



Person by person

Step by step

Day by day

Building a brighter tomorrow







A company that wins people's trust, today and in the future—that is our goal

Environmental and Social Report 2011

AIR WATER INC.

The Great East Japan Earthquake, which struck on March 11, 2011, and the subsequent radioactive contamination caused by the nuclear power plant accident in Fukushima have imposed an unprecedented set of challenges on Japanese society and the environment. It reminded us once again how difficult it is to protect and make the best use of the Earth's environment and resources.

At Air Water Inc., we have built a business that relies on the Earth's precious resources to support society and people's lives around the clock. What we must always keep in mind is that to pass on our society and the Earth sustainably to future generations, we must draw together as much wisdom as possible.

Through this year's Environmental and Social Report, we present a portion of the Air Water Group's activities, which encompass the creation of products and services that utilize air, water and other of the Earth's resources. We hope that this report will contribute to our ongoing dialogue with readers.

Industrial Gas Business

As a comprehensive gas manufacturer and supplier, Air Water produces a wide range of industrial gases and offers such services as engineering of gas supply facilities, such as piping and storage, and delivery of industrial gases. Air Water delivers industrial gas-related products and services essential to the manufacturing sector using optimal supply methods to meet customer needs consistently, safely and expeditiously. Our customers operate in a broad array of industries, including steel, electronics, glass, chemicals, shipbuilding and automobiles.

Large-scale cryogenic air separation system

High-efficiency compact liquid nitrogen/oxygen co-production plant (VSU)

Electronics Business

Air Water specializes in supplying a range of gases, specialty chemicals, equipment and services for such leading-edge electronics fields as flat panel displays, semiconductors and solar cells. Air Water is also active in providing proprietary materials for a broad array of next-generation devices, including functional carbon materials and highly heat-resistant semiconductor substrates.

Nitrogen trifluoride ISO module

Semiconductor substrate production line

Chemical Business

Air Water manufactures and markets coal chemical products and fine chemical products for customers in such industries as general chemicals, pharmaceuticals, electronic devices and tires. The coal chemical products handled by Air Water are separated and refined from the active ingredients of coke oven gas and coal tar, which are byproducts of steel mills. Air Water's coal chemical products include purified gas, crude benzene, BTX (benzene, toluene, xylene), carbon materials and tar distillation products. The fine chemical products handled by Air Water include pharmaceuticals that utilize organic synthesis technology, agrichemical intermediates and electronic materials.

Thermally expandable graphite (TEG)

GMP (Good Manufacturing Practice) plant

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Medical Business

Air Water provides an advanced, comprehensive range of solution services as the leading domestic supplier of medical gases. The Air Water Group utilizes its own supply infrastructure to provide a stable supply of medical oxygen and other gases to medical institutions nationwide. In addition, Air Water provides medical equipment, hospital engineering services, hospital SPD (supply, processing and distribution) services, contract sterilization services and other services for hospitals. The Air Water Group is also involved in such businesses as home-based medical care and nursing care services.

Home artificial respirator for infants and children

Advanced medical facilities simulation center

Energy Business

Air Water markets the "Hello Gas" brand of liquefied petroleum (LP) gas and kerosene to household, industrial and commercial users. The Air Water Group also sells a hybrid hot water and heating system developed in-house. In addition, Air Water provides a drinking water home delivery service, operates a local community-focused lifestyle support business centering on housing renovations, operates a Natural Gas Pipeline Distribution Business, and manufactures and markets liquefied natural gas (LNG)-related equipment (tank truck and satellite station equipment).

A Hello Gas spherical tank

Hybrid hot water and heating system

Other Business

These businesses are straightforward examples of Air Water's unique "Order Rodentia Style of Business." Air Water has the top domestic market share for salt, boasts a globally competitive market share in magnesia for electromagnetic steel sheets and has a frozen food ingredients business as well as a ham and delicatessen foods business. The Group also has an Aerosol Business that utilizes the logistics and advanced technologies developed in the handling of high-pressure gas, including controlled low-temperature transportation. This diverse range of businesses supports the Air Water Group's future growth.

Syunsetsu Saveur product range

Liquefied gas tank trucks

Management Philosophy

Concentrate member companies' knowledge and expertise on the creation and development of businesses that concern air, water, and the planet in general, in the spirit of entrepreneurship that contributes to society.

On March 11, 2011, an earthquake of unprecedented magnitude struck eastern Japan. We wish to extend our deepest sympathies to all those affected by the earthquake.

The earthquake and tsunami, along with the accident at the Fukushima Daiichi Nuclear Power Plant, has inflicted an immeasurable toll on the lives of people in Japan and the Japanese economy. The Air Water Group has also been affected by the earthquake. This includes significant damage to such production facilities as Air Water's Fukushima Gas Production Plant and Nihonkaisui Co., Ltd.'s Onahama Plant, as well as to facilities and businesses operated by our customers and business partners.

With regard to our initial response immediately following the earthquake, we utilized our network of high-efficiency compact liquid nitrogen/oxygen co-production plants (VSU) to rapidly build a gas supply system. This enabled us to minimize supply disruptions to the industrial and medical gases that our customers require.

At present, nearly all of the facilities that were affected by the earthquake have been restored to normal operations, and we have recovered to a level capable of responding to demand from customers both in Japan and overseas, and particularly those in newly emerging economies. Meanwhile, we anticipate ongoing impacts from electricity shortages triggered by the nuclear plant accident, contamination by radioactive materials and other factors. Air Water's business is founded on the use of air and water. In the current era, we can no longer take for granted that safe air and water will always be available, and we must work to protect and build these resources. In such an era, the true value of Air Water's business involving air and water will be scrutinized even more closely than it has been in the past.

We must be more humble in our acceptance of the fact that we live on a planet whose environment is finite. Based on the "All-Weather Management System" and "Order Rodentia Style of Business," the Air Water Group achieves growth and responds to society's needs through technology.

Hence, we are committed to working toward solutions to environmental, energy and other global-scale issues. We are also committed to efforts that will help Japanese society overcome the unprecedented challenges brought by the Great East Japan Earthquake, and realize sustainable development for the future. By drawing on the unlimited wisdom of human beings, we will continue to cultivate new businesses that contribute to people's daily lives.

In closing, I wish to comment on the matter of Air Water being found to be in breach of Japan's Antimonopoly Act by the Japan Fair Trade Commission, which imposed exclusion orders and a fine on Air Water in May 2011. Although Air Water has until now built an internal compliance system and implemented compliance training for employees, we will undertake increased efforts in the future to regain the trust of our customers by reinforcing compliance awareness and strengthening the Group's crisis management system. We look forward to your continued support for our future endeavors.

Hiroshi Aoki
Chairman of the Board, Chief Executive Officer
Air Water Inc.

H. Aoki

FEATURE STORY

Great East Japan Earthquake

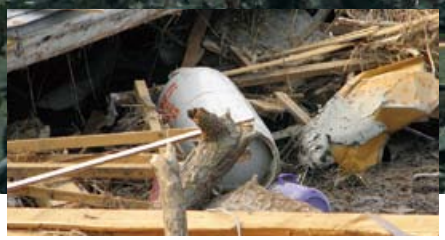
The Air Water Group—Meeting the Challenges of an Unprecedented Disaster

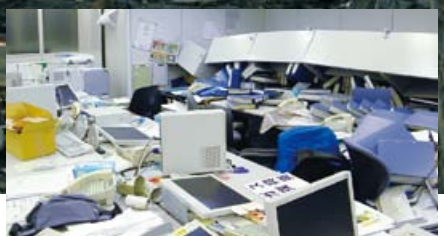
We offer our deepest sympathies and condolences to all those affected by the Great East Japan Earthquake, which occurred on March 11, 2011. Furthermore, we pray for the safety of all earthquake and tsunami survivors and for the swiftest possible reconstruction and recovery.

—The entire Air Water Group

What happened when the earthquake struck? How did the Air Water Group respond?

The Great East Japan Earthquake wreaked unprecedented damage beyond a level anyone could have imagined. Following the magnitude 9.0 earthquake—the most powerful ever recorded in Japan—a massive tsunami struck Japan's northeast coast and a crisis was triggered at the Fukushima Daiichi Nuclear Power Plant. Although the resulting devastation hit the Tohoku region hardest, it also affected a large swath of eastern Japan. What happened when the earthquake and tsunami struck? Subsequently, what responses were the Air Water Group able to effect? In this special feature article, from among the Air Water Group's numerous businesses, we report on the responses by the Industrial Gas Business, Medical Business, Energy Business and Logistics Business and the challenges they addressed.





Industrial Company—Risk Mitigation through VSU[*1] Network

"Did the plant shut down as soon as the earthquake struck? If it shut down, what needed to be done to avoid a cut-off of the gas supply? All employees of the Air Water Group—which is involved in the production and marketing of gases—would likely have had these questions running through their heads. Underpinned by a strong sense of responsibility toward our customers regarding the imperative of avoiding a disruption to the gas supply, everyone took the actions necessary based on their own initiative." These were the words of Tanaka, General Manager at Industrial Company Industrial Gas Division Air Separation Gas Department, summing up the response of his staff to the crisis triggered by the earthquake at Air Water's Tokyo Office.

The earthquake caused several of the Group's liquefied gas plants in the Kanto and Tohoku regions to shut down due to damage to facilities and power outages. Gas filling plants also shut down owing to power and water supply outages. The quake also scattered gas cylinders around at some Group sites. At some of the Group's facilities, it took several days to ascertain the situation of customers—the delay was caused by such factors as aftershocks, disruptions to communications networks and roads. In working to restore production, the Group initially prioritized oxygen for medical use and nitrogen used for explosion prevention. The Group provided back-up supply to the Tohoku region from the Kanto and Koshinetsu regions.

According to Tanaka, a major factor enabling a speedy restoration of supply was the Group's VSU network. "Niigata Ekisan became the frontline base for gas supply to Tohoku, with continuous shipments being made directly to disaster-affected areas. The main back-up gas supplier for the Niigata area was Shinano Ekisan. Sagamihara Ekisan and Shizuoka Ekisan also provided gas supply back-up for the entire Kanto region, and by utilizing our VSU network, we were able to maintain gas supply without any disruptions." Thanks to the Group's decentralized supply infrastructure based on its VSU network, the Group was able to minimize impacts on its customers.

Medical Company—Meeting the Challenge to Protect Lives

"When the earthquake struck, I was traveling along the coast of Wakayama prefecture [in western Japan], on my way to Kishu Air Water. I was on a business trip from Tokyo, but when I arrived at my destination, I was immediately told that there was a tsunami evacuation order in force, so I had to leave straight away." Maruko, General Manager at Medical Company Medical Gas Department, explains his experiences on March 11. He subsequently traveled to the Air Water Group's Osaka Head Office that evening, where a Disaster Response Headquarters had been established to deal with the Great East Japan Earthquake.

Although mobile phone communications were still operable immediately following the quake, after about 30 minutes contact with the disaster-affected areas was lost. Relying on a mobile phone line for use during disaster, which barely remained operable, the Group began gathering information on damage to the medical gas supply system and the damage situation at local hospitals in the disaster zone.

Note: Job titles and posts cited in this article were current as of the time interviews were conducted.

Go Tanaka,
General Manager, Industrial Gas Division
Air Separation Gas Department,
Industrial Company

Kazutoshi Maruko,
General Manager, Medical Gas Department,
Medical Company

Masanori Mikami,
General Manager, Medical Equipment Department,
Medical Company

First Response—Emergency Measures to Address Power Outage

Maruko and Medical Equipment Department General Manager Mikami quickly realized that they were dealing with a major earthquake, hence the Medical Company did not wait for detailed information from the affected areas before taking prompt action—specifically, the procurement of oxygen cylinders. This decisive move reflected their experience after the Great Hanshin Earthquake in 1995. The Medical Company contacted Air Water Group local subsidiaries from Hokkaido in the north to Kyushu in the south, and gathered small oxygen cylinders used by patients at home and in ambulances carrying patients to hospital. Between the late evening of March 11 and the early morning of March 12, a plan had already taken shape, and on the night of March 12 the first batch of cylinders arrived at Tohoku Air Water Co., Ltd.'s Fukushima Office. Meanwhile, oxygen concentrators*2 arranged to be sent to the earthquake-affected areas by Mikami arrived at Tohoku Air Water's Miyagi Gas Center at 5:00 a.m. on March 13.

Mikami explains these initial actions, "Since home oxygen concentrators require electricity to operate, the power outage would force patients to use emergency- or portable-use oxygen cylinders. However, ultimately most patients would be evacuated to hospitals or evacuation centers. Since hospitals often have emergency back-up generators, patients would be able to safely use oxygen concentrators. These were the reasons behind the immediate action to ship small oxygen cylinders and oxygen concentrators to the disaster-affected areas.

Steadfastly Maintaining Stable Supply through Diverse Means

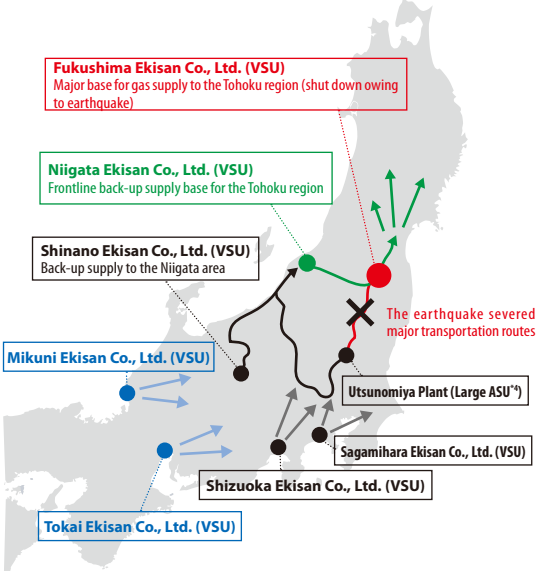
Following the March 11 earthquake, Air Water was able to maintain the supply of oxygen to hospitals without disruption. Maruko comments, "The crucial task is how to maintain a continuous supply of oxygen to hospitals." There are several ways of supplying the oxygen—these include shipping small cylinders, shipping LGCs*3, and for large hospitals, supplying oxygen to a stationary tank by means of liquefied oxygen tank truck. Pressurized tank trucks were chosen since they may be used even during power blackouts. Since the earthquake had cut roads to some hospitals and certain places were only passable by small trucks, both small and large tank trucks were prepared.

