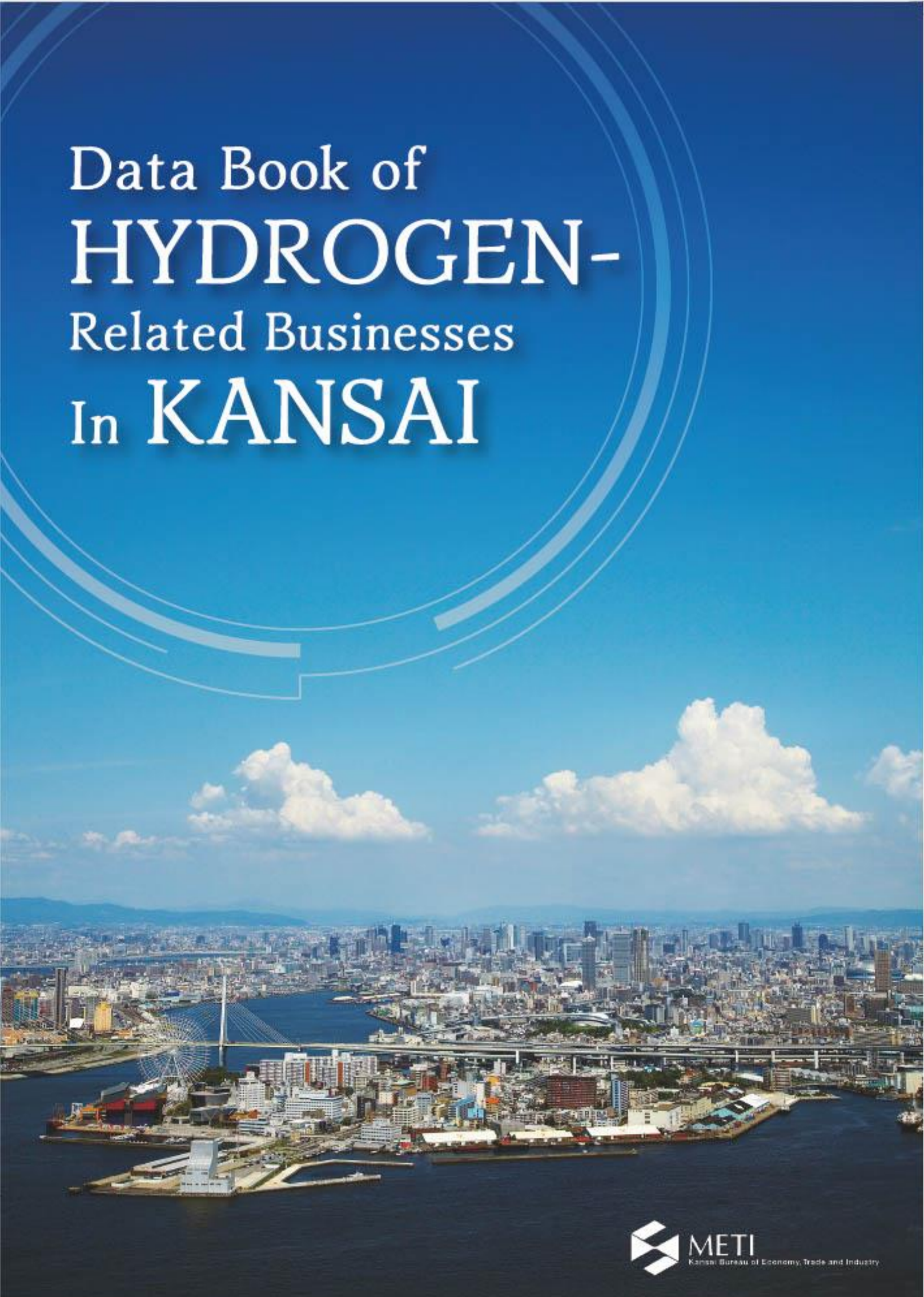
Data Book of HYDROGEN-Related Businesses In KANSAI



METI
Kansai Bureau of Economy, Trade and Industry

Introduction

Japan is working to develop and utilize next-generation energy systems and decarbonization technologies with the aim of achieving carbon neutrality by 2050. The goal is green transformation (GX), which entails shifting from an industrial and social structure centered on fossil fuels such as coal and oil to one centered on clean energy that does not emit CO_2 .

Among such systems and technologies, hydrogen is gaining increasing attention as a clean energy source that does not emit CO_2 during combustion or other reactions.

Hydrogen can be produced from a variety of resources, including water and fossil fuels such as natural gas and coal. Moreover, it plays an important role from the perspective of energy security because if electricity derived from renewable energy sources is used, hydrogen can be produced with virtually zero greenhouse gas emissions.

In 2017, Japan formulated the world's first national hydrogen strategy, the Basic Hydrogen Strategy.

Under this strategy, building on its accumulated research and development experience, Japan has been demonstrating a variety of hydrogen-related technologies, including hydrogen transport, hydrogen power generation, and heat utilization in factories, while maintaining its advantages, such as commercializing the world's first fuel cell vehicle, expanding the use of fuel cells for home use, and holding among the largest number of related patents in the world.

Subsequently, the Hydrogen Society Promotion Act was enacted in 2024, and institutions are being established to expand the introduction of low-carbon hydrogen and other technologies.

