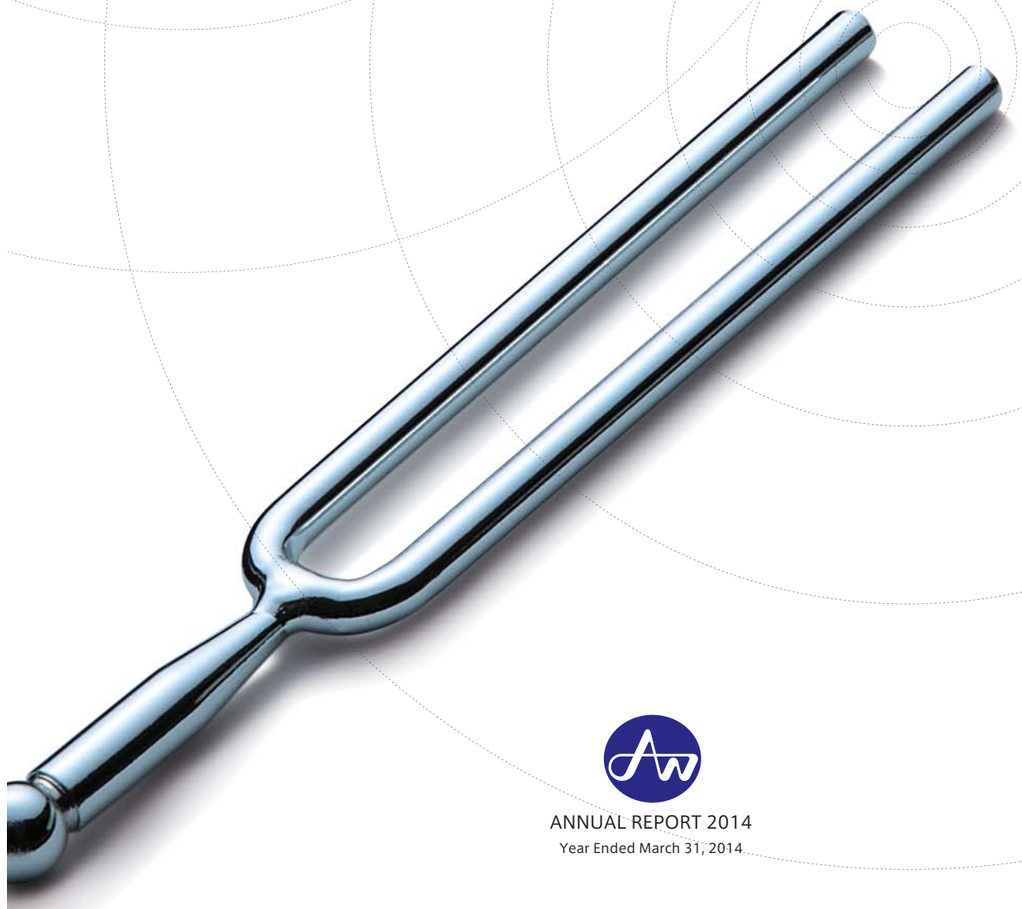
AIR WATER INC.

PLOTTING OUT FURTHER GROWTH



ANNUAL REPORT 2014

Year Ended March 31, 2014

Management Philosophy

We dedicate ourselves and our resources backed by the entrepreneurial spirit and pride in creation and development of businesses linking air, water, the earth, and humans.

CONTENTS

Visual concept for the cover

The concept for Annual Report 2014 is "Utilizing synergies to create a variety of businesses in which understanding is shared among businesses, between businesses and society and between businesses and communities."

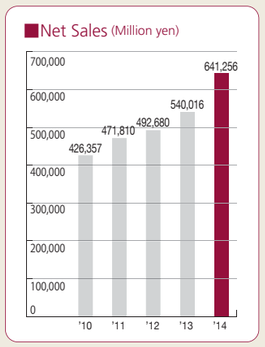
Consolidated Financial Highlights (Comparison of the past 5 fiscal years)

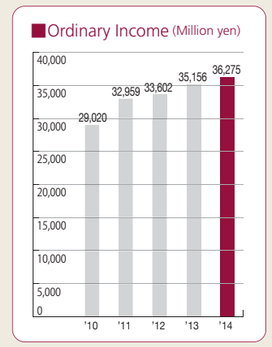
AIR WATER INC. and Consolidated Subsidiaries, Years ended March 31

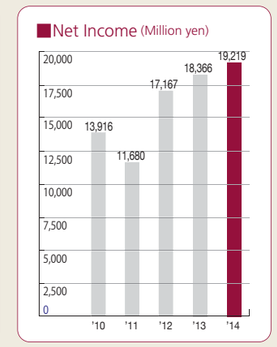
					Million of yen	Thousand of U.S. dollars*	Increase (Decrease)
	2014	2013	2012	2011	2010	**2014**	**2014/2013**
Net sales	**¥641,256**	¥540,016	¥492,680	¥471,810	¥426,357	**$6,230,626**	**18.7 %**
Cost of sales	**517,202**	429,862	380,536	359,560	320,758	**5,025,282**	**20.3**
Selling, general and administrative expenses	**88,977**	82,257	80,472	80,981	77,397	**864,526**	**8.2**
Operating income	**35,077**	27,897	31,672	31,269	28,202	**340,818**	**25.7**
Ordinary income	**36,275**	35,156	33,602	32,959	29,020	**352,458**	**3.2**
Net income	**19,219**	18,366	17,167	11,680	13,916	**186,737**	**4.6**
Comprehensive income	**25,151**	21,197	16,005	11,293	—	**244,374**	**18.7**
Total assets	**528,092**	484,329	430,547	407,639	392,759	**5,131,092**	**9.0**
Total net assets	**219,622**	199,212	182,700	169,127	163,950	**2,133,910**	**10.2**
Cash flows from operating activities	**48,249**	30,057	39,662	32,576	44,593	**468,801**	**60.5**
Cash flows from investing activities	**(52,187)**	(42,501)	(28,695)	(34,766)	(25,820)	**(507,064)**	**22.8**
Cash flows from financing activities	**4,620**	10,254	(7,612)	(1,592)	(20,615)	**44,889**	**(54.9)**
Cash and cash equivalents at end of year	**20,751**	19,470	21,562	18,131	21,529	**201,623**	**6.6**

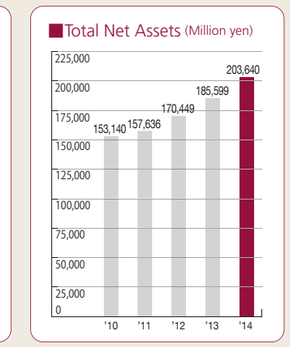
PER SHARE OF COMMON STOCK					Yen	U.S. dollars*	
Net income - basic	**¥98.29**	¥94.04	¥89.35	¥61.24	¥73.64	**$0.96**	**4.5**
Net income - diluted	**98.08**	93.87	87.21	59.56	70.03	**0.95**	**4.5**
Cash dividends applicable to the year	**26.00**	24.00	22.00	22.00	22.00	**0.25**	**8.3**
Net assets	**1,040.94**	949.63	873.78	822.05	789.89	**10.11**	**9.6**

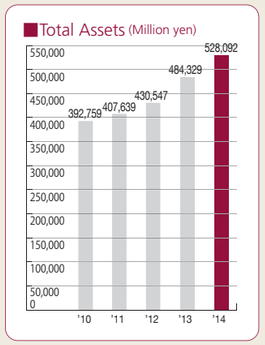
Notes: The translation of Japanese yen into U.S. dollars has been made solely for the reader's convenience at the rate of ¥102.92= U.S.$1.00, the rate prevailing on the Tokyo Foreign Exchange Market on March 31, 2014.

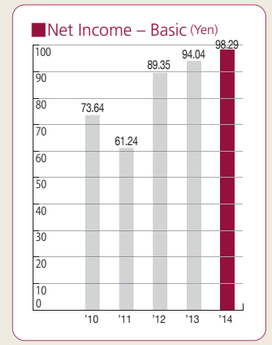


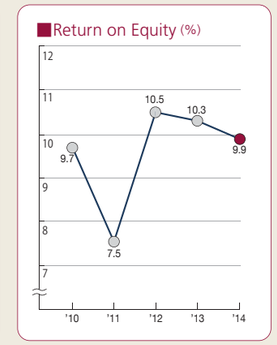


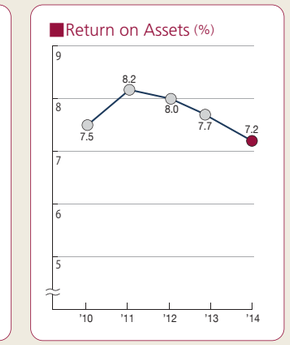












Forward-looking Statements (Business Risk Factors, etc.)

The forward-looking statements in this Annual Report regarding estimates of business performance and predictions of future developments reflect Management's judgments based on currently available information, but also involve potential risks and uncertainties. Actual business performance could be significantly different from the projections made herein due to changes in various factors. The primary potential risk factors are summarized below.

- Significant changes in demand in East Asia, an important market for our major customers
- Progress in passing on to the customer increased costs resulting from higher LPG and kerosene contract prices and rising crude oil prices
- Increased transport expenses, including the costs of light oil, fuel oil, ocean freight, and air freight due to rising crude oil prices
- Increased raw materials costs for our frozen food business
- Decreased sales or reduced profits for our medical gases and medical services resulting from revision of national insurance drug and medical examination reimbursement prices
- Risks arising from a production problem, product defects, accidents, etc.
- Risks arising from the failure of merger and acquisition activities or other investments to perform as anticipated
- Risks arising from the failure to implement adequate measures such as business expansion and cost reductions in response to competition
- Increased cost of compliance as a result of revised or newly implemented environmental laws and regulations
- Risks due to natural disasters and other potential risks

The financial statement information contained in this Annual Report is based on the accounting term for the year ended March 31, 2014, and for previous terms as indicated. All other content is based on information available on August 31, 2014, when the editing of the Annual Report was completed.

First year of "NEXT-2020 Ver. 2," a promising start with profit growth for the 11th consecutive period.

Hiroshi Aoki
Chairman of the Board, Chief Executive Officer
September 2014

H. Aoki

● Summary of FY2013

In this period (ended March 2014), we saw gradual recovery in the Japanese economy thanks to strong domestic demand along with a correction of the strong yen and an improvement in the export environment against a backdrop of aggressive economic policies by the government. Capital investment of manufacturing industries also gained an upward momentum. That coupled with the support of a favorable domestic demand attributable to strong demand prior to the consumption tax hike created a general sense of recovery throughout the domestic manufacturing sector.

Based on this business environment, we have been implementing the All-Weather Management System and Order Rodentia Style of Business in accordance with our medium-term business plan, "NEXT-2020 Ver. 2," that is the second step of the Air Water Group's long-term management vision, "NEXT-2020." As a result, consolidated net sales were 641.256 billion yen (118.7% year-on-year), setting a new record.

