet harvesters and cultivators.



Distribution and Sales

We offer safe and delicious vegetables and fruit to customers via the nationwide network of fruit and vegetable specialty stores managed by Kyushuya, and a wholesaler at the Otsu Market managed by Takaya Shoten.

Logistics



High-pressure Gas Transport

Air Water delivers high-pressure gases such as oxygen, nitrogen, and argon by the optimum transport means, ranging from liquefied gas tank trucks to trailers, in a safe and speedy manner. The transport know-how and constant low-temperature technology, which have been developed for high-pressure gas transport, have provided the basis for various logistics services that Air Water offers today.



Transport

Utilizing the transportation network centered on Hokkaido that connects the sites around Japan, Air Water transports all types of cargo, from construction materials and general cargo such as livestock feed and fertilizers to food and beverages, in different temperature zones, from room temperature to chilled to frozen. The transport business is also available for container transport using ferries between Hokkaido and Honshu.



3PL

Mainly in the food logistics field, Air Water aims to provide efficient and high added-value logistics services by comprehensively taking care of the entire logistics operations of shippers, from business improvement to management.



Medical and Environment

Taking advantage of its advanced constant low-temperature technology developed through transportation of high-pressure gases, Air Water conducts all types of transportation related to blood collected at blood centers around the country, including transportation of raw blood plasma, blood samples, raw blood, and blood for transfusion.

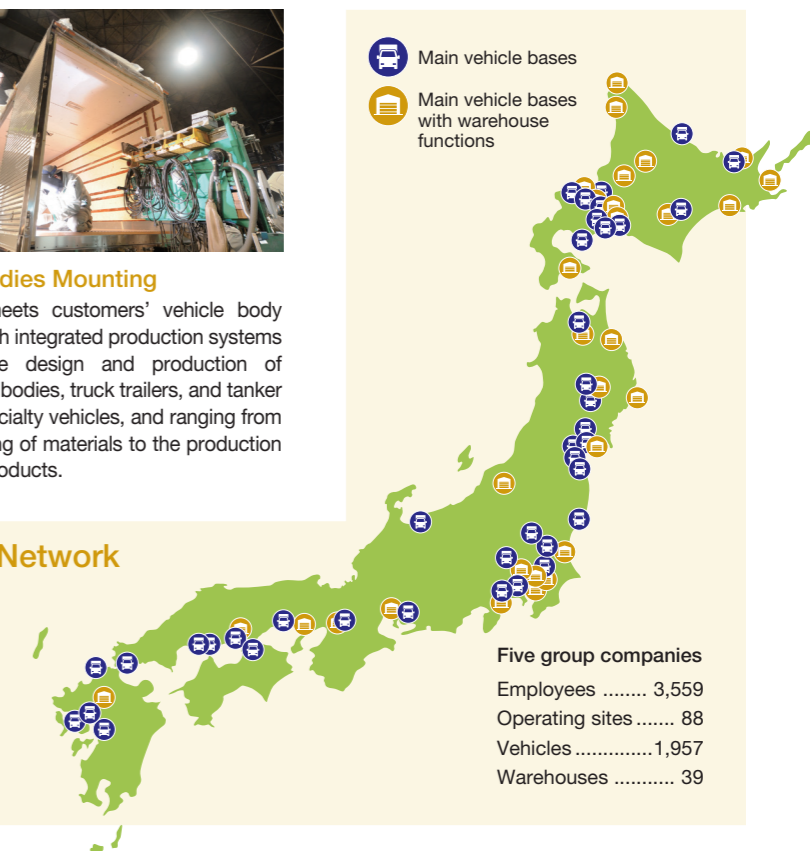


Vehicle Bodies Mounting

Air Water meets customers' vehicle body needs through integrated production systems spanning the design and production of various truck bodies, truck trailers, and tanker trucks to specialty vehicles, and ranging from the processing of materials to the production of finished products.