The Kansai region is home to a concentration of large companies that form the core of Japan's hydrogen supply chain, as well as highly skilled component and equipment manufacturers, and is a region where promising hydrogen-related projects are being actively pursued through collaboration between companies.

This data book lists companies based in the Kansai region that are boldly taking on challenges in hydrogen-related fields, categorizing them by the supply chain components of hydrogen, namely, production, transportation/storage, and use. It also describes each company's hydrogen-related efforts, their track records of implementation to date, the equipment they have developed, and demonstration projects they are undertaking, as well as their future developments and business plans.

We hope that this data book will serve as a guide for companies considering entering the hydrogen sector and for local governments and support organizations facilitating their entry into the sector. We also hope that it will be of help to universities, research institutions, and other organizations in forming alliances, joint research, and other collaborations.

Carbon Neutrality Promotion Office
Kansai Bureau of Economy, Trade and Industry

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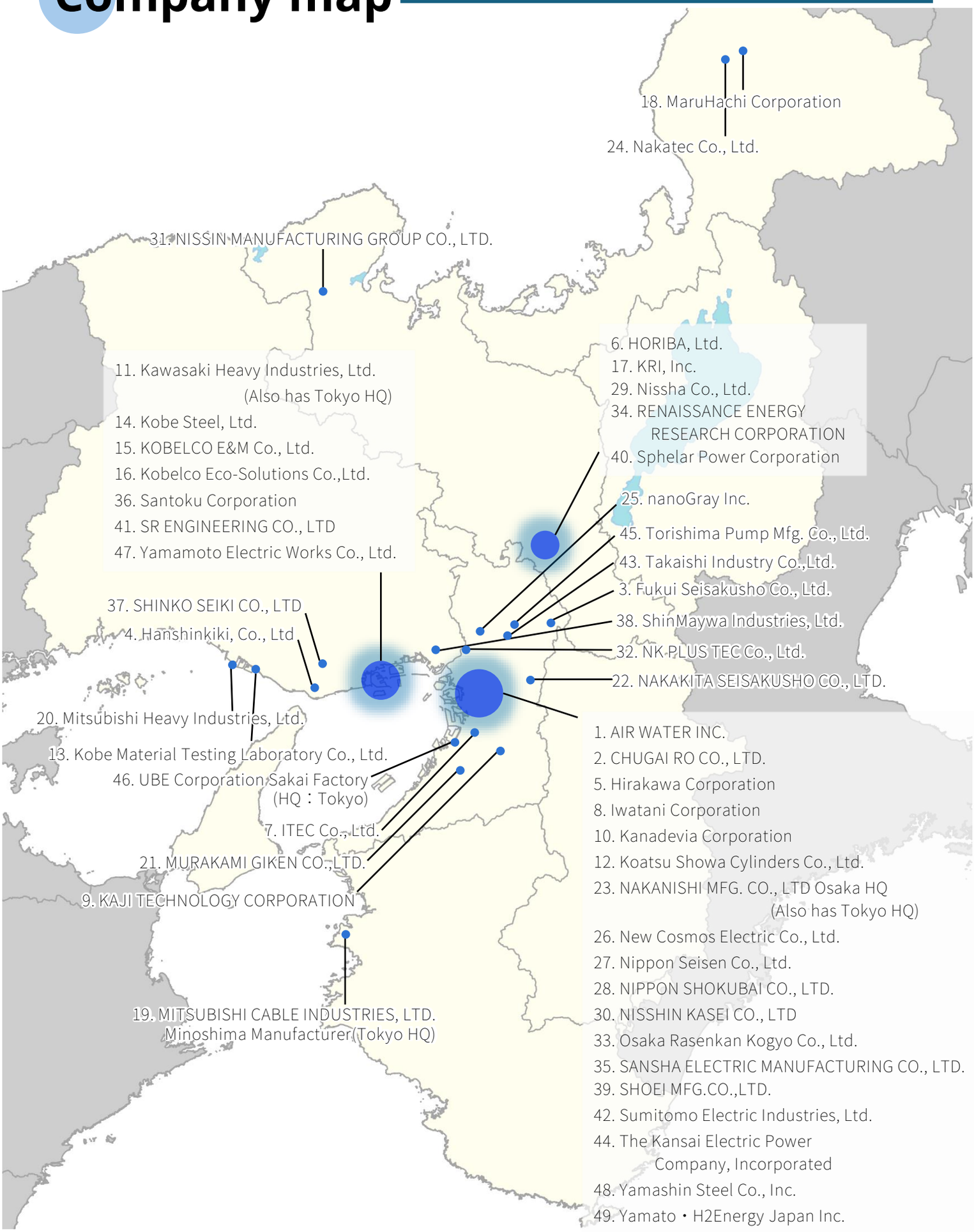
Company map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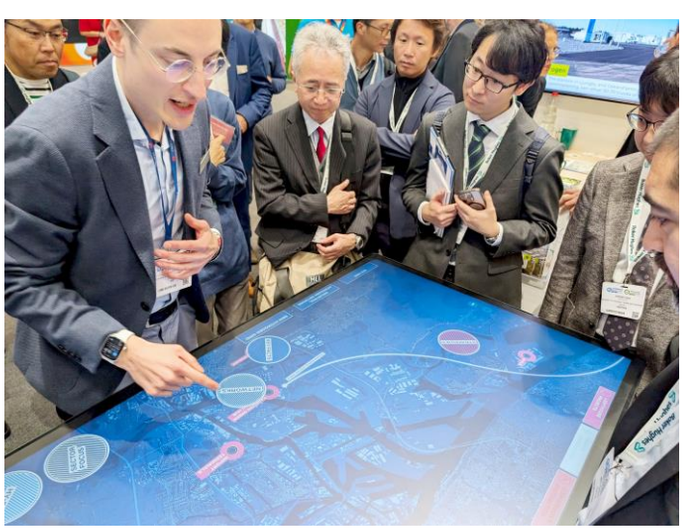
49. Yamato・H2Energy Japan Inc.