Dynamism and System for Cooperation Enable the Air Water Group to Overcome Crisis

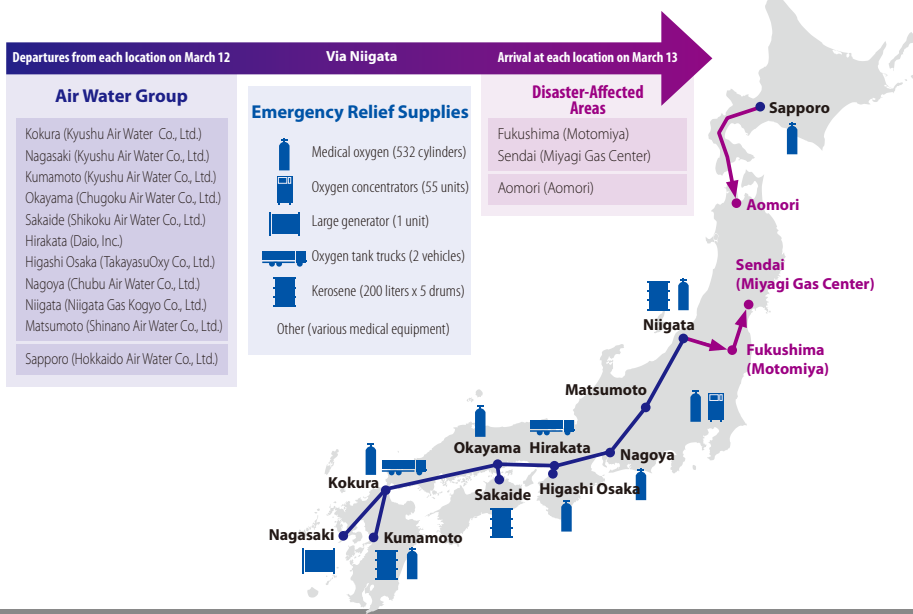
Maruko's voice takes on a more forceful tone, "Patients' lives depend on the work we do. Therefore, the provision of stable supplies of oxygen during emergencies is only to be expected. To ensure this is achieved, from immediately after the earthquake, we take all appropriate actions, including telephoning or sending staff to visit each hospital or home-based patient to check on equipment and piping. The level of gratitude I have for the dynamism of our staff involved in such medical-related services and the Air Water Group's overall system for cooperation cannot be adequately expressed in words.

*1 VSU: High-efficiency compact liquid nitrogen/oxygen co-production plant
*2 Oxygen concentrator: A type of medical device that intakes ambient air to produce oxygen in concentrated form. These devices are principally used by patients who suffer from a respiratory disorder to administer oxygen at home.
*3 LGC: Liquid Gas Container
*4 ASU: Air Separation Unit

● Emergency Gas Supply Routes Utilizing Air Water's VSU Network



● Emergency Relief Supply Routes for Medical Gas and Equipment Traversing the Length of Japan (March 12–13)



From that Moment, the Battle Begun in the Disaster-Affected Areas

A report from the Fukushima Branch of Tohoku Air Water Co., Ltd.

Morimasa Wada,
Director and Special General Manager, Medical Department,
Tohoku Air Water Co., Ltd.

Takashi Hayamizu,
Branch Manager, Fukushima Branch,
Tohoku Air Water Co., Ltd.

A collapsed chimney at a hospital in Sukagawa City, Fukushima

Work being carried out to secure gas cylinders knocked over by the earthquake

The Day of the Quake—Confirmation of Employee Safety Given Absolute Priority

On the afternoon of March 11, Wada, Special General Manager of the Medical Department at Tohoku Air Water was within the precincts of a hospital in Sukagawa City, Fukushima, about to carry out a final check on medical gas supply facilities to a new hospital building. At that exact moment, a huge tremor shook the ground and right before his eyes the chimney of the adjacent old hospital building collapsed and crashed through the building's ceiling. "My immediate thought was to check to see if anyone was trapped inside and help them get out. So I rushed over to the building, but luckily no one was inside. That was my first experience in the aftermath of the disaster," he recalls. He then inspected the medical gas supply facilities and reported to the hospital manager responsible that there were no malfunctions. Wada and one other Air Water staff member then left the hospital they had been at when the earthquake struck to check on the safety situation at other hospitals—Air Water customers—nearby.

At the same time as checking on the status of medical gas facilities, Wada also assisted with the evacuation of patients from hospitals that had a high risk of building collapse. After checking on safety at several hospitals, Wada arrived back at his company's Fukushima Branch late at night. Wada had realized soon after the earthquake that it was likely to take a long time to deal with the immediate aftermath, so he had stopped at a convenience store to buy food and also filled his car's gasoline tank. At that point, it had still been possible to purchase food and gasoline. Listening to the office radio, although Wada learned of the massive damage in coastal areas caused by the tsunami, little did he know of the nuclear disaster unfolding at the time, which would soon turn into a nightmare situation for Fukushima.

Information Gathering and Division of Labor—Whiteboard Becomes Key Communication Tool

How would Tohoku Air Water meet the needs of hospitals? Air Water staff quickly concluded that gathering accurate information was the first vital task. Air Water would need to respond in a completely different way depending on the particular circumstances of a hospital. For example, had the patients been evacuated owing to building damage? Had the hospital been destroyed by the tsunami? Was the hospital closed down owing to radiation danger? These basic questions had to be addressed before planning any response. In cases where the patients were being transferred, Air Water needed to assist with such transfers and provide portable oxygen cylinders. In cases where a hospital was being closed down, Air Water needed to shut off the medical gas facilities to ensure no leaks would occur. Wada recalls what they did on that first night, "To share this kind of information with all our employees, we all gathered in the conference room and proceeded to write everything down on the whiteboard. We then assigned the tasks that needed to be done. This first meeting was late at night on the 11th."

Staff share information using a whiteboard

Maintaining Stable Supply is the Overriding Mission

The Fukushima Branch of Tohoku Air Water encompasses on a single site everything from VSU facilities for gas production and a gas cylinder filling factory to delivery and sales functions. Wada says that being able to directly identify all issues themselves meant they could carry out their tasks efficiently. He further states, "Thanks to the logistic support we received from the rest of the Air Water Group, including cylinders, pressure regulators and spare refillable cylinders, our employees were able to dispel their anxiety and face the reality in front of them with courage."

Ultimately, within the area serviced by the Fukushima Branch, no hospitals suffered a cut-off in medical gas supplies and Air Water was able to meet all requests from hospitals for deliveries. Many hospitals have expressed their appreciation for Air Water's efforts throughout the crisis period to ensure that stable supplies of medical gas were maintained. "We received gratitude for something that is only what should be expected," says Wada modestly.

Industrial Gas—Unprecedented Quake Almost Topples VSU's Rectifying Column

Fukushima Ekisan Co., Ltd., is the Air Water Group company whose production facilities occupy the same site as Tohoku Air Water's Fukushima Branch. When the earthquake struck, Fukushima Ekisan's VSU was in operation. After detecting the quake's vibrations the plant shut down automatically. The VSU's rectifying column (air separation equipment) swayed violently. Staff immediately recognized that there was a danger the column might topple over, so all personnel evacuated to a safe area on the site. Fortunately, the rectifying column didn't collapse, but all of its foundation bolts were stretched some 20 millimeters. Fukushima Branch Manager Hayamizu, who was in the office when the earthquake hit, relates his experience, "The final 30 seconds of the quake brought the strongest horizontal shaking. The printer toppled over and the copier and fax machines were jolted about two or three meters. The windows were shaken free from their latches and swung open, letting snow blow in from outside."

Fukushima Prefecture's Recovery Has Only Just Begun

Out of the five liquefied gas plants that are suppliers to Tohoku Air Water, four plants lost their production capability. Hence, maintaining supply to large oxygen users became problematic. The company coped by providing oxygen everyday from alternative facilities, including the company's Utsunomiya ASU and the VSU operated by Niigata Ekisan Co., Ltd., another Air Water Group production subsidiary. In addition, since factories not directly affected by the earthquake—for example, customers in Yamagata prefecture and other parts of the Tohoku region—were operating normally, it was hard to reach agreement on delivery terms. Although the company is receiving back-up supply from other VSU sites, Hayamizu states, "With the Fukushima Ekisan VSU not able to operate[*1], I think the reason why we have not had serious supply instability is because gas users are still only operating at very restricted levels. Fukushima prefecture's recovery has only just begun, and the problem of radioactive contamination continues to have wide ramifications."

Nuclear Plant Accident Evacuation Simulation

"In response to the unexpected contingency, the Tohoku Air Water Head Office sent a directive to us at the Fukushima Branch—evacuate all staff and their families to Air Water sites in Niigata. We had carried out simulations for such a scenario. Including families, the evacuation order covered more than 100 people. So that we could respond quickly in the case of another nuclear accident, everyone kept a bag packed with a change of clothes and essential belongings and we made sure that we always had enough gasoline in our vehicles to get us to Niigata." Despite his calm demeanor, Hayamizu's words convey the depth of the crisis he and his staff faced.

*1 The situation at the time interviews were carried out for this report in June 2011. At the end of June, the VSU resumed operation.

Emergency relief supplies sent from the Air Water Head Office. These supplies were provided to employees and their families as well as disaster-affected customers.

A scene at the Sendai Office's LP gas filling site immediately following the earthquake. All the site's gas cylinders were toppled by the quake.

From Securing Safety to Start of Recovery, Staff Work Many Weeks Without a Break

A report from the Sendai Office of Higashinihon Air Water Energy Inc.

LP Gas Business—Fulfilling Responsibilities for Safe, Reliable Supply

Higashinihon Air Water Energy Inc. supplies liquefied petroleum (LP) gas and other products under the "Hello Gas" brand across a wide area covering the Tohoku and Kanto regions. From among the company's 12 operation sites, we report from the Sendai Office on damage sustained in the earthquake and the circumstances of the recovery.

By chance, on March 11, Maruyama—Supervising Manager at Higashinihon Air Water Energy's Security Group—was in Sendai on a business trip from Tokyo. He recalls, "I happened to be in Sendai when the earthquake struck, and I ended up staying there for over a month. I had no time to shave or get my hair cut, so my beard and hair were left to grow while I dealt with urgent tasks following the earthquake on a daily basis. Thinking back now, it must have seemed quite discourteous to the people around me."

At Higashinihon Air Water Energy's Head Office in Tokyo, Sales Department General Manager Nonami led the company's response to the earthquake. The task he devoted the most energy to was dealing with the situation at the company's Iwaki Office in Fukushima prefecture. He talks about the seriousness of the situation, "The Iwaki Office suffered a triple blow—the earthquake, tsunami and nuclear accident. Some of the office's customers were located within the 20-kilometer radius of the Fukushima Daiichi Nuclear Power Plant. Initially we had no idea about how bad the damage situation was."

Hiromitsu Nonami,
General Manager, Sales Department,
Higashinihon Air Water Energy Inc.

Keiji Mitsukawa,
General Manager, Sendai Office,
Higashinihon Air Water Energy Inc.

Clearing Operational Backlog Due to Slow Initial Progress in Recovery Requires Operating Seven Days a Week

Amid the disarray immediately following the earthquake on March 11, Higashinihon Air Water Energy's Sendai Office was able to gain very little information on its customers' damage circumstances. Although several staff members stayed overnight at the office on the 11th in order to deal with the situation, the electricity blackout meant that they were unable to use their computers or watch the news on television, leaving them with little information on the broader post-earthquake picture. They spent the night keeping warm around a kerosene stove while snow fell outside.

Early the next morning, on Saturday March 12, all employees able to get to the office gathered for a briefing. A Local Disaster Response Group was established and a meeting was held to decide on response measures. A team was organized to carry out equipment checks at customers' sites, another group was appointed to be in charge of emergency response, and a range of other matters were also decided, including checks on cylinder filling stations, procurement of food and making contact with sales agents.

Higashinihon Air Water Energy's Sendai Office General Manager Mitsukawa talks about his staff's activities during several days following the earthquake as they worked to get their operations up and running again. "In the week following the earthquake, it was very difficult to get gasoline, so we made little headway in carrying out checks on customer facilities. However, on March 18 we received permission from the police to have company vehicles recognized as emergency vehicles, which meant we were able to obtain gasoline from that point on. The emergency response team and equipment inspection team then commenced full-scale checks to ensure safety and prevent accidents. On the 18th electricity supply was also restored, and we were able to restart gas cylinder filling operations. On that day we were finally able to see some light at the end of the tunnel in terms of progress toward recovery."

The company carried out tasks to prevent secondary accidents caused by the earthquake, such as gas leaks or explosions. Specific activities included inspections of gas cylinders that had been toppled by the quake and collection of cylinders that had been swept from their original location by the tsunami. To clear the backlog caused by the slow initial recovery, the company carried out cylinder filling and delivery operations seven days a week. On March 25, a back-up team of 10 personnel arrived from Hokkaido Air Water Co., Ltd. and Air Water Hello Support Inc., who provided a substantial boost in carrying out inspections of customer facilities. Three employees of Air Water Techno Supply Co., Ltd., also bolstered manpower for the collection of cylinders, and members of the local LP gas association expressed their appreciation for the company's efforts.

Helping Customers Return their Lives to Normal

By the beginning of April, accompanying the recovery in electricity and water supplies, there was an increase in requests for repairs to water heating equipment. In addition, since customers who had evacuated owing to the tsunami gradually began returning home, Air Water Energy began carrying out repairs to household LP gas equipment.

Shuji Maruyama,
Supervising Manager, Security Group, Higashinihon Air Water Energy Inc.

An Air Water truck collects gas cylinders in a disaster-affected area

Higashinihon Air Water Energy Inc.'s Sennan Office served as a base for the provision of emergency relief supplies, with staff using a second-floor room as temporary accommodation

Sendai Office Retail Group Manager Masato Kurokawa explains, "From early April through early May, there were a lot of new tenants moving into apartments in Sendai—including students starting the new school year and people who had been evacuated from tsunami-hit areas. This meant that there was a sudden rush of demand for our service personnel to attend calls-outs necessary when commencing supply to a new customer—these involve opening up the gas supply and doing safety inspections on equipment. Although reticulated gas supplies were not restored until the second half of April, LP gas supply was available soon after the earthquake, which served as a reminder of the resilience of LP gas supply vis-à-vis major disasters. We were also rapidly able to provide portable gas cookers and cylinders to customers and evacuation centers, such as elementary schools, which was greatly appreciated by local communities."

Using the Experience from Disaster as a Lesson for Tomorrow

Maruyama offers his advices as a security specialist, "It is essential to have response manuals prepared and ready for use immediately following a disaster for each aspect of the recovery phase. In the case of this particular disaster, there were no secondary accidents, and thanks to the Air Water Group's human resource and material support as well as the unrelenting efforts of the Group's staff, we were able to make it through without any major problems. However, to ensure the highest level of risk management possible, robust manuals are indispensable. It is also necessary to strengthen relationships with business partners. This includes having agreed disaster protocols in place with each partner. If only minimal communication is maintained during normal times, when a crisis arises it may be difficult to secure effective cooperation. Finally, as part of training to ensure that the Group can respond to unforeseen disaster scenarios, I believe that 'desktop simulations' are an effective tool. Not only do we need to have local training exercises, but also training in which the map is spread wider and staff are given specific scenarios to which they must think about their responses."

By utilizing the experience gained on this occasion in overcoming the disaster, staff will be able to act with composure when the next disaster strikes. The importance of such an outcome is a point that Maruyama is particularly keen to emphasize.

Masato Kurokawa,
Retail Group Manager, Sendai Office, Higashinihon Air Water Energy Inc.

