

Paving the way for the future of Gas & Energy

**Iwatani**

# Paving the way for the future of Gas & Energy

## As those needed by society can prosper Making a difference as only Iwatani can

Our goal is to preempt what society needs so that we can provide support for industry and people's everyday lives.

We try to make a difference to people and society through "Gas & Energy", resources that the earth has carefully nurtured for hundreds of millions of years. As a specialist in handling such irreplaceable resources, we have been engaging in a wide range of operations here at Iwatani ever since the company was first established in 1930, including lifestyle products, machinery, welding materials, electronic equipment, materials and food products as well as our core LPG, hydrogen and industrial gas operations.

Our driving force has always revolved around people, underpinned by our determination to be "needed by society".

We draw strength from individual capabilities and the trusting relationships and networks we have built up with our customers, and from the new ideas and challenges that they present.

We may continue to change with the times, but our mission remains the same; to provide new value and to actively seek out potential needs.

We will continue to grow into the sort of company that our customers want and need, as we do our utmost to create a brighter future for everyone.

Creating the future of technology  
together with customers



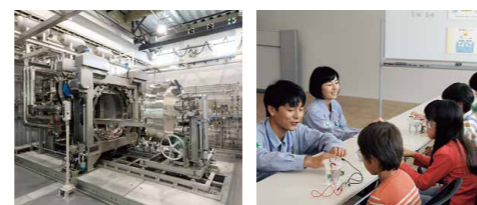
Iwatani R&D Center established as our new technology base (Amagasaki, Hyogo Prefecture)

Iwatani has information power unique to a trading company, as well as unique technological capabilities cultivated over many years. The Iwatani R&D Center plays a major role as a research and development base for fully expanding the potential of Iwatani. Based on our accumulated gas technologies, this facility is newly equipped with a host of the highest performance analytical instruments and permits a range of testing environments.

We wish to create new value by linking between

the seeds of creation and existent needs, thereby contributing to society. We aim to make the facility an open laboratory, at which we not only independently implement development projects but also collaborate with a wide variety of companies and organizations- including our customers, business partners, universities, public research institutes, and administrative organs- to create new technologies and products. To this end, we have introduced a wide array of advanced analytical instruments and equipment that enable

us to work on the latest research issues. We will provide one-stop services ranging from joint research with customers to development of products that fulfill customer needs. We have also installed various demonstration functions, including a hydrogen station, to facilitate understanding of our original technologies. Iwatani R&D Center thus makes it possible to realize the future envisioned by Iwatani, including a hydrogen society, in easy-to-understand ways.





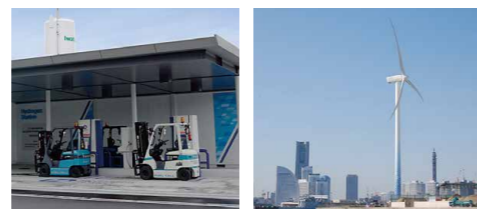
Thinking about the future means thinking about the future of hydrogen

Iwatani Hydrogen Refueling Station in Tokyo Ariake (Koto-ku, Tokyo) is the first of its kind in Japan to allow for the full-scale refueling of fuel cell buses.

Since 1941, Iwatani has been committed to stimulating demand for hydrogen and has always taken the lead in manufacturing liquid hydrogen and developing its applications. In December 2014, Toyota Motor Corporation launched MIRAI, a fuel cell vehicle. While the efforts to develop a hydrogen-utilizing society are accelerated, we are also pursuing the centralization of functions for designing and constructing hydrogen stations and reinforcing our engineering organization. By doing so, our in-

frastructures are strengthened through, for example, the operation of hydrogen stations nationwide. Beginning with the Iwatani Hydrogen Refueling Station in Amagasaki, the first commercial hydrogen station in Japan, we are constructing hydrogen-refueling stations mainly in four major urban areas, including Aichi and Tokyo, and plan to open a total of 83 hydrogen-refueling stations by fiscal year 2023. Furthermore, every year since 2006 we have built momentum toward the popularization of

hydrogen energy and have been organizing the Iwatani Hydrogen Energy Forum with the goal of providing opportunities for networking. It serves as a bridge between industries, government and academia in hydrogen-related areas and pursues a hydrogen energy society, while also putting a great deal of effort into the activities for raising awareness about hydrogen with the aim of communicating the attractiveness and cleanness of hydrogen to children who will lead the next generations.





With safety and security,  
We deliver the energy to watch our lives.

Osaka-Higashi LPG Center (Daito, Osaka Prefecture)

In 1953, Iwatani became the first company in Japan to sell household LP gas. This originated from a desire to lessen the burdens on housewives in their kitchen chores: they had difficulties using firewood and charcoal to make fires and were also troubled by the resultant soot. We undertake consistent supplies to households throughout the process from import to delivery and ensure security system improvements. The supply system starts by concluding direct import contracts with gas-producing countries

and involves the use of our chartered tankers to store the gas in our import bases. In this way, the gas is delivered to households as Marui Gas, our own brand of LP gas.

We also sell ENE-FARM, a household fuel cell system that extracts hydrogen from LPG to generate electricity and produces hot water from the exhaust heat generated at the same time. Our LPG system is a distributed system, and the strength of its high disaster response capability is proof of its reliability. We are also making

efforts to further promote the spread of systems that are effective in providing electricity in the event of a disaster, such as gas heat pump air conditioners and LPG emergency generators. Approximately 3,600 gas experts, including LPG installation engineers, are registered with the MaruiGas Disaster Relief Corps, and in the unlikely event of a disaster, they are always ready to rush to the disaster area from all over the country for the early restoration of LPG facilities.



A business domain spanning the globe  
Iwatani continues to exceed expectations



Mining area of Iwatani Australia Pty Ltd. (Australia)

Iwatani's business fields span the globe. We import LPG from Saudi Arabia, the United Arab Emirates (UAE), and the United States, while considering the navigation status of LPG tankers (totaling about 40,000 tons) for which Iwatani has concluded charter contracts with shipping companies, while also carrying out operations in pursuit of cost reduction and efficiency at the same time. In China, which has been our focus for a long time, we conduct the air separation gas business, carbon dioxide gas production

business, and metal coating business and have more than 40 business bases in various fields, including industrial gases and materials. In the United States, we sell valves, mineral products, firing jigs, cassette gas stoves, and cassette gas canisters. Most recently, we started the operation of hydrogen-refueling stations in California. We also procure helium, a rare resource, from the United States and Qatar and supply it to Japan and rapidly growing countries and regions, such as China and Southeast Asia.

In Australia, we operate our manufacturing business as the only Japanese trading company with a mineral sand manufacturer, and we have started a demonstration project to produce hydrogen from lignite for import to Japan. The significance of overseas activities is increasing in each field, such as the start of the import of palm kernel shells (PKS) from Indonesia.



## To remain a company needed by society, we will contribute to the public good by striving to create new value.

Since its founding in 1930, Iwatani Corporation has delivered a variety of gases and energies to people and industry based on the corporate philosophy, “Become a person needed by society, as those needed by society can prosper.”

At the root of this is our desire to contribute to society by creating the new value required by the world in the future, and this is a major driving force for our business.

In the medium-term management plans over five terms from fiscal year 2000, our profitability and financial strength have improved greatly as a result of the promotion of structural reform with gas and energy as the core business.

In the three-year medium-term management plan PLAN20, which started in 2018, we have been working on sustained growth and the improvement of corporate value under the themes of “Evolution” and “Creation,” and the basic policies of “Promotion of growth strategy” and “Expansion of the management base.” As a result, we achieved all of our management index targets (ordinary income of 33 billion yen, ROE of 10.0% or more, and net debt-to-equity ratio of 0.7).

In fiscal 2021, we announced a new medium-term management plan, PLAN23. We will work on further growth with theme of “Toward the realization of a hydrogen energy-based society – Going beyond the framework of business –” and the basic policy of “Strengthening of strategic investments toward a carbon-neutral society” and “Promotion of digitalization.”

Since 1941, we have regarded hydrogen as the ultimate clean energy source and have taken steps toward its spread. Under the slogan “A world where all enjoy true comfort- this is Iwatani’s desire.” we aim to solve social issues, such as environmental problems, by realizing a CO<sub>2</sub>-free society through the utilization of hydrogen.

We also participate in the Hydrogen Council as a principal member, which was established mainly by energy-related companies around the world, and are conducting activities for the promotion of hydrogen utilization on a global scale. As for the creation of new demand for hydrogen, we are constructing hydrogen-refueling stations for the spread of fuel cell vehicles (FCVs). We are expanding the construction of hydrogen-refueling stations in California, the United States, where FCVs are becoming more widespread ahead of all other regions, and are considering liquefied hydrogen production in the state in the future.

Regarding efforts for the creation of a CO<sub>2</sub>-free hydrogen supply chain, we are participating in a mass transportation and storage project for liquefied hydrogen from Australia and working on a demonstration by a carrying vessel. We are also participating in the Fukushima Plan for a New Energy Society for the production of hydrogen using power generated from renewable energy, and the Fukushima Hydrogen Energy Research Field commenced operation in February 2020. In December of the same year, the Japan Hydrogen Association was established as a new organization to promote global cooperation and the formation of a hydrogen supply chain in the field of hydrogen etc., and we have been proceeding with various efforts to establish and expand a hydrogen-based society.

On the other hand, our main business, the LPG business, is based on 3.2 million households nationwide. Iwatani GateWay, which creates new services for our customers, completed its demonstration and started providing its services in July 2021.

Toward our upcoming 100th anniversary and in order to make a further leap thereafter, we will continue to provide new value to all customers, shareholders/investors, business partners, local people, and employees and will aim for sustainable growth as an evolving comprehensive energy service provider.



Chairman & CEO

*Akiji Makino*

President

*Kiroshi Majima*



“Gas & Energy” are gifts from the earth.

Our unique technologies and sales network enable us to bring those precious resources together and deploy them across a wide range of areas from four different angles, so that they can be put to the best possible use.

Our goal is to provide people and society as a whole with what they need for tomorrow.

We aim to make those products as convenient and user friendly as possible too.

We precisely cater to customers' needs in each area, in order to help them resolve their issues.

We want to help companies to develop and to help people to live their lives, as an ever-present partner in industry and technology.