Hydrogen Utilization Promotion Project at Ministry of Economy, Trade and Industry, Kansai Bureau

Toward the realization of carbon neutrality by 2050, the Ministry of Economy, Trade and Industry, Kansai Bureau is working with companies, local governments, support organizations, economic organizations, and relevant government agencies and organizations overseas to promote hydrogen-related industries in the Kansai region.

Through these partnerships, we are implementing various efforts, including support for entry into the hydrogen-related industries and measures to promote the wider adoption and deployment of hydrogen and its derivatives.



Company profiles

#InHouseProduction #VHR #HydrogenGasManufacturer

Production | Transport /Storage | Utilization

The one and only company in the industry to produce products, from cylinders to generators, in-house

AIR WATER INC.

Shikaoi Hydrogen Farm

We are a hydrogen gas manufacturer. With 10 hydrogen production bases across Japan, we provide our customers with a stable supply of hydrogen gas in various forms, from cylinders to generators. In addition, through the application of our hydrogen-related technology developed over many years, we are working to ensure the creation of a hydrogen energy-based society. Our carbon neutrality initiatives include the following: participation in a hydrogen supply chain demonstration project utilizing biomass-derived hydrogen (Shikaoi Hydrogen Farm, Shikaoi-cho, Hokkaido) and design, production, and operation of stationary and mobile hydrogen stations (Sapporo City and Muroran City, Hokkaido) and in-house developed CO_2 recovery equipment, as well as involvement in initiatives to develop technology for CO_2-free hydrogen by the iron oxide-catalyzed direct methane reforming (DMR) process in the research and development division.

Hydrogen initiatives / Delivery records

We are the only domestic industrial gas manufacturer that offers hydrogen generators developed in-house. Our hydrogen gas generator VHR has achieved the world's highest level of hydrogen gas generation efficiency by employing an originally developed reformer using city gas as a raw material. Compared with our competitors' equipment, our equipment reduces city gas consumption by 8%. Combined with reducing electricity use, our equipment has achieved a reduction of CO_2 emissions by about 10%. Furthermore, optionally installing the in-house developed CO_2 recovery equipment enables further reduction of CO_2 emissions, contributing to the decarbonization of the global environment.
With regard to services, the Air Water Group handles all processes, from design, production, and maintenance to backup of hydrogen-related facilities, and installs equipment in customers' plants as our own asset, promising a long-term total cost reduction and stable supply at our own responsibility.

Hydrogen generator (VHR)

Next action / Business plan

We started delivery of the hydrogen gas generator VHR in August 2019, and as of the end of FY2025, nine units have been delivered. We offer a demonstrated record of delivery performance with 16 total deliveries, including conventional equipment. In FY2026 and beyond, we currently aim to deliver five units.
For the hydrogen gas generator VHR, we will continue our drive to ensure cost reductions, aiming to install a total of 21 units by the end of FY2030. In addition, we contribute to the creation of a hydrogen-based society as a hydrogen gas manufacturer by newly promoting hydrogen filling plants in Japan as bases or reorganizing them to establish a stable supply system for energy hydrogen, for which demand will grow in the future, as well as for industrial hydrogen gases.

CO_2 recovery equipment ($ReCO_2$ STATION)

Company profile

Location	2-12-8 Minami Semba, Chuo-ku, Osaka-shi,Osaka, 542-0081 Japan		
Founded	24 September 1929	**Capital**	55.855 billion yen
Representative	Representative Director, President & CEO, and COO Ryosuke Matsubayashi	**WEBSITE**	https://www.awi.co.jp

Department in charge

Department name
Air Water Green Design Inc.West Japan Branch, Osaka Sales OfficeHydrogen Group Yuki Kido

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E-mail kido-yuu@awi.co.jp

Leading the field of hydrogen combustion — Top brand of industrial furnaces and burners

CHUGAI RO CO., LTD.

Our core base: Sakai Works

ChugaiRo Co., Ltd. established in 1945, operates under the corporate philosophy of “Creating new value through thermal technology” and develops businesses that contribute to both industrial progress and environmental conservation. The company provides heat treatment furnaces for automobiles, machinery parts, semiconductors, and battery materials, unique coating equipment with minimal application liquid waste, large-scale industrial furnaces for steel plants, and combustion equipments. In addition, it is advancing the development of hydrogen combustion technology and ammonia utilization technology toward a decarbonized society, while also focusing on electrification solutions. Through these initiatives, the company contributes to solving various challenges, including climate change, and is committed to creating a prosperous future where people and the Earth coexist in harmony.