In earnings, operating income was 35.077 billion yen (125.7% year-on-year), ordinary income was 36.275 billion yen (103.2% year-on-year), and net income was 19.219 billion yen (104.6% year-on-year), for an overall increase. Profit growth in ordinary income was achieved for the 11th consecutive period.

Regarding each business sector, larger revenue and smaller profits were seen in the Industrial Gas Business and Chemical Business due to such factors as rising costs including electricity prices and a decline in the business environment. However, this was offset by strong growth of sales and profits in the Medical Business, Energy Business, Agriculture and Food Products Business and other consumer-oriented business, that drove overall growth for the Group. Profits were also increased by companies newly joining the Group through M&A, such as Gold-Pak Co., Ltd., Abe Denzai Co., Ltd., Air Water Medical Inc., Ikiken Co., Ltd., Healthcare-Tech Corporation, Nichinoki Seiko Co., Ltd. and Aquaintec Corporation.

The first year of "NEXT-2020 Ver. 2" was thus a promising start.

● Business outlook for FY2014

In the next period (ending March 2015), the Japanese economy is expected to show moderate recovery due primarily to a recovery in consumer spending thanks to various economic stimulus packages. Expansion in exports is also expected thanks to expansion of the U.S. economy and economic recovery in developing nations. However, the environment surrounding domestic manufacturing industries is expected to remain unpredictable on account of such factors as a downturn of overseas economies and increased geopolitical risks.

Based on these forecasts, the Air Water Group will continue in the upcoming period as well to strongly promote its All-Weather Management System and Order Rodentia Style of Business that have successfully established steady growth against all types of adversity. While striving to strengthen our existing businesses and create new business through M&A, we will steadily pursue the second year of "NEXT-2020 Ver. 2" by exploiting our unique synergies between businesses.

Based on the above, we project sales in the next period to be 670 billion yen in net sales (104.5% year-on-year), 38 billion yen in operating income (108.3% year-on-year), 39 billion yen in ordinary income (107.5% year-on-year), and 20.5 billion yen in net income (106.7% year-on-year).

● Key medium- to long-term challenges and initiatives

To ensure successful fulfillment of the Air Water Group's long-term management vision, "NEXT-2020," and achieve sustained growth into the future, we have set the following key challenges and will pursue the stated initiatives.

The first challenge is to strengthen the business structure of our Industrial Gas Business. The landscape surrounding the industrial gas sector is changing more drastically than ever before; however, we will take this as a major business opportunity. We will secure sustainable revenue over the medium- to long-term by actively investing in technological development for and construction of energy-saving plants. Our efforts are also focused on developing next-generation technologies such as our uniquely developed technology to mass produce SiC substrates based on our specialty gas application technology.

The second challenge is expansion of new community-based business. A model case for this endeavor is the Air Water business accumulated in Shinshu (see Special Column 1). We will continue to generate creative new businesses throughout Japan by matching the strengths of Group companies in each region with local qualities.

The third challenge is expanding business fields involving people. Transforming the business structure by expanding non-industry related businesses (businesses involving people) will be a critical key to achieving the goal of becoming a "1-trillion yen Company in FY2020." Going forward, we will continue to focus our efforts on expanding the field of businesses involving people.

The fourth challenge is new development through M&A. An M&A strategy that exceeds the boundaries of our existing business is essential for achieving the high goal of our 1-trillion Vision. We will use the M&A expertise our company has developed to date to welcome new companies to our Group. We will promote our Order Rodentia Style of Business in which companies reinforce each other and cooperate with one another to continuously energize the entire Group, in the aim for further growth.

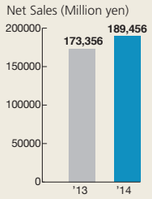
It is my hope that as we strive towards these goals, we will be able to continue to count on your warm support and understanding.

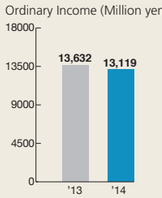
Business Overview

Review of FY2013 | Sales trends by category (Year ended March 31) | Business Segment | Outlook for FY2014

Industrial Gas Business

In the Industrial Gas Business, domestic demand for Blast Furnace On-site grew favorably and oxygen gas supply was high. Signs of recovery were seen in the Welding Gas Business, and gas business for electronics was driven by favorable mobile devices for robust growth overall. Manufacturing costs continued to soar as a result of rising electricity rates, but these costs were absorbed by various efforts towards streamlining operations and revisions in industrial gas prices, leading to steady progress.





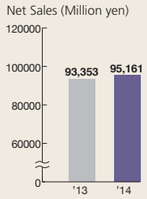
Industrial Gas Business

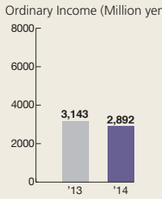
- Tank Trucks and Cylinders
- VSUs
- Large-scale On-site
- Small- to Medium-scale On-site
- Industrial Equipment
- Specialty Gases and Specialty Chemicals
- Electrical and Electronics Materials
- BELLPEARL

Gas demand is expected to continue improving due to such factors as continued solid sales of steel, recovery in the automobile and construction machinery markets, and predicted recovery in ship-building and electronics in the next period. Within this context, Air Water will integrate its VSU strategy with its enhancement of filling stations to strengthen and expand regional business. In the Carbon Dioxide Business that remains tight in terms of supply and demand, it will continue strengthening its gas production capacity to establish a stable supply system.

Chemical Business

In the Coal Chemical Business, coke oven gas treatment volume stabilized and production and sale of crude benzene that is a core basic chemical product were strong. In the Fine Chemical Business, structural reforms for fine chemicals progressed steadily as a result of streamlining of raw material procurement. Favorable progress in these core businesses offset a slump in tar distillation caused by a deteriorating business climate.





Chemical Business

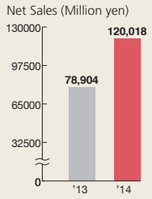
■Coal Chemical
- Gas Purification and Basic Chemicals
- Carbon Materials
- Tar Distillation

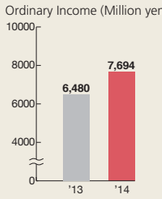
■Fine Chemical
- Agricultural Chemical Intermediates
- Pharmaceutical Intermediates
- Electronics Materials

Production of general-purpose chemicals is shifting to developing nations, and international competition is becoming increasingly fierce. Within this climate, Air Water will strengthen its collaborations with relevant partners in the Coal Chemical Business to maintain a stable production system and develop new products through collaboration with other Group businesses. In the Fine Chemical Business, Air Water will strengthen its development of new products and new applications utilizing its distinct technologies, with the aim of creating high grade, competitive products.

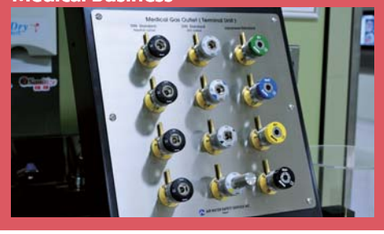
Medical Business

In Medical Oxygen, efforts to acquire new client hospitals resulted in the same sales volume as the previous year. In Hospital Facilities, a growing demand for advanced healthcare facilities led to a high volume of construction of state-of-the-art operating rooms and ICUs. Sales for Medical Equipment grew due to a boost in cardiovascular equipment sales and a stronger lineup of medical equipment related to child and perinatal care that is a key area. Business in Medical Services and Home Care was strengthened and expanded through M&A.





Medical Business

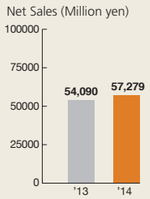


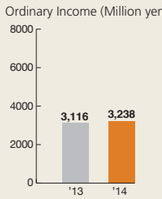
■Hospital Facilities
■Medical Gas
■Home Care
■Medical Services
■Medical Equipment

As the need rises for equipment and instruments for advanced medical care, mostly in acute care hospitals, in its Medical Business, Air Water will provide its unique total healthcare service that is the only one of its kind in Japan, centered on five pillars: Hospital Facilities, Medical Gas, Home Care, Medical Services and Medical Equipment. Each of those businesses has a sizable presence with distinctive technologies, services and products. Air Water will use its comprehensive strength to conduct business that is closely matched to each and every hospital, and aim towards growth as an indispensable partner for medical institutions.

Energy Business

In the key area of LP Gas, consumption rose with the acquisition of new clients and installation of hybrid hot water supply and heating systems. The sales volume was higher than that of the previous year as a result of increased sales of industrial LP gas due to a shift from fuel oil to fuel. For Kerosene, efforts to streamline purchasing and other costs offset deterioration in the business environment. Activities to expand sales by utilizing the sales routes for LP gas clients were pursued for gas equipment and energy saving devices.





Energy Business

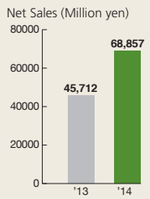
■Energy Supply
- LP Gas and Kerosene
- Natural Gas Pipeline Distribution

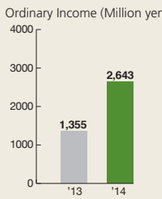
■Energy Solutions
- LNG Transport and Storage Tanks
- LP Gas-type Mobile Power Source Cars
- Woody Biomass Utilization Systems
- Snow and Ice Cryogenic Energy Systems

The business environment is expected to remain harsh in the upcoming period as well, owing to such factors as decreasing unit consumption of LP gas, rising purchasing costs and intensifying market competition. In this context, Air Water will strive to acquire new clients and expand sales of its unique hybrid hot water supply and heating system for residential applications. For industrial clients, it will continue proposing a shift from fuel oil to fuel. These strategies will simultaneously propel sales and raise the consumption level of clients.

Agriculture and Food Products Business

In the Ham, Delicatessen, and Frozen Food Product Business, an increase in sales was seen in commercial uncured ham and bacon that are key products, mostly in the Kanto region. Commercial sauces and confectionery are being adopted by restaurant chains, resulting in steady growth. In the Beverage Business, commissioning of the production of fruit and vegetable juices, coffee drinks and other beverages is expanding. The Agriculture and Processed Foods Business is growing steadily owing to a hike in market prices of core vegetables. However, poor quality of raw materials due to harsh weather conditions resulted in reduced raw material yields, creating difficult conditions.





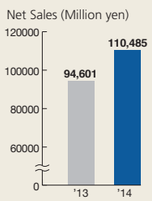
Agriculture and Food Products Business

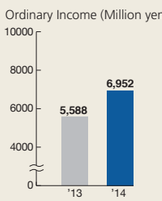
■Ham, Delicatessen and Frozen Foods
■Fruit and Vegetable Juices
■Fruit/Vegetable Distribution and Processing
■Agriculture
■Agricultural Machines and Tools
■AW-Water
(home delivered drinking water)

Gold-Pak Co., Ltd. merged with Nichirosunpack Corporation to create a framework of four domestic plants, and is focusing efforts on the development and sales expansion of fruit and vegetable juices. In FY2014, the AW-Water business and Nichinoki Seiko Co., Ltd. that deals in dry field farm equipment will also be added to the segment, enabling the Air Water Group to build a sixth industry of agricultural produce that includes everything from producing raw materials to processing and marketing. Each company will carry out distinctive business in its field as the Group seeks synergies and develops new businesses.