- Energy
- Industrial gas and machinery
- Materials
- Agri-bio and food

**Giving people and industry what they need**  
**Providing support from four different angles**



## Keeping an eye on lifestyles and society Identifying what people want

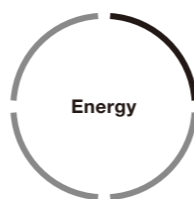
Our unique integrated network here at Iwatani, covering every step of the way from import to delivery to households, enables us to maintain stable supplies, so that people can use LPG safely and securely.

We are also working to pave the way for new energy sources such as hydrogen.



An LPG tanker docked at our Sakai LPG import terminal (Sakai, Osaka prefecture)

# Energy



## Providing an energy lifeline, all the way from gas producing countries



### LPG (overseas imports)

In an effort to establish a strong supply structure for LPG, in 1980 we signed a direct import contract with Saudi Arabia so that we no longer had to go through the major oil companies. We commenced importing in 1981, and have since expanded our import partners to include sources in the Middle East, Asia and the United States. We have established a robust supply structure that is

less susceptible to international unrest, and are now able to supply gas to domestic customers safely and securely using our own chartered carriers. We provide Japanese society with a stable supply of energy for an increasingly diverse range of needs, from household users to vehicle fuels and industrial gases.



### LPG integration (domestic supplies)

As well as reliably importing LPG, we also operate a stockpiling and supply structure to provide domestic customers with LPG safely and efficiently, all the way from gas producing countries to their kitchen. Having established our Sakai LPG import terminal, we are now working to align and integrate secondary and tertiary terminals, in order to reinforce our network and effectively supply gas to households.



### Everyday energy courtesy of Marui Gas

In the face of changing market conditions, from the days when propane gas was just taking off to the current era of lifestyle solutions, we changed the name of Iwatani's LPG brand from Marui Propane to Marui Gas in 1993, to mark 40 years of sales. Making the most of our network of 1,400 distributors, the largest network of its kind in Japan, we are in the process of reorienting our business from

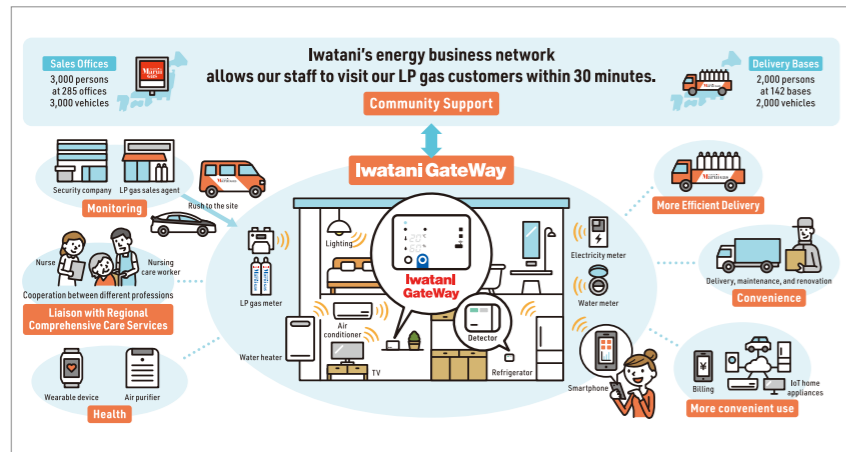
supplies to solutions. We are working closely with local communities to identify their needs, with the aim of becoming consumers' energy source of choice, and currently supply 3.1 million households nationwide, from urban areas to outlying islands. We continue to provide people with gas safely and securely, to help improve their everyday lives.



### Bulk supply

Our LPG bulk supply system streamlines the distribution process by directly recharging gas tanks from specialized tanker trucks fitted with pumps, thereby increasing convenience for our customers. We continue to install systems in various settings, ranging from households to industry.

We help consumers life safely and securely every day with our reliable technical strength.



**Iwatani GateWay**

We have developed the Iwatani GateWay, a platform (relay station) that connects various things to the Internet by adding an information network function to the gas alarm units installed in ordinary households. By connecting to gas and electricity meters etc., it prevents gas shortages, improves the efficiency of LPG delivery, and provides new services that are useful for the everyday lives of our

customers, such as a safety monitoring service for the elderly and health management. Iwatani GateWay Co., Ltd., was established in November 2020 and started providing services from July 2021.



**Electric power (Iwatani Denki)**

Following the full-scale liberalization of retail power in April 2016, we entered the market of household electric power in the form of the Iwatani Denki brand. Targeting Marui Gas customers in the Tokyo and Kanto areas, we pursue service improvements by selling electric power and LP gas as a package.



**City gas**

Following the full-scale liberalization of city gas retail in April 2017, we concluded partnerships with Kansai Electric Power Co., Inc. and other companies and commenced operations of city gas security and sales by agent. In the LP gas business, Iwatani and its group companies have developed the capability to make proposals to customers and the capability to maintain the security of products. These capabilities are utilized in supporting the safe, secure supply of city gas.



**Proprietary safety standards**

Ensuring safety has always been one of our main concerns here at Iwatani, ever since we started our business. We have distilled the considerable expertise that we have built up throughout the company over many years into the Iwatani Safety Spec (ISS), which acts as a safety management standard both within the company and for our customers.



**TeleSafe 24-hour monitoring system**

Manned monitoring of gas leaks, prolonged use of combustion appliances, etc., at home is carried out 24 hours a day, 365 days a year at the Iwatani Call Center. When emergency information is detected, the system notifies the distributor in charge at the same time as contacting the customer, thereby preventing accidents at home.



**ENE-FARM**

ENE-FARM is a household cogeneration system that takes hydrogen out of LP gas and city gas, uses the hydrogen to make fuel cells generate power and collects hot water from exhaust heat that occurs simultaneously. It has high energy efficiency and can dramatically reduce CO<sub>2</sub> emissions.



**Growing acclaim for decentralized energy**

As well as being a disaster-resilient energy source, LPG is also receiving growing acclaim for its benefits as a decentralized energy source, as opposed to centralized systems operating via the power grid or gas pipes. Of the more than 100 supply facilities that we have nationwide, we have reinforced filling stations on a priority basis, to act as backbone facilities that will be capable of

shipping LPG even in the event of a disaster. We have also installed an LPG-powered air conditioning system (GHP) at our Tokyo Head Office so that we can meet power saving requirements. Our aim is to cater to society's wide-ranging needs quickly and effectively.



**Delivery Station**

This is our original rice-boiling set powered solely by LP gas. Based on the concept, "Just a single unit allows for easy, full-scale cooking in any location," Delivery Station makes it possible to safely cook rice, soup and other tasty food items in any situation, and impresses users with the benefits of LP gas. Delivery Station is used at events and other applications, and we also suggest its use for BCP measures in the event of a disaster.



**Marui Mutti**

Marui Mutti is a monthly newsletter delivered to households using Marui Gas all over Japan. In addition to information on fashion, food, the home and leisure activities, it also contains helpful hints on environmental issues, disaster preparedness and security. Our aim is to help customers build better lives for themselves, through two-way communication with our distributors.



**LPG Emergency Generator**

Making the most of LPG's advantages as a disaster-resilient decentralized energy source, we propose LPG emergency generators to provide essential power in case of an emergency. Generators offer a solution for public facilities, quakeproof apartment buildings and other key facilities, to enable them to reliably maintain gas and electricity supplies in the event of a disaster.



**Gas heat pump (GHP) air conditioning**

GHP systems use gas engines to circulate refrigerant in order to provide efficient heating and cooling, whilst at the same time reducing power consumption. Our ECOWILL household cogeneration systems meanwhile use gas engines to generate power, whilst effectively reusing waste heat to supply hot water or heating. Saving and creating energy using LPG are two of our top priorities here at Iwatani.



**Children's emergency services**

As part of our social contribution to the local communities to which we are indebted on a daily basis, we are working on our Children's Emergency Services project as a group. We want to protect the children and elderly within the community. That's why we are contributing to crime deterrence through our operations by leveraging our business and delivery vehicles.

## Creating a recycling society through new energy



### LNG (liquefied natural gas)

Made by liquefying natural gas, LNG is a clean energy source with exceptionally low NOx (nitrogen oxide) and CO<sub>2</sub> emissions and is expected to become a key alternative to petroleum. We are working to establish the necessary structure to supply LNG safely and securely, including through eL-Energy Co. Inc., which we established as a joint venture with Kansai Electric Power Co. Inc.



### Cogeneration systems

Cogeneration systems combine gas engines and turbines to generate power, whilst at the same time using waste heat energy for purposes such as cooling and heating. Systems make efficient use of energy and can cater to a wide range of needs depending on the scale and purpose for which power and waste heat are used, from household systems to large-scale facilities.



### Local LNG pipelines (city gas business)

Local energy infrastructure can be used to tap into the potential of LNG. Our operations via local LNG pipelines, in conjunction with power and gas companies, show that this model can work. At Koga Energy Co., Ltd. in Shiga prefecture, we manufacture city gas (natural gas) from LNG transported from the Sakai LNG Center operated by Kansai Electric Power Co., Inc. We have put in place a



### LNG emergency network

An emergency network is developed with the aim of ensuring the early resolution of any accident that occurs during LNG transportation, and preventing secondary disasters. Our staff members undergo regular training, which involves putting technical staff in action at the site, giving directions for the evacuation of an accident-stricken lorry and other practices, so that information can be communicated rapidly within a group.



### Nationwide energy seminars

We organize seminars in an effort to provide our customers with solutions based on the comprehensive expertise that we have built up through our Gas & Energy business. We are constantly working to encourage customers to switch fuels from heavy oil to LPG, and to strike a balance between cutting costs for corporate clients through energy saving initiatives and reducing CO<sub>2</sub> emissions to protect the global environment.

## Right by our customers' side, helping them to lead full and healthy lives



### Cassette Gas series

Our products using cassette gas canisters expand the point of contact between the lives of our customers and Iwatani with our unique ideas. Our hose-free cooking stove, Cassette-Feu, which was launched in 1969, has expanded demand from household use to leisure activities and has grown into a long-selling product that is also available overseas, mainly in the United States, China,



and Taiwan. As examples of products that further expand the possibilities, we launched the HAN-go Cassette Gas Rice Cooker, which allows one to easily enjoy delicious gas-fired rice; the Yakimaru II Smokeless Barbecue Grill Station, which is a new standard for home cooking of grilled meat; and the Aburiya Robata-Yaki Grill Station, which allows one to enjoy skewers and grilling at



home as if you were in an izakaya (a Japanese-style pub). We are developing variations to meet changing lifestyles and needs. These products utilize Iwatani's expertise in LPG handling technologies as we constantly look at gas and daily life.