Hydrogen initiatives / Delivery records

Our company is actively promoting the social implementation of decarbonization technologies. We delivered a hydrogen combustion afterburner furnace to DENSO Fukushima, and this technology, along with related initiatives, received the “Toyota Technical Development Grand Award” (jointly awarded with DENSO). In addition, we supplied the world’s first commercial-scale ammonia-only burner for demonstration testing to UBE Mitsubishi Cement Corporation, marking a new step forward in decarbonization within the cement industry. On the development side, we have worked on PFAS (Per- and polyfluoroalkyl substances) thermal decomposition technology, successfully establishing a process using hydrogen combustion superheated steam in collaboration with Konoike Construction Co., Ltd., which was announced in September 2023. PFAS are persistent substances. We pose challenges in the environmental field by examining and demonstrating hydrogen-based processes, and we have presented new solutions that contribute to reducing environmental impact. Our company is not limited to hydrogen alone but is also advancing the development of a wide range of decarbonization technologies, including ammonia fuel, to contribute to the realization of a sustainable society.

Award-winning hydrogen combustion type afterburner furnace

Next action / Business plan

At the integrated research facility within the Sakai Works, which includes the newly established Thermal Technology Creative Center in November 2023, we are expanding decarbonization-related test equipment as a company that regards contribution to achieving carbon neutrality as a key priority, aiming for broad development such as building a hydrogen-based society.

Expanding Thermal Technology Creative Center

Company profile

Location 3-6-1 Hiranomachi, Chuo-ku, Osaka-shi, Osaka
Established August 1945
Capital 6.17672 billion yen
Representative Representative Director,President & Chief Executive Officer Akira Ozaki
WEBSITE https://chugai.co.jp/

Department in charge

Department name
Corporate Planning Group
TEL +81-72-247-2530
E-mail web_master@n.chugai.co.jp

FUKUI, the Japanese PSV customized for your carbon neutral future

Fukui Seisakusho Co., Ltd.

FUKUI Pressure Safety Valve

FUKUI is a global safety valve specialist founded in 1936. Our product line-up covers a wide range of pressure and temperature applications in oil & gas, power plants, marine and offshore space. Remarkably, FUKUI is the 90% global market share holder in LNG carriers, and moreover, the latest deliveries include other special applications such as South American FPSO projects and liquified CO_2 carrier development.
FUKUI have delivered safety and security for the future of customers involved in energy infrastructure in 100+ countries.

Hydrogen initiatives / Delivery records

We developed the world's first type-approval PSV for marine use at -253degC of hydrogen liquified temperature for the LH2 carrier SUISO FRONTIER. Japan-to-Australia bilateral HySTRA project has also proved our capability to support every hydrogen supply chain of production, transportation, storage, and utilization.

In 2025, FUKUI signed MOU with ClassNK to collaborate on ultra-high-pressure PSV for hydrogen dual-fuel engines and successfully completed PSV pressure test in the actual temperature and pressure condition (-253 degC, 60MPa) in the presence of ClassNK.

FUKUI LH2 Pressure Safety Valve

Next action / Business plan

FUKUI signed the framework agreement with EcoLog and major Japanese manufacturers to collaborate on the world's first commercial liquified hydrogen (LH2) supply chain. The consortium will develop LH2 vessels and new import terminal at the Port of Amsterdam, the Netherlands.

Following our achievements and milestones to date, we will continue to innovate new technologies in Hydrogen, Ammonia, and CCS market space. Contribution to international rule-making process in such prospective market will be accelerating FUKUI to actualize the 100th anniversary company goal to 2036 "Be at the center of the energy domain of carbon neutral society".

Gastech Exhibition & Conference

Company profile

Location	1-6 Shodaitajika, Hirakata-shi, Osaka 573-1132, Japan		
Founded	April 1936	**Capital**	100 million yen
Representative	CEO Yo Fukui	**WEBSITE**	https://www.fkis.co.jp/

Department in charge

Department name
Global Marketing Group

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E-mail stm@fkis.co.jp

Contributing to a hydrogen energy-based society with fuel cell power generation systems

Hanshinkiki, Co., Ltd

Fuel cell power generation system

Founded in 1926, Hanshinkiki Co., Ltd. is primarily engaged in the manufacture and sale of electrical equipment for industrial machinery, sheet metal parts for construction machinery, and machined parts. In addition, to plunge into new markets, the company has developed the power generation system Hydro.eLife. Furthermore, to venture into the aerospace and defense field, it has obtained JIS Q 9100 certification covering management systems for this business. It also has a track record of delivering related products.

Hydrogen initiatives / Delivery records

We have developed Hydro.eLife, a power generation system using fuel cells as core technology, and are currently offering a one-stop, flexible service that takes advantage of the strengths of a small and medium-sized enterprise. Additionally, at various exhibitions and events, we are currently conducting demonstrations of power supply to lighting and air conditioning equipment, simulating emergency power sources usable in the event of a disaster, as well as power supply to food trucks. We also lease power generation systems to private companies.

Power supply to a food truck

Power supply to air conditioning equipment

Next action / Business plan

Individual sales tailored to customer needs have begun. In addition, we are currently conducting marketing activities aimed at overseas sales in the near future.