Logistics is the Lifeline—Key to Maintaining Society's Basic Functions and Pivotal in Disaster Recovery

A report from Air Water Specialized Transportation Inc.

Unifying the Entire Group's Strengths

Air Water Specialized Transportation Inc. utilizes a nationwide network to provide logistics services covering a broad array of goods and equipment, including industrial gas, machinery, medical gas, foodstuffs and general freight. Damage from the disaster affected nearly all of the operation sites in the Tohoku and northern Kanto regions of group company Eastern Japan Air Water Specialized Transportation Inc. When the earthquake and tsunami disrupted the movement of a diverse range of goods and equipment, the company swiftly restored its operations by leveraging its transportation and human resource capabilities. We asked Air Water Specialized Transportation about its activities in dealing with the disaster, which contributed significantly to the transportation of Air Water Group emergency relief supplies as well as the Group's products. At the company's Head Office in Sapporo, Hokkaido, a Disaster Response Group was established, which was personally led by President Toshihiko Akatsu (currently Corporate Senior Managing Director at Air Water Inc.). For this report, we spoke to Mifune, General Manger of Air Water Specialized Transportation's Safety Promotion Department, and responsible for information gathering; the company's Sapporo Office General Manager, Tsuzuki; and Mukaide, who at the time led his company's disaster response as President of Eastern Japan Air Water Specialized Transportation (currently Corporate Senior Managing Director at Air Water Specialized Transportation Inc.).

Commencement of Transportation of Urgent Food and Medical Supplies

Immediately following the earthquake, the first priority for Mukaide was to ascertain the safety of all employees. He explains, "Human life comes first. We checked with all our operation sites throughout eastern Japan on the safety of employees. When we got the tsunami warning we immediately ordered all personnel to evacuate to high ground. The next thing we did was begin arranging for the procurement and shipment of emergency supplies." As president, Mukaide personally made emergency contact by telephone with each office. The impacts of both the earthquake and tsunami were enormous. Many operation sites suffered flooding or structural damage, and the Eastern Japan Air Water Specialized Transportation Group lost 20% of its vehicles owing to damage, being swept away or flooding. There were also fuel shortages and many employees were barely able to make it into work. However, it is in these kind of harsh circumstances in particular when it is essential for logistics functions to remain uninterrupted. Mukaide played a central role in formulating the company's response together with the Disaster Response Group.

**Michihiko Tsuzuki,
Office General Manager, Sapporo Office,
Air Water Specialized Transportation Inc.**

**Toshiyuki Mukaide,
General Manager of Sales, Corporate Senior Managing Director,
Air Water Specialized Transportation Inc.**

**Shigeyuki Mifune,
General Manger, Safety Promotion Department,
Air Water Specialized Transportation Inc.**

Mifune tells us, "Under the orders of Air Water Inc. Logistics Division General Manager, Kawata (currently President of Air Water Specialized Transportation Inc.), we acted as a transit station for emergency supplies arriving from Osaka, and simultaneously we also shipped supplies under our own initiative to the disaster-affected areas. Group companies cooperated to requisition vehicles and staff, and we worked as hard as possible to ensure that transport operations progressed without delay." They provided a range of logistic support, including procurement of fuel and secondhand vehicles. However, at the time the only functioning transportation link connecting Hokkaido with Honshu was the ferry from Hakodate to Aomori. Tsuzuki recalls, "There was a 2–3 day backlog of trucks waiting to board the ferry, and we had little idea of the road conditions in the areas we were heading for. However, our drivers felt a strong sense of duty, and we were able to successfully deliver supplies to the disaster areas." At a time when almost no one was able to move owing to fuel shortages, Eastern Japan Air Water Specialized Transportation had access to diesel supplies sent from its parent-company operation sites throughout Japan. On Monday March 14, just three days after the earthquake, the company was able to mobilize its fleet of trucks.

The shipment of foodstuffs was a particularly urgent need. The company received the cooperation of customers in restoring its facilities, and partner companies provided vehicles on a temporary-loan basis, thereby enabling the company to resume operations at an early stage. Medical oxygen was transported and supplied without disruption thanks to tanker trucks provided from all over Japan, including as far away as Kyushu. When the company received an urgent request from the Iwaki Red Cross Blood Center for transportation of blood products, the company accepted the request despite fears over radiation contamination.

Renewed Awareness of the Importance of Logistics

Air Water Specialized Transportation utilized its network of operation sites, vehicles and staff located throughout Japan to provide a coordinated, unified response to this major disaster. In doing so, the company was able to live up to the trust placed in it by its customers. Owing to the priority given to transportation of emergency supplies, there were certain situations in which customers' requests were not able to be fully satisfied. However, during emergency circumstances in which ready access to many types of goods was no longer possible, the reports from these three Air Water managers reinforce the reality that the vehicle-based movement of goods is a vital business supporting the lives of ordinary people.

What Can We Do to Help the Disaster-Affected Areas?

Yoshinari Date,
Manager,
AW-Water Division

The AW-Water Division provides safe and delicious water in "One-Way Bottles" through its home-delivery business

Air Water Mach Inc. markets a range of products, including an antibacterial deodorant agent, hand cleanser and wet tissues

Soichi Teramoto,
Deputy General Manager,
Antibacterial and Deodorant Business Group Leader,
Product Development Department,
Air Water Mach Inc.

Air Water continued producing water for disaster-affected communities by operating seven days a week, from early morning until late at night.

After hearing that essential lifeline utilities in disaster-hit areas were in a state of devastation, the Air Water Group considered whether it would be feasible to deliver AW-Water—a drinking-water product produced by the Group—to such areas. Initially, the Disaster Response Headquarters at Air Water's Osaka Head Office sent AW-Water to disaster-affected areas as consolidated cargo along with other emergency relief supplies. Subsequently, Higashinihon Air Water Energy and the AW-Water Division joined forces to provide AW-Water as emergency aid on an ongoing basis. Most of the recipients of AW-Water shipments were Air Water Group companies and partner companies in the disaster-affected regions, however, from those locations Higashinihon Air Water Energy delivered the water to evacuation centers, nursery schools and other places where it was needed.

One of the most difficult problems the AW-Water Division had to deal with was the rolling power blackouts implemented by Tokyo Electric Power Company (TEPCO), which affected the Saitama plant that produces AW-Water. To avoid power blackout times and produce sufficient water to meet demand for emergency supplies, we shifted production to an alternative schedule centering on weekends, early morning and late at night. From April, AW-Water launched sales of its "One-Way Bottle"—a system enabling containers to be disposed of for recycling—hence, water produced using this new packaging system was also delivered to the disaster-affected areas. We received positive feedback regarding this new system from Japan Self-Defense Forces (JSDF) personnel, who commented that the product is easy to use and saves the time and labor previously used for collection of used bottles. The disaster relief activities we undertook on this occasion brought home to us the importance of our business' mission.

Japan Self-Defense Forces personnel unpack a consignment of AW-Water delivered to an emergency evacuation shelter by Eastern Japan Air Water Specialized Transportation

Letters of appreciation received from nursery schools

We were determined to help temporary shelters for evacuees manage hygiene effectively.

We had previously thought that certain of our main products would become essential items during periods of disaster. "Scentless E-1" is the key ingredient in our antibacterial deodorant agent, and is based on Air Water's own patented technology. "Scentless E-1" is principally derived from a soybean amino acid, providing a high level of safety and extremely effective antibacterial and deodorant properties. In situations where critical infrastructure, such as water and sewage, is disrupted, problems relating to hygiene always emerge. Hence, we were determined to leverage the strengths of our products to help communities in disaster-affected areas cope with such issues.

On the Sendai City municipal Website, there was a notice asking for assistance in providing cleansing alcohol and wet tissues. After contacting the relief coordinators, we rapidly dispatched products to approximately 100 temporary emergency shelters for evacuees. We asked the JSDF to undertake delivery of these items. The relief supplies we provided included 12,000 bottles of "G2TAMαPLUS" antiviral, antibacterial and deodorant spray; 1,920 bottles of "G2TAM" hand cleanser; and 18,000 packs of "AW Wetty" tissues. Subsequently, we delivered "G2TAMαPLUS" to an emergency shelter in Minami Sanriku, Miyagi, where there had been an outbreak of norovirus. We sincerely pray that all victims of this disaster will be able to leave the emergency shelters as soon as possible.

* The AW-Water Division and Air Water Mach Inc. are included in the "Other Business" segment.

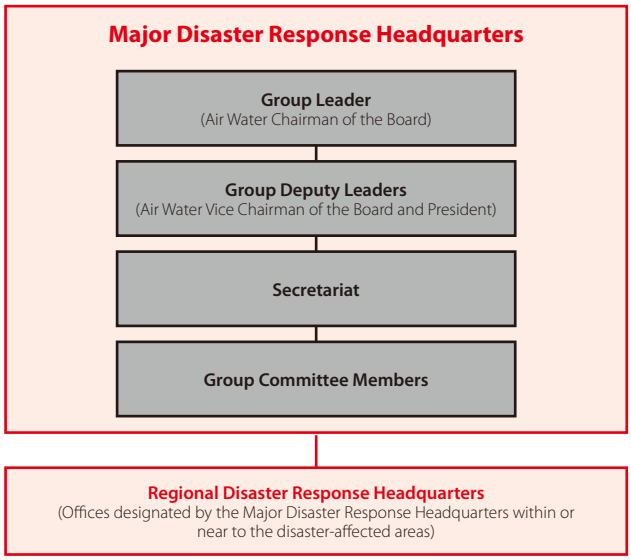
As employees of the Air Water Group grappled with the aftermath of the Great East Japan Earthquake, and worked to overcome an array of challenges on the way to recovery, not all of these efforts ran smoothly all of the time. However, by utilizing our knowledge, experience, physical stamina, capacity for action and teamwork to the maximum extent possible, we were able to overcome the challenges we faced. Our corporate philosophy focuses on concentrating member companies' knowledge and expertise on the creation and development of businesses. Even when dealing with the unavoidable risk of natural disaster, we must combine our knowledge and fulfill our responsibilities and mission as a business enterprise. In responding to the Great East Japan Earthquake, a key strength that underpinned our efforts toward recovery was the Air Water Group's "integrated capabilities" drawing on its nationwide network of production facilities and sales offices. By learning from this experience, we are even more determined than ever to combine our knowledge to help realize a sustainable society.

The Air Water Group's Disaster-Related Systems

● System for Responding to Major Disasters

When major disasters occur, Air Water establishes a "Major Disaster Response Headquarters" at its Head Office. The purpose of this group is to ascertain the extent of damage from the disaster, direct and coordinate emergency relief activities, formulate countermeasures to minimize damage from the disaster and examine and execute measures needed for recovery. However, in the case of a disaster affecting Osaka City—specifically where lifeline utilities (electricity, water, gas, telephone) have been disrupted—the Major Disaster Response Headquarters shall be established at the Air Water Tokyo Office located in Minato-ku, Tokyo.

● Organizational Chart of the Major Disaster Response Headquarters



● Earthquake Drills

In principle, every year around January 17—the anniversary of the Great Hanshin Earthquake—Air Water holds earthquake drills at each of its offices. These drills are based on a predetermined disaster prevention plan, which assumes an earthquake with an intensity rating of five or greater (on the Japanese earthquake intensity scale of between one and seven). The effectiveness of the disaster prevention plan is verified through these drills, and improvements and adjustments are implemented as necessary. In FY2010, the Air Water Group held 68 earthquake drills in 65 locations throughout Japan.

At one of these drills, at Air Water Sakai Business Complex, participants learned about the physical mechanisms relating to earthquakes and tsunami as well as the evacuation plan. After individually identifying the initial actions they should take when an earthquake occurs, drill participants were divided into small groups for discussions on their respective individual tasks. The Sakai Business Complex drill included these activities in a simulation exercise on what to do during and immediately following an earthquake or tsunami.

Employees participate in an earthquake drill at Air Water's Sakai Business Complex

System for Responding to the Great East Japan Earthquake

I. Disaster Response Headquarters

Establishment of the Disaster Response Headquarters

On March 11 at 2:46 p.m., an earthquake measuring magnitude 9.0—the largest earthquake ever recorded in Japan—occurred off the coast of the Sanriku area of the Tohoku region. In response, at 4:30 p.m. that day, Air Water established a Disaster Response Headquarters at its Head Office. Air Water Chairman of the Board Hiroshi Aoki, who was appointed Disaster Response Headquarters Leader, directed staff to place the first priority on confirming and securing the safety of all personnel. In the initial response phase, Aoki instructed staff not to use their energies for other purposes. The Disaster Response Headquarters carried out its activities for approximately two months.

Principal Operations of the Disaster Response Headquarters

1. Confirmation of the safety of employees and their families and provision of assistance
2. Gathering and dissemination of information on the situation in disaster-affected areas
3. Procurement and delivery of emergency relief supplies

II. Regional Disaster Response Headquarters in the Disaster-Affected Areas

1. Regional Disaster Response Headquarters was established at the Air Water Tokyo Office (Minato-ku, Tokyo) and Tohoku Branch (Sendai, Miyagi). Initially, since the Disaster Response Headquarters was unable to establish contact with the Tohoku Branch, information was relayed via the Tokyo Office.
2. Provision of relief supplies to the disaster-affected areas was carried out using three Air Water Group operations sites as the main distribution bases: Tohoku Air Water Co., Ltd.'s Miyagi Gas Center; Tohoku Air Water Co., Ltd.'s Fukushima Office; and Nihonkaisui Co., Ltd.'s Onahama Plant.
3. Air Water's Tokyo Office and Niigata Air Water Co., Ltd. acted as local agencies of the Disaster Response Headquarters. Relief supplies were shipped to the aforementioned three bases via these two offices.

III. Measures Subsequent to Disbanding the Major Disaster Response Headquarters

Amendment of Regulations and Rules

Since the earthquake, Air Water has amended its Major Disaster Emergency Response Regulations and Major Disaster Emergency Response Rules based on the results of operation of the Disaster Response Headquarters. For example, a provision was added so that in the case of a disaster affecting a very broad area, where it is impractical to establish a Regional Disaster Response Headquarters, the Disaster Response Headquarters will carry out such functions instead. Other changes were made to response manuals as necessary.

Corporate Governance Structure

Basic Approach to Corporate Governance

The Air Water Group believes that conducting fair business activities observing social common sense and gaining trust from shareholders, customers, local communities, employees and all other stakeholders is essential for continuous business growth and maximizing enterprise value. We view comprehensive corporate governance including an internal control system as the most important management issue for gaining stakeholder trust and fulfilling corporate social responsibility. Air Water is working to strengthen its corporate governance by constructing a fully functioning management structure for appropriate management decision-making and the proper and swift execution of business based thereon, with supervision and monitoring, while securing management transparency through wide-ranging information disclosure.

Corporate Governance Structure Outline

Air Water Inc. is a company with a Board of Auditors system. Under this system, while Directors conduct appropriate decision-making and the swift execution of business, the functions of the Board of Directors, Auditors, and the Board of Auditors properly supervise and monitor the execution of duties by the each Director.