### FORE WINDS

Our outdoor brand FORE WINDS, which has continued to be marketed since 1995, has been renewed and is now sold in Japan and overseas as a global brand. By newly adding functional and high-quality design to the concept of fusion with nature when the brand was born, we are developing and selling outdoor products that pursue functional beauty. Taking advantage of the convenience of cas-

sette gas canisters, we propose a smart and comfortable outdoor lifestyle. We will change the value of Iwatani's gas and energy from something that is consumed to something that creates new experiences. FORE WINDS will blow like a fresh breeze as you embrace nature.



### ALALA series

The ALALA series of household detergents contributes to cleaning household wastewater because we are particular about using highly biodegradable natural palm oil as the main component. As a natural brand that is not only environmentally friendly but also gentle on the hands and skin, we are expanding the product lineup from kitchen detergents to hand soaps and body soaps.



### Vanadium-rich Fuji-no-Yusui drinking water

Fuji no Yusui is natural mineral water rich in vanadium, taken from the nature-rich northern base of Mt. Fuji. It is kept under rigid quality control at a modern manufacturing plant and packaged under the D-pack system into single-use containers designed to prevent water from coming into contact with the air. We deliver this water safe from its collection point to the customer.



### Livestock products

Utilizing the goodness of the materials as they are with ultra-low temperature freezing technology using liquefied nitrogen, we propose a healthy life through excellent food ingredients, such as Goma-dofu no Moto and Sporiki, as well as Manuka Honey from Australia and Jabara (a type of citrus fruit) from Wakayama Prefecture.



### Iwatani i-collect

Iwatani i-collect is a comprehensive shopping site that offers everything from household supplies, health foods, cosmetics, and outdoor products to fresh foods from local regions, along with tips and ideas for everyday life. The site offers an abundant product lineup and introduces excellent items that add color to the lives of our customers.

## Harnessing gas and technology to carve out a new future for industry

Here at Iwatani, we provide industry with a wide range of high-pressure gas support, from separating gases such as oxygen, nitrogen and argon from air to handling gases such as liquid hydrogen and helium at ultra-low temperatures. We are constantly working to harness our gas technologies and come up with new solutions in different areas.



Helium container being shipped (Kobe, Hyogo prefecture)

# Industrial Gases & Machinery



## Strengthening gas supply infrastructure and catering to industrial needs



### Separating gases from air

We contribute to a wide range of industries, from semiconductor manufacturing to the medical industry, by extracting oxygen, nitrogen and argon from liquefied air, using their different boiling points. We are constantly working to expand our production and supply network on a national scale, to establish a stable supply structure for separated gases.



### A pioneer in hydrogen

Since 1941, Iwatani has been committed to stimulating demand for hydrogen and has always pioneered the manufacture and development of applications for liquid hydrogen. We realized the potential of liquid hydrogen, which can be transported 12 times more efficiently than regular compressed hydrogen, at an early stage in that process and in 2006 established Hydroedge, a next-generation

liquid hydrogen and separated gas manufacturing plant in Sakai, Osaka prefecture. We went on to establish the first liquid hydrogen plant in East Japan in 2009, in Ichihara, Chiba prefecture. In 2013, our third domestic liquid hydrogen plant located in Shunan (Yamaguchi prefecture), Yamaguchi Liquid Hydrogen Corporation, went into operation.

### Onsite supply

Onsite supply systems produce and supply gas via a plant installed directly on users' premises. As the most suitable equipment can be built into each user's plant, depending on their needs and conditions, it is possible to create more efficient production systems.



### A leading supplier of helium

By utilizing helium's ultra-low boiling point of -269 Centigrade, we are deeply involved in fields applying state-of-the-art technologies. In 2013, Iwatani began direct import of eight million m<sup>3</sup>/year of helium produced in Qatar, which is equivalent to half of the domestic demand, in addition to continuing import from the United States. In 2019, we estab-

lished the Tokyo Helium Center, one of Japan's largest supply facilities, in Ibaraki Prefecture. In addition to our two domestic facilities in Tokyo and Osaka, we are expanding our bases in China and Southeast Asian to realize the stable and efficient supply of helium, for which robust demand continues.



### Global business development

In the industrial gas sector, we have been operating the air separation business in the Chinese city of Dalian while running air separation operations and manufacturing carbon dioxide in East China (Shanghai). We are also expanding our sales network in China and Southeast Asia, and working to reinforce our sales structure for welding robots and other industrial machinery.

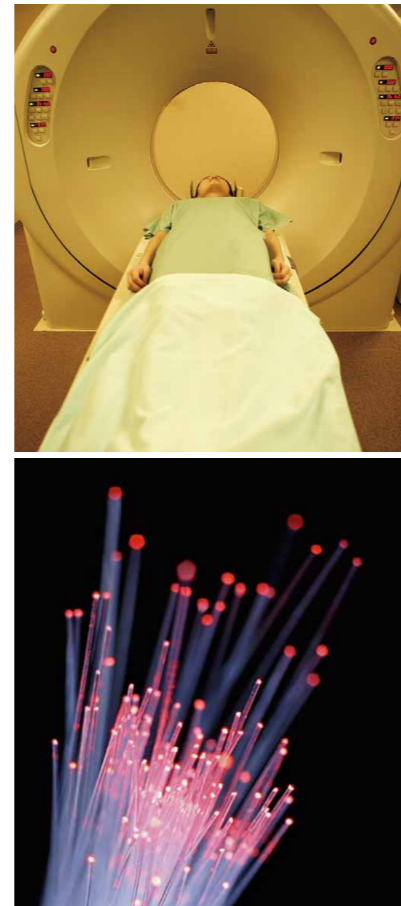
## Harnessing creativity and the potential of gas to take on any challenge



### Hydrogen and liquid hydrogen

From environmental technologies to high-tech industries, hydrogen is used across a wide range of areas, for purposes such as fuel cells, semiconductor manufacturing, and rocket fuel. Liquid hydrogen meanwhile has the potential to transform our society, as a highly environmentally friendly energy source that offers a clean alternative to oil. Iwatani was the first company to start

supplying liquefied hydrogen for industrial use in Japan. It develops infrastructures for the hydrogen society by addressing the future increase in hydrogen demand and through numerous projects and social experiments such as the verification of CO<sub>2</sub>-free hydrogen production using renewable energy.



### Helium

Helium is a rare resource produced in just six countries and essential in the high-tech, medical and space industries to name just a few. As demand is expected to increase on a global scale in the future, securing stable supplies of helium is a top priority in terms of developing advanced industries. As Japan's leading helium supplier, we are endeavoring to ensure stable supplies.



### Harnessing cold heat

Technologies that are capable of controlling the transition of gas into liquid and solid form have a wide range of potential applications. Harnessing the specific properties of individual gases, we offer solutions that are tailor-made to suit a diverse range of needs, from frost shattering and flash freezing in the food industry to medical, environmental and high-tech applications.



### Medical gases

Medical gases such as oxygen, nitrogen and carbon dioxide play a crucial role in supporting people's lives. Here at Iwatani, we provide total support for the medical industry, from creating the optimum gas environment based on the needs and scale of individual facilities to providing medical gas safety workshops for safe usage.



### Development and Proposal for Environmentally Friendly Products

We are always exploring the limitless possibilities of gas in order to help resolve issues in various different areas. Combining our technical capabilities as a manufacturer with our solution capabilities as a trading company, we continue to develop quality environmental products and offer improved solutions aimed at resolving, alleviating or reducing the impact of environmental issues. Examples include ECO FREEZE, a natural

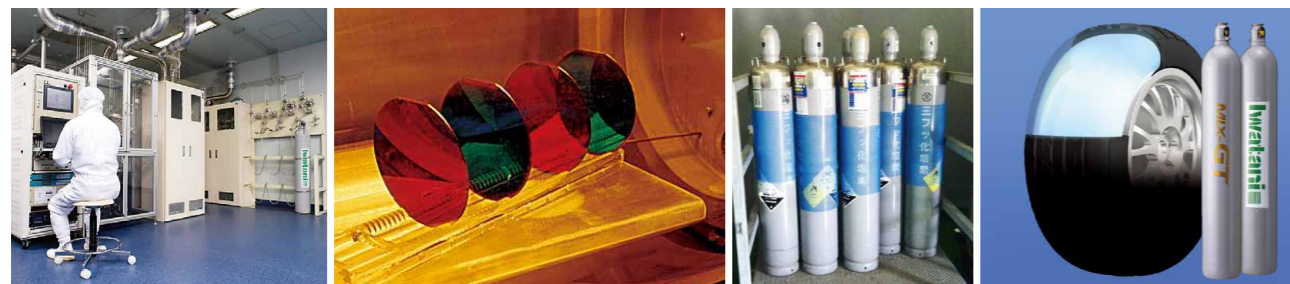
coolant and an alternative to CFCs, HFO-1234yf, a new refrigerant for car air-conditioners, and our Dry Ice Beads which have a diameter of roughly 6 mm and cool more efficiently than conventional dry ice, helping save energy during refrigerated transportation. We continue to tap into the potential of gas across a wide range of areas and are determined to finding cross-sector solutions to environmental issues.



### Carbon dioxide and dry ice

Our carbon dioxide and dry ice operations, which involve recovering, refining and reusing off-gas produced by the likes of chemical and steel manufacturers, are driven by creativity, constantly generating new value as well as reducing environmental impact. Our products are used for purposes such as welding, beer and other carbonated beverages, and the refrigeration and refrigerated

transport of food products. We continue to explore new possibilities in other areas too, such as neutralizing alkali drainage from dam construction, using the bacteriostatic action of carbon dioxide for use in post-harvest agrochemicals, and processing dry ice into pellets for blast washing. We are committed to developing new applications in our capacity as a gas solutions partner.