Other Businesses

In the Salt Business, an increase in the sales volume through greater sales of commercial salt with high added value made in a special manufacturing process, the expansion of new businesses such as potassium chloride and the new consolidation of Aquaintec Corporation, a pipe reclamation company, resulted in favorable growth. Growth has also been steady in the Magnesia Business with the recovery in sales of magnesia for high-grade electromagnetic steel sheets. Despite a rise in freight handling volume, mostly for construction-related projects, conditions were harsh in the Logistics Business owing to rising costs resulting from such factors as increased diesel fuel prices and a nationwide car shortage.





Other Businesses

■Seawater
- Salt
- Magnesia

■Logistics
■Aerosol
■NV
■O-rings
■ECOROCA®
(artificial recycled wood)
■SiC

Nihonkaisui Co., Ltd. will continue striving to provide a stable salt supply and expand its production of environmental products such as potassium chloride and READ-F. In the Magnesia Business, the focus will be on increasing sales of magnesia for high-grade electromagnetic steel sheets and breaking into the business of electrofused magnesia for ceramics. In the Logistics Business, Air Water will strive to enhance the distribution network within a robust food product logistics field and construct specialized vehicles for Group companies.

Aiming for more advanced domestic business with a new Regional Business Model

Air Water is steadily accelerating towards its goal of becoming a 1 - trillion yen company in net sales in FY2020. Implementing the Order Rodentia Style of Business and All-Weather Management System—the keys to Air Water growth—on the front lines are regional business companies throughout Japan. This Special Column describes Air Water's Regional Business Model aimed at new growth in domestic markets through the creation of innovative businesses. These businesses are carried out autonomously in each region, utilizing the synergies between various Air Water businesses in accordance with local characteristics and the business structure of the relevant regional business companies.

Creating novel synergies throughout the country centered on regional business companies on the front lines

Deployment of community-based business that is essential for the Order Rodentia Style of Business and All-Weather Management System

Air Water achieved growth in ordinary income for the 11th consecutive period in FY2013 (period ended March 2014). The pillars for this growth are the Order Rodentia Style of Business, an original strategy for flexibly adapting to environmental changes with a diverse group of small yet profitable companies, and the All-Weather Management System that creates a stable business foundation while optimizing the balance between industry-related businesses (Industrial Gas Business and Chemical Business) and businesses involving people (Medical Business, Energy Business and Agriculture and Food Products Business). A variety of new businesses in medical care, nursing care, energy, agriculture and food products, seawater and other fields have been added to the group through aggressive M&A based on these fundamental strategies, ensuring steady growth.

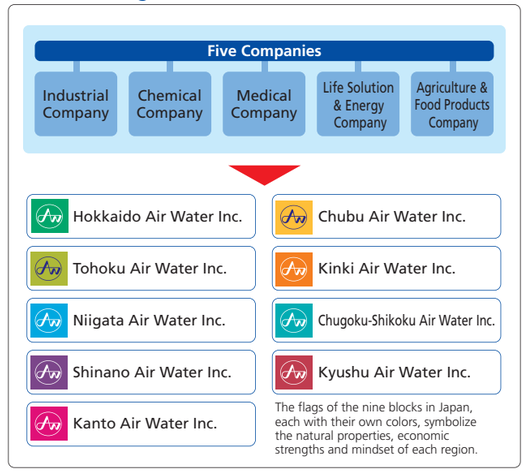
Air Water has consolidated nearly 90 companies through M&A in the 13 years since its founding; however, Air Water-style M&A is not simple addition. New businesses acquired through M&A are steadily grown using the comprehensive power of the Group and the various synergies among its new and existing businesses, resulting in the development of a succession of new, innovative business models. This is what has enabled Air Water to achieve steady growth in its 13 years, despite a continuing harsh business environment surrounding manufacturing industries in Japan.

The key to creating these new business models is the "deployment of community-based businesses." Carefully discerning what types of industries and lifestyles are present in each region and actively striving to provide the products and services those regions truly need lead to growth of a diversity of businesses and enable the utilization of inter-business synergies.

Pursuing deep cultivation of business adapted to local characteristics with a Federation System of nine blocks throughout Japan

To more vigorously advance these regional businesses that may be considered the foundation for growth, Air Water carried out a novel structural reform in June 2012 in which Japan was divided into nine regional blocks, each with its own regional business company. This structural reorganization clarifies the positioning of regional business companies as entities that take on the front lines of Air Water business. This does not refer simply to regular subsidiaries specializing in distribution of products to local regions downstream of the head office business line; rather, it is the declaration of a Federation System. In this system, the nine blocks throughout Japan carry out business independently as "Local Air Waters," with each regional business company independently and autonomously creating novel business models matched to local characteristics.

[Air Water Regional Business Promotion Framework]



Based on this new Federation System, the nine blocks around Japan generate distinctive business models. In these business models, new products and materials developed by the regional business companies are utilized to grow local business. At the same time, products and services of the Group's various business formats, including energy, nursing care, agriculture and food products and water, are fused in a way that corresponds to local characteristics. The most advanced of these models is in Shinshu, Nagano Prefecture. This column outlines the types of local companies nurtured in the area and how they have generated unique synergies.

Community-based business model realized in Shinshu

16 business entities congregated in Nagano contribute to local lifestyles and the local economy

Shinshu, Nagano Prefecture is enveloped in mountains and greenery and is blessed with clean air and bountiful, high quality water. The core entity promoting Shinshu business is Shinano Air Water Inc., established in 1994. This company pursues Industrial Gas Business and Medical Gas Business centered on VSUs. It also coordinates the diverse group of companies in Shinshu, acting as a conductor that helps these companies develop community-rooted businesses.

[16 Shinshu Businesses]

① Shinano Air Water Inc.
② Air Water Mach Inc.
③ Saveur SS Inc.
④ Air Water ECOROCA Inc.
⑤ Fine Foods Co., Ltd.
⑥ Air Water Farm Co., Ltd.
⑦ Yamaguchi Tokushu Insatsu Co., Ltd.
⑧ Shinano Ekisan Inc.
⑨ Lifestyle Assist Center Matsumoto, AW Anjyuri Co., Ltd.
⑩ Shinano-omachi Plant, AW Water Inc.
⑪ Market Development Division of Industrial Company, Air Water Inc.
⑫ SIC Division, Air Water Inc.
⑬ Air Water R&D Co., Ltd.
⑭ Welfare & Nursing Service Div. of Medical Company, Air Water Inc.
⑮ Gold-Pak Co., Ltd.
⑯ Abe Denzai Co., Ltd.,

The Shinshu area hub is currently comprised of 16 companies including Shinano Air Water Inc. It generates synergies among the diverse businesses while carrying out dense, multi-tiered business though operations that are closely linked to local needs. This has especially enabled strong growth in businesses involving people, such as agriculture and food products, water, medical care and nursing care, creating better living conditions for the local community. Furthermore, the Group employs over 1,000 people in the prefecture, greatly contributing to the local economy through the creation of jobs.

Agriculture, food products, beverages, mineral water... A diverse group of businesses that exploits synergistic effects

A main feature of business development in Shinshu is that there are many food-related companies.

As a business base in the agriculture and food products field, the area was already home to a sales office of Saveur SS Inc. that manufactures and sells commercial foods. In 2008, it took over Fine Foods Co., Ltd. that produces and sells germinated brown rice, the business promoted by Matsumoto City, adding a manufacturing base to the team. Then again in 2011, Air Water took over a tomato cultivation business in Azumino City from a third-sector company and began expanding its manufacturing business as Azumino Farm, Air Water Farm Co., Ltd. Taking on local business in this manner not only contributed to the local community, but was also a major stepping stone for expanding synergies among companies in Shinshu.

Air Water then entered the beverage industry in 2012 by adding Gold-Pak Co., Ltd., a fruit and vegetable juice producer with two plants in Nagano Prefecture, to the Group. In March 2013, the Shinano-omachi Plant, AW Water Inc. was completed, propelling Air Water's full-scale launch into home delivery drinking water. This plant produces natural spring water using groundwater from the Northern Alps of Japan that contains a rich concentration of minerals.

Organic collaborations have been struck between these businesses in many different forms. One example is the use of carbon dioxide, a product of Air Water's Industrial Gas Business, to aid in cultivation for vegetable production on the farm. Another example is the provision of vegetables from Saveur SS Inc. to be used as ingredients in the meal services offered by Fine Foods Co., Ltd. Potential collaborations between the farm business and Gold-Pak Co., Ltd. also look promising. Indeed, it is the creation of such synergies between companies that is the essence of the Air Water-style Regional Business Model.

Azumino Farm, Air Water Farm Co., Ltd.

Pioneering Nursing Care Business that combines the Group's varied products and services

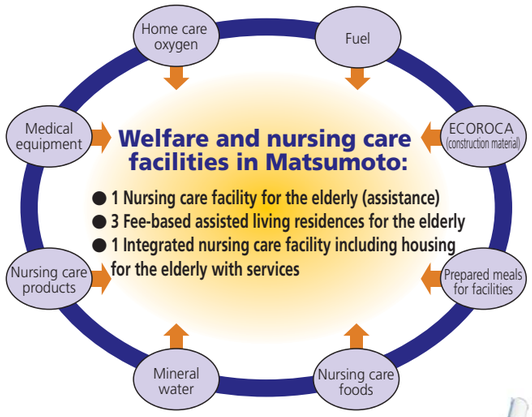
In Shinshu, where collaborations are achieved between a variety of businesses, the greatest example of using synergies between new and existing business is in the field of nursing care.

Air Water first entered the field in 2000, when it assisted in the opening of a special elderly nursing home called "Salvia" in Matsumoto City, and has been actively expanding its Nursing Care Business in the prefecture ever since. In 2011, it established AW Anjyuri Co., Ltd., a company specializing in Nursing Care Business in Matsumoto City. This company currently runs three residential retirement housing complexes called "Anjyuri," "Izumi no Sato" and "Akari."

In May 2013, Air Water opened an integrated nursing care facility including housing for the elderly with services called the"Lifestyle Assist Center Matsumoto" in Matsumoto City. With full support from the Faculty of Human Health Science, Matsumoto University, where research into kinematics and nutrition is conducted, and in collaboration with local medical institutions, this pioneering nursing care facility has established an integrated system for taking on everything from long-term care prevention to health management and medical care support.

These nursing care facilities receive a wide variety of products and services from the Group that have aggregated in Shinshu, including prepared meals, mineral water and nursing care products as well as oxygen ventilators for home use, LP gas, construction materials and more (see the figure). This is a prime example of businesses involving people smoothly utilizing the synergies among them.