(a) Board of Directors

In addition to items specified in laws and in the Articles of Incorporation, the Board of Directors makes decisions and reports regarding important items concerning the Air Water Group's management and execution of business, and functions for the mutual supervision and monitoring of the Directors.

(b) Corporate Management Committee

The Corporate Management Committee, which includes Directors with positions of Managing Director or higher and the managers of each operating division, meets once per month, in principle, as an organ to support proper and swift decision-making throughout the Air Water Group's wide-ranging business fields. The Corporate Management Committee holds preliminary discussions on items referred by the Board of Directors from wide-ranging and diverse viewpoints and deliberates important items concerning the execution of business by the Air Water Group.

(c) Auditors and Board of Auditors

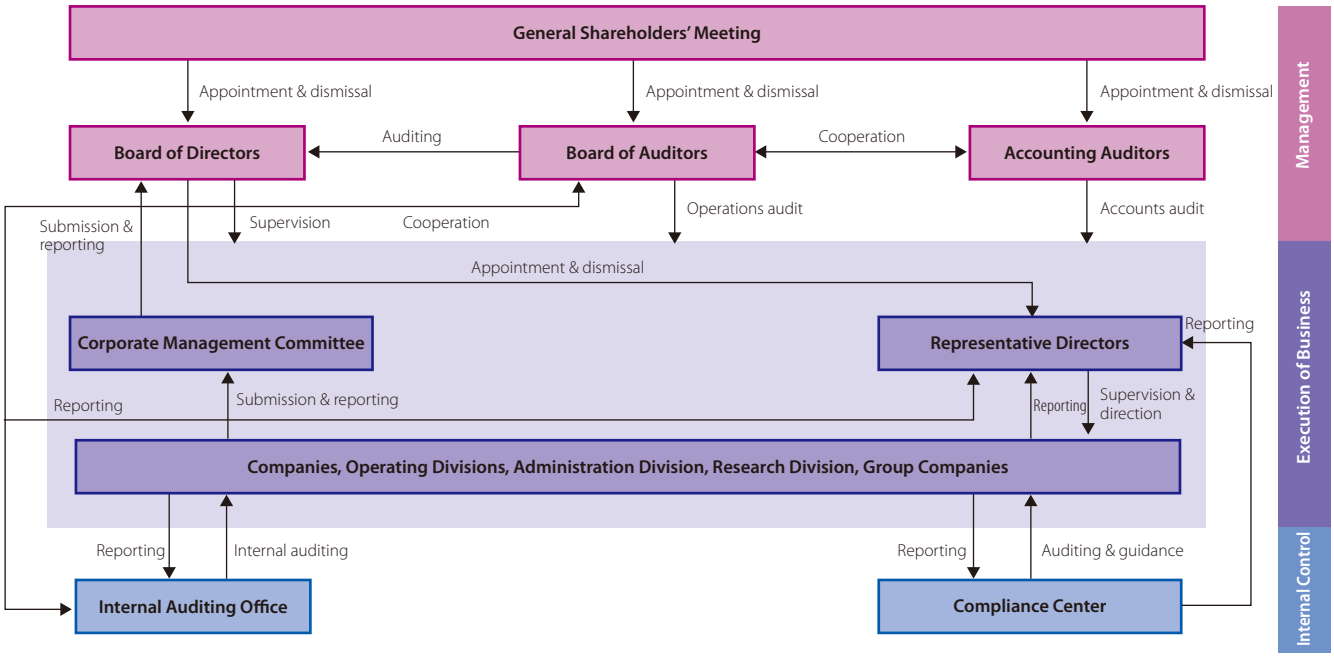
Auditors, including Outside Auditors, audit the legal compliance and appropriateness of the decision-making by the Board of Directors and of the execution of duties by individual Directors.

The Board of Auditors, which comprises all the Auditors, determines auditing policies and plans, and each Auditor implements audits based on its decisions.

Internal Audits

Internal Audits are conducted periodically by the Internal Auditing Office, which is the Company's internal auditing unit, to audit the Air Water Group's compliance with laws and internal regulations, as well as the propriety and appropriateness of its business processes. The Internal Auditing Office also supervises and monitors the construction and administration of internal control systems to secure the reliability and propriety of financial reports, and evaluates their validity as the division in charge under the responsibility and direction of the Representative Directors. In addition to the Internal Auditing Office, Air Water has also established a Compliance Center as an exclusive unit for the management and control of compliance, security and disaster prevention, and environmental preservation across the Air Water Group. Under our management structure, the Internal

● Corporate Governance Structure



Auditing Office and Compliance Center report to the Auditors and to the Representative Directors as appropriate when their internal audits confirm facts that might have a material effect on Air Water's management.

Risk Management Structure

The Compliance Center, which is an organ under the direct control of the Representative Directors, manages compliance items recognized as particularly important risks for business activities and risks concerning security, disaster prevention and environmental preservation at Air Water Inc. and its subsidiaries, as the supervisory division across the Air Water Group.

Individual risks concerning information security, quality control, intellectual properties and contracts are managed through prior inspections and the settlement system, and by enacting internal regulations, creating manuals and conducting education and training at the respective responsible divisions.

Compliance Promotion Structure

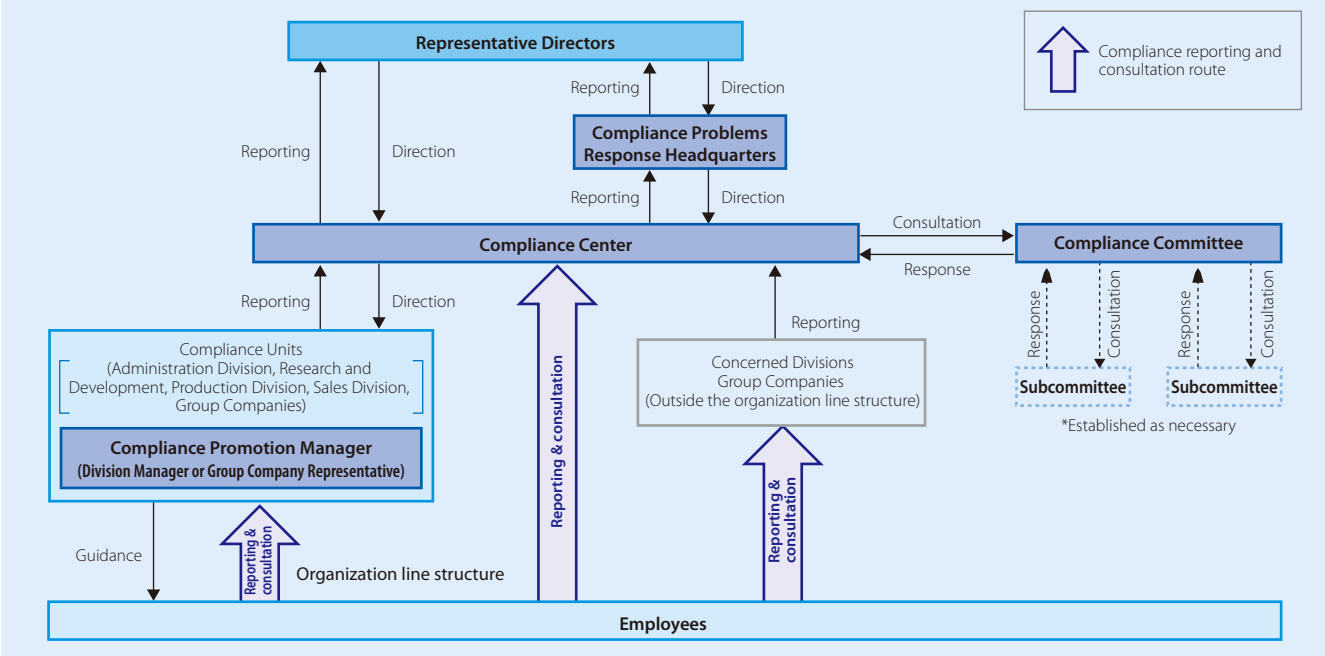
Air Water Group Code of Ethical Conduct

As the foundation of our compliance structure, Air Water has established the Air Water Group Code of Ethical Conduct as an action guideline so that Directors and employees of the Company and its subsidiaries comply with the law and practice behavior respecting social ethics. We are advancing education on the spirit of observing social ethics and the law, and arranging rules regarding legal compliance.

Internal Regulations

Air Water has enacted Compliance Regulations and Compliance Violation Reporting Regulations to promote compliance-related efforts, and we are advancing improvements of our structure and systems.

● **Compliance Structure**



Response to the Cease and Desist Order and Surcharge Payment Order from the Japan Fair Trade Commission

Air Water Inc. underwent an on-the-spot inspection by the Japan Fair Trade Commission (hereafter, JFTC) on January 19, 2010, and received the Cease and Desist Order and the Surcharge Payment Order on May 26, 2011 for acts concerning the sales of air separation gases (liquid oxygen, liquid nitrogen, and liquid argon transported by tanker trucks [excluding those for medical use]) found to be in violation of the provisions of Article 3 of the Act on Prohibition of Private Monopolization and Maintenance of Fair Trade (hereafter, Antimonopoly Act).

As for the Cease and Desist Order, it is true that Air Water Inc. participated in department-manager class meetings of four companies in the same industry. After consultations with outside experts, Air Water Inc. concluded that it would be difficult to overturn the findings of the Cease and Desist Order by the JFTC. Considering this and other factors, such as the projected expenses and works burden from requesting a hearing and other proceedings, Air Water Inc. has decided not to contest the Cease and Desist Order.

It is extremely regrettable that this situation has occurred even though Air Water Inc. had already prepared a manual for compliance with the Antimonopoly Act as internal rules, and educated our employees. We would like to express our deepest apologies. In the future, Air Water Inc. and the entire Air Water Group will strive for complete compliance, strengthen our internal control system, and work to prevent recurrence and recover trust.

As for the JFTC Surcharge Payment Order, there is a large gap between the JFTC and Air Water Inc. regarding the interpretation of the calculation basis. So Air Water Inc. has reached the decision that it cannot agree with that order, and will request a hearing and seek a decision consistent with the actual conditions.

Air Water Group Safety and Health Basic Policy

Air Water has set the following Safety and Health Basic Policy so that employees can work safely without concern, and to secure customer and product safety.

Safety and Health Basic Policy

1. We aim at zero work-related accidents, and advance comprehensive and systematic safety measures.
2. We promote the formation of a comfortable workplace environment, while securing employee safety and health.
3. We comply with all related laws, and create workplaces with clear lines of responsibility.

Items Implemented at Each Workplace

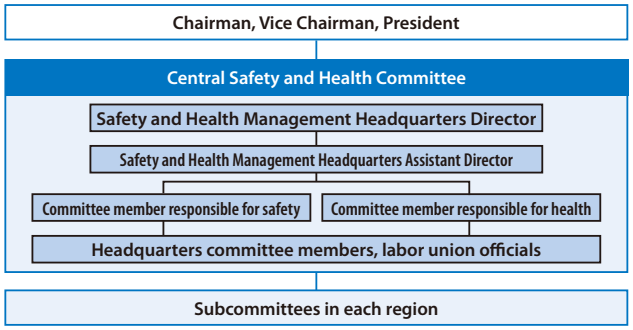
① Hold Safety and Health Committee meetings
② Draw up a safety and health activities implementation plan
③ Advance education on safety and health
④ Revise work standards and manuals, and secure safe operations by having them observed
⑤ Review and strengthen safety measures for each operation
⑥ Advance "near misses" and KY (hazard prediction training) activities
⑦ Advance 5S activities
⑧ Maintain and improve employee physical and psychological health
⑨ Observe traffic rules and advance traffic safety education activities

Approach to Safety

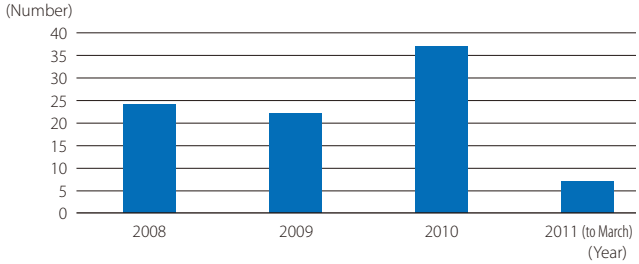
Safety and Health Structure

Air Water has established a Central Safety and Health Committee structure to secure workplace safety and health. The Central Safety and Health Committee meets on a regular basis under the direction of the Safety and Health Management Headquarters Director, with the participation of the committee member responsible for safety, the committee member responsible for health, the Headquarters committee member, and officials from the Air Water labor union. The minutes of Central Safety and Health Committee meetings are disclosed internally using groupware, for information sharing.

● **Safety and Health Structure**



● **Number of Work-Related Accidents**



Range: Air Water Inc., consolidated subsidiaries, equity-method subsidiaries, equity-method affiliates, non-consolidated subsidiaries

Safety Slogans

Air Water solicits safety slogans during National Safety Week each year from all employees including employees at Group companies in an effort to boost safety awareness. The number of entries has been growing each year. In 2010, a total of 2,875 slogans were submitted from 53 Air Water Group companies. The slogan contest provides a good opportunity for respondents to think about workplace and household safety. The winning slogan is given an award and made into a poster which is displayed at each workplace.

Safety slogan poster

Work-Related Accident Statistics

Air Water compiles statistics on accident reports throughout the Air Water Group and provides guidance on accident prevention through safety audits. In FY2010, there were 37 work-related accidents excluding traffic accidents, and 14 accidents during commuting. The number of work-related accidents rose by 15 and the number of accidents during commuting rose by 12 from the previous year.

The accident contents include wounds and bone fractures from falling off work areas, bone fractures and sprains from stumbling and falling down, and other accidents believed to be caused by carelessness in failing to confirm safety beforehand.

Air Water periodically shares accident cases and countermeasures with employees and is otherwise working to boost daily safety management awareness and eliminate work-related accidents.

Workplace Examples

On-site Company's Wakayama Plant

The On-site Company's Wakayama Plant produces oxygen, nitrogen and argon for supply to the Sumitomo Metal Industries, Ltd.'s Wakayama Steel Works. The plant also manufactures and supplies hydrogen and compressed air, and conducts water treatment works for the steelworks plants.

This year's safety activities gave priority to hazard prediction training (KY) activities, verbal point confirmations and to risk assessment, which was introduced from this year. Other safety efforts include monthly safety education, emergency measures drills, and joint safety activities together with the Wakayama Steel Works via the Yuwa Kyoryokukai cooperative association. We continue to achieve zero work-related accidents each year by having all employees completely implement a "safety first" approach.

For risk assessment, five employees took a course at the Japan Industrial Safety & Health Association, and those employees then conducted in-house education for all employees. From now on, each group will conduct one risk assessment per month (discover a potential danger or harm at a workplace, and quantitatively present the extent of that risk), examine its importance, and decide and implement countermeasures. Risk assessment activities, which share risk with everyone and can prevent accidents beforehand, are highly significant and effective.

Risk assessment activities

Nippon Fine Gas, Inc.