### Taking on the challenge of developing new gases

"If you need something, look for it. If you can't find it, make it." By transcending barriers between industries and sectors, and effectively sharing priorities with our customers, we can make the impossible possible. That is our view for new gas development activities here at Iwatani. In the highly concentrated ozone sector for instance, we have established technology capable of manufacturing and storing ozone with a concentration of over 50%, which

was previously thought to be impossible. That technology is now being used in areas such as semiconductor manufacturing. Non-plasma cleaning using ClF<sub>3</sub> (chlorine trifluoride), which has become the standard cleaning gas for purposes such as semiconductor manufacturing, is another technology developed exclusively by Iwatani. By making the best use of our strength in welding technology, especially for automobiles where there is a growing trend of

reducing vehicle body weight to improve fuel efficiency, we propose the optimum mixed gas for which the mixing ratio of argon gas and carbon dioxide gas is controlled to enhance the strength and appearance of ultra-thin plate joints. We are also opening up the possibilities of gases in new fields, such as MIX-GT and N<sub>2</sub>-GT tire-filling gases, that take safety, fuel efficiency, environmental performance, etc. into consideration.



### Supplying semiconductor gas

We promote development of original new gases through collaborations with semiconductor manufacturers and supply a full range of gases for use in semiconductor manufacturing processes, including material gas, atmospheric gas, and cleaning gas. We also provide integrated installation of gas supply and piping systems to safely control toxic gas and flammable gas.



### Manufacturing cryogenic equipment

Continual gas supply to customers is impossible without technologies for safe transport and storage of liquefied gas at a very low temperature. We manufacture and sell cryogenic equipment such as storage tanks and tanker trucks, drawing on our expertise in storing and transporting cryogenic liquid gases such as oxygen, nitrogen and hydrogen. We will vastly improve quality and cost competitiveness, take advantage of economies of scale and revise manufacturing methods in our efforts to dramatically reduce manufacturing costs.

We will continue to streamline operations and devise better means of transportation, storage and supply in the future, making the most of our experience and the low-temperature technologies we have developed as a manufacturer of liquid hydrogen and other ultra-low temperature gases.

## Exploring on the diversity of gas, from environmental preservation to mechatronics

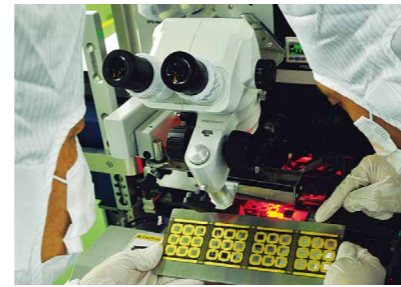


### Application to regenerative medicine

The market of regenerative medicine is expanding rapidly these days. In regenerative medicine, our strength in handling gas for industrial, medical and food use and in the automation of industrial robots and others can be utilized. We are capable of comprehensively designing and offering cell-freezing liquefied nitrogen, carbon dioxide gas for incubators and cell preservation and trans-



portation containers, robots and equipment for bio and regenerative medicine facilities. Liquefied nitrogen, which is characterized by a very low temperature of -196 degrees C, is particularly suitable for use in cryopreserving cells and, combined with dry ice for transportation at -70 degrees C, helps to satisfy the rise in demand resulting from an increase in the storage and transportation of cells.



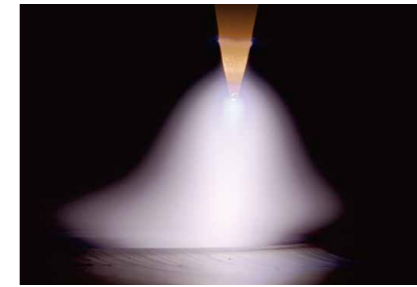
### Semiconductor manufacturing equipment

We provide the semiconductor manufacturing sector with sophisticated one-stop solutions that encompass every process along the way. As well as facilities and systems however, we also provide a wide range of tailored support and consulting services, including package solutions using the very latest materials.



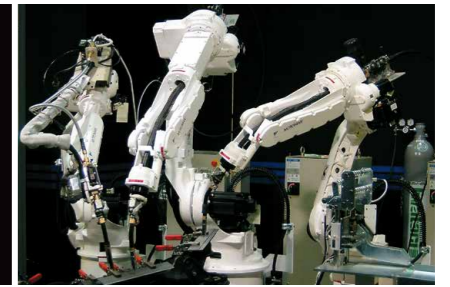
### "Hydro Cut®" gas for welding

Hydro Cut®, hydrogen gas-based mixed gas, excels in terms of environmental performance, safety and usability. For example, it significantly reduces carbon dioxide emissions, minimizes the likelihood of causing backfire, emits a small amount of radiant heat, is lighter than air and is less likely to accumulate. Hydro Cut has been used in many different applications such as shipbuilding, construction and auto parts.



### Welding, cutting, and industrial robots

We established the "Welding Gas Demonstration Room" in Iwatani R&D Center as a base for developing new technologies and providing customer support. Activities in this room include research and development in areas such as shield gas, assessment and testing of demonstration samples, and provision of welding testing and training services when users request us, in addition to supplying



welding gas. We have also reinforced our support and consulting abilities. For example, we provide integrated system solutions in partnership with wire, welding equipment, and robotics manufacturers. We are challenging a new stage as a system organizer that provides robotics applications for a whole series of processes including welding, cutting, coating, and grinding.



### Automating cylinder management using RF tags

With the entire industry eager to streamline distribution and tighten security as part of the management of high-pressure cylinders, we are in the process of switching to RF (radio frequency) tags in accordance with standards set out by the Japan Industrial and Medical Gases Association. Having quickly recognized the potential of RF technology, which enables remote identification of individual



items, we have established an in-house management system that will increase cylinder turnover and improve our ability to identify abandoned or unmarked cylinders. We have also released a system called BINGO, which gives distributors online access to identification capabilities and databases via cloud computing.



### Ozone Passivation®

Uniquely developed by Iwatani, Ozone Passivation® technology uses highly concentrated ozone with a concentration of over 50% to passivate metal surfaces on gas piping and semiconductor manufacturing facilities, in order to increase resistance to corrosive gases. It significantly reduces particle generation in manufacturing environments for delicate devices. Ozone turns into harmless oxygen after it is used.



### Electronic component manufacturing equipment

We supply full processing lines for manufacturing facilities producing advanced electronic components, which act as key devices in products such as smart phones and tablets. We are constantly working to improve our solutions capabilities here at Iwatani, in line with growing demand for compact, sophisticated and high performance devices.



### Integrated plant disaster prevention system

As an expert in gas security, we operate an integrated plant disaster prevention system that is designed to keep entire areas safe. The system utilizes all of the crisis management expertise we have built up to date and covers everything from monitoring safety using sensors to preventing and extinguishing chemical or flammable gas fires, and even counter-terrorism measures.



### FA system

With our unique expertise, Iwatani supports streamlining and efficiency improvement of operations at diverse manufacturing facilities. We provide a wide range of solutions, including highly versatile machine and plating tools, exceedingly unique specialized plating and welding machinery, powder molding machinery, electronic component manufacturing equipment, and a variety of assembly devices, inspection devices, and logistics systems.



### Gas collectors

Although the manufacture of halon gas for use in fire extinguishers is prohibited due to its damaging effects on the ozone layer, it is still used by many facilities due to its excellent fire extinguishing capabilities and outstanding safety record. To cater to demand, we therefore operate two halon recovery and filling facilities, in Hyogo and Saitama prefectures.



### Dyna Guard F, PFC waste gas burner

We developed the Dyna Guard F burner to remove PFCs (perfluoro compounds) from waste gas, in response to strong demand from the semiconductor industry. It is the first system in the world to use forced combustion to efficiently break down PFCs, which contribute to global warming and are subject to international reduction targets, and is a key element of our environmental technologies here at Iwatani.



### LN<sub>2</sub> concrete cleaning

At hot temperatures, there is an increased risk of concrete in structures such as dams and bridges deteriorating, especially due to cracking. Cooling fresh concrete with liquid nitrogen before it is cast however helps prevent cracks from forming once it hardens, resulting in better quality concrete.



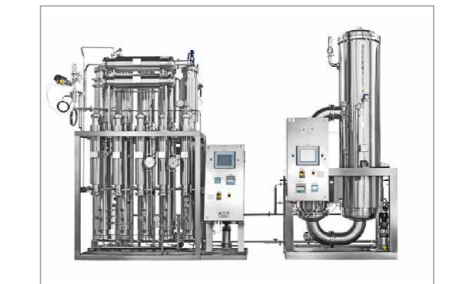
### Waste gas treatment equipment

We strive to improve working conditions and protect the global environment by removing corrosive gases and odors from emissions produced by industrial manufacturing processes as efficiently and effectively as possible. In particular, we are building extensive expertise in odor control, to provide customers with tailored solutions to meet their specific needs.



### Heat storage type exhaust gas purification device

While the emission of volatile organic compounds (VOCs) that adversely affect health and the environment is a problem in a wide range of fields, such as automobiles, chemistry, and film processing, we propose recovery technologies and abatement systems that contribute to saving energy and reducing CO<sub>2</sub> emissions.



### Pharmaceutical product manufacturing equipment

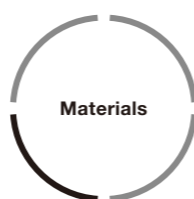
We propose and deliver pharmaceutical product manufacturing equipment that complies with the latest regulations to Japanese and overseas pharmaceutical companies. We support the operation of our customers' production lines by handling everything from water facilities and filling facilities to packaging facilities and security services.



## Not all niche markets are small Creating substantial businesses from materials

Here at Iwatani, we cater to a wide range of needs from industries through our material operations, from mineral sands to investment in overseas resource development and core initiatives in areas such as the environment, medicine and precision components.

Unloading mineral sand (Nagoya, Aichi prefecture)



# Materials

## Developing resources and applications to carve out new markets



### Mineral sands and mineral products and materials

We supply a range of mineral sands and have long since boasted a leading share of the domestic markets for zircon, which is used as a raw material in plasma display panels (PDP), semiconductor abrasives, ceramics and refractories and titanium, which is used as a raw material in pigments and welding materials. We import mineral products and raw materials from countries such as China

and Australia, and then sell them in Japan for use in a whole host of different areas, from the refractory and pigment industries to electronic materials industry. We have also expanded our scope of operations to include the advanced ceramics sector, as we continue to cater precisely to modern-day needs.



### Palm Kernel Shells (PKS)

PKS, a wooden biomass fuel, is attracting attention as an alternative to coal. We import PKS from Indonesia and Malaysia to supply it to our biomass power stations in Japan. With the aim of offering high quality PKS, our R&D Center analyzes parameters such as the amount of heat generation and moisture value and thoroughly engages in our original practice for quality control.