The Group's Nationwide Distribution Network (as of March 31, 2020)

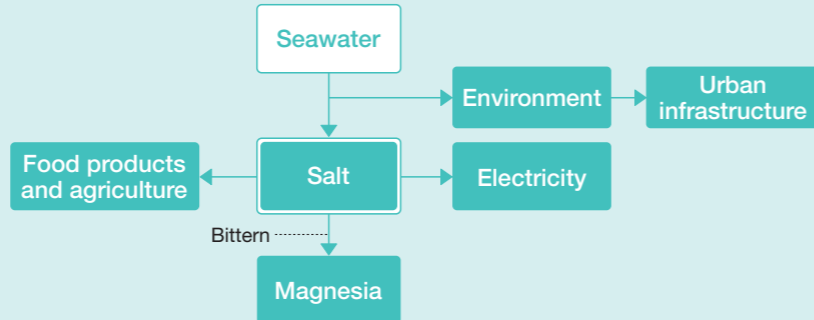
Mainly in the Hokkaido, Tohoku, and Kita Kanto regions, Air Water maintains a cold chain for convenience stores and supermarkets. It is also involved in the production of specialty vehicles. The group also leverages its temperature control technology to provide logistics services for the transportation of raw blood plasma.



Seawater Business



Our Seawater Business is based on a long tradition of salt production, and we are proud to hold the top share of the Japanese industrial and household salt markets. Our operations in this segment are aimed at upholding the stable supply of this basic necessity, and providing seawater-derived foods and environmental products. Beyond these, we pursue a variety of activities aimed at extracting maximum potential from seawater. For instance, our crystal control technologies enable us to develop high-value-added magnesia products.



Salt



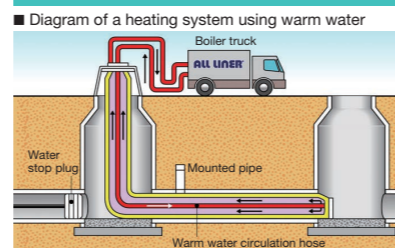
Salt
Nihonkaisui, the leading producer of salt in Japan, provides a stable supply of high-quality salt products to regions throughout Japan from its Ako and Sanuki plants.

Environment



Water and Soil Treatment Agent
We are utilizing seawater resources and technologies to expand into a wide range of business areas, particularly environmental products such as absorbent for water treatment, insolubilizing agent for soil treatment and magnesium hydroxide for the desulfurization of flue gas.

Urban Infrastructure



Regeneration of Sewer Pipes
Aquaintec employs an innovative technology to regenerate aged underground pipes and manholes without digging up the ground. It is also engaged in the development, design, production, installation, and supervision of machinery and equipment in sewage treatment plants.

Electricity



Woody Biomass Power Generation
In 2015, the Ako Plant of Nihonkaisui introduced an integrated cogeneration power system that uses woody biomass and natural gas. In fiscal 2020, the company's second biomass power plant is scheduled to begin operation.

Agriculture



Agricultural Fertilizers
Nihonkaisui utilizes seawater resources to supply potassium chloride, one of the three major fertilizers, for fertilizer manufacturers. The company is aiming to further expand its business through supply of industrial-use fluxing agent.

Food Products



Seawater-derived Food Products
We have commercialized bittern generated in salt production processes as a food additive. We also offer products using seaweed grown in the Ariake Sea in Kyushu, *furikake* seasoning, Italian food ingredients and seawater-derived mineral water.

Magnesia



Example of end product (transformer)

Magnesia for Oriented Electromagnetic Steel Sheets
Oriented electromagnetic steel sheets are used in the iron core of transformers, and so are indispensable for electric power facilities. Magnesia is essential for producing these electromagnetic steel sheets. The magnesia produced at the Ako and Hibiki-nada plants of Tateho Chemical Industries is of world-class quality.



Example of end product (home heater)

Magnesia Powder and Ceramics for Heaters
As well as for insulation filler in a wide range of heaters that function at both low and ultra-high temperatures—including white goods and industrial-use heaters—magnesia powder and ceramics are also used in glow plugs for car engines. These products are produced at three of Tateho Chemical Industries' plants: Une in Japan, Tateho Chemical Dalian in China, and TOTC in Missouri, US.