Nippon Fine Gas, Inc. is an Air Water Group company engaged in the manufacturing and sale of gas for industrial and medical uses. In recognition of its social responsibility as a company located in the Sakai-Senboku littoral industrial zone of Osaka Prefecture where large quantities of high-pressure gas and hazardous materials are gathered, Nippon Fine Gas is striving to continuously reduce risks related to safety and disaster prevention, environmental preservation and labor safety and health to secure the safety of all employees engaged in filling containers with high-pressure gas.

Nippon Fine Gas has maintained a zero accidents record for 14 consecutive years, but the company is not relaxing its efforts. Nippon Fine Gas is collecting "near misses," advancing risk assessment based on these incidents, and striving for the early detection and reduction of potential risk in the workplace. Additionally, all participants conduct self-assessments of their various safety activities each month, which raises safety awareness. Furthermore, the company is advancing "mutual caution activities" toward forming a culture where employees will caution one another about unsafe behavior without reserve, and using the items submitted for risk reduction activities. Small group activities also address safety as a theme, and foster the abilities of each employee to personally identify and resolve problems in his or her own workplace.

Nippon Fine Gas will continue working to reduce risk through steady efforts, including regular emergency response drills.

Earthquake & tsunami response drill

Tateho Ceramic Co., Ltd. Receives Hyogo Labor Bureau Director's Encouragement Award

Air Water Group company Tateho Ceramic Co., Ltd., which is engaged in the manufacture of ceramic insulators, melting pots and other items, was given the Hyogo Labor Bureau Director's Encouragement Award at the FY2011 Hyogo Labor Bureau Safety and Health Awards. The award certificate was presented by the Director of the Hyogo Labor Bureau at the Kobe City Industrial Promotion Center on July 7, 2011.

This award is presented to workplaces that maintain high safety and health management levels in each prefecture, as part of Japan's National Safety Week which takes place each July.

Tateho Ceramic received the award for its efforts to boost safety awareness at workplaces, active promotion of labor safety and health activities, a zero accidents record for over five years, superior safety and health levels, and improvement efforts that serve as a model for other companies.

The firm also received the Hyogo Prefecture Governor's Award as a "superior high-pressure gas manufacturer" in October 2010.

Tateho Ceramic will strive to carry out even greater safety and health activities, with all employees steadily implementing 3S activities for a clean and orderly workplace every day, and to maintain a high level of safety awareness.

*Tateho Ceramic falls under the "Other Business" segment.

Award certificate

Award ceremony

Air Water Group Environmental Basic Policy

Basic Philosophy

Air and water — we are stewards of the great gifts of nature, and must consider ways of manufacturing products that are best for nature while also best for industry and life.
We will allow air and water to return to nature after being used by human beings — to regain their pure, original state.
We deeply believe that this is our responsibility to the future.
We seek to be a company grounded in the providence of nature and the cycle of life. We aim to become a global resource cyclical company.

Basic Policy

1. We work to conserve resources, conserve energy, recycle, and reduce waste products in all our business activities from research and development to production, sales, distribution and service.
2. We research and examine the impact on the environment from our business activities, establish technically and economically feasible goals for reducing environmental load, and continuously work to achieve them.
3. We comply with environmental laws and regulations, establish voluntary standards as necessary, and work for environmental conservation.
4. We select resources (facilities, raw materials, subsidiary materials, components, etc.) required for business activities that satisfy technological and economic demands, but which also have a small environmental load and little impact on local residents and employees.
5. Our research and development works give consideration to the environment, safety and quality, and provide products, goods and technology development that contribute to the environment.
6. We promote acquisition of the ISO 14001 international standards for environmental management systems, and arrange structures for implementing our Environmental Basic Policy.
7. We use internal publicity and other activities to boost all employees' understanding and awareness of the Air Water Group Environmental Basic Policy. We disclose this Environmental Basic Policy to the general public.

Environmental Management

Environmental Management Structure

The entire Air Water Group is working on environmental activities with our Chairman of the Board as the chief executive responsible. The central role is played by the Compliance Center Environmental Management Promotion Department, which provides guidance on compliance with environmental laws and regulations at workplaces and Group companies, and promotes activities to reduce environmental load.

In accordance with the Environmental Basic Policy, Air Water also promotes acquisition of ISO 14001 environmental management system certification, especially at manufacturing plants inside the Group which have a high environmental load. Certification has now been obtained for 29 business establishments, including Group company plants.

● **Main Establishments with ISO 14001 Certification**

Air Water Inc. (9 business establishments)
• On-site Company: Wakayama Plant (as a business establishment related to Sumitomo Metal Industries, Ltd.'s Wakayama Steel Works)
• On-site Company: Kokura Plant (as a business establishment related to Sumitomo Metals (Kokura), Ltd.)
• Chemical Company: Kashima Plant, Wakayama Plant
• Sakai Business Complex, Amagasaki Business Complex, Hirakata Business Complex
• Hokkaido Company
• Utsunomiya Business Complex
• Nagoya Business Complex
• Kashima Business Complex
• Research & Development Institute
Air Water Group companies (20 business establishments)
For details, see the following Website: http://www.awi.co.jp/environment/iso/index.html

Environmental Risk Management

Environmental Audits

At Air Water, the Compliance Center Environmental Management Promotion Department conducts audits at all business establishments and Group companies nationwide which have a high environmental load to provide guidance on environmental conservation activities and compliance with environmental laws and regulations.

These audits promote communications between Headquarters staff and site employees, and advance the reduction of environmental risk. In FY2010, the audits focused on response to revisions made to the Act on the Rational Use of Energy and the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.

● FY2010 Environmental Audits

- Air Water Sol Inc.
  (Gunma Plant, Ibaraki Plant, Gifu Plant)
- Sun Chemical Co., Ltd.
- Tateho Chemical Industries Co., Ltd.
- Air Water Bellpearl Inc.
  (former Air Water Inc. Hofu Plant)
- Air Water Inc.
  - On-site Company
    (Kashima Plant, Wakayama Plant)
  - Chemical Company
    (Kashima Plant, Wakayama Plant)
  - Amagasaki Gas Center

Environmental audit

Publication of Environmental Information

Air Water publishes revisions to environmental laws and regulations and examples of environmental efforts at other companies as "Environmental Information" for distribution to each business establishment and Group company. In this way, Air Water is working to share information within the Group, leading to reduced environmental risk.

Main Information Transmission Items

- Information on the addition of contracted sterilization as a Designated Industry accompanying revision of the PRTR Act (Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof)
- Information on thorough compliance with the Air Pollution Control Act

Environmental information

Education and Human Resources Development

Environment & Energy Management Staff Training Sessions

Air Water conducts human resources development training sessions every year for the key environmental activities personnel at each of our business establishments and Group companies.

In FY2010, 38 employees centered on those responsible for energy conservation at each business establishment and Group company participated in the training session as an energy conservation measure. Mr. Suzuki from the Energy Conservation Center, Japan (ECCJ) Energy Conservation Training and Education Group presented the keynote speech "Points to Note for Further Energy Conservation at Manufacturing Sites." The training session also included study and group discussions regarding such topics as efforts to prevent global warming and environmental and energy risk.

With exchanges of information and opinions regarding energy conservation, the FY2010 training improved the capabilities of employees responsible for energy conservation and advanced energy conservation activities throughout the Air Water Group.

Staff training session

Internal Environmental Auditors Training Sessions

The Air Water Group has gained ISO 14001 certification at 29 business establishments nationwide, and these are each advancing environmental activities.

Air Water holds training sessions for the development of internal environmental auditors at these ISO 14001 business establishments each year, with Compliance Center Environmental Management Promotion Department employees serving as lecturers. These sessions explain the items required under the ISO standards and internal auditing methods using texts, exercises, group discussions, etc.

In FY2010, the training sessions were held at three locations nationwide and trained 34 new internal environmental auditors.

Internal environmental auditors training session

Prevention of Global Warming

Air Water uses a great deal of energy in its business activities. As a Specified Business Operator under the Energy Conservation Act, Air Water is working to grasp its energy use and conserve energy in all its operations including plants, offices, business premises and research facilities.

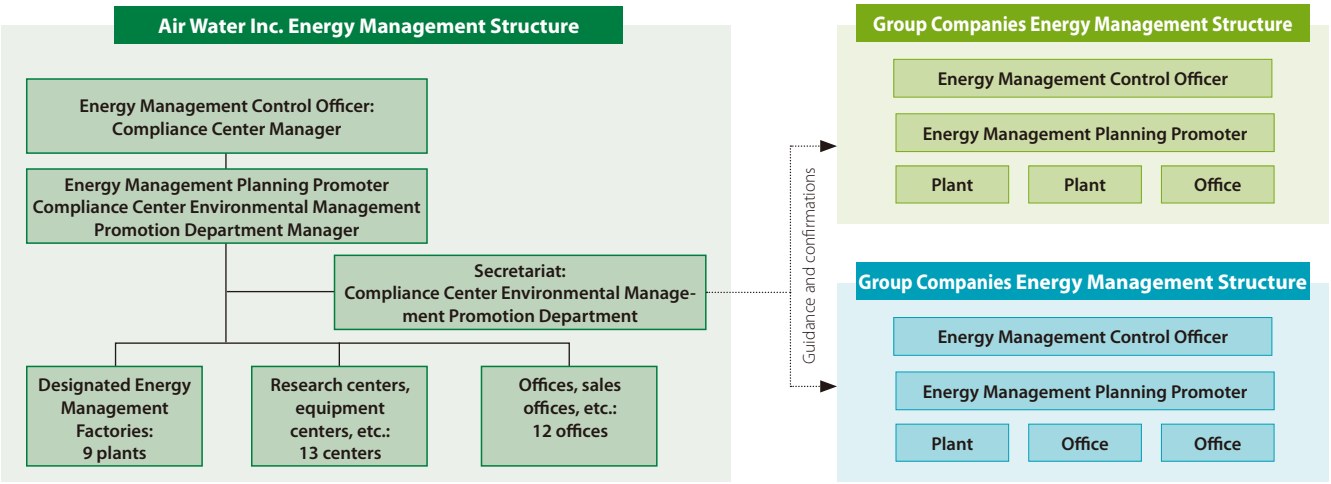
Energy Management Structure

Air Water's industrial gas plants use a great deal of energy in liquefying and separating gases from air. Energy conservation measures have been advanced at these plants as Designated Energy Management Factories.

In response to the revisions to the Energy Conservation Act implemented in April 2010, Air Water has constructed an energy management structure with the Compliance Center Manager as the responsible officer, to advance energy management throughout the entire company, expanding from our prior efforts at the individual plant level to include offices and other business premises.

The Compliance Center Environmental Management Promotion Department also confirms the energy management structures of each group company, and provides guidance.

● **Energy Management Structure**



*Number of plants, centers and offices as of April 2011

Energy Conservation Act Measures Meetings

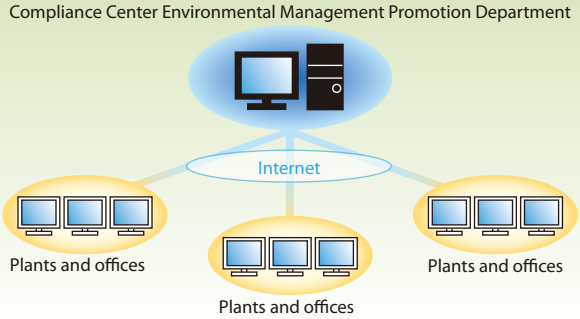
Air Water holds "energy conservation act measures meetings" for the managers responsible for energy management at our nine Designated Energy Management Factories nationwide, where they examine response to the law and exchange information. They also examine specific practical works such as data collection methods and report preparation based on the Energy Conservation Act, and advance correct compliance with the Act.

From FY2011, these gatherings have been renamed the "Energy Conservation Promotion Committee," which will continue advancing energy conservation activities.

Making Energy Consumption Visible

Air Water introduced an Internet-based (SaaS-type cloud service) system for the collection of environmental data from FY2010.

This system inputs energy use data via the Internet from personal computers at each plant and office. The Compliance Center Environmental Management Promotion Department quickly and accurately collects the data to make energy consumption and unit energy consumption visible. This promotes energy conservation activities at the plants and offices.



Global Warming Prevention Measures

Efforts as a Business Operator (Plants & Offices)

● Middle- to Long-term Goals

Evaluation: ○ Goal achieved △ Close to goal × Far from goal

Purpose	Goal	Subject Business Establishments	Specific Efforts	FY2010 Results	Evaluation
Prevention of global warming (energy conservation)	Reduce unit energy consumption by an average rate of at least 1% per year over the middle- to long-term (over the past five years)	All Businesses		Annual average reduction of 1% over the past 2 years	○
		Industrial Gas (Chitose, Wanishi, Kashima, Utsunomiya, Wakayama, Kokura, Arai, Uozu, Tonami)	• Construction of a high-efficiency, large-scale plant • Change to energy-efficient facilities • Improvements to operating methods	Annual average reduction of 0.9% over the past 5 years	△
		Chemical (Kashima, Wakayama)	• Facilities renewals and improvements • Controls placed over pump and other engine speeds	Annual average increase of 2.0% over the past 5 years	×

● Fiscal Year Goals

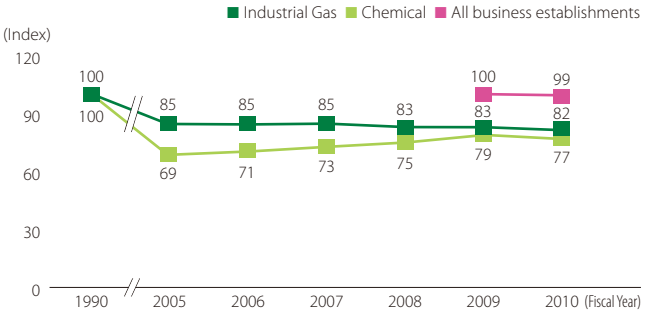
Purpose	Goal	Subject Business Establishments	Specific Efforts	FY2010 Results	Evaluation
Prevention of global warming (energy conservation)	Reduce unit energy consumption compared with the previous year	All Businesses		Reduction of 1% compared with FY2009	○
		Industrial Gas (Chitose, Wanishi, Kashima, Utsunomiya, Wakayama, Kokura, Arai, Uozu, Tonami)	• Constructed new state-of-the-art Wakayama Plant • Optimized the number of heater heating operations	Reduction of 1% compared with FY2009	○
		Chemical (Kashima, Wakayama)	• Installed inverter pump • Optimized circulation volume of light oil equipment • Optimized (shutdown) number of operating pumps	Reduction of 2% compared with FY2009	○

In FY2010, Air Water's overall unit energy consumption index declined by 1 point from 100 to 99.

In the Industrial Gas Business, the unit energy consumption index dropped 1 point from 83 to 82 with the new construction of the large-scale Wakayama Plant. In the Chemical Business, the unit energy consumption index dropped 2 points from 79 to 77 with the optimization of pump operation and the adoption of inverter pumps.