### Stainless steel, aluminum and high alloys

In Japan, we have established a nationwide processing, inventory and logistics network, revolving around the Iwatani Stainless-Kai, and are working to put in place a more mobile framework to cater to users' specific needs. Overseas, we are focusing on sales of high alloys to power, gas and chemical plants.



### PET with a low environmental burden

We have made a full-scale introduction to the market of the biomass PET, which is transformed into plastic bottles and similar products and is made from 30% plant-derived material. We are also committed to the development of aluminum catalyst PET, which involves the use of heavy metal-free aluminum catalysts in the production process, in an effort to satisfy growing environmental needs.



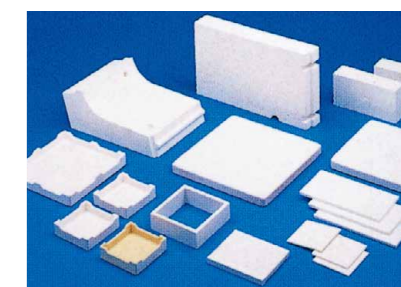
### Metal product

We continue to establish manufacturing plants in China and Southeast Asia in particular, as we shift to a more manufacturing-oriented position. We are determined to keep on developing, offering and supplying processed metal products to a wide range of sectors in the future, including growth sectors such as the automotive industry, home appliances and electronic components.



### Synthetic resin materials and functional resin products

We supply raw materials for synthetic resins and finished resin products both inside and outside Japan via our network across China and Southeast Asia. We continue to develop products aimed at protecting the global environment and catering precisely to changing market needs, including plant-based biomass PET plastic and functional films for use in solar cells.



### Ceramic materials and ceramic products

We supply ceramic raw materials, such as rare earth and zirconia compounds, for use in catalysts, electronics and various other sectors. We also sell casts and products using those ceramic materials. On other fronts, we continue to develop innovative nano-materials, an area that is expected to grow considerably in the future.



### Electronic and display materials

We have our own processing facilities for metals, functional films and electronic ceramics, both inside and outside Japan, and can cater to a wide range of needs in electronic and related sectors. We continue to develop new products and materials under our own unique brands, focusing particularly on raw materials and components in growth areas such as smart phones, tablet computers and lithium ion batteries.



## Bring enrichment and high quality to food through our operations in food, agriculture and livestock

Iwatani delivers safe and secure foods, such as vegetables, marine products, and meat products, and further contributes to food production, including the supply of the latest agricultural equipment/materials, livestock equipment/equipment, and the production of breeding pigs.

Inspecting frozen food at one of our warehouses (Kawasaki, Kanagawa prefecture)



## New ideas for everyday life, approached from an agricultural perspective



### Frozen foods for commercial use/general consumers

Based on the philosophy of delivering selected ingredients with safety and security, Iwatani's foods make life richer and more delicious. We provide quality seasonal ingredients not only from within Japan but also from countries all over the world. This business, which started with frozen cut vegetables, has now expanded its product lineup to provide a complete range of frozen

Japanese prepared foods and frozen foods, including processed fishery products, frozen meat products, breads, and desserts. We have been developing sales channels mainly for commercial use. In addition, in the frozen food market for general consumers, which is expanding because of changes in the social structure and values due to the declining birthrate, the aging



population, and the global pandemic, we are further expanding our business domain through the development and sales of consumer products, such as small-capacity frozen cut vegetables and frozen prepared foods.



### Quality assurance

With the mission of protecting food safety and security through a reassuring system of quality assurance, the person in charge of food in the Quality Assurance Department, part of an independent organization in the Technology & Engineering Division, follows Iwatani Corporation's quality policy and develops a quality assurance system that ensures the safety and security of the food handled by the Agri-Bio & Foods Division.



### Gilts and Boars

Camborough hybrid gilts and boars are very proliferative and economically efficient and can be a source of pork that many consumers like. Tashiro Farm and Tohoku Farm of Iwatani Camborough Co., Ltd. raise the gilts and boars and sell them to pig farmers around the country.



### Piggeries and livestock facilities

We supply cutting-edge piggeries and livestock facilities that maximize the hereditary capabilities of Camborough hybrid gilts and boars. Furthermore, our staff, including veterinarians, provide guidance on farm management to help with the production of good pork at low cost.



### Farm facilities

Achieving clean environments with good workability, we offer agricultural greenhouses that are suitable for growing vegetables and seedlings through a soilless cultivation system, the control of the concentration of the carbon dioxide gas necessary for photosynthesis and temperature control using LPG and heat pumps.



### Farm equipment and materials

We offer high-quality soil in pursuit of greater agricultural productivity through the use of Iwatani Plug System, a seedling production system, energy-saving systems such as the Iwatani NeoCape System that stimulates after-ripening for fruit trees, and the importing of peat moss, a soil improvement additive.



### Alfloc trolleys

Alfloc trolleys are specifically designed to eliminate the process of repeatedly transferring plants and flowers during distribution, enabling a new approach to through-transit so that producers can get their flowers to market quickly without damaging them. We are working to develop a new standard in flower distribution, revolving around the roughly 40,000 Alfloc trolleys currently in use around the country.



A group of children are running across a large, green grassy field. In the foreground, a soccer ball is visible on the grass. The background is filled with a dense line of trees under a cloudy sky.

**A world where all enjoy true comfort  
- this is Iwatani's desire.**

Naoji Iwatani, the founder of Iwatani Corporation, viewed companies as a part of the natural order, much like people.

That led to the notion of "circulation," based on respecting and benefiting from nature. We have remained true to that philosophy right through to the present day, and continue to provide support for education, culture and sports, as ties that bind us to the global environment and the local community.

We want to bring people and nature closer together.

That is an important step if we want to make the earth a better place.

We benefit from nature, so we should give back to nature too.

If we keep on doing that, it will pave the way for the next generation and beyond.

**Giving something back to society as well as creating new things**



**Iwatani Naoji Foundation**

Established in 1973 by the founder Naoji Iwatani with his private fortune, hoping for the development of science and technology and the improvement of the lives of Japanese citizens. The foundation conducts social contribution activities centered on research support, gives awards in the fields of energy and the environment, and provides support for international students from Asia. It also contributes to people and society through schemes, such as the Iwatani Naoji Memorial Award, science and technology grants, and scholarship grants for overseas students.



**The Iwatani Group Environmental Charter**

We set out the Iwatani Group Environmental Charter in 1998, based on our slogan "Our aim is to make the Earth a better place to live." That philosophy remains at the heart of all of our business activities, as we keep on striving to create a recycling oriented society. As a group, we contribute to worldwide development by reducing environmental impact and implement practical initiatives across various different sectors.



**Creating a hydrogen energy society**

We are expanding the production and supply system, including Hydro Edge Co., Ltd., toward the spread of hydrogen energy. At the same time, we are driving the future of a hydrogen energy-based society through multifaceted efforts, such as the construction of hydrogen-refueling stations and consideration for the procurement of inexpensive and large amounts of CO2-free hydrogen, as well as educational activities and events.



**Supporting educational and cultural programs**

As a forward-thinking company, we believe that one of our key responsibilities is to pass the baton on to the next generation in terms of technology for the future. As part of the activities to let children experience hydrogen energy through the electrolysis of water and experiments using toy fuel cell vehicles, we are engaged in educational activities, such as holding hydrogen experiment classes all over the country.



**Iwatani R&D Center inaugurated as a new technology center**

Iwatani pursues new possibilities for gas and energy by integrating information power as a trading company and technological capabilities as a manufacturer. The Iwatani R&D Center is working on basic research, applied research, and product development in a wide range of fields, such as hydrogen and other gases, as well as materials and foods, and is taking on the challenge of the creation of new value.

**Creating energy through interaction**



**Working in partnership with the NHK Symphony Orchestra**

Iwatani supports the NHK Symphony Orchestra in its determination "to aim to enhance and develop the musical art of our country through symphonies, and accomplish the orchestra's mission insociety," and have been co-sponsoring local performances and meet-and-greet concerts where the orchestra's members meet young musicians ever since 1987. In particular, we sponsor "NHK Symphony Orchestra 'Summer'" in our role as a special partner company. We are contributing to promote cultural interaction with the local community through music.



**Japan International Birdman Rally**

As part of a project to mark our 80th anniversary in 2010, we began co-sponsoring and helping to organize a birdman contest. The concept of seeing who can fly the furthest in a man-powered aircraft ties in perfectly with our commitment to creating a clean energy society. We are always keen to support environmental events, so that we can help make the earth a better place to live.



**Corporate athletics team**

Hisakazu Hirose, the director of the team, is highly qualified with a track record of successfully training many long-distance runners including Mizuki Noguchi, the winner of the gold medal in the women's marathon at the Athens Olympics. We strive to contribute to local communities and society through our involvement in athletic activities, while developing and supporting middle- and long-distance runners, mainly those who compete in women's ekiden (road relay) races.



**Education system Biwako Conference Center**

We use the Biwako Conference Center, the first facility in Japan to be approved by the American Conference Institute, for employee training and various other practical training sessions, seminars and qualification schemes. The center's facilities combine Iwatani's expertise in human resource development with a beautiful natural environment and are also open to other companies and organizations outside the Iwatani Group.



**All Japan Elementary School Essay Contest**

We launched the All Japan Elementary School Essay Contest in 2010 as part of a project to mark our 80th anniversary. Based on the theme "A world where all enjoy true comfort -this is Iwatani's desire," the event echoes our slogan "Iwatani, making the earth a better place to live" and is aimed at encouraging children to join us in thinking about the future. Full of realization and new discoveries, the children's words show the way forward for the future.

**Looking to the future of mankind and nature in our role as a corporate citizen**



**Marui Gas Emergency Taskforce**

Our Marui Gas Emergency Taskforce is a national organization that quickly heads out to the scene of any disaster to provide services such as restoring LPG supplies and carrying out safety inspections on gas equipment. Following the Great East Japan Earthquake in 2011, taskforce members immediately went out to the affected area, taking with them 320 LPG bottles and emergency relief supplies, in order to provide immediate assistance on behalf of the Iwatani Group.



**Marui Gas Emergency Taskforce at Collective National Training**

Nobody can predict when disaster might strike. That's why we launched the Marui Gas Emergency Taskforce in 1996, the year after the Great Hanshin-Awaji Earthquake. We also set aside one day in October each year as Marui Gas Disaster Drill Day and conduct a nationwide drill. The aim is to incorporate practical training activities in the event of a disaster, such as checking that everyone is safe and being prepared to mobilize at short notice.