Other Businesses

With unique technologies and products such as aerosols, O-rings, ECOROCA® building material made from recycled wood, and NV metal surface treatments, our operations in this segment underpin the growth of the Air Water Group. We are also pursuing new ventures such as power generation using woody biomass and global engineering.

Aerosol

Air Water conducts a broad range of businesses on an OEM/ODM basis, flexibly responding to diverse needs of customers by manufacturing aerosol products and other liquid-filled products in both large and small lots, from items for the human body and household commodities to paint, automotive parts, and industrial items.



Electronics Materials

Leveraging its global network, Air Water offers a wide range of chemical products for various industries, from basic chemicals to high-purity chemicals, electric insulating materials and resin molded items for the electronics field. Air Water also jointly develops products with manufacturers and provides state-of-the-art information and materials.



O-rings

Air Water manufactures and sells various types of seal materials such as rubber O-rings and other rubber products for industrial use. For semiconductor manufacturing systems, it offers a lineup under the Pororoca brand of ultra high-performance rubber O-rings. Recently, it has developed and started selling O-rings made of perfluoroelastomer (FFKM), which have the world's highest level of heat resistance, and O-rings made from general-purpose fluoroelastomer rubber (FKM).



BELLPEARL®

Air Water offers "Bellpearl®," an environmentally friendly particulate phenolic resin; "Bellfine®," a functional new carbon made by the highly controlled burning and carbonizing of Bellpearl resin; and "Bells-wing®," a PSA-type nitrogen gas generator that uses Bellfine carbon as an absorbent.



ECOROCA®

Air Water manufactures and sells ECOROCA®, a new compound recycled material made from underutilized resources such as waste wood and waste plastic. Delivering excellent strength and safety while maintaining the texture of wood, ECOROCA® is used as decking material, louver material, and wall material at various sites, mainly public facilities.



NV (Metal Surface Treatments)

We offer a range of unique surface treatments, including: NV nitriding, which uses gas activation and atmospheric control to improve the abrasion resistance of metal; Pionite, which hardens stainless steel without compromising its corrosion resistance; and CR-NITE, which can withstand 1000°C temperatures.



Electricity

Our Industrial Gas Business consumes a vast amount of electricity in its manufacturing processes. To ensure business continuity in all circumstances, including major disasters, we believe it is crucial to become self-sufficient by securing baseload power. To this end, we have begun power generation using woody biomass, a renewable energy source. We are also engaged in small-scale power generation using woody biomass, and are working to establish a renewable energy use model for local communities.

Air Water & Energia Power Yamaguchi (Hofu City, Yamaguchi)



Woody biomass and coal co-fired power generation
Generation capacity: approx. 112,000 kW
(Began operations in July 2019)

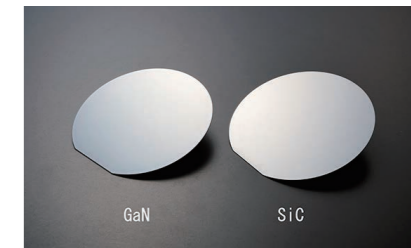
Air Water & Energia Power Onahama (Iwaki City, Fukushima)



Woody biomass mono-fired power generation
Generation capacity: approx. 75,000 kW
(Start of operation scheduled for April 2021)

SiC

We have developed our own SiC substrate for products such as power and high-frequency semiconductors. We have also successfully established a technology for large-diameter substrates of up to eight inches and mass-produced the substrates, which are deemed the most suitable for the growth of GaN (gallium nitride).



High-Power UPS Systems

High-power uninterruptible power supplies (UPS) are essential for avoiding power supply issues—such as voltage dips and power outages—and ensuring stable operation in semiconductor factories and data centers. Through Power Partners (Singapore) and Hitec Holding (the Netherlands), we are providing safe and reliable UPS solutions to our customers.