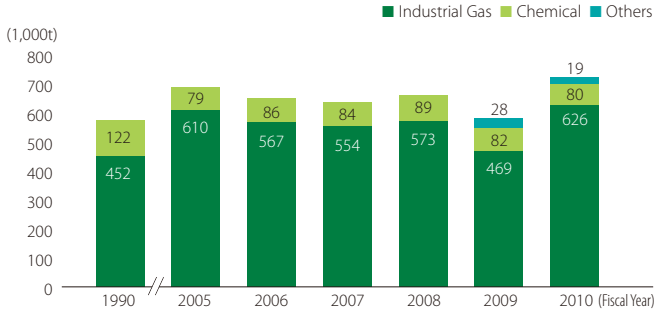
CO_2 emissions totaled 725,000 tons (up 12% from FY2009), as industrial gas production increased with the recovery in steel-related demand.

● Unit Energy Consumption Index (FY1990–FY2010)



*FY1990 unit energy consumption set at 100.
For all Air Water business establishments (plants, offices, etc.); FY2009 unit set at 100.
*Range: All Air Water Inc. plants and business establishments

● CO_2 Emissions (FY1990–FY2010)



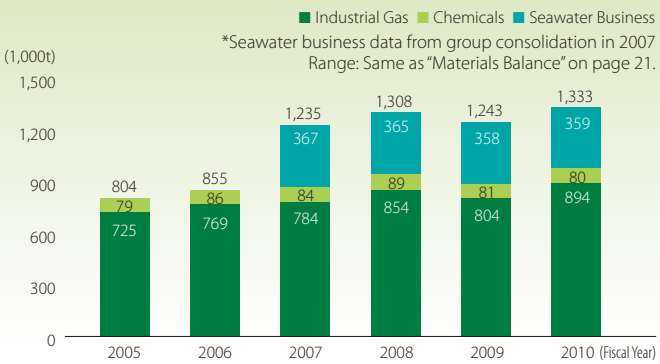
*Shows CO_2 emissions for all Air Water business establishments (plants, offices, etc.) from FY2009 based on the revisions to the Energy Conservation Act.

CO_2 Emissions at Main Air Water Group Plants (FY2005–FY2010)

The Air Water Group is advancing energy conservation measures as measures to combat global warming. We grasp and manage our CO_2 emissions.

CO_2 emissions from plants inside the Air Water Group which consume large amounts of energy (Designated Energy Management Factories under the Energy Conservation Act) totaled 1.333 million tons in FY2010 (a 7% increase compared with FY2009).

● CO_2 Emissions at Main Air Water Group Plants (FY2005–FY2010)



Transportation Sector Efforts

● Middle- to Long-Term Goals

Evaluation: ○ Goal achieved △ Close to goal ✕ Far from goal

Purpose	Goal	Subject Business Establishments	Specific Efforts	FY2010 Results	Evaluation
Prevention of global warming (energy conservation)	Reduce unit energy consumption by an average rate of at least 1% per year over the middle- to long-term (over the past five years)	Freight consignment category	• Establishment of new supply bases • Promotion of ecological driving	Annual average reduction of 5% over the past 5 years	○
		Freight transportation category	• Introduction of low fuel consumption vehicles • Implementation of ecological driving • Revisions to transportation routes	Annual average reduction of 2% over the past 5 years	○

● Fiscal Year Goals

Purpose	Goal	Subject Business Establishments	Specific Efforts	FY2010 Results	Evaluation
Prevention of global warming (energy conservation)	Reduce unit energy consumption compared with the previous year	Freight consignment category	• Establishment of new supply base (Nagano district) • Reduction of number of trips through appropriate delivery	Reduction of 4% compared with FY2009	○
		Freight transportation category	• Introduction of low fuel consumption vehicles • Strengthened guidance on implementation of ecological driving • Switch to larger transport vehicles	Reduction of 4% compared with FY2009	○

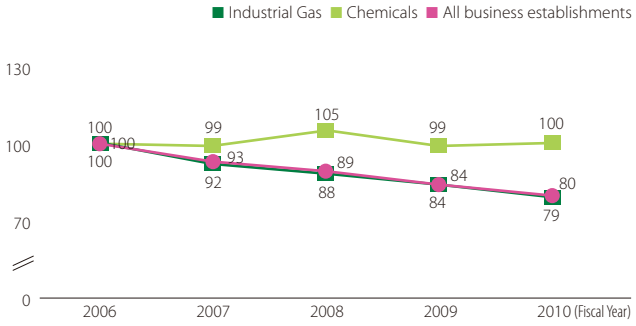
Efforts as a Freight Consigner

Air Water cooperates with transportation companies as a Specified Consigner under the Energy Conservation Act and promotes energy conservation in transportation.

In the Industrial Gas Business, we are reducing fuel consumption and CO_2 emissions by establishing VSU (high-efficiency compact liquid nitrogen/oxygen co-production plants) nationwide, and switching over from our former system of supply from littoral plants to a regionally dispersed supply system with highly efficient delivery. As a result of these efforts, the unit energy consumption index in consigned transportation for the Industrial Gas Business decreased five points from 84 in FY2009 to 79 in FY2010.

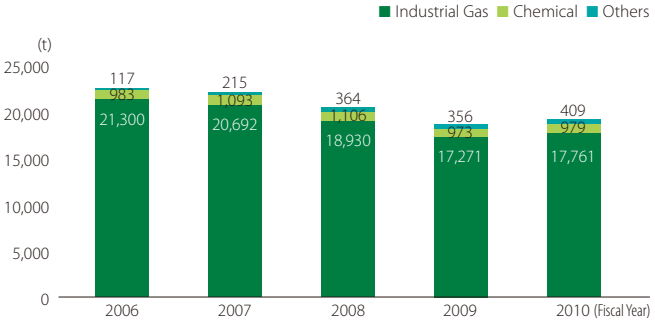
The unit energy consumption index in consigned transportation for the Chemical Business rose one point from 99 in FY2009 to 100 in FY2010.

● Unit Energy Consumption Index in Consigned Transportation (FY2006–FY2010)



*FY2006 unit energy consumption (energy use / amount of transportation) set at 100.

● CO_2 Emissions from Consigned Transportation (FY2006–FY2010)



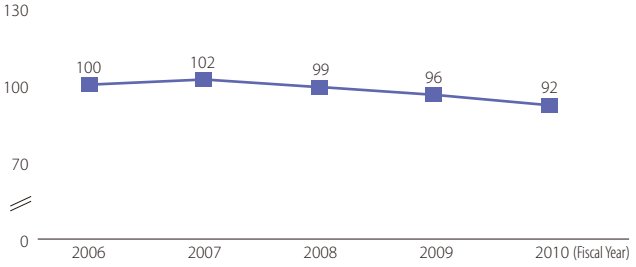
Efforts as a Freight Carrier

The Air Water Group's transportation company Air Water Specialized Transportation Inc. complies with environmental laws as a Specified Freight Carrier under the Energy Conservation Act, and is systematically working to reduce CO_2 emissions and prevent environmental pollution from automobile exhaust gas.

Air Water Specialized Transportation is reinforcing its truck operation management using digital tachographs, which were installed in 59 trucks in FY2010 completing the installation in the entire fleet, and also revised transportation routes.

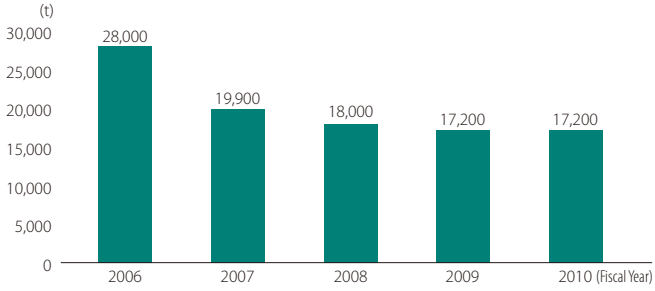
As a result of these efforts, the unit energy consumption index decreased four points from 96 in FY2009 to 92 in FY2010.

● Unit Energy Consumption Index for Transportation as a Freight Carrier (FY2006–FY2010)



*FY2006 unit energy consumption (energy use / amount of transportation) set at 100.

● CO_2 Emissions from Transportation as a Freight Carrier (FY2006–FY2010)



The Air Water Group's Materials Balance

Delivering customers safe and secure products created from air, water and the Earth's resources, and returning them to nature after they have been used. Air Water's business activities can be said to be doing the Earth's work. At Air Water, we grasp the resources, energy and other inputs in our production activities, as well as the manufactured products, waste products and other outputs, and work to reduce the environmental load.

Industrial Gas Production Activities

FY2010

INPUT

Raw materials / Other materials	Air			
	• LDG (Linz-Donawitz Converter Gas)	11	million Nm³	
	• Coke oven gas	4.6	million Nm³	
	• Methanol	700	t	
Inputs / Energy	• Electric power	2,000	million kWh	
	• Fuel	4	TJ*	
	• Steam	230	TJ	
Inputs / Water	• Seawater	92	million m³	
	• Water for industrial use	3	million m³	

*TJ is an abbreviation for terajoule (1 trillion joules)

Range: Air Water Inc., Hokkaido Company (Chitose), On-site Company (Wanishi, Utsunomiya, Kashima, Wakayama, Kokura), Gas Center (Arai, Uozu, Tonami), Cryo Air Co., Ltd., Senboku Oxygen Co., Ltd., NCSS Air Water Inc. (Hikari, Kumamoto), Tomakomai Oxygen Co., Ltd., Fukushima Ekisan Co., Ltd., Niigata Ekisan Co., Ltd., Sagamihara Ekisan Co., Ltd., Tokai Ekisan Co., Ltd., Shizuoka Ekisan Co., Ltd., Mikuni Ekisan Co., Ltd., Matsuyama Oxygen, Inc., Daido Air Products Electronics, Inc. (Mie, Hiroshima, Nagasaki), Chugoku Air Water (Kudamatsu)

OUTPUT

Products	• Oxygen, nitrogen and argon	4,200	million Nm³
	• Hydrogen	8	million Nm³
	• Carbon dioxide	22,000	t
Outputs / Air	• CO_2 emissions	894,000	t
	• Airborne pollutants (SOx, NOx)	0	t
	PRTR substances emissions	2	t
Outputs / Disposal (land)	• Non-industrial wastes	29	t
	• Industrial wastes	352	t
	PRTR substances releases	38	t
Outputs / Water	• Public water bodies	95	million m³
	• Sewage	48,000	m³
	PRTR substances releases	0	t

Chemical Production Activities

FY2010

INPUT

Raw materials / Other materials	Coal (→ Coke oven gas)		
	• Molten sulfur	2,200	t
	• Feedstock for FR	3,300	t
	• TEG graphite feedstock	1,200	t
	• Phenol	400	t
Inputs / Energy	• Electric power	100	million kWh
	• Fuel	690	TJ
	• Steam	260	TJ
Inputs / Water	• Seawater	61	million m³
	• Water for industrial use	7	million m³

Range: Air Water Inc., Chemical Company (Kashima, Wakayama)

OUTPUT

Products	• Refined coke oven gas	2,300	million Nm³
	• Crude benzene	82,000	t
	• Ammonium sulfate	33,000	t
	• Concentrated sulfuric acid	12,000	t
	• Liquid ammonia	6,000 t	t
Outputs / Air	• CO_2 emissions	80,000	t
	• Airborne pollutants (SOx, NOx)	500	t
	PRTR substances emissions	4	t
Outputs / Disposal (land)	• Non-industrial wastes	67	t
	• Industrial wastes	630	t
	PRTR substances releases	33	t
Outputs / Water	• Public water bodies	65	million m³
	• Sewage	0	m³
	PRTR substances releases	2	t

Seawater Business Production Activities

FY2010

INPUT

Raw materials / Other materials	Seawater		
	• Coal	23,000	t
	• Light burnt dolomite	13,000	t
Inputs / Energy	• Electric power	110	million kWh
	• Fuel	3,000	TJ
	• Steam	400	TJ
Inputs / Water	• Water for industrial use	1.3	million m³
	• Service water	0.4	million m³

Range: Nihonkaisui Co., Ltd. (Ako, Onahama, Sanuki), Tateho Chemical Industries Co., Ltd. (Head Office, Une)

OUTPUT

Products	• Salt	570,000	t
	• Magnesium hydroxide	76,000	t
	• Magnesium oxide	7,000	t
Outputs / Air	• CO_2 emissions	359,000	t
	• Airborne pollutants (SOx, NOx)	625	t
	PRTR substances emissions	0	t
Outputs / Disposal (land)	• Non-industrial wastes	42	t
	• Industrial wastes	18,000	t
	PRTR substances releases	0	t
Outputs / Water	• Public water bodies	98	million m³
	• Sewage	8,000	m³
	PRTR substances releases	0	t

Appropriate Management of Waste Products and Chemical Substances

Waste Management

The Air Water Group works to restrict waste products releases, implement reuse, recycling and other proper disposal, and grasp waste transfers and releases. We promote environmental preservation and the effective use of resources.

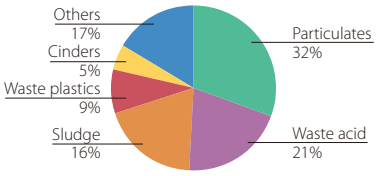
In FY2010, the Air Water Group's main plants released a total of 9,991 tons of industrial wastes, a decrease of 496 tons from the previous fiscal year.

In the Industrial Gas Business, the types of debris increased with the removal of air filters at the On-site Company's Wakayama Plant and the shaving of their surrounding foundations.

In the Chemical Business, the quantity of flammable waste oil was decreased from recycling at the Chemical Company's Wakayama Plant.

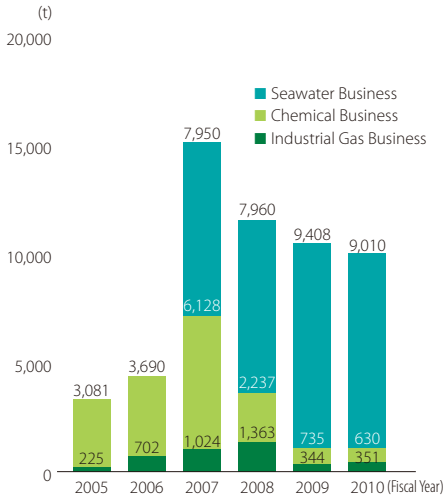
In the Seawater Business, the amount of particulates rose with increases in the quantity of coal used at Nihonkaisui Co., Ltd.'s Sanuki Plant and in the ash content of the coal.

● **Industrial Wastes Releases Breakdown**



Range: Air Water Inc. and its consolidated subsidiaries

● **Industrial Waste Products Releases**



Range: Same as "Materials Balance" on page 21.
*Seawater Business data from group consolidation in 2007

PCB Wastes Management

The Air Water Group grasps the types, quantities, storage conditions and other items regarding PCB wastes, and reports these to prefectural governors and other authorities each year. We are systematically advancing appropriate disposal toward completion by the July 2016 disposal deadline.