**Saudi Aramco - Iwatani Corporation Emergency LPG Relief Program**

We established the Emergency LPG Relief Program as a joint fund with Saudi Aramco, Saudi Arabia's state-owned national oil company, in order to provide portable gas stoves and canisters free of charge in the event of a large-scale disaster in Japan. We doubled the fund to two million dollars following the Great East Japan Earthquake and provided a total of 21,680 portable stoves and 120,000 gas canisters.



**Contribution to improving welding technology in Asian countries**

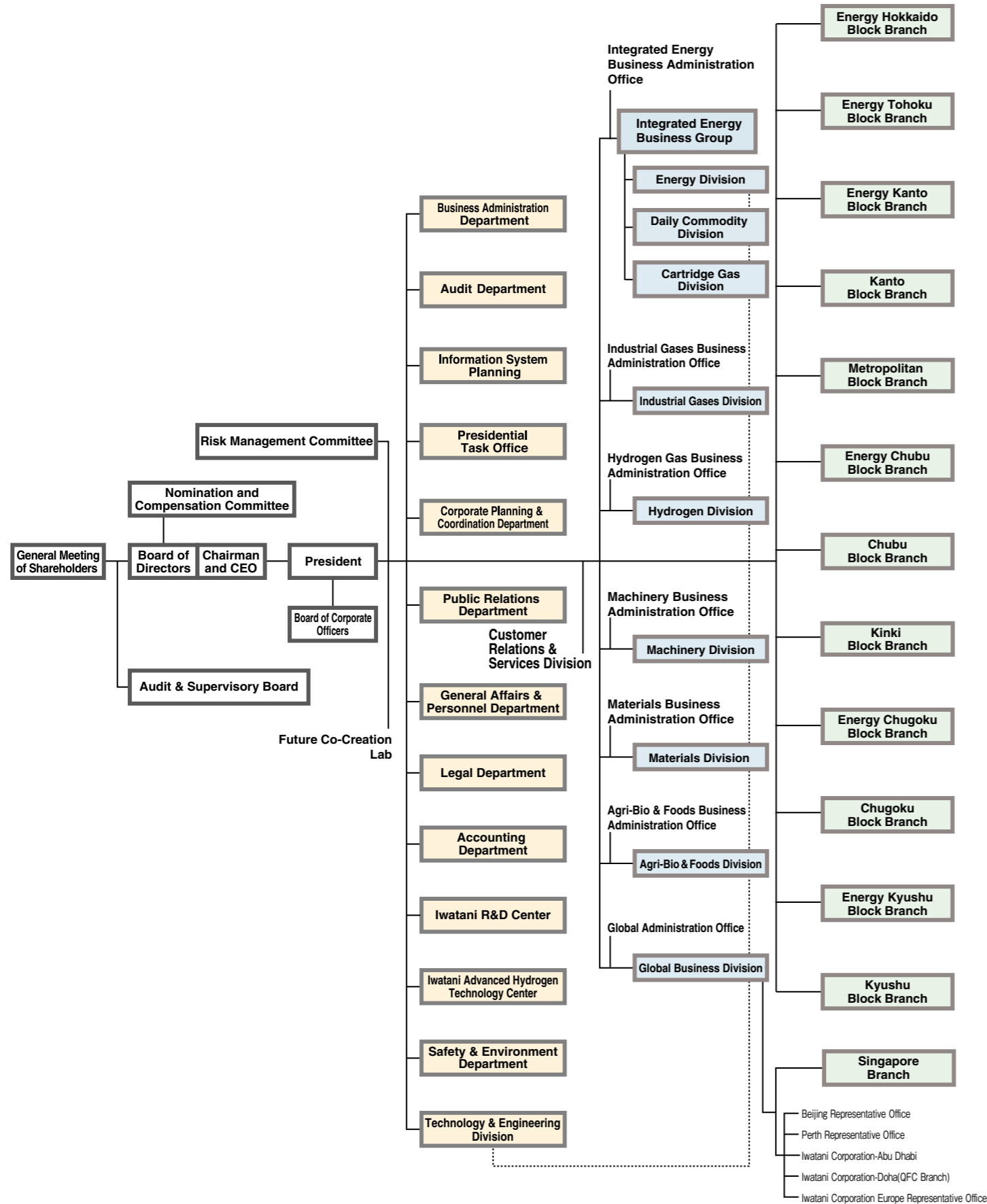
With the aim of improving welding technology in rapidly developing Asian countries, we held welding technology seminars and welding competitions in the city of Dalian in China for ten years from 1997. Since then, we have been actively engaged in activities, such as holding welding seminars and welding contests in Hanoi, Vietnam, in 2007 and in Jakarta, Indonesia, from 2013.



**Green exterior walls**

at the Tokyo Head Office and at the Iwatani R&D Center

As part of our efforts to promote urban greening systems, which help plants to grow and are easy to install and maintain, we have added greenery to the walls at our Tokyo Head Office and at the Iwatani R&D Center. The greening system that we have installed combines several types of plant and is expected to help purify the air, as well as giving a richer, more luxurious feel to the urban landscape and providing a pleasant outlook for people as they walk by.



Corporate Profile

Name: **Iwatani Corporation**  
 Founded: **May 5, 1930**  
 Incorporated: **February 2, 1945**  
 Chairman & CEO: **Akiji Makino**  
 Vice Chairman: **Toshio Watanabe**  
 President: **Hiroshi Majima**

History

- 1930 Founded Naoji Iwatani Shoten in Minato-ku, Osaka, and began selling oxygen, welding rods and carbide.
- 1945 Founded Iwatani Sangyo Co.,Ltd. with capital of ¥198,000, with founder Naoji Iwatani as President.
- 1947 Completed Head Office at Honmachi 3-chome, Higashi-ku, Osaka.
- 1953 Began selling Marui Propane household products.
- 1962 Listed shares on the Second Section of the Osaka Securities Exchange and Tokyo Stock Exchange (upgraded to First Section in 1965).
- 1964 Became the sole distributor in Japan for Australian company AMA and further increased volume of trade in mineral sand. Marui Propane chosen to power the Olympic flame at the 1964 Tokyo Olympics.
- 1966 Began importing LPG from Canada.
- 1969 Developed and began selling the Mihari gas leak detector and the Cassette-Feu hose-free portable stove.Established dual head office system based in Tokyo and Osaka.
- 1970 Relocated Osaka Head Office to 4-8, Honmachi 3-chome, Chuo-ku, Osaka.Adopted new corporate slogan "Iwatani, making the earth a better place to live."
- 1972 Designated a friendly trading company in China, paving the way for fully-fledged trade with China.
- 1973 Founded Iwatani Naoji Foundation.
- 1975 Founded Cold Air Products Co., Ltd., a joint venture with Osaka Gas Co.,Ltd. and began to produce gas via air separation on a commercial scale.
- 1977 Became a primary trading partner with Kawasaki Steel Corporation and expanded metal operations.
- 1978 Completed Japan's first fully-fledged liquid hydrogen plant. Began supplying liquid hydrogen for all H-model space exploration rockets from 1986 onwards.
- 1980 Celebrated 50th anniversary. Completed the Sakai LPG Terminal (with a capacity of just over 80,000 tons) and started direct imports of LPG from Petromin Corporation the following year.
- 1983 Completed Iwatani Industrial Gases Corporation's Kofu Plant, the first separated gas plant in eastern Japan.
- 1985 Formed business partnership in the industrial gas sector with Union Carbide Corporation (USA).
- 1986 Appointed Koji Saito as President, with Naoji Iwatani as Chairman. Set out plans for a secondary lifestyle business and began "lifestyle upgrade" operations.
- 1987 Adopted **Iwatani** logo. Founded Shiga Technology Center (Moriyama). Began working in partnership with the NHK Symphony Orchestra.
- 1989 Launched a number of joint ventures in China, starting with Dalian Iwatani Gas Machinery Co., Ltd.
- 1990 Celebrated 60th anniversary.
- 1991 Received the Mecenat Award for corporate support of the arts at the 1st Mecenat Awards.
- 1993 Changed brand name to **Marui** gas to mark the 40th anniversary of Marui Propane.
- 1994 Completed and began operations at Kashima LPG Joint Stockpiling Base (225,000 tons) and Kizuregawa Separated Gas Plant.
- 1995 Sent out emergency supplies of Cassette-Feu portable stoves to the area affected by the Great Hanshin-Awaji Earthquake.
- 1997 Founded the Iwatani Group Environmental Charter.
- 1998 Appointed Tatsuo Yagii as President, with Naoji Iwatani as Honorary Chairman.
- 2000 Celebrated 70th anniversary. Appointed Akiji Makino as President. Founded joint LNG sales companies with three regional power companies in Kansai, Chubu and Hokuriku (2000-2001). Obtained ISO14001 batch certification for all branch level premises and higher.
- 2002 Developed the self-station a simple LPG filling station. Continued to improve hydrogen infrastructure by completing Osaka Torishima Hydrogen Station, the first of its kind in Japan, and developing country's first mobile hydrogen station.
- 2003 Became the first private company in Japan to buy two fuel cell vehicles (Honda FCX and Toyota FCHV) and organized promotional events nationwide. Completed Ariake Hydrogen Station in Tokyo. Jointly developed pickup truck and welfare minibus powered by next generation fuel DME.
- 2004 Introduced executive officer system. Sent out emergency supplies of portable gas stoves and canisters to the area affected by the Niigata Chuetsu Earthquake, and dispatched the Marui Gas Emergency Taskforce.
- 2005 Founded Shikoku Iwatani Sangyo Co.,Ltd. as a separate regional entity. Jointly developed a liquid hydrogen-based mobile power station in partnership with Kansai Electric Power Co.,Ltd. Began trialing an LPG reformed fuel cell cogeneration system for household use in partnership with Toshiba Fuel Cell Power Systems Corporation.
- 2006 Completed construction of Kamisu National LPG Stockpiling Base (200,000 tons), a Japanese national LPG stockpiling base. Began liquid hydrogen and air separation gas operations at Hydro Edge Co.,Ltd. (founded jointly with Sakai LNG Co.,Ltd. in 2004). Received the Konstantin Tsiolkovsky Award from the International Association for Hydrogen Energy.
- 2007 Dispatched the Marui Gas Emergency Taskforce to the area affected by the Noto. Peninsula Earthquake and sent out emergency supplies including Cassette-Feu portable stoves. Founded IN Stainless Steel Process Center in eastern Japan. Completed and began operations at HJFC Kansai Airport Hydrogen Station. Began supplying natural gas through group company Koga Energy Co.,Ltd. Organized a fuel cell and hydrogen vehicle touring event and held educational classes on hydrogen at various locations across Japan.
- 2008 Founded Delhi Liaison Office. Began supplying LNG to industries in the Kanto region. Changed name to **Iwatani Corporation** in English. Developed new technology to condense ozone gas at room temperature. Teamed up with Kyoto University to develop ClF<sub>3</sub> (chlorine trifluoride) gas cluster etching technology for use in semiconductor manufacturing.
- 2009 Jointly Founded the Saudi Aramco-Iwatani Emergency LPG Relief Program. Completed Iwatani Industrial Gases Corporation's Chiba Plant, the first liquid hydrogen plant in eastern Japan.Began full-fledged sale of ENE-FARM household fuel cell systems throughout Japan. Drove four hydrogen vehicles a distance of 626km from Sakai to Kitakyushu as part of the West Japan Hydrogen Highway Demonstration Project. Completed and began operations at Kitakyushu Hydrogen Station. Developed a hydrogen bicycle with a compact pure-hydrogen fuel cell.
- 2010 Celebrated 80th anniversary. Completed and began operations at the Osaka Helium Center, integrating capabilities from Sakai and Okazaki.
- 2011 Sent out emergency supplies following the Great East Japan Earthquake, including 350,000 portable stoves and 9.05 million cassette gas canisters.
- 2012 Appointed Akiji Makino as Chairman and CEO, with Toshio Watanabe as Vice Chairman and Masao Nomura as President.
- 2013 Iwatani R&D Center was completed in Amagasaki (Hyogo prefecture). Launched fujina, a cosmetics product made using Fuji-no-Yusui. A third domestic liquid hydrogen plant located in Shunan (Yamaguchi prefecture), Yamaguchi Liquid Hydrogen Corporation, went into operation.
- 2014 Opened Iwatani Hydrogen Refueling Station in Amagasaki, Japan's first commercial hydrogen station. We founded Sakai Carbonics, our fourth liquefied carbonic acid manufacturing plant in Japan.
- 2015 We established a new hydrogen-supply company in collaboration with Toyota Tsusho Corporation and Taiyo Nippon Sanso Corporation, and launched Japan's first commercial mobile hydrogen station through this company.
- 2016 Completed commercial hydrogen stations in 20 locations centered on the four major metropolitan regions. Dispatched the Marui Gas Emergency Taskforce to the quake-stricken area of Kumamoto Prefecture. Donated 10 million yen.
- 2017 Mitsuhiro Tanimoto assumed the role of president. Our corporate athletics team was established. Hisakazu Hirose became director of the team.
- 2018 Took part in Japan H2 Mobility, LLC (JHyM). Supplied hydrogen to fuel the cauldron for the National Sports Festival & the National Sports Festival for People with Disabilities held in Fukui.
- 2019 Cassette-Feu celebrated its 50th year. Appointed Suzuho Makaze, a top star from the Cosmos Troupe of the Takarazuka Revue musical theatre troupe, as Iwatani's official celebrity spokesperson.
- 2020 Iwatani Corporation celebrates its 90th year in business. Hiroshi Majima assumed the presidency. Opened the Future Creation Room, an information exchange space for co-creating the future, and the Iwatani Base Camp, an antenna shop.