[Synergies based on Nursing Care Business]



Using Shinshu as a model case for revitalizing regional business throughout Japan

These business collaborations in Shinshu are being considered as one model case for Air Water to develop new regional business. With Shinano Air Water Inc.'s deep cultivation of regional business as described above as a pioneering example, Air Water will have the local company in each of the other eight blocks of Japan act as the core for that block to create unique business models that are closely connected to local characteristics and needs.

In November 2013, Air Water acquired capital in Ellenbarrie Industrial Gases Ltd., an industrial gas manufacturer in India, and launched industrial gas business in India. In June of that year, before the agreement, Ellenbarrie president P. K. Agarwala visited Nagano. When he saw the complex collaborations involving not only gas business but also businesses involving people, such as water, agriculture and food products, he was very impressed and declared that Air Water had foresight into the future of industrial gas. He voiced a strong desire to recreate Air Water's community-based business model in India as well. This was the deciding factor in striking a new partnership.

Ellenbarrie Industrial Gases Ltd.

Taking root in the local area and peering closely into the lifestyles of the community while expanding the service field though aggressive M&A and adhering to the Order Rodentia Style comprising a diverse group of companies to pursue synergies and form novel business structures that are closely connected to local needs—Air Water's Shinshu model not only revitalizes domestic business but also holds potential as an excellent guide for expanding business overseas.

Research and development institute that combines the intellectual capabilities of Air Water

Air Water R&D Co., Ltd. that was established in Matsumoto City undertakes development of innovative new technologies from gas and low temperature device technologies to semiconductor and medical care-related technologies as well as the creation of new business models. It also works with the other Group companies from around Japan to provide technical support to the diverse group of companies in Nagano Prefecture.






Diving into the North American market with LNG transport technology and achievements fostered in Japan

With M&A of an industrial gas company in India, construction of a gas plant in Vietnam and other overseas projects underway, the Air Water Group is gradually expanding its industrial gas business in countries outside Japan, step by step. In May 2014, it joined with Hitachi High-Technologies Corporation to establish an LNG (liquefied natural gas) transport tank container manufacturing and sales company in the U.S. Starting in North America where the Shale Gas Revolution is advancing, Air Water will utilize its powerful LNG transport technology and expertise developed in Japan to take on other markets throughout the globe.

LNG tank containers for transport that use cryogenic insulation technology

Air Water successfully developed its first LNG transport tank container in 1999. To increase the transport efficiency of liquefied natural gas whose domestic demand was increasing, Air Water set out to develop tank containers that were capable of transport with a railroad-car combination and held larger loads than tank trucks. Perlite insulation*1 that was the conventional material used as tank insulation at the time could not tolerate severe vibrations. Instead, Air Water successfully used composite vacuum insulation*2, a new technology developed by the Cold Evaporator (CE) industrial gas facility, to develop a 30-foot-long LNG transport tank container that can withstand the severe vibrations of railways.

LNG transport using these new tanks was launched in 2000, enabling long-distance transport of LNG with trailers and railways over a 360 km route from the main LNG station in Niigata to a satellite station in Komatsu, Ishikawa Prefecture. This was the development that foresaw a revolution in LNG supply in Japan.

In 2001, the following year, Air Water successfully developed a trailer-type 40-foot-long tank container that could hold a 13.5 -ton load, the largest possible in Japan (at the time). In 2008, it attached an axle to the tank body to lower the center of gravity of the entire trailer and reduce the weight—the monocoque type LNG semi-trailer. This increased the competitiveness by raising the possible load to 14-tons. Then, last year, Air Water developed and released a 15.7-ton trailer capable of carrying the largest load in Japan. By March 2014, it has sold over 300 trailers and containers and currently commands the largest share in the domestic field.

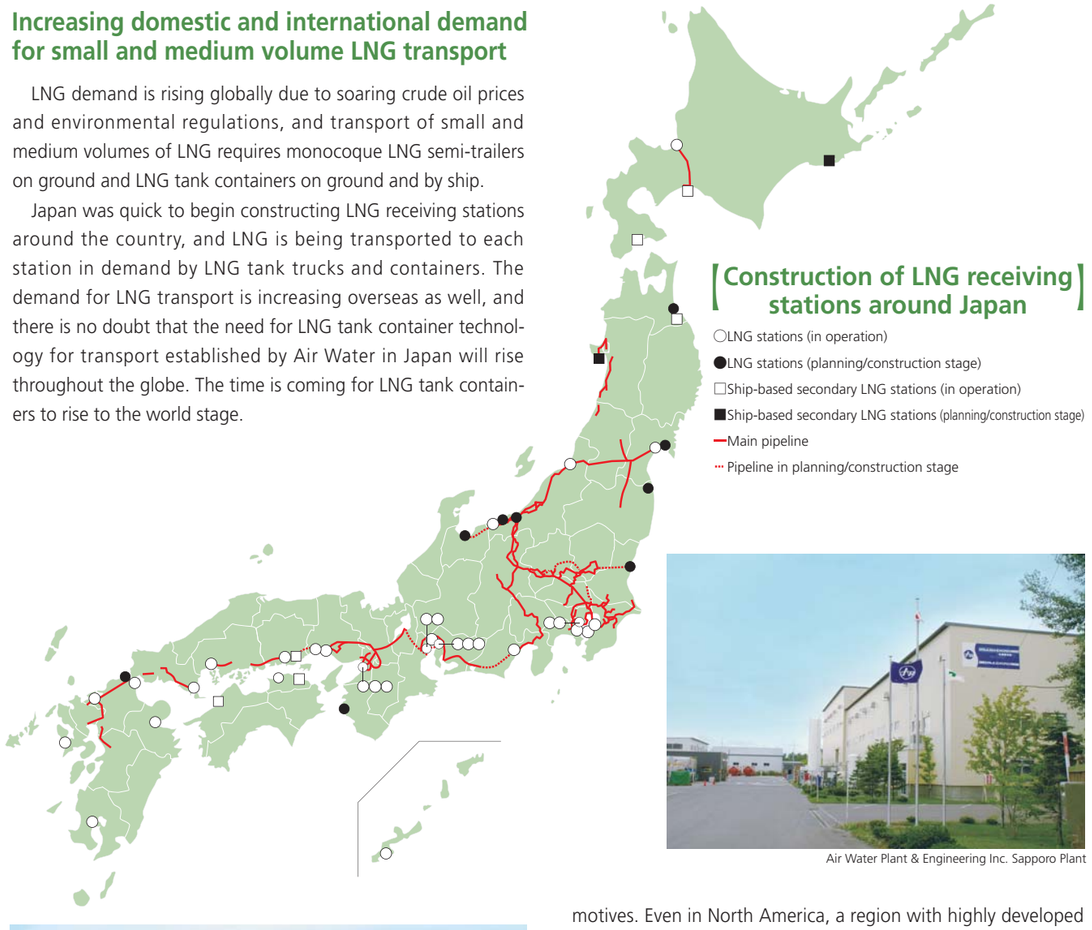
*1. Perlite insulation: Perlite is a sandy insulation material made from vitrified volcanic rock. It is filled in the outer vacuum of insulating containers to create an insulation layer, but is very heavy, and may become uneven under intense vibrations, losing its insulating effect.

*2. Composite vacuum insulation: Achieves excellent vibration resistance and insulation by using lightweight insulating material that is one fourth the weight of perlite.

Increasing domestic and international demand for small and medium volume LNG transport

LNG demand is rising globally due to soaring crude oil prices and environmental regulations, and transport of small and medium volumes of LNG requires monocoque LNG semi-trailers on ground and LNG tank containers on ground and by ship.

Japan was quick to begin constructing LNG receiving stations around the country, and LNG is being transported to each station in demand by LNG tank trucks and containers. The demand for LNG transport is increasing overseas as well, and there is no doubt that the need for LNG tank container technology for transport established by Air Water in Japan will rise throughout the globe. The time is coming for LNG tank containers to rise to the world stage.



Air Water Plant & Engineering Inc. Sapporo Plant

LNG tank containers

Establishment of a joint venture to manufacture and sell LNG tank containers in North America, the world's biggest market

The greatest target for LNG tank containers is the North American region that contains massive shale gas reserves. In North America, the price of natural gas dropped with an increase in its production volume that began with the Shale Gas Revolution. Demand is on the rise not only for large volumes for large-scale power plants but also for smaller volumes for all sorts of applications including small-scale power plants and LNG locomotives. Even in North America, a region with highly developed pipeline transport of petroleum and natural gas, shale gas cannot be distributed to living spaces with this pipeline network alone. There is thus an increasing need for means of transporting small and medium volumes of natural gas, for example by truck or railway.

Against this background, in May 2014, Hitachi High-Technologies Corporation and Air Water Plant & Engineering Inc., a company in the Air Water Group, established Hitachi High-Tech AW Cryo, Inc., a joint venture in North America to manufacture and sell 40-foot LNG tank containers*3. This company will market LNG tank containers that are capable of reliable and efficient transport of small and medium volumes of natural gas to local energy companies and leading logistics companies in North America, aiming for net sales of 12 billion yen by FY2020. This is the first time for Air Water to take on a joint venture of this type, and it shows great promise as one model case for overseas expansion in the future.

*3. Air Water Plant & Engineering Inc. invested 34% of the capital. Hitachi High-Technologies Corporation invested 51% and Hitachi High Technologies America, Inc, its local affiliation in the U.S., invested 15%.

Industrial Gas Business

Responding to varied manufacturing and lifestyle needs as a comprehensive industrial gas supplier

Air Water supplies many different types of gases to society, including oxygen, nitrogen, argon, carbon dioxide, hydrogen, and helium. In addition to utilization in a myriad of manufacturing fields, such as steel, chemical, electronics, and glass, these industrial gases are indispensable to all spheres of society, from medical to agriculture and food industries. A prime feature of Air Water's Industrial Gas Business is the flexible supply system that allows a selection of the optimal method to suit the need, be it on-site supply or small-scale supply via gas cylinders. An integrated production and sales system rooted in the idea of "making and delivering our own gas to customers" has been valued highly since the company's inception. In addition to gas production, Air Water will continue to amass advanced gas-related technologies for plant engineering, transport, storage tanks, and other applications as well as for gas production to meet the diverse needs of society.

Air Water Carbonic Inc. to build new plant in Kawasaki

TonenGeneral Sekiyu K.K. consented to have Air Water Carbonic Inc. build a new carbon dioxide plant on the unused land within its Kawasaki Plant. The new plant will use carbon dioxide generated in the crude oil refining process at the TonenGeneral Plant to manufacture and sell liquefied carbon dioxide and will also use that liquefied carbon dioxide to manufacture dry ice. Construction of the new plant will begin in FY2014 and trial operations will be completed in FY2015. While the Ichihara Plant already exists as a key production base for carbon dioxide in the Kanto region, the addition of the Kawasaki Plant will help maintain a stable supply of liquefied carbon dioxide and dry ice that are expected to be in tight supply and demand in the coming years.