Company profile

Location	745, Junna, Ikawadani-cho, Nishi-ku,Kobe-shi, Hyogo, Japan		
Established	August 1953	**Capital**	100 million yen
Representative	President Ryuichi Yamada	**WEBSITE**	https://www.hanshinkiki.co.jp/

Department in charge

Department name
Planning Office

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E-mail info@hanshinkiki.co.jp

Leading products with condensing technology; HydroMix series of multi-fuel fired boilers that use hydrogen and city gas

Hirakawa Corporation

Since our founding in 1912, we have been a dedicated manufacturer of a comprehensive range of boilers and related products, from water heaters to steam boilers, with extensive experience in development, production, distribution, and maintenance. Specifically, we have a track record of selling numerous condensing steam boilers and water heaters that offer excellent energy saving performance across Japan as the industry's leading products. We explore possibilities for users to save energy and propose optimum energy-saving systems with our products equipped with effective means and cutting-edge technology as the right solution.

Hydrogen initiatives / Delivery records

In light of the future supply of hydrogen, we have commercialized small multi-fuel once-through boilers/water heaters as the HydroMix series, which uses hydrogen and city gas and yet can be fired with city gas alone. With regard to small once-through boilers, we have achieved one of the lowest NOx emission levels (measured value: 40 ppm at 0% O2) in the industry for single-fuel combustion with hydrogen and hydrogen co-firing, attaining levels below the environmental standard value. Our water heaters are Japan's first condensing water heaters that, while achieving Japan's top-class efficiency of 105% and low NOx emissions comparable to those of conventional, city gas 13A-fired condensing water heaters, achieve further CO_2 emissions reduction through hydrogen co-firing. In addition to traditional customers such as factories, hotels, hospitals, and commercial facilities, in recent years, multiple small boilers have been installed in district heating and cooling facilities. We proactively propose HydroMix, which contributes to CO_2 emissions reduction, to customers who are concerned about decarbonization.

Hydrogen co-firing once-through boiler:
JSN-HM series

Hydrogen co-firing condensing water heater:
UG2-HM series

Next action / Business plan

We will continually increase the value of our products and further enhance the lineup while responding to customer needs, such as by reducing costs and improving their quality, even after launching them.

Company profile

Location	1-9-5 Oyodokita, Kita-ku, Osaka-shi, Osaka, 531-0077, Japan		
Founded	April 1912	**Capital**	90 million yen
Representative	Representative Ryoichi Hirakawa	**WEBSITE**	https://www.hirakawag.co.jp/

Department in charge

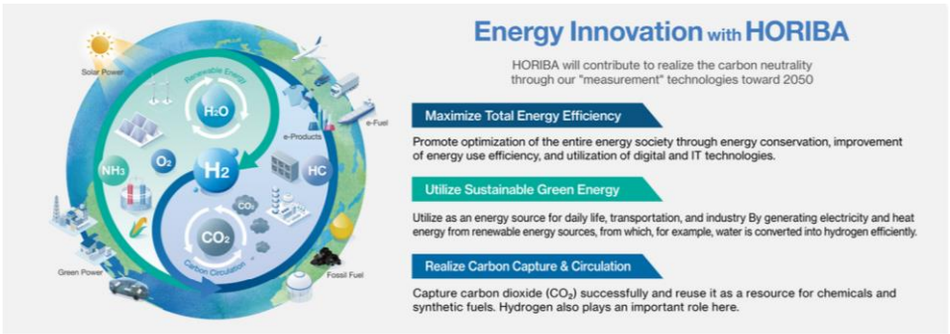
Department name
Technical Development, Shiga Office

TEL +81-77-588-2455
E-mail info@hirakawag.co.jp

Improving development efficiency through DX and automation of 'connect × measurement' analysis

HORIBA, Ltd.

Since its founding, to protect the earth and the health of people, HORIBA has been committed to developing and socially implementing advanced analysis and measurement technologies. In the hydrogen and energy sectors, we provide development environments and measurement solutions that offer flexible responses to customers' challenges, ranging from gas measurement, such as hydrogen/NH_3,impurities in hydrogen, and fuel/synthesis gases, analysis of catalyst materials, monitoring of plants, evaluation of fuel cells and water electrolysis, to development of next generation mobility vehicles. Furthermore, by drawing on the experience and expertise we have accumulated, as well as developing and providing analysis and measuring equipment, we will respond to various requests from customers, including engineering, test/evaluation consulting, and contract analysis.



Energy Innovation with HORIBA

Hydrogen initiatives / Delivery records

Through the DX and automation with our "Connect × Measurement" analysis approach, HORIBA is committed to improving development efficiency and productivity.

【Automated Experimentation and Autonomous Exploration Systems "ROPES*1"】

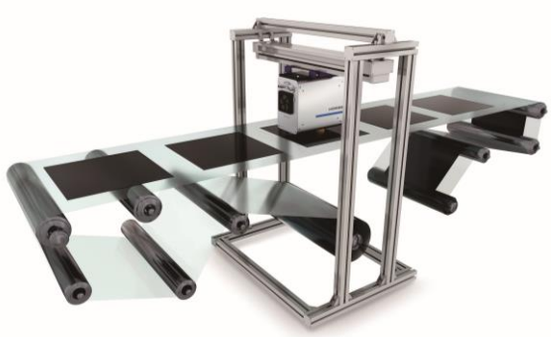
To support the development of fuel cell production processes, a small-scale pilot line simulating actual manufacturing processes has been developed, automating the coating, drying, and evaluation steps.By utilizing process informatics, ROPES contributes to labor-saving, dramatically reduces the trial-and-error and extensive experimental costs that previously relied on intuition and experience and efficiently derives optimal conditions.(This achievement was made through a project commissioned by NEDO [New Energy and Industrial Technology Development Organization].https://www.t.u-tokyo.ac.jp/press/pr2025-06-12-002)

*1 Robotic Objective Process Exploration System

ROPES for Coating & Drying

【CCM/MEA Catalyst Coating Monitor】

XV-100 enables non-destructive, non-contact inline measurement of precious metal catalyst (Pt/Ir) content and membrane thickness on CCM/MEA, which are critical components for fuel cells and water electrolysis. This contributes to yield improvement, cost reduction, and enhanced quality control.