## Divisional History

### Energy

- 1953 Established Propane Section in order to get LPG business up and running. Signed exclusive distribution agreement for propane gas in western Japan.
- 1954 Upgraded Propane Section to Propane Department and began the full-fledged sale of propane gas.
- 1957 Formed Marui Propane-Kai (now Marui-Kai). Began to import and sell Primus products.
- 1958 Established large-scale supply facilities throughout Japan, starting with Kokura.
- 1962 Began shipping large volumes of products overseas. Launched the Alala series.  
Developed commercially viable LPG taxis in Osaka.
- 1963 Began selling Sky Rocket 3.5 autogas stands.
- 1964 Marui Propane chosen to power the Olympic flame at the Tokyo Olympics.
- 1965 Established Safety Department (Propane Division).  
Established LPG Technology Section.  
Completed the Yamahide Maru LPG import tanker.
- 1967 Ran P-100 pure propane campaign.
- 1969 Developed and began selling two major brands, the Mihari gas leak detector and the Cassette-Feu hose-free portable stove.
- 1970 Began importing and selling Vulcan Superheat high-end heaters.  
Developed INTAC cockroach trap.  
Formed Mihari project team.
- 1971 Ran "No More Gas Accidents" campaign.
- 1974 Established Marui Supply Center to handle specific MPS measures.
- 1976 Abolished standard pricing structure.
- 1977 Began selling Alala Clean products.
- 1980 Signed agreement with Petromin.  
Completed Sakai LPG Terminal.  
Developed health food products made from ground snapping turtle (suppon).
- 1981 First tanker importing LPG from Saudi Arabia arrived at the Sakai LPG Terminal.
- 1985 Began installing cogeneration systems in factories, hotels and other establishments.
- 1987 Set up "Lifestyle Upgrade Shops" nationwide, providing a wide range of products and services.  
Developed Tele-Safe 24-hour monitoring system.
- 1988 Developed Milser food processors.
- 1991 Began trial redevelopment of LPG supply network.
- 1992 Signed long-term LPG import agreement with Samarec (now Saudi Aramco).  
Established Maruigas Corporation.
- 1993 Changed brand name to **Marui Gas** to mark the 40th anniversary of Marui Propane.
- 1994 Completed and began operations at Kashima LPG Joint Stockpiling Base (225,000 tons) and Kitasuregawa Separated Gas Plant.
- 1995 Established Marui Gas Emergency Taskforce.
- 1998 Established Iwatani Maruigas Corporation.
- 1999 Began supplying high purity LPG coolant ECO FREEZE.
- 2000 Formed business partnerships with power companies in an effort to establish LNG supply operations.
- 2001 Developed the self-station α simple LPG filling station.  
Began working on ESCO operations.
- 2002 Launched the Marui Gas Business Restructuring Project.  
Began selling Triple Keibu multipurpose detectors.
- 2003 Began going out to consumer's homes nationwide to provide Kitchen Safety Inspection services.
- 2004 Entered home delivery market, supplying Fuji-no-Yusui mineral water.
- 2008 Established Marui Gas Supply Chain Association.  
Began testing cogeneration systems equipped with pure hydrogen fuel cells.
- 2009 Began selling ENE-FARM household fuel cell cogeneration systems.
- 2010 Began selling disposable packs from third Fuji-no-Yusui plant.  
Held launch ceremony for mobile children's emergency services.
- 2011 Sent out emergency supplies of Cassette-Feu portable stoves to the area affected by the Great East Japan Earthquake.  
Donated gas heat pumps (GHP) to the area affected by the Great East Japan Earthquake.  
Began selling computerized gas meters with added safety features, the first product of its kind in China.
- 2012 Completed work on core LPG centers in 11 locations and continued to expand steadily.
- 2015 Launched the world's first cassette gas fan heater powered by cassette gas.
- 2016 Entered the household electricity market in the Kanto and Tokyo Metropolitan Area.  
Established a new cassette gas plant in Shiga Prefecture.  
Dispatched the Marui Gas Emergency Taskforce to the quake-stricken area of Kumamoto Prefecture and restored the LP gas supply. Donated 10 million yen.
- 2017 Iwatani formed partnerships with Kansai Electric Power and Chubu Electric Power in city gas.  
They started supplying LPG conduits for adjusting the amount of city gas heat, from Iwatani Liquefied Gas Terminal to Kansai Electric Power's Sakaiko Power Station.
- 2018 Iwatani Gateway was developed. At its core is a gas leak detector with communications capability.
- 2019 Cassette-Feu celebrated its 50th year.
- 2020 Started flood control measures at the LPG center with a three-year plan.

### Industrial Gases & Machinery

- 1930 Established Naoji Iwatani Shoten in Minato-ku, Osaka, and began selling oxygen, welding rods and carbide.
- 1939 Established Kinsei Kaiun Shokai.
- 1945 Established Iwatani Sangyo Co., Ltd. with capital of ¥198,000, with founder Naoji Iwatani as President.
- 1947 Completed Head Office at Honmachi 3-chome, Higashi-ku, Osaka.
- 1949 Established Kokura Sales Office.
- 1952 The company began dealing in Kohtaki Precision Machine's pumps for the information and electronics sectors.
- 1956 Joined forces with other companies with specialist technologies to develop a coal-based automatic arc welding system.
- 1962 Began selling Sharp Gas cutting gas.
- 1964 Sharp Gas officially adopted by Yawata Works.
- 1968 Handled sales of PC automatic cutting machinery manufactured by Precision Welding and Cutting Machinery Co., Ltd. (now Kohtaki Precision Machine Co., Ltd.).
- 1969 The company began dealing in STILMAS distilled water manufacturing equipment to sell medical equipment for the first time.
- 1970 Began selling Wel-Cut mixed gas throughout Japan.
- 1975 Restructured Iwatani-kai according to individual product categories.  
Established Cold Air Products Co., Ltd. (CAP).
- 1976 Began selling Hi-Ray LN continuous rapid freezing systems.
- 1977 Began selling Motoman vertical articulated welding robots.  
Began selling Acom Gas shield gas.  
NASET formed.
- 1979 Began operations of Tokyo Gas Center and established gas centers throughout Japan.
- 1982 Began supplying nitrogen PSA.  
Established Fine Gas Co., Ltd., a joint venture with Seitetsu Chemical Industry Co., Ltd. (now Sumitomo Seika Chemicals Co., Ltd.).
- 1983 Completed Iwatani Gas Industries Corporation's Kofu Plant (now Iwatani Industrial Gases Corporation), the first separated gas plant in eastern Japan.
- 1985 Formed business partnership with Union Carbide Corporation (UCC).  
Launched technical transfer project.  
Completed Sakai Helium Center and began rolling out centers nationwide.  
Developed ClF<sub>3</sub> (chlorine trifluoride) cleaning gas in partnership with Central Glass Co., Ltd.  
The company entered the semiconductor area at full scale.
- 1986 Completed Sakai Helium Center and began rolling out centers nationwide.
- 1987 Established Shiga Technology Center (Moriyama).
- 1989 Began upgrading and constructing new industrial gas supply facilities.  
Launched a number of joint ventures in China, starting with Dalian Iwatani Gas Machinery Co., Ltd.
- 1994 Completed and began operations at Kashima LPG Joint Stockpiling Co., Ltd. and Kizuregawa Separated Gas Plant.
- 1995 Established Iwatani Hokuriku Gas Center as a joint venture with Sakaisangyo Co. Ltd.  
Completed air gas plant on the site of the Iwakuni-Ohtake Works at Mitsui Petrochemical Industries Ltd. (now Mitsui Chemicals).  
Established Aneka Iwatani Industrial Gases PT. in Indonesia.
- 1997 Stepped up technical and human exchange with the city of Dalian.
- 1998 Began commissioned processing operations using WINSUT.
- 2000 Developed and began selling Dyna Guard F products.  
Full-scale entry into the optoelectronics market.
- 2003 Launched the Industrial Gas Structural Reform Project.  
Developed WINZONE, the world's first ozone gas containing cylinders.  
Developed the WINLOOP dry fluorine recycling system.
- 2006 Began air separation gas operations in the Chinese city of Jiaying, Zhejiang province.
- 2008 Developed ClF<sub>3</sub> gas cluster etching technology in partnership with Kyoto University.
- 2010 Began six-month fuel cell vehicle trial in Yamanashi prefecture (Toyota FCHV-adv). Installed mobile power station.  
Secured right to import helium from Qatar.
- 2011 Upgraded air separation plant at Iwatani Industrial Gases Corporation's Kofu Plant.  
Acquired cryo business (A-TEC Co., Ltd.).  
The company set up a halon recovery and filling system at the Himeji Plant of Iwatani Industrial Gas Corporation.
- 2012 Developed Hydro Cut, a new hydrogen-based mixed gas for welding and cutting.
- 2013 Commenced shipment of helium from Qatar.
- 2018 Began commercial production and sale of deuterium gases.
- 2019 Tokyo Helium Center was completed and began operating.
- 2020 Developed a cool box for transporting and storing vaccines and pharmaceutical products.