Block dry ice production line

＜Tank Trucks and Cylinders＞

Air Water has built a solid nationwide distribution network that ties its gas production facilities and filling stations to its Regional Business Companies. From the meticulous supply of single cylinders for small-scale demand to the stable supply of gas cylinder bundles, PLC (ultra-low temperature liquefied gas containers), and liquefied gas tank trucks for medium-sized demand, Air Water delivers gas in a manner that is optimally suited to quantity and usage needs.

Tsukuba Gas Center

＜VSUs＞

The VSU high-efficiency, compact liquefied gas production plant is a unique Air Water business model based on the concept of "production in appropriate quantities near those areas where there is demand, and delivery by short-distance transportation," enabling local supply for local demand through partnerships with dealers in each area. The VSU plants in 11 locations throughout Japan form an industrial gas supply network that is highly resistant to disasters, create a safe and stable supply system, and help cut CO_2 emissions in gas transport.

VSU in Hofu Plant

＜Large-scale On-site＞

Large-scale gas production plants are constructed on-site at the production facilities of steel, chemical, semiconductor, and other manufacturers that require a large, continuous supply of industrial gas. Gas from these plants is safely and efficiently supplied to users via pipes. The on-site plants located throughout Japan that are run directly by the Air Water Group, along with the VSU plants, are also used for producing liquefied gas for outside sale. State-of-the-art technologies are implemented to ensure high-efficiency gas production at all times.

Senboku Oxygen's V3

＜Small- to Medium-scale On-site＞

Small- to medium-scale gas generators supply on-site gas to users in electronics, glass, paper and pulp, and other industries with medium-scale demand. Air Water offers a broad lineup of gas generators developed in-house to meet its customers' needs, including the V series that produces highly pure nitrogen, oxygen, and hydrogen, cryogenic air separation generators, and PSA generators that do not use cold energy or catalysts.

V1 high-purity nitrogen generator

＜Industrial Equipment＞

Air Water offers all types of industrial equipment, including those required for argon gas for welding shields. Through the sale of equipment and tools used at manufacturing sites, Air Water provides welding solution services that revolve around the ELNACKS® shielding gas for high-purity and high-quality steel plate welding that boasts the highest market share in Japan and the AW-Shield that is a shield gas for welding stainless steel and aluminum.

ELNACKS® gas for welding shields

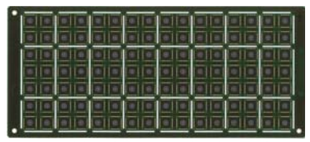
＜Specialty Gases and Specialty Chemicals＞

Air Water procures specialty gases, highly pure chemicals, and organic metal materials used in processing for the semiconductor, liquid crystal panel, solar cell, LED and other cutting-edge fields from overseas manufacturers and provides them to users after rigorously checking them for quality. High-quality high-purity ammonia and hydrogen selenide are manufactured in Japan.

Specialty gas supply module

＜Electrical and Electronics Materials＞

Inoueki Co., Ltd. and Abe Denzai Co., Ltd. are trading companies that specialize in electrical and electronic materials. They procure products that resolve customers' challenges from around the globe and add the required processing as requested by the customer before delivery. Printec Corporation manufactures and sells high performance semiconductor substrates and LED adhesives.



High performance semiconductor substrate

＜BELLPEARL＞

Air Water Bellpearl Inc. manufactures and sells a variety of products including BELLPEARL® functional resin, BELLFINE® electrode material for power storage devices, and ATEC® electrode sheets. It has also developed BELLSWING®, a PSA-type nitrogen gas generator that uses BELLFINE® as its adsorbent, which it sells to domestic and overseas users.

Functional resin BELLPEARL®

Chemical Business

Use of chemical products created with coal chemical technology in various aspects of society

Air Water's Chemical Business is based on the close relationship with the steel manufacturing industry that was built up by supplying industrial gas. This business is centered around the Coal Chemical Business in which high value-added chemical products are created from coke oven gas and coal tar supplied from steel works, and the Fine Chemical Business in which high-grade products are produced from tar distillation products and organic compounds using superior synthesizing technologies. These businesses generate a number of different chemical products that are then used in all aspects of society, from resins and rubbers to fertilizers, agrochemicals, pharmaceuticals, and electronic materials.

Air Water founded a fine chemical production company in China in 2012, and has been strengthening and enhancing its business framework to establish a high-grade and globally competitive production and supply system. Based on its accumulated wealth of knowledge and expertise in all types of separation and purification technologies and aromatic compound derivative synthesizing technologies, Air Water will strive to develop innovative products that meet the needs and requirements of each user.

Launching silicon wafer abrasive business (AT Silica Inc.)

As a part of its Chemical Business, Air Water founded AT Silica Inc. in 2010 as a joint venture with Tytemn Corporation and delved into the silicon wafer abrasive business. In 2011, the first production facilities centered on cocoon-shaped silica were built in the Tsukuba Plant, and these facilities were expanded in 2013 to enable production of a new type of cocoon-shaped silica. The industry-leading technological capabilities of AT Silica that can handle the micronization of semiconductor design rules is appraised highly by silicon wafer manufacturers. Sales routes have continued expanding gradually since AT Silica began selling its products in 2013. Going forward, Air Water will use this as a core business and fuse it with the existing Electronics Materials Business with the aim of expanding into a new business field.


Abrasive reactor

Coal Chemical

＜Gas Purification and Basic Chemicals＞

Coke oven gas that is produced as a byproduct in the manufacturing of coke, a blast furnace fuel, at steel works is separated and refined in order to directly supply steel works with the purified gas (fuel gas) essential to blast furnace operation.

Furthermore, basic chemicals such as crude benzene and ammonium sulfate are also produced in the purification process. These products are useful to society as raw materials for a wide variety of industrial products, including resins, solvents, agricultural fertilizers, and synthetic fibers.


Chemical Kashima Plant

＜Carbon Materials＞

Coal chemical technologies are applied to the development of high value-added carbon products that are then released to the market. Air Water is the only domestic manufacturer of thermally expandable graphite, or TEG, one of its core products. TEG is used in such applications as seal material for vehicle engines and exhaust gas pumps and as a flame retardant for building materials. In addition, Air Water's hydrocarbon resin, FR, is highly compatible with rubber and resin, and used as a binding agent for vehicle tire rubber.


TEG used as flame retardant

＜Tar Distillation＞

C-Chem Co., Ltd., a joint company with Nippon Steel & Sumikin Chemical Co., Ltd. is a dedicated tar distillation company with one of the top production capacities in Japan. The company uses coal tar provided by Air Water as a raw material to manufacture tar-derived products such as needle coke for electric furnace electrodes, naphthalene, and phthalic anhydride that are supplied to the global market.


Needle coke that is the raw material in electric furnace electrodes

Fine Chemical

＜Agricultural Chemical Intermediates＞

As a top global manufacturer of quinolines, indoles, and other heterocyclic compounds, Air Water provides a multitude of compounds to meet the derivative development needs of agrochemical manufacturers around the world, not only in Japan but also in Asia, the Americas and Europe. These compounds are used as raw materials for the production of all sorts of agrochemical products, such as fruit germicides, plant growth-promoting agents, and herbicides.


Agricultural chemical intermediate

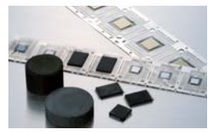
＜Pharmaceutical Intermediates＞

Air Water makes full use of its multipurpose synthesis plants (Air Water Kashima Plant, Sun Chemical Co., Ltd.) that feature advanced synthesizing technologies and meet GMP standards to produce a diverse array of pharmaceutical derivatives by commissioning, and meets the highly varied needs of major pharmaceutical manufacturers and other customers. Those raw pharmaceutical materials and pharmaceutical intermediates are turned into anticancer drugs, anti-allergic drugs, nutritional supplements, cough suppressants, eye drops, angiography contrast agents and many other pharmaceutical products that broadly serve the medical care field.


GMP plant in Kashima Plant

＜Electronics Materials＞

Liquid air oxidation, nitration, and other advanced polymide synthesizing technologies are utilized to manufacture functional polymer products at Air Water's Kashima Plant and its joint venture company in China (Air Water-Richap Chemical). These products are used in such applications as semiconductor sealant and photoresist technology. The SK Resin thermosetting phenolic resin that is a core Air Water product commands a domestic market share of roughly 30% as a semiconductor sealant in the high-end segment. It is available in a broad range of grades.


SK Resin, semiconductor sealing material

Medical Business

Integrated support to the front lines of healthcare with “total solutions” for everything from medical gas to facilities, equipment, and medical services

Providing a stable supply of medical oxygen and all other types of medical gas at all times—this is the absolute mission of Air Water's Medical Business. Air Water safely and reliably delivers medical gas to healthcare institutions through its own infrastructure to protect the lives of patients. Air Water is greatly expanding the range of its Medical Business to cover everything from the import and sale of medical instruments such as infant and child ventilators and incubators to the design and construction of operating rooms, ICUs, and other hospital facilities, medical services such as SPD (hospital supply, processing and distribution) and contract sterilization, and services that are directly linked to patients, such as the home care business.

It is through such diverse businesses that Air Water is able to offer its customers suitable solutions for the many challenges faced by those in the front lines of healthcare.

Air Water will continue enhancing the quality and volume of services in the Medical Business category that is an important pillar of its growth strategy.

Enhancing capabilities for total solutions for hospitals

Air Water’s Medical Business is a compound service framework built on five pillars: Hospital Facilities, Medical Gas, Home Care, Medical Services and Medical Equipment. Business is pursued with an all-encompassing capacity that is unmatched by competitors.

To boost activities even further, in FY2013 Air Water took on the manufacture and sale of medical oxygen concentrators and home care infusion pump business in the Home Care Business category and added leading SPD service provider Healthcare-Tech Corporation to the Air Water Group. Business collaborations were also struck with Pharmarise Holdings Corporation that manages dispensing pharmacies and with Morita Holdings Corporation that is a leader in firefighting and fire protection business. These developments will be linked to the provision of new solutions to enhance Air Water’s total capabilities in medical business.

fabian HFO Series

*This outlet is CE Marking certified as its passport to exporting to Europe (medical gas outlet: pipe terminal device).
Its mechanism to automatically stop the flow of gas during maintenance and inspection checks is unique the world over.

Hospital Facilities

Air Water Safety Service Inc., Miwa Electric Medical Co., Ltd., and Seiken Medical Co., Ltd. collaborate together and combine each of their strengths to provide one-stop solutions covering everything from planning to design, manufacturing, construction, and maintenance for medical gas piping and other gas supply facilities and hospital facilities that require advanced technology, such as operating rooms that play a central role in hospitals, ICUs (intensive care units), CCUs (coronary care units), and NICUs (neonatal intensive care units), based on many years of experience and the latest technologies.