Engineering and Equipment

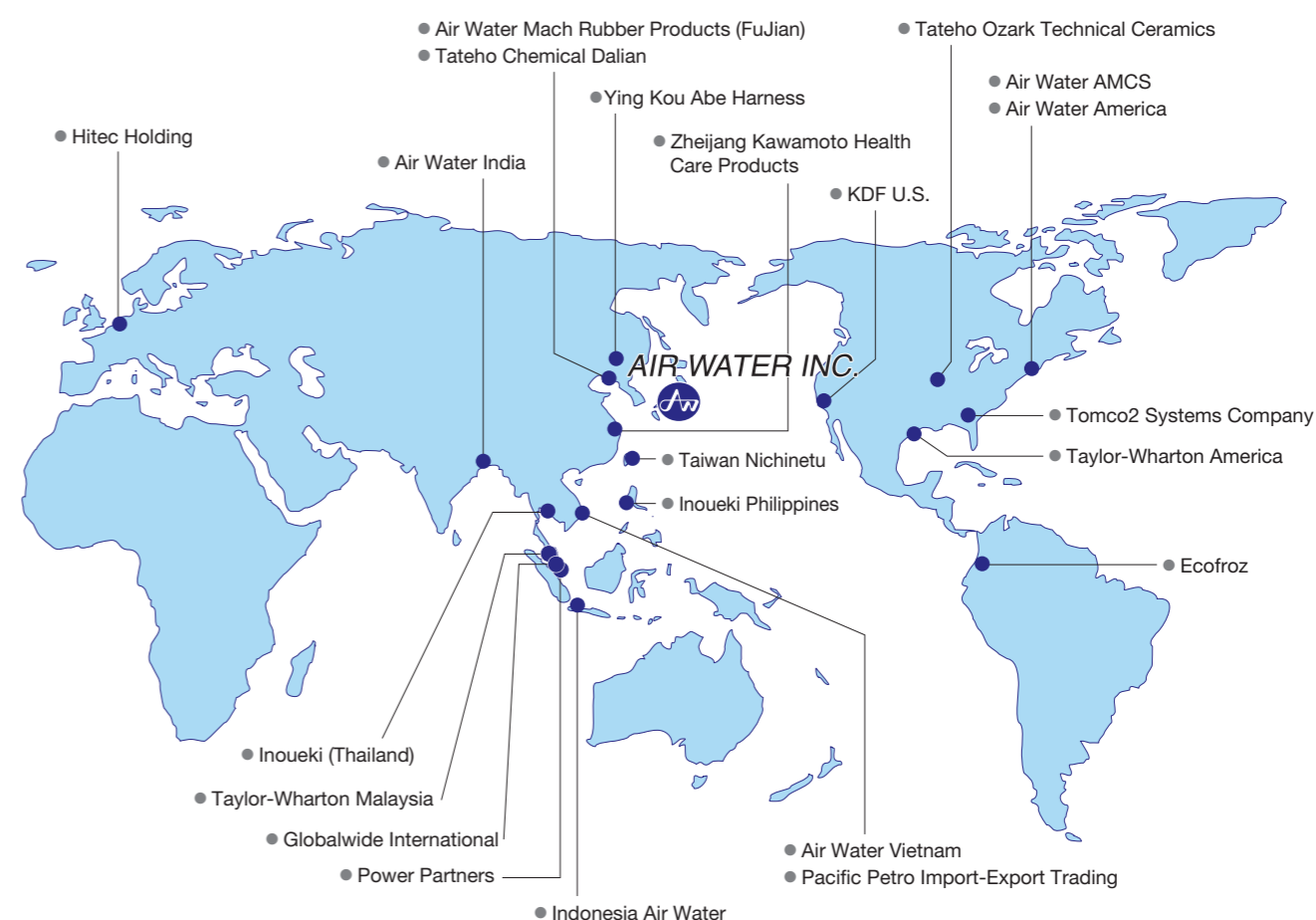
In the North American Market, we produce and sell industrial-use low-temperature gas equipment—both stationary-type and those for transport—and carbon dioxide equipment, while we also undertake engineering work for industrial gas production plants. Through these businesses, not only are we increasing the presence of the Air Water brand, but by reinforcing partnerships with gas dealers, we are building an industrial gas business in the North American market.