CCM/MEA Catalyst Coating Monitor XV-100

Next action / Business plan

HORIBA is strengthening collaboration with domestic and international research institutions and companies, and, to support the realization of a decarbonized and circular economy, we are contributing to the advancement of technologies not only for hydrogen but also including CCUS.

Company profile

Location	2 Miyanohigashi-cho, Kisshoin, Minami-ku, Kyoto, 601-8510, Japan		
Established	January 1953	**Capital**	12.011 billion yen (as of December 31, 2024)
Representative	President Masayuki Adachi	**WEBSITE**	https://www.horiba.com/jpn/applications/energy-and-environment/

Department in charge

Department name
Energy & Environment Business Planning Dept.

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E-mail Please contact us through our website.

Producing hydrogen as renewable energy from waste aluminum

ITEC Co., Ltd.

The entire business that ITEC is involved in

Our company develops equipment sales and trial testing based on high-temperature and high-pressure technologies. The fields we cover are diverse, including supercritical water treatment, supercritical CO_2 processing, CO_2 liquefaction, fine dry ice cleaning, and, as introduced here, hydrogen generation from aluminum. This technology utilizes aluminum alloy machining chips and aluminum dross produced during processing, reacting them with alkali to generate hydrogen. The hydrogen obtained can be used in fuel cells or as combustion heat, and it can also be transported to remote locations in the form of cylinders or hydrogen storage alloys. As such, it plays an important role in building a recycling-oriented society.

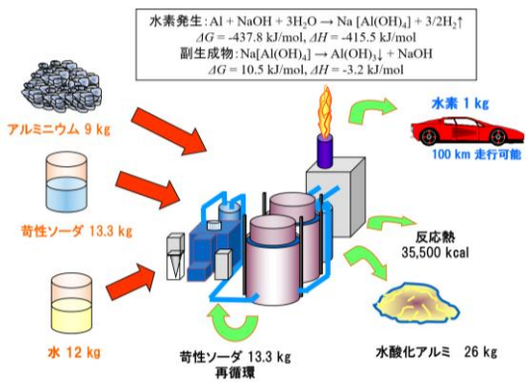
Hydrogen initiatives / Delivery records

Our company has a track record of implementing equipment across various scales. For example, at the demonstration plant scale, we have delivered a system capable of processing 100 kg of aluminum dross in a 3-hour batch operation, generating 37.3m³ of hydrogen. In addition to these large-scale systems, we also provide a large number of prototype and small-scale testing systems including those that use waste silicon instead of waste aluminum as a raw material, those that generate hydrogen under a pressurized environment for downstream supply, and those that are contained within a containerized module.

Demonstration equipment
for aluminum dross processing

Next action / Business plan

Preliminary consideration is essential for system implementation.While we have this track record, thorough preliminary consideration is essential for implementation. During testing, we measure the time-dependent changes in hydrogen production rates, temperature and pressure. This data is then utilized in equipment design, allowing for the construction of a more refined system. Furthermore, testing can cover not only hydrogen generation but also the assessment of the aluminum hydroxide byproduct. For raw materials, we can utilize waste silicon in addition to waste aluminum. Regarding the feeding method, we support continuous feeding of aluminum in addition to the standard batch testing. We can also accommodate reaction tests under pressurized conditions.



Relationship diagram of the amount of substances
in the hydrogen production process

Company profile

Location	3-161-2, Kaisan-cho, Sakai-ku, Sakai-shi, Osaka,590-0982 Japan		
Founded	June 1995	**Capital**	50 million yen
Representative	President Daisuke Iida	**WEBSITE**	https://www.itec-es.co.jp/en/

Department in charge

Department name
Sales Department

TEL +81-72-226-8853

E-mail info@itec-es.co.jp

Japan's only liquefied hydrogen supplier with the top domestic market share in hydrogen

Iwatani Corporation

Hydro Edge, Japan's largest liquefied hydrogen production plant

Based on the corporate philosophy “Become a person needed by society, as those needed by society can prosper,” we deliver various kinds of “gas and energy” needed in everyday lives and industry, with a comprehensive energy business focusing on LP gas and an industrial gas and machinery business focusing on oxygen, nitrogen, hydrogen, and helium as our core business operations. In addition, we have positioned environmental and energy challenges that must be addressed and overcome as our important initiatives, and we are committed to providing solutions to these challenges by reducing the burden on the environment by promoting the utilization of hydrogen, which will achieve the ultimate form of clean energy.