Advanced medical facility operating room

Medical Gas

As the top supplier of medical gas, Air Water supplies a variety of medical gases, such as medical oxygen that is a core product, nitrous oxide (laughing gas) used as an anesthetic, helium for MR imaging, and sterilization gas used in medical instrument sterilization, to medical institutions across Japan. For medical oxygen that is required to be in steady supply, Air Water has established a thoroughly reliable stable supply system comprising VSUs and other manufacturing and distribution hubs and a transportation network that stretches across the entire country.

It has also built a remote monitoring system based on in-house development that enables 24-hour-a-day, 365-day-a-year assessment of the state of the medical gas supply and facilities in real time at a monitoring center.

Medical gas CE

Home Care

In 1982, Air Water became the first to import medical use oxygen concentrators and launch a Home Care Business in Japan. Since then, it has expanded its range in this field to include in-house developed and manufactured medical use oxygen concentrators, home care artificial ventilators, devices for treating sleep apnea syndrome, and even mechanical in-exsufflators. Air Water will continue to enhance and expand its Home Care Business including the development and production of equipment and the provision of assistance and detailed support to home care patients.

“Koharu” and “Ibuki” oxygen concentrators

Portable HPN pump, Cafty Pump S

Medical Services

Through the SPD service, which involves accepting contracted responsibility for the logistics management of all pharmaceuticals and medical instruments within a hospital, the contract sterilization service, which involves the sterilization of medical instruments, and other services, Air Water helps create an environment where hospital staff can focus on providing healthcare service. It offers flexible contract sterilization services with the option of having specialized staff visit hospitals to conduct high-quality sterilization on location and the use of contract sterilization centers located across the country. Home care and nursing care products are available for sale and rent as a regional medical care service, and Air Water has begun running nursing care and welfare facilities that pair the technologies and expertise of the Group with local capabilities.

Kyushu Sterilization Center

Lifestyle Assist Center Matsumoto

Lifestyle Assist Center Matsumoto

Medical Equipment

In the Medical Equipment field, Air Water has expanded its range to include hyperbaric oxygen chambers, in which it has a high domestic market share, and other ventilator-related equipment that is closely connected to medical gas as well as cardiovascular, dialysis, nursing care, dental, and other medical instruments for which it offers distribution and maintenance services. In particular, it boasts strengths in medical equipment related to infant/child/perinatal care. In the neonatal field, it offers inhalation therapy based on INOflow® nitric oxide pulmonary vasodilators and INOvent® as a device for administering the gas. Air Water also carefully selects outstanding medical instruments from around the world to import to the Japanese market.

As one of its nursing care instruments, it manufactures and sells the “Viami®” series of shower equipment for nursing care use that enables comfortable showering for both the care receiver and the caregiver. Air Water also conducts a number of other wide-ranging businesses, such as the manufacturing of metal and resin materials for use in dentistry and their fabricating equipment as well as hypodermic needles.

Sechrist Industries hyperbaric oxygen chamber

Energy Business

Developing community-based Lifestyle Solution Business centered on Air Water's LP gas business

Air Water's Energy Business started in 1955 in Hokkaido with sales of LP gas, and this business has grown steadily ever since. The LP gas field that is at the core of Energy Business utilizes Air Water's solid brand strength cultivated over many years and numerous distribution and marketing hubs scattered throughout Hokkaido, eastern Japan, and central Japan to provide a wide variety of services that are closely linked to local industries and the local people's lives.

Also in the field of LNG (liquid natural gas) that is garnering increasing interest as a clean energy with a smaller environmental load than petroleum and coal, Air Water is pursuing the Engineering Business that includes providing containers for transportation using cryogenic technology. It is further actively exploring new concepts with its distinctive technologies, such as distributed energy systems, mobile power source cars with LP gas generators, woody biomass utilization systems, and snow and ice cryogenic energy systems that efficiently utilize the cold energy of snow, and show great promise for energy conservation and disaster control.

Development of a new mountable 50 kW power generation unit LP gas-type mobile power source car

In May 2014, the lineup of LP gas-type mobile power source cars that generate power from LP gas expanded with the addition of a new mountable 50 kW power generation unit type. This product is a 50 kW LP gas power generator mounted onto a 3-ton long truck that has the capacity to power about 20 ordinary households. The power generator can be mounted or removed, so the base carrier can be used as a regular truck during non-emergencies. The power generator can also be used as a stand-alone unit, so that in addition to acting as a mobile power source car to aid areas affected by disasters, it can also be used as an emergency power source for plants and other facilities.

50 kW LP gas-type mobile power source car

Energy Supply

＜LP Gas and Kerosene＞

Air Water delivers fuel energy that is indispensable for local living and industry, including everything from household use to commercial and industrial use, use in vehicles, and use in community gas utility businesses, through the Hello Gas brand that is available widely across Hokkaido and in areas in eastern and central Japan. For its LP Gas Business, Air Water has established an integrated supply and management system for delivering from secondary facilities (large-sized LP gas storage tanks) to users. Air Water is also focusing on providing customers with optimal energy mix solutions that combine LP gas with other forms of energy. For corporate customers, it offers LP gas-based gas co-generation and gas heat pump systems, and for regular homes it offers the hybrid hot water supply and heating system VIVIDO that combines an electric heat pump with a high-efficiency gas hot water heater.

As part of its comfortable LP gas life solutions, Air Water offers community-based lifestyle services such as the sale and installation of LP gas-related equipment, residential renovation solutions, and nursing care equipment.

LP gas

LP gas supply equipment for use in disasters

＜Natural Gas Pipeline Distribution＞

Natural gas from the Yufutsu gas field in Tomakomai, Hokkaido, which boasts some of the largest reserves in Japan, is pumped down Air Water's own gas pipeline to the Chitose Natural Gas Distribution Center in the Chitose Rinku Industrial Complex to provide a stable supply to companies in the industrial complex.

Chitose Natural Gas Distribution Center

Energy Solutions

＜LNG Transport and Storage Tanks＞

Air Water is a domestic pioneer in LNG transport and storage tank technology. In the field of LNG transport equipment, it offers LNG transportation containers that it has developed to meet a wide range of transportation needs, including monocoque tank trucks that are specialized for high-volume inland transport, inland and marine transportation tank containers, and inland and rail transportation tank containers. Air Water also utilizes the cryogenic technology and expertise it has cultivated in the Industrial Gas Business for its LNG storage tanks to provide advanced engineering services for the actualization of optimized LNG satellite hubs (storage and vaporization delivery facilities) that match user needs from the selection of storage tanks to facility layout.

15.7-ton LNG tank truck with one of the largest LNG shipping capacities in Japan

＜Woody Biomass Utilization Systems＞

Air Water is working towards the creation of an energy supply system that uses woody biomass, a type of renewable energy. It will pair a state-of-the-art woody biomass gasifier with heat utilization techniques developed in its cogeneration business to build a compact and highly efficient energy utilization system and market it as a "local production for local consumption" energy utilization model.

＜LP Gas-type Mobile Power Source Cars＞

The lineup of LP gas-type mobile power source cars includes a container type trailer that can supply 100 kW (the power consumption of about 40 ordinary households) of LP gas-generated power, a compact light automobile type car (9.8 kW capacity) that offers excellent mobility and a mountable 50 kW power generation unit type consisting of a power generator mounted onto a truck. Air Water will continue equipping its LP gas filling stations with the cars as part of its business continuity plan for disasters and will increase sales of the cars to companies and municipalities for use as emergency power sources.

LP Gas secondary facilities and a 100 kW mobile power source car

＜Snow and Ice Cryogenic Energy Systems＞

Air Water has begun trial operations of a chilling system that focuses on cold energy from snow, a resource that was largely ignored until now. It is striving towards the development of new businesses, such as storage units for chilled food that maintain the taste and freshness of vegetables and rice without expending a large amount of energy.

Storage unit utilizing snow and ice cryogenic energy (ice room)

Agriculture and Food Products Business

Aiming for a sixth business segment with a groundbreaking food value chain covering everything from crop production and distribution to food processing

Air Water's "food" business began in the 1980s with the manufacturing of farm and marine product-based frozen foods that effectively utilize the cold energy of liquid nitrogen. Since then, Air Water has expanded its business in this category to ham, delicatessen products, and other chilled food products as well as originally developed cooking sauces and sweets. In 2009, it established the Air Water Farm Agricultural Production Corporation and launched full-scale into the agriculture field with the production of high-quality vegetables at solar-powered vegetable plants.

Air Water continued to actively pursue M&A and add new fields to its repertoire including the distribution and processing of fruit and vegetables and the manufacturing and selling of non-alcoholic beverages. In 2012, Air Water launched the Agriculture and Food Products Business as a new business segment. Going forward, Air Water will seek synergies between the segment's varied businesses and its existing businesses to create a revolutionary food business aimed at the establishment of a sixth industry that encompasses the first three. It will develop this category into a new growth pillar.

AW-Water North Alps Spring Water wins Monde Selection Grand Gold Medal and two golden stars in the iTQi Superior Taste Award

AW-Water North Alps Spring Water won a 2014 Grand Gold Medal from Monde Selection, an international quality reviewing organization, as well as two golden stars in the 2014 Superior Taste Award of the International Taste & Quality Institute (iTQi) that judges the taste of food products and beverages. The product is delicious and safe home delivered spring water produced at Air Water's state-of-the-art plant using clear, nutrient-rich natural spring water from Shinano-omachi that was produced in the bountiful natural environment of the North Alps of Japan. These awards demonstrate the international recognition of the high technological standards, quality and great taste of Air Water's drinking water.

AW-Water North Alps Spring Water

Ham, Delicatessen and Frozen Foods

Saveur SS Inc. offers three brands: Saveur commercial frozen food ingredients that have received great acclaim from hotels and upscale restaurants in Japan, Syunsetsu ham and delicatessen products for the general consumer market, and Sagami Ham, which has strong brand prestige in Kanagawa Prefecture and the surrounding southern Kanto region. In addition to its uncured ham that boasts the top share in the domestic market, it offers a broad range of high-quality frozen foods such as broccoli and asparagus that retain their taste and freshness through cryogenic technology.

The company is also working actively to take on new fields such as cooking sauces and Hokkaido sweets.

Saveur products (commercial use)

Fruit and Vegetable Juices

Gold-Pak Co., Ltd. has provided high quality beverages such as fruit juices, vegetable juices and natural spring water, for many years. It continues producing highly reliable products made from domestic ingredients and with great consideration given to both taste and safety.

To further its growth, it widened its sphere that began in Nagano to include Hokkaido and Aomori in 2014, launching new developments. The fresh crops of Shinshu, the varied vegetables and rich nature of Hokkaido and the apples that comprise the brand equity of Aomori—Gold-Pak will use this new platform to continue creating popular products by utilizing agricultural processing technology that brings out the intrinsic great taste of natural ingredients while treasuring the universal value of agriculture, based on the philosophy of "complete devotion to great flavor."