Major Group Companies (as of October 1, 2020)

Company Name	Head Office	Major Business Activities	Air Water's Share of Voting Rights (%)
Regional Business Companies			
Air Water Hokkaido Inc.	Sapporo City, Hokkaido	Sale of industrial gas and medical gas, LP gas, and related equipment	100.0
Air Water East Japan Inc.	Minato-ku, Tokyo	Sale of industrial gas and medical gas, LP gas, and related equipment	100.0
Air Water West Japan Inc.	Osaka City, Osaka	Sale of industrial gas and medical gas, LP gas, and related equipment	100.0
Industrial Gas Business			
NSCC Air Water Inc.	Chuo-ku, Tokyo	Manufacture and sale of industrial gas	65.0
Air Water Carbonic Inc.	Minato-ku, Tokyo	Manufacture and sale of liquid nitrogen gas and dry ice	100.0
Air Water Hydrogen Corp.	Minato-ku, Tokyo	Manufacture and sale of industrial hydrogen gas	95.0
Nihon Dennetsu Co., Ltd.	Azumino City, Nagano	Manufacture and sale of electric heating devices and controllers for industrial applications	100.0
Air Water Cryoplant, Ltd.	Osaka City, Osaka	Design, production and maintenance of cryogenic air separation units	100.0
Air Water Plant & Engineering Inc.	Sakai City, Osaka	Design, production, sale and maintenance of various types of gas generation units, gas applications, and related equipment	100.0
Air Water India Pvt. Ltd.	India	Manufacture and sale of industrial gas	100.0
Chemical Business			
Kawasaki Kasei Chemicals Ltd.	Kawasaki City, Kanagawa	Manufacture and sale of organic acid products, organic acid derivatives, and quinone-based products	100.0
Daito Chemical Co., Ltd.	Hiratsuka City, Kanagawa	Production and sale of inorganic and organic chemical products, and contract manufacturing and sale of chemical mixing and filling	100.0
Medical Business			
Misawa Medical Industry Co., Ltd.	Kasama City, Ibaraki	Production and sale of needles and syringes, etc.	100.0
Air Water Medi H, Co., Ltd.	Shinagawa-ku, Tokyo	Contract sterilization of medical equipment and materials, and SPD services for medical institutions	100.0
Air Water Link Inc.	Kyoto City, Kyoto	Sale and maintenance of cardiovascular devices, dialysis devices, and surgical equipment	97.2
Denken-Highdental Co., Ltd.	Kyoto City, Kyoto	Design, production and sale of dental equipment, dental materials, and laboratory equipment	96.1
Kawamoto Corporation	Osaka City, Osaka	Manufacture and sale of sanitary products, medical supplies, etc.	50.1
Air Water Safety Service Inc.	Kobe City, Hyogo	Operating rooms, installation of medical gas pipes, and design, manufacture and sale of ventilators, fire extinguishing units, etc.	100.0
CI Medical Co., Ltd.	Hakusan City, Ishikawa	Online sale and wholesale of dental and medical supplies	40.0
Globalwide International Pte. Ltd.	Singapore	Design and installation of hospital interiors and facilities	70.0
Globalwide M&E Pte. Ltd.			
Agriculture and Food Products Business			
Saveur SS Inc.	Sapporo City, Hokkaido	Manufacture and sale of processed meat products (ham and delicatessen), ingredient-type frozen foods and cooking sauces	90.9
Tomiiichi Co., Ltd.	Asahikawa City, Hokkaido	Wholesale and processing of fruit and vegetables for processing, and sale of frozen foods, etc.	90.0
Gold Pak Co., Ltd.	Shinagawa-ku, Tokyo	Manufacture and sale of fruit and vegetable juices and other beverages including some soft drinks	100.0
Kyusyuya Co., Ltd.	Hachioji City, Tokyo	Operation of fruit and vegetable retailing stores in department stores, station buildings and shopping centers	55.0
Plecia Co., Ltd.	Atsugi City, Kanagawa	Manufacture and sale of Japanese confectionery and Western confectionery	-
*Wholly owned subsidiary of Saveur SS Inc.			
Logistics Business			
Air Water Logistics Co., Ltd.	Sapporo City, Hokkaido	Distribution of high-pressure gas, general freight, food, medical and environmental items, and distributive processing services	100.0
Hokkaido Shatai Co., Ltd.	Kitahiroshima City, Hokkaido	Design, manufacture, sale, and repair of truck bodies; vehicle inspection and certification	82.6
Air Water Food Logistics Co., Ltd.	Sendai City, Miyagi	Low-temperature food distribution, and contract warehouse storage and warehouse work	100.0
East Japan Air Water Logistics Co., Ltd.	Yokohama City, Kanagawa	Distribution of high-pressure gas, general freight, food, medical and environmental items, and distributive processing services	100.0
West Japan Air Water Logistics Co., Ltd.	Osaka City, Osaka	Distribution of high-pressure gas, general freight, food, medical and environmental items, and distributive processing services	100.0
Seawater Business			
Nihonkaisui Co., Ltd.	Chiyoda-ku, Tokyo	Production and sale of salt and salt byproducts; environmental business, electric power business	76.9
Tateho Chemical Industries Co., Ltd.	Chiyoda-ku, Tokyo	Production and sale of magnesium oxide, fused magnesia, magnesium hydroxide, and ceramic products	100.0
Aquaintec Corporation	Kakegawa City, Shizuoka	Pipe renewal business, manufacturing of water treatment machinery, and sale of environmental equipment and materials	-
*Wholly owned subsidiary of Nihonkaisui Co., Ltd.			
Other Businesses			
Air Water Sol Inc.	Chiyoda-ku, Tokyo	OEM supply of aerosol products, and manufacture and sales of its own branded products	100.0
Air Water Materials Inc.	Minato-ku, Tokyo	Sale and export/import of semiconductor manufacturing chemicals, chemical industry chemicals, synthetics resins, and electric and electronic materials	100.0
K&O Energy Group Inc.	Mobara City, Chiba	Business management of subsidiaries which are engaged in the gas business, iodine business, etc.	17.2
Air Water Mach Inc.	Matsumoto City, Nagano	Manufacture and sale of industrial rubber products and resin products	100.0
Air Water & Energia Power Yamaguchi Co., Ltd.	Hofu City, Yamaguchi	Operation and maintenance of woody biomass and coal co-combustion power plants, and sales of the power from those plants	51.0
Matsuo Holdings K.K.	Kitakyushu City, Fukuoka	Business management of subsidiaries engaged in construction work, engineering work, and paving work, etc.	65.0
Power Partners Pte. Ltd.	Singapore	Engineering and maintenance of uninterruptible power supplies	60.0
Hitec Holding B.V.	The Netherlands	Business management of subsidiaries that produce and sell rotary-type uninterruptible power supplies	100.0