### Materials and nature

- 1946 Selected as designated container wholesaler (iron, steel and other metals) for Fuso Metal Industries Co., Ltd. (later Sumitomo Metal Industries Ltd.).
- 1952 Began supplying vinyl chloride pipes manufactured by Sekisui Chemical Co., Ltd. (synthetic resin).
- 1953 Began supplying rutile sand (mineral products).  
Used vinyl chloride pipes as a springboard to enter construction machinery sector.
- 1960 Began importing and selling Bruder products (livestock).
- 1964 Signed exclusive distribution agreement with Australian Minerals Association.
- 1966 Designated as primary distributor for new low-density polyethylene products manufactured by Ube Industries Co., Ltd.
- 1967 Began importing food products (food and health food).  
Began manufacturing and selling Skytanks.
- 1968 Began importing and selling peat moss (agriculture).
- 1970 Began importing automatic poultry farming systems manufactured by AR Wood Mfg Company.  
Developed NeoCape fruit tree ripening system.
- 1972 Developed Bander plowing machinery.
- 1974 Began selling frozen vegetables.
- 1975 Began selling Iwatani AgriHouse agricultural greenhouses.
- 1976 Developed iWrap plastic bags (patented) in partnership with Idemitsu Kosan Co., Ltd.  
Designated as primary distributor for Kawasaki Steel Corporation.
- 1979 Entered pig breeding business (livestock).
- 1980 Launched health food business.
- 1986 Developed Naistud construction technique.
- 1993 Began trading with Chinese food manufacturer Longda Foodstuffs Co., Ltd.
- 1995 Launched Alfloc rental business.
- 1997 Obtained exclusive distribution rights in Japan for Australian Fused Materials Pty. Ltd.
- 1998 Developed new commercial breeding boar PIC265.  
Launched metal slit business via Zhongshan Iwatani Co., Ltd.
- 2005 Designated as primary distributor for Prime Polymer Co., Ltd.
- 2010 Signed exclusive distribution agreement with Chinese manufacturers.  
The company signed an exclusive distribution agreement with Chinese manufacturers of cobalt oxide as a material for positive electrodes of lithium ion batteries.
- 2012 Developed environmentally friendly resin made from 30% plant-based materials.
- 2015 Importing of PKS, a biomass fuel, started.
- 2017 Launched a highly recyclable aluminum catalyst PET resin.

### Overseas

- 1939 Established Kinsei Kaiun Shokai in Shanghai, China.
- 1949 Began exporting welding and cutting tools to Taiwan, the start of a network of bases across Asia, Oceania, Europe and the US.
- 1989 Established Dalian Iwatani Gas Machinery Co., Ltd. as a joint venture with the city of Dalian.
- 1994 Established Shanghai Petrochem-Iwatani Gases Development Co., Ltd. as a joint venture with a SINOPEC (China Petrochemical Corporation) Group company.  
Invested in Shanghai Rishen Food Products Co., Ltd. and began to manufacture rice flour (food sector).
- 1995 Established wire rod processing company Zhongshan Iwatani Co., Ltd. in southern China (metal and machinery sector).  
Established local trading company Shanghai Iwatani Co., Ltd.
- 2010 Established Wuhan Iwatani Commercial Trade Co., Ltd.
- 2011 Established Iwatani India Pvt. Ltd.  
Iwatani Corporation-Abu Dhabi opens.
- 2012 Iwatani Philippines, Inc. is established.  
A contract is renewed with Praxair (U.S.) for long-term supply and sale of helium.
- 2013 A new helium center opens in Senai, Johor (Malaysia).  
Helium shipment from the Qatar Helium 2 Project is commenced.  
PT. Iwatani Indonesia is established.
- 2014 A gas plant of Iwatani-SIG Industrial Gases Sdn. Bhd. commences operations in Malaysia.
- 2015 A renewal agreement on the joint-venture contract with Dandong Iwatani Toyo Gas Meter Co., Ltd. is reached.
- 2017 Iwatani Corporation – Doha (QFC Branch) opens.  
Iwatani Corporation Europe Representative Office opens.
- 2018 Completed a project to acquire full ownership of the capital of Dalian Iwatani Gas Machinery Co., Ltd.
- 2019 Acquired Advanced Specialty Gases Inc., a U.S. gas dealer.  
Started the operation of a hydrogen-refueling station for the first time as a Japanese company in California, USA.

### Hydrogen

- 1958 Established Osaka Hydrogen Industries Ltd. (now Iwatani Industrial Gases Corporation).
- 1960 Developed original hydrogen trailer, the first commercially available product of its kind in Japan.
- 1965 Established method of manufacturing liquid hydrogen and started research and development of storage and transportation methods.
- 1976 Conducted discharge, diffusion and combustion experiments on liquid hydrogen.
- 1978 Completed Japan's first fully-fledged liquid hydrogen plant.  
Began supplying liquid hydrogen for all H-model space exploration rockets from 1986 onwards.
- 1984 Established Japan Liquid Hydrogen Co., Ltd. as a specialist liquid hydrogen manufacturer (dissolved in July 1995)
- 1986 Signed up to the International Clean Energy System Using Hydrogen Conversion (WE-NET) project.
- 1993 First H-I rocket test launch.
- 2000 Completed hydrogen supply station.
- 2004 Established the Fukuoka Strategy Conference for Hydrogen Energy.
- 2005 Established Hydrogen Energy Department.
- 2006 Began operations at Hydro Edge Co., Ltd.  
Organized the 1st Iwatani Hydrogen Energy Forum in Tokyo.  
Received the Konstantin Tsiolkovsky Award from the International Association for Hydrogen Energy.
- 2007 Organized fuel cell and hydrogen vehicle touring event across Japan.
- 2009 Established Iwatani Industrial Gases Corporation's Chiba Plant, the first liquid hydrogen plant in eastern Japan.  
Received the Fuji Sankei Business i Prize at the 18th Global Environment Awards, in recognition of efforts to raise awareness of hydrogen energy.
- 2010 Organized Hydrogen Science Course 80 classes at elementary schools throughout Japan.
- 2011 Signed up to the Kitakyushu Hydrogen Town project organized by HySUT.  
Issued a joint statement with 12 other countries, outlining plans to launch fuel cell vehicles onto the domestic market and improve Japan's hydrogen supply infrastructure.
- 2013 Completed the Toyota Eco Full Town Hydrogen Station for commercial demonstration with 70-MPa filling pressure.  
Yamaguchi Liquid Hydrogen Corporation went into operation.
- 2015 We established a new hydrogen-supply company in collaboration with Toyota Tsusho Corporation and Taiyo Nippon Sanso Corporation, and launched Japan's first commercial mobile hydrogen station through this company.  
Completed Hydrogen supply equipment for forklifts at Kansai International Airport and commenced a demonstration trial.  
Commenced research and development activities followed by a demonstration trial of a pure hydrogen fuel cell cogeneration system in Shunan-shi, Yamaguchi Prefecture.
- 2016 Completed commercial hydrogen stations in 20 locations centered on the four major metropolitan regions.  
Commenced a demonstration trial project in the Keihin coastal region of Kanagawa Prefecture to create a low-carbon hydrogen supply chain model utilizing renewable energy.  
Established the CO<sub>2</sub>-free Hydrogen Energy Supply-chain Technology Research Association (HySTRA) in association with three other companies, including Kawasaki Heavy Industries, Ltd.
- 2017 Iwatani Hydrogen Refueling Station in Tokyo Ariake, which allows for the full-scale refueling of fuel cell buses, was completed.  
The development of a large-scale hydrogen energy system using renewable energy, a project assigned by NEDO, was commenced in cooperation with Toshiba Corporation and Tohoku-Electric Power Co., Inc.  
Construction for the extension of Yamaguchi Liquid Hydrogen Corporation was completed.
- 2019 Acquired and began operating four hydrogen stations in the state of California, USA.
- 2020 Increased the liquefied hydrogen production capacity of Hydro Edge Co., Ltd., resulting in a total capacity of 120 million m<sup>3</sup> at three domestic bases.  
Established the Japan Hydrogen Association. Became joint representatives with Toyota Motor Corporation and Sumitomo Mitsui Financial Group.



**Iwatani**  
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