Gold-Pak Co., Ltd. Azumino Plant

Gold-Pak Co., Ltd. products

Fruit/Vegetable Distribution and Processing

Tomiichi Co., Ltd. has signed cultivation contracts with over 250 farmers in Hokkaido. The company offers nearly 20 different types of seasonal fruit and vegetables, including potatoes, pumpkins, and daikon radishes, that have been nurtured under the natural bounty of Hokkaido, as well as frozen vegetables and other processed foods to major food product manufacturers and other customers around the country. The company is drawing on its synergy with another Hokkaido-based company, Hayashiya, that is strong in the frozen vegetable field for its pumpkin, sweet corn and other products, and working to build a powerful supply chain. The original technologies and expertise and wide-ranging distribution network of Tomiichi Co., Ltd. that carries out all steps from raw material procurement to processing, freezing, and inspection all on its own greatly contribute to the creation of a new value chain in the Agriculture and Food Products Business category.

Tomiichi Co., Ltd.

Agricultural Machines and Tools

Nichinoki Seiko Co., Ltd. and Hiroshi Industrial Co., Ltd. manufacture and sell all types of agricultural machines and tools. Each company offers its own distinctive products and services, and makes maximum use of the business network to strengthen and expand synergies with the Air Water Group.

Nichinoki Seiko Co. Ltd. beet harvesters

Agriculture

Air Water Farm Agricultural Production Corporation operates two farms: the Chitose Farm, which produces fresh tomatoes and leafy vegetables in one of Japan's largest greenhouses, and the Azumino Farm, a base for tomato production in Nagano Prefecture. These farms automatically regulate greenhouse temperature, sunlight, irrigation and other environmental factors via a compound environmental control system to create an environment that suits the cultivation of vegetables, allowing for a stable year-round supply of safe, high-quality vegetables. In addition, Air Water maximally exploits its merits as an industrial gas manufacturer, for example by supplying carbon dioxide gas through the Air Water Group for vegetable cultivation and controlling the CO_2 concentration in the greenhouse to create the optimal state for growing vegetables.

Air Water Farm Co., Ltd.

AW-Water (home delivered drinking water)

AW-Water manufactures and sells mineral water that is water purified by reverse osmosis (RO) membrane filtration or clear distilled water obtained in the salt purification process added with the company's own marine-derived minerals, and spring water that is high quality groundwater from the Northern Alps. These products are distributed by delivery service to homes and offices along with a water-cooler developed in-house.

Shinano-omachi Plant, AW Water Inc.

Other Businesses

A multitude of distinctive technologies, products, and services continues to drive the growth of the Air Water Group

The foundation for Air Water's "All-Weather Management System" that is unaffected by fluctuations in the business environment is the "Order Rodentia Style of Business"—a portfolio strategy centered on a diverse group of small-scale but highly profitable businesses. The development of a variety of different businesses in the Other Business segment can be considered the essence of Air Water's business model.

From the Seawater Business, which supplies customers around the world with high-quality salt products and magnesia made from seawater, a resource with unlimited potential, to the Logistics Business, which provides high value-added services based on the equable low-temperature transportation technology developed through Air Water's Industrial Gas Business, each Group company with its unique technical capabilities and powerful products and services supports the continuous growth of the entire Group. In addition, exploiting the synergies between these businesses and Air Water's existing business or other Group companies enables the creation of even more ingenious businesses.

Startup of potassium chloride manufacturing facilities at the Sanuki Plant, Nihonkaisui Co., Ltd.

Following its Ako Plant, Nihonkaisui Co., Ltd. completed construction of potassium chloride manufacturing facilities at its Sanuki Plant that began operation in December 2013. Nihonkaisui that efficiently utilizes seawater established technology to extract potassium chloride from the ingredients in bittern, a product generated in the salt-making process. The Ako Plant has been commercializing its high quality potassium chloride that meets fertilizer standards and supplying it as a raw material for agricultural fertilizer. For the launch of the facilities at the Sanuki Plant, a new dissolving and washing process was developed and adopted to raise the purity of the potassium chloride. Nihonkaisui Co., Ltd. will carry out production at the two plants to adequately meet customer expectations and expand its potassium chloride business.

Potassium chloride manufacturing facilities

Seawater

＜Salt＞

Nihonkaisui, Co., Ltd., a comprehensive manufacturer of salt that commands the leading market share in Japan, develops a variety of salt products, from table salt and food processing salt manufactured at the Ako and Sanuki plants to snow melting salt and boiler salt. It also makes active use of seawater resources and technologies to offer environmental products, such as the READ-F adsorbent for water and soil treatment and magnesium hydroxide. It is working to expand its business range to cover fields such as potassium chloride and other agricultural business, the electric power business, and the sewer pipe reclamation business.

General household salts

＜Magnesia＞

Tateho Chemical Industries Co., Ltd., an international magnesia brand, uses one-of-a-kind technology to produce high-function and high value-added magnesia compounds and ceramic products that have seawater-derived bittern and mineral magnesium as their primary ingredients and supplies these products to a wide range of industries. In particular, it distributes magnesia for high-grade electromagnetic steel sheets that are indispensable for the electricity infrastructure.

Magnesium compounds

Logistics

Air Water Specialized Transportation Inc. utilizes the equable low-temperature transport technology developed in Air Water's Industrial Gas Business to offer "food product logistics" that maintains freshness through meticulous temperature regulation and "medical logistics" involving the transport of blood (blood plasma) collected at blood centers around the country. In the General Cargo field, it offers a plethora of services to meet customer needs, from container transport to transportation of small- and medium-sized cargo lots through shared distribution channels and 3PL. It also designs and manufactures specialty vehicles that are optimized for each individual purpose.

Container transport method

Aerosol

Air Water Sol Inc. has the advantages of a production system based on three highly specialized plants in Japan and a research and development capacity that covers numerous fields. It supplies a diverse range of aerosol products via OEM, including everything from coating materials and automotive parts to cosmetics, quasi drugs, and household commodities. It is also working to strengthen the development of products such as UV protection sprays and disinfectant and washing solutions under its own brand, and to reform its business structure, for example by entering overseas markets and adding a liquid filling company to the Group.

Air Water Sol brand Aerosol products

NV (metal surface treatment)

Air Water NV Inc. uses its own unique metal surface treatment technology to provide solutions such as NV nitriding, which provides high-quality surface treatment for steel materials, and Pionite, which increases the hardness of stainless steel without compromising corrosion resistance. It is developing and expanding its business not only in Japan but also in regions of China and Southeast Asia.

NV processing of automotive parts

O-rings

Air Water Mach Inc. manufactures and sells all types of seals, such as JIS standard rubber O-rings and rubber products for industrial use. It offers a lineup of its own finished products for varied industrial fields, including ultrahigh-performance rubber O-rings for semiconductors and LCD manufacturing systems.

Rubber O-rings

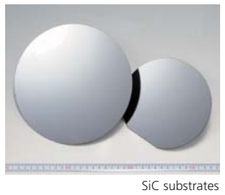
ECOROCA® (artificial recycled wood)

Air Water ECOROCA Inc. manufactures and sells ECOROCA®, a new compound, recycled material made from used wood and plastic. This eco-friendly construction material with a low environment load, which provides superior durability and safety together with the natural feel of wood, is being used more and more in public facilities and other places.

ECOROCA®

SiC

Air Water has developed its own SiC substrate for such products as power semiconductors and super luminosity LEDs, and begun supplying the substrates to domestic and international customers. Air Water is the first in the world to successfully establish a technology for large diameter substrates of up to 8 inches and mass-produce the substrates as the most suitable for the growth of GaN (gallium nitride).



SiC substrates

Research & Development

A "technology-driven company" to support the Group's future

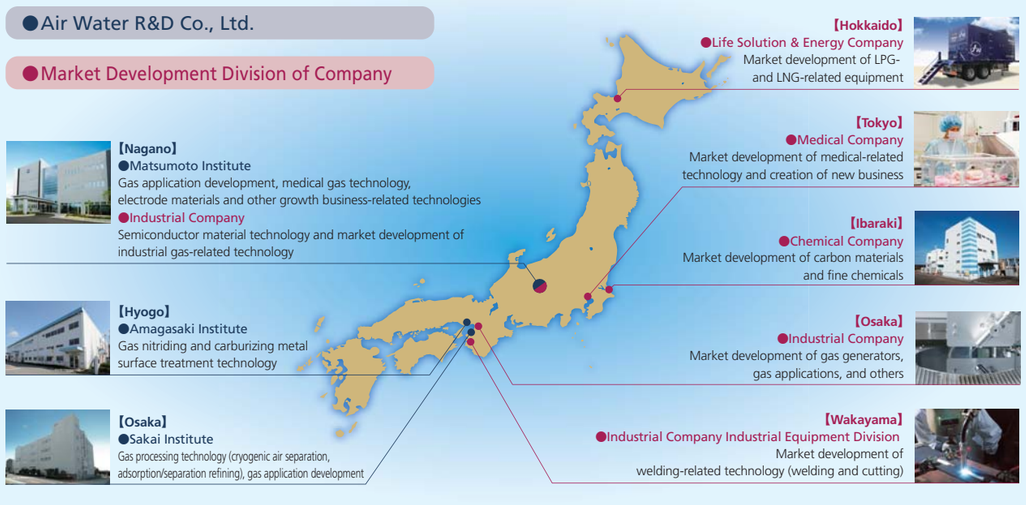
Pursuing further growth as a technology-driven company with technological innovations and expeditious business operation

Air Water powerfully creates technological innovations and conducts business through close collaboration between Air Water R&D Co., Ltd. that pursues strategic technological development goals and the development divisions of each company that pursue business oriented technological development goals that are closely coupled to customer needs.

Air Water R&D Co., Ltd. supports the technological developments of the entire group, and conducts research and development activities based on medium- to long-term technological strategies. It brings together the varied technologies possessed by the different group companies and generates novel cutting-edge technologies. Meanwhile, the development divisions of each business division are responsible for developing products that apply basic technologies and breaking into new markets, responding quickly to customer demands. Air Water will continue pursuing development of new technologies that maximize its R&D investment efficiency, moving forward as a technology-driven company.

Research and development fields

- Gas processing technology
- Gas collection and recycling technology
- Gas applied technology
- Welding technology
- Electronics materials technology
- Plasma surface treatment technology
- Fine chemicals and new materials technology
- Functional resin materials technology and carbon materials technology
- Medical-related technology
- Metal surface treatment technology
- Collagen applied technology
- Agriculture- and food-related technology



Major R&D Results for FY2013

System for stable oxygen supply to meet demand fluctuation

Air Water has developed an oxygen supply system (air separation system) that enables on-site supply to plants with greatly fluctuating oxygen use and to developing countries that have not yet developed an oxygen supply network. For example, electric furnace oxygen consumption fluctuates considerably. In the past, a tank truck or other backup supply of liquid oxygen was required. This new system enables on-site supply of oxygen to match the actual demand volume through highly efficient use of energy.