Major Global Sites (65 locations in 17 countries and regions; as of March 31, 2020)



Corporate Profile / Principal Shareholders

Corporate Information

(as of March 31, 2020)

Company Name	AIR WATER INC.
Head Office	12-8, Minami-Semba 2-chome, Chuo-ku, Osaka, 542-0081, Japan Tel: (+81) 6-6252-5411 Fax: (+81) 6-6252-3965
Tokyo Office	18-19, Toranomon 3-chome, Minato-ku, Tokyo, 105-0001, Japan
Established	September 24, 1929
Paid-in Capital	¥55,855 million
Number of Employees	18,211 (consolidated)
URL	https://www.awi.co.jp/english/

Principal Shareholders

(as of March 31, 2020)

Company	Number of shares held (thousands)	Ratio of shares held (%)
The Master Trust Bank of Japan, Ltd. (trust account)	16,051	7.06
Japan Trustee Services Bank, Ltd. (trust account)	11,162	4.91
Nippon Steel Corporation	10,000	4.40
Sumitomo Mitsui Trust Bank, Limited	7,936	3.49
Sumitomo Mitsui Banking Corporation	6,196	2.72
Air Water Customers' Stockholding	5,428	2.39
J.P. MORGAN BANK LUXEMBOURG S.A. 1300000	5,161	2.27
North Pacific Bank, Ltd.	4,428	1.95
The Hokkaido Bank, Ltd.	4,113	1.81
Osaka Gas Liquid Co., Ltd.	3,786	1.66

*Ratios of shares held have been calculated based on the total number of issued shares excluding treasury stock (2,253,304).