Hydrogen initiatives / Delivery records

■ Hydrogen-related initiatives

Since we started handling hydrogen in 1941, with the understanding that hydrogen will achieve the ultimate form of clean energy, we have advanced our various efforts toward the utilization of hydrogen. Starting with the construction of Japan's first liquefied hydrogen production plant in Sakai City, Osaka, in 2006, we have brought six plants at three bases into operation, and we are now providing a stable supply nationwide as the sole liquefied hydrogen supplier in Japan. In 2014, we introduced Japan's first commercial hydrogen station in Amagasaki City, Hyogo. Currently, hydrogen stations operate or are being developed at 52 locations (including ones under construction). In addition, in order to contribute to the realization of net zero greenhouse gas emissions by 2050, which the Japanese government has pledged, we are actively working toward early realization of a hydrogen energy-based society by participating in various projects with multiple companies to build a large-scale low-carbon hydrogen supply chain. At Expo 2025 Osaka, Kansai, Japan, we provided the first passenger service on a hydrogen fuel cell ship without internal combustion engine in Japan (from Universal City Port to the Expo 2025 venue).

■ Track record of delivery

We provide a stable supply of liquefied hydrogen to more than 120 user companies nationwide. In addition, our hydrogen stations now operate or are being developed at 52 locations (including ones under construction) in Japan, and we are planning to construct hydrogen stations mainly for trucks and other commercial vehicles.

Iwatani hydrogen station in Ariake

Hydrogen fuel cell ship Mahoroba

Next action / Business plan

Toward the realization of a hydrogen energy-based society, we are producing low-carbon hydrogen by utilizing renewable energy overseas. At the same time, by importing large amounts of liquefied hydrogen through the use of a dedicated carrier, we aim to supply liquefied hydrogen for power generation and mobility.

Company profile

Location	6-4, Hommachi 3-chome, Chuo-ku, Osaka-shi, Osaka 541-0053 Japan		
Established	May 1930	**Capital**	35.096 billion yen
Representative	President Hiroshi Majima	**WEBSITE**	https://www.kajitech.com/en/

Department in charge

Department name
Hydrogen Division

TEL +81-6-7637-3458

E-mail Please contact us through our website.

Overcome global challenges with our outstanding high-pressure technology.

KAJI TECHNOLOGY CORPORATION


Inside the assembly plant

We were founded as a textile machinery manufacturer in 1905, and our current flagship products are high-pressure and ultrahigh-pressure compressors for air and various gases.
We are a manufacturing company that carries out design, welding, machining, assembly, and operation tests in-house. By investing more of our management resources on research and development, which is the lifeblood of any manufacturing company, we are responding to ever-diversifying and sophisticated market needs while constantly strengthening our cost competitiveness to meet the needs of our customers.

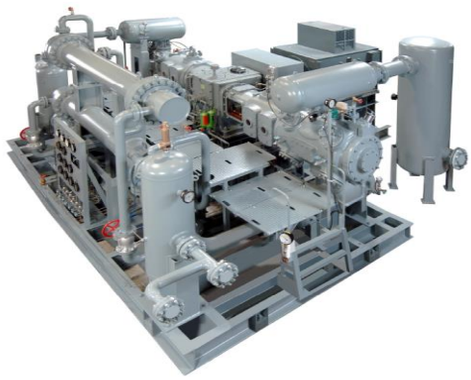
Hydrogen initiatives / Delivery records

In 2001, we started development of a compressor for hydrogen stations, and in 2005 we succeeded in developing an oil-less reciprocating compressor that can boost pressure up to 110 MPaG. Our technological capabilities are not limited to hydrogen stations but are highly valued across a wide range of fields, including the petroleum, petrochemical, and gas industries as well as research institutions. Ultrahigh-pressure compressors for hydrogen stations do not require nitrogen purging because there is no gas leakage and a stable boost in pressure can be achieved by our original technology. In addition, gas seal performance is improved by adopting highly reliable in-house welded fittings in place of cone and thread fittings. Compressor units are housed in soundproof cases so that they can even be installed in downtown stations, where noise regulations are strict.
By FY2025, we have commercialized and delivered the ultrahigh-pressure compressor for hydrogen stations HyKom^{3}40 (82 MPaG) to 61 locations in total. In addition, we have an extensive track record of performance in the production of 40 MPaG-class high-pressure compressors (for hydrogen stations, and for refueling fuel cell forklifts).

Compressor for hydrogen station (HyKom^{3}40)

Next action / Business plan

We are now in the development phase of our next model compressors for hydrogen stations that will offer further cost reduction, size reduction, shorter delivery times, and lower running costs. We look to continue our efforts in creating value with our flagship products and contribute to the realization of a hydrogen-based society.


Compressor for petroleum and chemical plants

Company profile

Location	6.Bodai,Mihara-ku,Sakai,Osaka		
Established	February 1934	**Capital**	1.44 billion yen
Representative	President and CEO Katsunori Matsuoka	**WEBSITE**	https://www.kajitech.com

Department in charge

Department name
Osaka Sales Sec. Sales Dept.

TEL +81-72-361-9500

E-mail Please contact us through our website.

Bringing new value to the world through the power of hydrogen

Kanadevia Corporation

Kanadevia
Technology for people and planet

The company changed its name from Hitachi Zosen to Kanadevia on October 1, 2024.

We are a comprehensive manufacturer that operates a wide range of businesses, including plant engineering, precision machinery, and power generation equipment, with a focus on the environment and energy fields. In particular, in the hydrogen business, we have developed the PEM hydrogen production system HYDROSPRING® and established high-purity hydrogen generation technology based on water electrolysis. Our on-site packages are available in a range of capacities, from small to large, and contribute to the creation of a decarbonized society through the production of green hydrogen and the effective use of surplus renewable energy. As a leading company creating a sustainable future, we deliver new value to the world through our innovative technology.