System for stable oxygen supply to meet demand fluctuation

High-efficiency Carbon Dioxide Collection System

Air Water has developed a new system for highly efficient collection of carbon dioxide from raw gas that has a low carbon dioxide concentration. This system has improved insulation of the carbon dioxide liquefying and purification part and features a reduced size and power consumption rate, not only enabling efficient utilization of untapped resources, but also leading to innovation of the carbon dioxide supply network, for example through satellite distribution of production bases.

High-efficiency carbon dioxide collection system

Standing centrifugal low temperature liquefied gas pump series

Air Water's standing centrifugal low temperature liquefied gas pumps feature a long operating life and a compact, lightweight, low noise and leak-free design with excellent maintenance efficiency. These pumps have been very well received since their market release. In FY2013, Air Water developed an explosion-proof model for LNG and a highly safe model for liquid oxygen. Going forward, it will continue to expand the series, for example with higher capacities, higher lifting and smaller size, in the aim to become the de facto standard in the low temperature liquefied gas pump field.

Standing centrifugal low temperature liquefied gas pump series

GaN Substrates

GaN and other wide band gap semiconductors that dramatically improve power conversion efficiency are garnering attention. The world's first 3C-SiC on Si substrate created by utilizing Air Water's unique film formation technology features the high melting point of SiC and a lattice constant close to that of GaN, making it a suitable substrate for GaN growth. The Si base also enables production of large diameter substrates. Air Water carried out activities to develop GaN growth technologies that are suited to the 3C-SiC on Si substrate, resulting in its large-diameter GaN substrate with excellent crystallinity.

GaN substrates

GaN (0001) thickness: 2.0 μm
Nitride buffer: approx. 1.5 μm
3C-SiC (111)
2" to 6" Si (111) Sub.

Oxygen Dissolving Device

Air Water developed a device that can dissolve oxygen gas in water many times more efficiently than aeration tubes and raise dissolved oxygen levels. Its simple construction prevents clogging and enables easy synchronization during load changes, exercising a stable performance. Air Water will utilize these strengths to develop this device for gas applications for the food, agriculture and fisheries and environmental fields, for example for fish and seafood farming, crop cultivation and drainage treatment.

Oxygen dissolving device

Organization Chart (As of July 1, 2014)

- The Board of Directors
- The Board of Auditors
- Chairman & CEO
- Vice Chairman
- President & COO
- Overall Technology Officer
- Public Relations & IR
  - Secretariat
- Internal Auditing
  - Compliance Center
- Corporate Planning
- Group Business Planning
- Overseas Affairs Office
- Procurement
- Human Resources
- Financial Affairs
- Corporate Management
- Accounting
- Information Systems
- Legal and General Affairs
- Air Water R&D Co., Ltd.
  - R&D Div.
  - Technology Management Div.
- Industrial Company
  - Market Development
  - Planning & Administration
  - Industrial Gas Div.
    - Air Separation Gas Dept.
    - Plant Gas Dept.
    - Hydrogen Gas & Specialty Gas Dept.
    - Operations Management and Quality Control Dept.
  - Industrial Equipment Div.
  - On-site Div.
    - Operation Dept.
    - Manufacturing & Technology Dept.
    - Production Control Dept.
  - Overseas Business Development
  - Electronics Div.
    - Bulk Gas Dept.
    - Specialty Materials Dept.
  - Engineering Div.
- Chemical Company
  - Market Development
  - Planning & Administration
  - Production & Safety Technology Dept.
  - Coal Chemical Div.
    - Basic Chemical Dept.
    - BTX Dept.
    - Fine Chemical Dept.
  - Fine Chemical Div.
    - Fine Chemical Sales Dept.
    - Fine Chemical Manufacturing Dept.
- Medical Company
  - New Business Development Div.
  - Planning & Administration
  - Hospital Support Div.
  - Home Medical Care Div.
  - Medical Gas Div.
  - Medical Equipment Dept.
  - Quality and Safety Div.
  - Welfare & Nursing Service Div.
- Life Solution & Energy Company
  - Market Development
  - Planning & Administration
  - Energy Related Business Div.
  - Energy Solution Div.
- Agriculture & Food Company
  - Planning & Administration
  - Agricultural Strategy Div
  - AW-Water Div.
- Electric Power Strategy Dept.
- Logistics Strategy Dept.
- ECOROCA Wood-Plastic Composites Div.
- SIC Division
- Hokkaido Air Water Inc.
- Tohoku Air Water Inc.
- Kanto Air Water Inc.
- Niigata Air Water Inc.
- Shinano Air Water Inc.
- Chubu Air Water Inc.
- Kinki Air Water Inc.
- Kisyu Air Water Inc.
- Chugoku-Shikoku Air Water Inc.
- Kyushu Air Water Inc.
- Air Water Vietnam Co., Ltd.
- Chitose Plant
- Wanishi Plant
- Kashima Plant
- Utsunomiya Plant
- Kobe Plant
- Wakayama Plant
- Hofu Plant
- Kokura Plant
- Kashima Plant
- Wakayama Plant

Compliance Center

- Safety Management
- Environmental Management Promotion
- Medical Safety Management
- Food Safety Management
- Technology Management

Corporate History

HOXAN Corporation

Sep. 1929 Hokkai Sanso Co., Ltd. is established in Sapporo.

Dec. 1955 Sales of LPG begin.

Sep. 1963 Sales and production of a bath room unit named “Bath-All” begin.

Aug. 1966 Company name changed to HOXAN Corporation.

Sep. 1979 The Company's stock is listed on the First Section of the Tokyo Stock Exchange.

Mar. 1981 Manufacture and sales of frozen food begin.

Daido Sanso K.K.

Mar. 1933 Daido Sanso K.K. is established in Osaka.

Sep. 1961 The Company's stock is listed on the First Section of the Tokyo Stock Exchange.

Apr. 1970 Senboku Oxygen Co., Ltd. begins operation. The Kansai district's first on-site operation with the capability of generating gas and liquid gas begins.

Oct. 1983 Capital alliance with U.S.-based Air Products and Chemicals, Inc. is formed.

Aug. 1984 High-purity nitrogen generator “V1” is developed. Mini on-site operation for semiconductor equipment manufacture begins.

Dec. 1992 Cryo-Air Co., Ltd., which has an energy-saving cryogenic air separation system utilizing LNG's cold energy, begins operation.

Kyodo Oxygen Co., Ltd.

Feb. 1962 Kyodo Oxygen Co., Ltd. is established in Wakayama.

Sep. 1979 Manufacture and sales of ELNACKS® welding shield gas begin.

Jan. 1996 The Company's stock is listed on the Second Section of the Osaka Securities Exchange.

Apr. 1993 Daido Hoxan Inc. is established.

May 1996 Business alliance between Daido Hoxan and Kyodo Oxygen is formed.

Jan. 1997 Daido Air Products Electronics Inc. is established.

Apr. 2000 Air Water Inc. is established.

Oct. 2002 Sumikin Air Water Chemical Inc. is established. Chemical Business is established around coal chemical.

Apr. 2004 Development of compact liquefied gas plant (VSU). No.1 Unit begins operation in Niigata. (upgrades and expands stable local supply system)

Sep. 2007 Nihonkaisui Co., Ltd. is made a subsidiary of the Air Water Group. Seawater Business is established; including Tateho Chemical Industries Co., Ltd..

Oct. 2007 Research and Development Institute is established in Matsumoto City (Nagano). Consolidates the cutting-edge technologies and intellectual properties of the Air Water Group.

Mar. 2010 Mid-term Business Plan “NEXT-2020 Ver.1” is established. (Seeks to become a 1-trillion yen company in net sales in FY2020 and puts in place a “Foundation for Further Growth”.)

Oct. 2012 Agriculture and Food Products Business is established through the addition of Gold-Pak and Tomiichi to the Air Water Group.

May 2013 New medium-term business plan “NEXT-2020 Ver. 2” is established. (Net sales target for FY2015: 700 billion yen)

Corporate Outline

(As of March 31, 2014)

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
(Registered Address of Head Office)	2, Kita-Sanjo-Nishi 1-chome, Chuo-ku, Sapporo, 060-0003, Japan
(Tokyo Office)	18-19, Toranomon 3-chome, Minato-ku, Tokyo, 105-0001, Japan
Established	September 24, 1929
Paid-in Capital	¥32,263 Million
Number of Employees	9,558 (Consolidated)
URL	http://www.awi.co.jp/english/

Board of Directors

(As of June 26, 2014)

Chairman of the Board and Chief Executive Officer	Hiroshi Aoki
Vice Chairman	Masahiro Toyoda
President and Chief Operating Officer	Yasuo Imai
Corporate Senior Managing Directors	Toshihiko Akatsu / Akira Fujita / Kikuo Toyoda / Junichi Nakagawa
Managing Directors	Yuu Karato / Yukio Matsubara / Masato Machida
Corporate Directors	Hideo Tsutsumi / Minoru Nagata / Yasushi Sogabe / Yukio Murakami / Kiyoshi Shirai / Masayuki Hasegawa / Kazuhiko Hatano / Yukiko Sakamoto
Standing Audit & Supervisory Board Members	Tomohiro Katano / Kouichi Nakagawa / Hirohisa Hiramatsu
Audit & Supervisory Board Members (part-time)	Morihiro Sekiyama / Akihiko Takashima

Principal Shareholders

(As of March 31, 2014)

Company	Number of shares held (thousands)	Ratio of shares held (%)
Nippon Steel & Sumitomo Metal Corporation	10,000	5.03
Japan Trustee Services Bank, Ltd. (trust account)	8,123	4.09
The Master Trust Bank of Japan, Ltd. (trust account)	8,059	4.06
Sumitomo Mitsui Trust Bank, Limited	7,936	3.99
JP Morgan Chase Bank 385632 (Standing proxy: Mizuho Bank, Ltd.)	7,287	3.67
Sumitomo Mitsui Banking Corporation	6,196	3.12
Air Water Customers' Stockholding	5,202	2.62
National Mutual Insurance Federation of Agricultural Cooperatives	4,780	2.41
Northern Trust Co. (AVFC) Re 15pct Treaty Account (Standing proxy: The Hongkong and Shanghai Banking Corporation, Ltd.)	4,489	2.26
The Hokkaido Bank, Ltd.	4,113	2.07

Information on Shares

(As of March 31, 2014)

Fiscal Year	From April 1 to March 31
Annual General Meeting of Shareholders	June
Record Dates	Annual meeting: March 31
	Year-end dividends: March 31
	Interim dividend: September 30
Number of Shares per Unit	1,000 shares
Manager of the Register of Shareholders	Sumitomo Mitsui Trust Bank, Limited. 4-1, Marunouchi 1-chome, Chiyoda-ku, Tokyo, Japan
Telephone Number for Inquiries	TEL 0120-782-031 (toll-free in Japan)
URL	http://www.smtb.jp/personal/agency/index.html
Method of Public Notice	Electronic public notice
	*URL depicting public notice
	http://www.awi.co.jp/ir/koukoku.html
Listed Financial Instruments Exchange	Tokyo, Sapporo