● **Business Establishments with PCB Waste Products Storage** (As of March 2011)

Business Establishments	Location
Kyodo Carbonic Inc.	Muroran City, Hokkaido
Nihonkaisui Co., Ltd. Onahama Plant	Iwaki City, Fukushima Prefecture
Air Water On-site Company Kashima Plant	Kashima City, Ibaraki Prefecture
Air Water Chemical Company Kashima Plant	Kashima City, Ibaraki Prefecture
Sagami Ham Co., Ltd.	Fujisawa City, Kanagawa Prefecture
Air Water Sol Inc. Gifu Plant	Seki City, Gifu Prefecture
Air Water Inc. Sakai Business Complex	Sakai City, Osaka Prefecture
Air Water On-site Company Wakayama Plant	Wakayama City, Wakayama Prefecture
Air Water Yakka Co., Ltd.	Wakayama City, Wakayama Prefecture
Nihonkaisui Co., Ltd. Ako Plant	Ako City, Hyogo Prefecture
Nihonkaisui Co., Ltd. Sanuki Plant	Sakaide City, Kagawa Prefecture
Air Water On-site Company Kokura Plant	Kitakyushu City, Fukuoka Prefecture
Kyushu Air Water Co., Ltd. Kumamoto Plant	Uto City, Kumamoto Prefecture

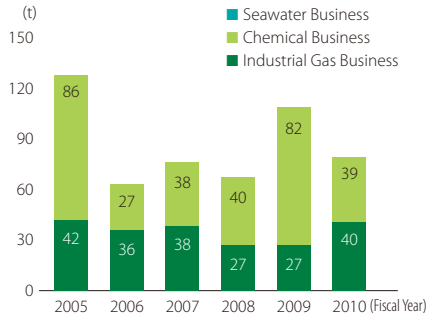
Chemical Substances Management

The Air Water Group works to accurately grasp chemical substances handling amounts, releases and transfers.

In FY2010, among Air Water's main plants, the plants which handled 1 ton or more of Class I Designated Chemical Substances (0.5 tons or more of Specified Chemical Substances) under the PRTR Act and which reported release and transfer amounts to the national government were two Industrial Gas Business On-site Company plants (Wanishi, Wakayama) and two Chemical Business Chemical Company plants (Kashima, Wakayama).

The transfer amount of xylene decreased 21 tons at the Chemical Company Wakayama Plant, and the transfer amount of toluene decreased 11 tons at the Chemical Company Kashima Plant.

● **PRTR Substances Release Amounts and Transfer Amounts**



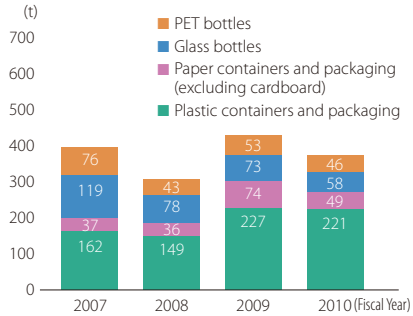
Range: Same as "Materials Balance" on page 21.
The Seawater Business has never released or transferred any PRTR substances.

Container and Packaging Recycling

At the Air Water Group, plastic containers, PET bottles and other containers and packaging are used at Urashima Nori Co., Ltd., Nihonkaisui Co., Ltd., Saveur SS Inc., Air Water Sol Inc., and Sagami Ham Co., Ltd. As Specified Container Users under the Containers and Packaging Recycling Act, these five companies grasp and manage the quantities of product packaging, and have contracts for consigned recycling with the Japan Containers and Packaging Recycling Association.

In FY2010, these five companies used 374 tons of containers and packaging. Urashima Nori shifted from glass container products to plastic container products, reducing the use of glass bottles by 18 tons. Sagami Ham Co., Ltd. revised the size and the materials of its gift boxes, reducing weight and cutting paper container use by 26 tons.

● **Amount of Containers and Packaging Used in Products**



Range: Urashima Nori Co., Ltd., Nihonkaisui Co., Ltd., Saveur SS Inc., Air Water Sol Inc., and Sagami Ham Co., Ltd.

Environmental Contribution Technologies and Products

Air Water Research and Development that Contributes to the Environment

The Earth's resources air and water are the source of the technologies we create at Air Water

Air Water seeks to combine the basic and advanced technologies we hold in diverse leading fields starting with industrial gas, electronics and medicine with our engineers uniting across disciplines to create unique technologies and businesses beyond the reach of our rivals. This is an introduction to the Air Water Group's efforts toward reducing environmental load.

Environmentally Friendly High-Performance Products

Highly Heat-Resistant Halogen-Free Substrate Material for IC packages

BN300GF is a new halogen-free substrate material for IC packages jointly developed with Air Water Group company Printec Corporation to provide a halogen-free product, in response to the recent rising awareness concerning environmental issues.

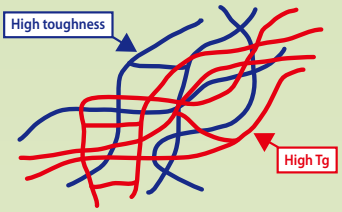
Our highly heat-resistant substrate material BN300 has the properties demanded of future VLSI (very-large-scale integrated circuit) substrates with low bowing, high heat-resistance, and fine pattern etching. It is a substrate for next-generation IC packaging incorporating the IPN structure*1—which is attracting attention as a new compound technology—inside the material molecules, making it possible to enjoy the merits of both the high heat resistance of the polyimide resin and the high adhesiveness and moldability of the epoxy resin. Leading U.S. semiconductor manufacturers have noted and are making use of the high heat-resistance of this revolutionary material (glass transition temperature [Tg] = 300˚C). BN300 is being used by semiconductor and electronics manufacturers, and for household video game consoles and other applications.

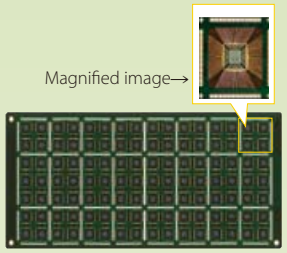
Now the new BN300GF has been made halogen free while retaining the outstanding properties of BN300. With highly superior heat-resistance, BN300GF imparts superior flame resistance without using any halogen fire retardants, which have a large environmental load, or any phosphorous fire retardants, which may become regulated in the future.

With its superior heat-resistance, BN300GF is the optimal material for copper wire bonding IC packages which require high temperature mounting. We have also developed BN-EM, which has a heat-resistance of 250˚C, as a product for low-temperature press processing.

Air Water will continue working to actively spread the use of BN300GF as a high performance, state-of-the-art, environmentally friendly product.

*1. IPN Structure (interpenetration structure): The high temperature resistance component (red) and the high toughness component (blue) each independently comprise their respective chains, so even under high temperatures the high temperature resistance component (red) is not disconnected, and retains high toughness





BN300GF IC package example

BN300GF substrate material

CO_2 Reduction Gas Application Using Oxygen Burning

Oxygen Burner System (DOC Burner) for Electric Furnace Ladle Preheating

Air Water has introduced DOC (Dilute Oxygen Combustion) burner system technology from Praxair Inc. as a new oxygen gas application for electric furnaces*2 and initiated sales activities. DOC refers to combustion in dilute and diffuse oxygen. DOC burners are special burners that uniformly increase the temperature of the object being heated and do not damage fireproofing materials, etc.

Conventional electric furnace ladle preheating burners adopt the air combustion method, but under that method a lot of heat energy becomes flue gases together with the nitrogen in the air. In contrast, oxygen burning generates little flue gases, boosts thermal efficiency, and reduces fuel use. Specific results include: (1) reduction in fuel used: a 53.4% reduction compared with air burners (performance at an electric furnace manufacturer in the Kanto region) as well as reduced CO_2 emissions, (2) reduction of NOx generated (to virtually 0), (3) improved work environment from a large reduction in the amount of exhaust gas, and (4) reduced heating time.

This system is a technology that can be applied to all heating processes. Praxair has delivered the system for use in steel rolling heating furnaces and other types of heating furnaces, and in batch furnaces. This is an oxygen gas application that is drawing attention in the electric furnace industry amid the current demands for energy conservation and CO_2 reductions.

*2. Electric furnaces used for steel production

Air burner

DOC burner

The color temperature of the DOC burner is higher.

With Our Customers

Hand-Delivered Quality, Safety and the Air Water Brand

Operational improvements at Air Water Specialized Transportation Inc.

The Air Water Group values communication with customers. Air Water Specialized Transportation, a Group company with many points of contact with customers, strives to remain keenly aware of its role as the face of Air Water, and to provide a more courteous and exacting service.

Air Water Specialized Transportation provides high-pressure gas delivery and various other logistics services. In its food product distribution business, customers have a wide range of requirements, and it is essential for the company to provide a quality logistics service that is trusted by its partners, and to make proposals to improve logistic costs. Improvement measures are still implemented by the site managers, but we have also revised our logistics services through small group activities, utilizing the improvement measures presentation competition sponsored by one of our customers, AEON GLOBAL SCM Co., Ltd.

● **Overview of Improvement Measures**

Goal

Reduce the number of inquiries from store operators

Cause

Items from different categories mixed together in containers
Difficult for shops to confirm delivery

↓

The reasons it was difficult to confirm product delivery:

1) Items from different categories mixed together

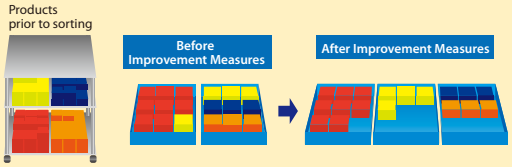
2) Same items placed in different containers

Measures

Numerous containers made available

↓

Alleviated the problem of separated products



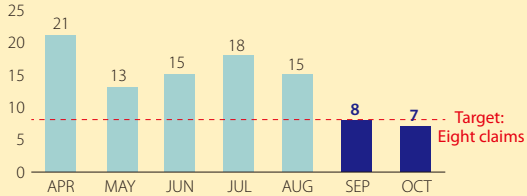
Operational change to sort products without placing same product in different containers

Results

Inquiries reduced by 50%

↓

No. of Non-Delivery Claims (April–October 2010)



Goal of Air Water Specialized Transport:
Earn the trust of customers

The guiding principle for our improvement measures was to enhance the level of service from the perspective of the customer. To select the theme for the small group activities we reviewed the distribution center inquiry log, a compilation of opinions and requests submitted by customers, and analyzed the contents. Claims for non-delivery of items accounted for 63% of all inquiries, which we recognized was resulting in lost time in operations for store operators. We decided that reducing the number of non-delivery claims is a prime example of enhancing distribution quality, and set a goal for improvement in this area.

For our improvement measures we considered distribution quality and cost, and took steps to enhance visibility in the process. Specifically, we made it easier for customers to confirm product delivery by sorting products so that the same items were in the same container, and that items from different categories were not mixed together. Within two months of implementing these measures, inquiry rates dropped by half.

We will maintain this perspective, follow the guidance provided by customers, and together with them seek to provide a logistics service trusted by customers, the final destination in delivery.

Note: Air Water Specialized Transportation is included in the "Other Business" segment.

Worker confirms that same products are placed together in the same container

First Prize in the Second Nationwide Competition
Sponsored by AEON GLOBAL SCM
(November 2010)

This competition is held once a year with the goal of improving quality and cost performance. Participants comprised 94 teams from companies throughout Japan that have logistics contracts with AEON Co., Ltd. The presentations on everyday operational improvements offered many opportunities to rethink ordinary practices. We plan to continue to work with partner companies and ensure a deep-rooted commitment to improvement.

With Our Business Partners

Transparent Purchasing Builds Mutual Trust

Initiatives through various Websites

Air Water ensures a transparent buying process for the various raw materials and products it purchases, conducting procurement and purchasing based on customer needs. We also select energy-saving equipment and environmentally friendly products through a relationship of mutual trust.

Air Water's procurement department utilizes central purchasing and implements a variety of other measures aimed at optimizing the purchasing of direct and indirect materials within the corporate group, and improving the cost structure.

In central purchasing, mainly for indirect materials we take care to conduct transactions emphasizing the QCDE (Quality, Cost, Delivery and Environment) balance, and utilize throughout the corporate group a special purchasing Website, called WEB Procurement, that is linked to the systems of vendors. As a result, total purchasing amounted to approximately ¥4.2 billion in FY2010, with cost reductions of around ¥170 million.

In the selection of business partners for central purchasing, we revised the previous system of purchasing locally on an individual basis, and pursue fair procurement that includes both existing and new vendors.

Initially the items for central purchasing were limited to airline tickets and office supplies, but this been expanded and now includes approximately 80 items and 170 vendors. We do not focus exclusively on cost competitiveness, but try to constantly open the door to new vendors, and exchange information during meetings. This not only reduces costs, but allows us to gain from vendors everything from information on new items and the latest industry trends, to a variety of ideas and proposals for operational improvements and lessening environment loads. Our aim is to maximize the benefits for both sides. By utilizing the economies of scale possible with the Air Water Group, we encourage our trading partners to provide goods at an appropriate cost based on the purchasing volume of the entire corporate group, and build a mutual win–win relationship.

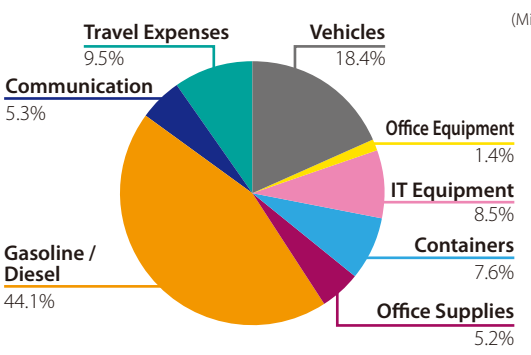
Air Water also operates a benefit and welfare Website called Kizuna for employees, their families, and retired employees. Originally launched with the aim of selling products from Group companies to employees, Kizuna has received support from more than 120 external business partners, and has both enhanced the benefit and welfare system for employees, and helped establish ongoing relationships with vendors.

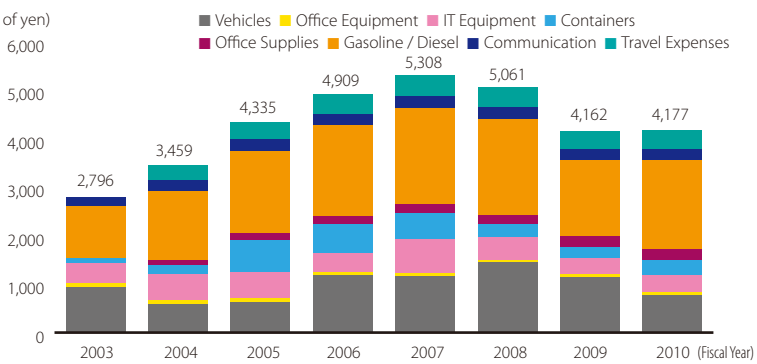
In addition to indirect materials, the procurement department provides support for business purchases through the Kouca Website, an information site to share expertise on cost reductions with the entire Group, helping to reduce purchasing costs of direct materials for business divisions and Group companies. Air Water also launched a new initiative in FY2011 to establish an overseas procurement structure, and institute its own particular style of optimal procurement outside Japan.

Our central purchasing and other initiatives are aimed not simply at reducing costs from vendors, but building relationships that provide a mutual benefit overall.

Items are bought through Web-based central purchasing

● **Breakdown of Purchasing Costs**





Relationship with Employees

Human Resources Development Linking Today with the Future

Utilization of the Tsumori Training Institute and educational initiatives

The Tsumori Training Institute in Tsumori (Nishinari-ku, Osaka), an important area in the founding and development of Air Water, is a place to learn about the spirit of entrepreneurship, and to understand one's own identity. Air Water utilizes this training institute for internal education and the development of human resources.

Understanding the Company's origins and learning the spirit of entrepreneurship

"With all the problems that need addressing in society, what should I do now?" This was the starting point for the spirit of entrepreneurship, the central tenet of which is to approach business from the customer's perspective. This seems only natural, considering that all three of the forerunners of the company, HOXAN Corporation, Daido Sanso K.K. and Kyodo Oxygen Co., Ltd., were established by the customers themselves to meet their needs. Before your own work is the customer, and beyond that is the company. As a company involved with global resources, we consider it important that all employees be conscious of the responsibility and social nature of Air Water in their daily work duties. Through our internal education system, with the Tsumori Training Institute as the cornerstone, we are working to instill in employees the spirit of entrepreneurship.

Training structure rooted in the basic principle of "autonomy and independence"

To realize our management philosophy, which is included in the words "In the spirit of entrepreneurship," Air Water has put in place a training structure based on the principle of "autonomy and independence." Based on the idea of continual advancement through practical experience, Air Water provides a unique and varied structure for training and education to supplement work experience. As shown in the chart below, we have three categories of training: Position-specific training, professional education, and selective training.

Position-specific training is provided for employees as they advance through each career stage, from orientations for new employees, to training for newly appointed department managers and affiliate presidents. We provide opportunities for employees to expand their strengths, complement their weaknesses, and enhance their capability for independent thought and action.

Training session

"Air and Water Memorial" history exhibit at the Tsumori Training Institute

● **Education and Training Structure**

	Position-Specific Training	Professional Education (managed by business divisions)	Selective Training
VI (Senior managers)			
V (Division managers)	Training for newly appointed department managers and affiliate presidents Training for newly appointed managers	Evaluator training	
IV (Senior staff / Assistant managers)	Assessment training Senior staff training	• Medical representative education and training • Medical personnel education • Engineer internal qualification system • Engineer education and training • Product knowledge and sales skill enhancement • User application and business strategy training • Security and technical staff training • Manufacturing position training program Evaluator training	Safety and skills learning system Correspondence education system Qualification acquisition incentive system
III II I (Ordinary employees)	Training for promoted employees Follow-up training New employee orientation		
Corporate Rank	Goal Management System, Evaluation System, Career Declaration System		Select & Point System

Professional education is crucial training to enhance our functionality as a manufacturer. The representative example of this is our "Manufacturing Position Training Program" to enhance on-site manufacturing capabilities. It is also a mission for our employees in their late 50s or older to pass on their knowledge and skills to the younger generation prior to retirement.

Selective training is education to develop independent Air Water personnel. Employees select training to match their career vision, and under the select and point system, receive points that count toward promotion each time they conclude a training session or distance learning course. This system also helps to enhance employee motivation.

Internal education utilizing the Tsumori Training Institute

Through the Tsumori Training Institute we've taken a new step forward in internal education. The institute is a place to reset and get back to basics, a place to feel the energy of the spirit of entrepreneurship. It is a place where employees can experience the starting point for the Company, and return to it at any time. The internal education at the Tsumori Training Institute is consistent with "autonomy and independence," the basic principle for human resources development, and we plan to further develop the programs going forward.

Relationship with Shareholders and Investors

Air Water strives to provide accountability to ensure that shareholders and investors have a proper understanding of the Group's management strategies, current status and business activities. We actively pursue communication by means of company information made available through our Website and printed materials, timely and appropriate disclosure, the annual shareholder meeting, and investor relations (IR) activities conducted both in Japan and overseas.

Results Briefings

Results briefings for institutional investors and analysts are held twice annually, in May and November. Along with business results and forecasts, we take care to include in the briefings presentations on aspects that help to deepen understanding of the Company, such as the progress made in implementing our medium-term management plan NEXT-2020 Ver. 1 (FY2010–2012), and the priority measures for each business division.

Results briefing

Tours of Factories and Facilities

We regularly conduct tours of our facilities for institutional investors, analysts and other visitors, including our on-site and chemical plants, and the Company history exhibit in our internal training facility.

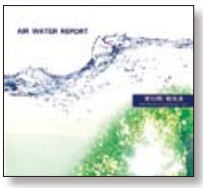
Factory tour

Tour of facilities

Publications

- Annual Report (Annually in September)
- Business Reports (Biannually in May and November)
- Consolidated Financial Results (Quarterly in May, August, November and February)
- Environmental and Social Report (Annually in November)

Annual Report



Business Report

Environmental and Social Report

Website

Air Water has established an IR page on its corporate Website as one means of providing timely and appropriate disclosure to shareholders and investors. The section includes Consolidated Financial Results, Financial Report and Financial Results briefing materials, as well as documents relating to the General Meeting of Shareholders, Shareholder Reports, and Information on shareholder benefits. The Website also includes materials such as overviews of the medium-term management plan, news releases, and the Environmental and Social Report, helping to deepen understanding of the Company's business policies, business activities and technologies. The Website address is http://www.awi.co.jp/.

Front page of the Air Water Website

IR page

Involvement in Local Communities

Supporting vibrant communities through our business activities

Nihonkaisui Sponsors the "All-Ako Great Exhibition" at Its Ako Plant

The Air Water Group believes that it is essential for it to walk in step and move forward with local communities in order to sustain its business. We sponsor activities that reflect the special characteristics of our business to fulfill our role as a member of the local society, to encourage communication with neighborhood residents, and to make people glad that Air Water is a part of their community.

The Air Water Group company Nihonkaisui Co., Ltd. is one of the leading producers of salt in Japan. Its Ako Plant is located in the city of Ako in Hyogo Prefecture. The area facing the Seto Inland Sea has long been a center for salt production utilizing seawater.

The Ako Shiobana Festival sponsored by the Ako Chamber of Commerce and Industry was begun in 1999 with the aim of deepening contact between local businesses and residents, and enlivening the community. Nihonkaisui supports this idea, and has been a sponsor since the beginning.

The festival has grown bigger each year, and in 2010 became the All-Ako Great Exhibition comprising a variety of events on the theme of "salt." Around 33,000 visitors attended the festival between November 3rd and 21st, 2010. Salt provided by Nihonkaisui was used in a variety of different ways during the festivities.

The main venue for the festival featured a massive salt sculpture that was the centerpiece of the exhibition. Entitled *Crystal*, the salt sculpture's base was molded by Nihonkaisui, and crafted by professional sculptors over two months. It was 3.5 meters tall and 7.0 meters wide. The title *Crystal* incorporates the idea of something new being born from the ancient substance of salt. The base for the salt sculpture was formed by compressing and drying moisture-containing salt, and from August until the end of October created through a process of repeated molding and natural drying. A total of 57 tons of salt was used, which was recycled for industrial use after the exhibition.

At another venue, a salt art contest was held at which participants created original salt sculptures. For this event, Nihonkaisui formed and provided the salt pillars for the sculpting blocks (90cm in diameter and 100cm tall). The works were for a grand champion tournament by previous winners, and each was spectacular. Other creations included a "kamakura" snow hut using the snow-white salt, and a 5x5 meter shallow pool filled with salt. The salt pool was a larger volume of salt than people ordinarily see, and adults as well as children enjoyed playing in the salt.

In the evening the road to the station was lined with glowing salt lanterns, evoking a sense of walking along the legendary streets of Ako that were home to the 47 Ronin made famous in "Chushingura."

The charming city of Ako is dotted with cultural heritage sites, and has a beautiful coastline. Nihonkaisui is creating new charm from the local resource of salt production that has been passed down through the generations. Through events such as these we hope to deepen our communication with the community.

Note: Nihonkaisui is included in the "Other Business" segment.

The completed massive salt sculpture *Crystal* (3.5 meters tall by 7.0 meters wide)

Reception for the completion of the sculpture

The salt art contest (champion tournament of past winners)

The pool of salt

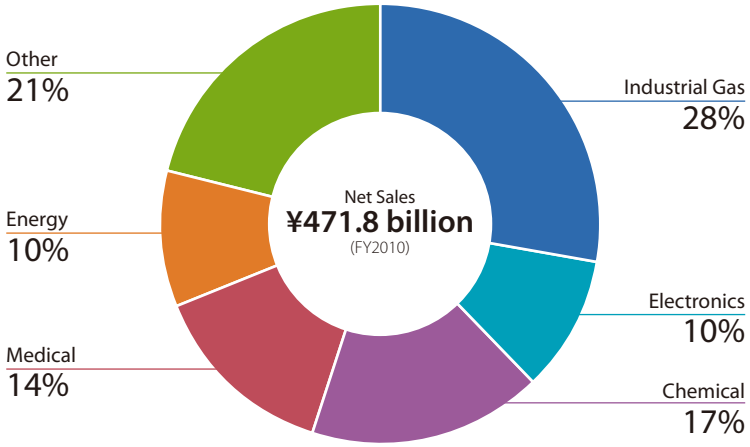
Air Water Inc. Corporate Data

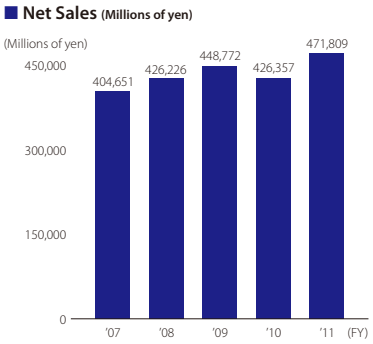
(As of March 31, 2011)

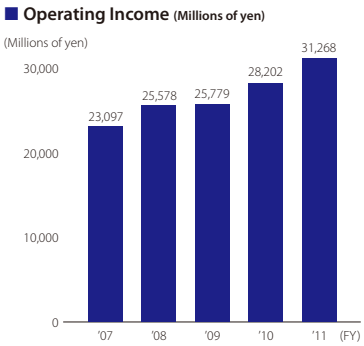
Company Outline

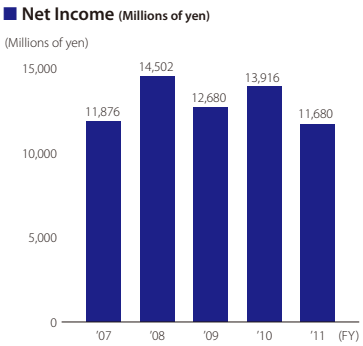
Company Name	AIR WATER INC.
Head Office	12-8, Minami-Semba 2-chome, Chuo-ku, Osaka, 542-0081, Japan
Established	September 24, 1929
Representative	Hiroshi Aoki, Chairman of the Board, Chief Executive Officer
Paid-in Capital	¥31,013 million
Number of Employees	8,237 (Consolidated)

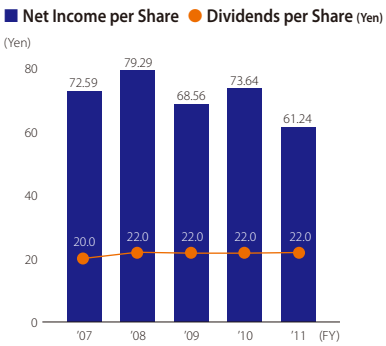
Sales by Segment











Editorial Policy

This publication is Air Water's 10th annual Environmental and Social Report. We view this report as a communications tool to refine our corporate culture as Air Water and to have it refined.

We have edited this volume with the goal of making it interesting and understandable to readers so that they will feel close to Air Water and become supporters.

Accordingly, we have compiled this report based on the following perspectives and policies.

- Environmental and Social Report 2011 comprises a Feature Story, together with a Management Report, Safety Report, Environmental Report, and Social Report. It focuses on the corporate activities of Air Water Inc. and its corporate group during FY2010 (ended March 31, 2011). A particular emphasis has been placed on the Air Water Group's measures in response to the Great East Japan Earthquake. The Safety Report comprises the Air Water Group's safety initiatives. The Environmental Report is mainly a compilation of data.
- Data included in the report is compiled from the period from April 1, 2010 to March 31, 2011. Reports on corporate activities include those through July 2011.
- The report was edited with reference to Environmental Reporting Guidelines issued by the Ministry of the Environment. Certain sections, however, have not been expressed in numerical terms, such as those on green procurement and environmental accounting.
- The Environmental Report focuses mainly on the environmental strategies, targets and results for the Industrial Gas, Chemical, and Seawater Businesses of Air Water and its Group companies.
- For the Management Report, Safety Report and Social Report, we have taken care to express the Company's basic stance and the current circumstances as directly as possible.

AIR WATER INC.

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Compliance Center
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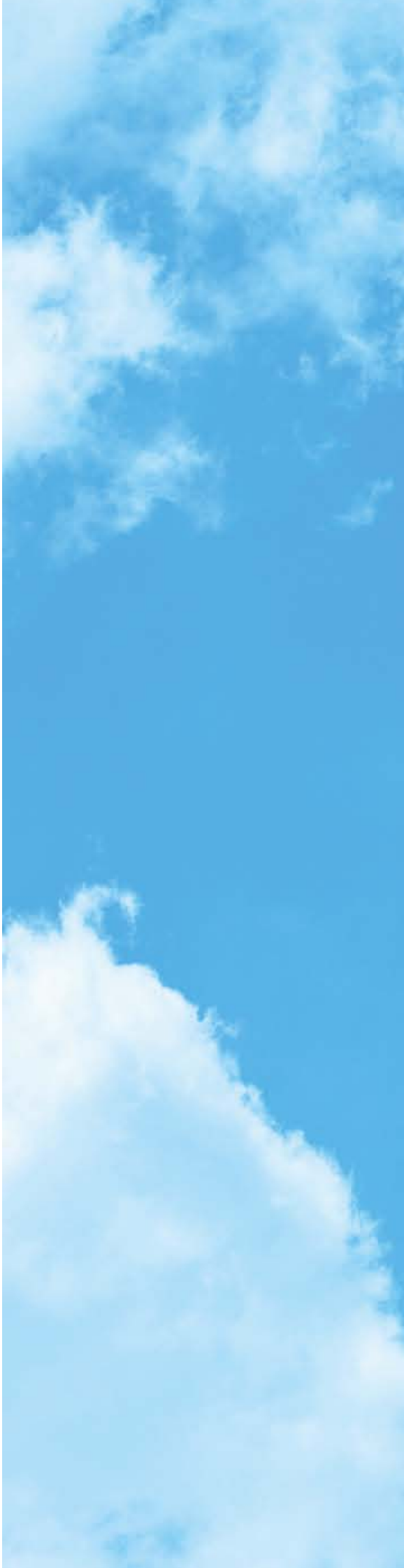
This report is available on Air Water's Website.
The PDF format can be viewed with Adobe Acrobat Reader.
URL: http://www.awi.co.jp/



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