Hydrogen initiatives / Delivery records

The electrolyzer is the heart of the hydrogen production system. Through an initiative to work on development by fusing our electrolysis technology and filter press technology, in 2018, we developed a large megawatt-capable electrolyzer, the first of its kind in Japan as a PEM type. In addition, we began marketing a packaged product that contains a 1 MW PEM hydrogen production system in a 40-feet container. In this product, we have achieved a maximum hydrogen production capacity of 200 N㎥/h per unit, making it possible to convert MW-class electric power such as renewable energy to hydrogen and store it. Its applications are diverse, including green hydrogen production, methanation research, FCVs, ZEBs, power plant turbine cooling, conversion of surplus renewable energy-based electricity to hydrogen, and gas turbine co-firing, contributing to building a decarbonized society.

Large electrolyzer

Next action / Business plan

A mass production plant for PEM water electrolysis stacks is planned to be built in Tsuru City, Yamanashi Prefecture. Design is scheduled to begin in 2025, construction to begin in 2026, and completion at the end of fiscal year 2028, with the aim of achieving an annual production capacity of 1 GW (approximately 157,000 tons of hydrogen equivalent). Through this investment, we will leverage our strength in integral design technology to enhance our competitiveness in terms of cost, supply capacity, and delivery time.

Rendered image of the exterior of the mass-production plant for water electrolysis stacks

Company profile

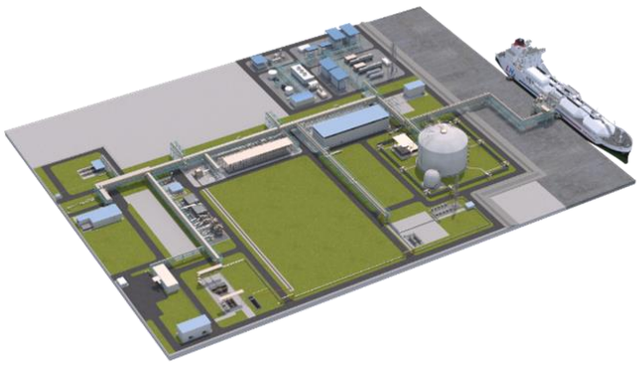
Location	1-7-89 Nankokita, Suminoe-ku, Osaka-shi, Osaka, Japan		
Established	1881	**Capital**	45.442 billion yen
Representative	Michi Kuwahara	**WEBSITE**	https://www.kanadevia.com/english/

Department in charge

Department name
Business Department Decarbonization System Business Unit Carbon Neutral Solution Business Headquarters
TEL +81-3-6404-0824
E-mail hydrogen_PtG@kanadevia.com

Hydrogen Road Paving the way for a hydrogen-based society

Kawasaki Heavy Industries, Ltd.



Rendering of the completed Kawasaki LH_2 Terminal (Kawasaki City, Kanagawa Prefecture). A groundbreaking ceremony was held on November 27, 2025.

We are a comprehensive engineering manufacturer engaged in a wide range of businesses, including ships, rolling stock, aircraft, motorcycles, gas turbines, industrial plants, and robotics.
The Kawasaki Group is advancing its expertise in technological development, from upstream to downstream of the entire hydrogen supply chain, for the production, transportation, storage, and utilization of hydrogen in order to bring hydrogen energy to as many people as possible. The Group is continuing to take on the challenge of the early realization of a hydrogen-based society.
In 2025, the Suiso Frontier, the world's first carrier ship to transport liquefied hydrogen internationally, sailed off the shore of the Expo site.

Hydrogen initiatives / Delivery records

Leveraging core technology development subsidized by NEDO, we have an extensive proven track record in implementing a wide range of hydrogen-related equipment, including the development and sale of Japan's first hydrogen liquefier, the development and construction of liquefied hydrogen carriers, and the development and sale of hydrogen gas turbines, gas engines, and boilers.
The liquefied hydrogen carrier Suiso Frontier has demonstrated a boil-off rate (BOR) of 0.3%/day in demonstration testing conducted over four years. Moreover, the storage tanks at the receiving terminal Hy touch Kobe have also achieved high insulation performance equivalent to that of LNG equipment of the same size, demonstrating a BOR of 0.06%/day.

Liquefied hydrogen carrier sails off the shore of the Osaka-Kansai Expo site.
(NEDO-subsidized project: Demonstrative Project for Establishing a Large-scale Marine Transport Supply Chain Using Hydrogen Derived from Unutilized Lignite 2015–2023
Acquiring data for international standardization of liquefied hydrogen transportation and cargo handling systems 2023-2026

Next action / Business plan

In November 2025, a groundbreaking ceremony was held for a commercial-scale LH2 terminal equipped with one of the world's largest liquefied hydrogen storage tanks (50,000 ㎥), marine loading and unloading facilities, hydrogen liquefaction and gas transmission facilities, and tanker truck shipping facilities. The terminal project is operated by Japan Suiso Energy, Ltd., with a joint venture led by Kawasaki Heavy Industries responsible for facility design and construction. Construction of a liquefied hydrogen carrier with a capacity of approximately 40,000 ㎥ is also planned.
Furthermore, we have installed a direct air capture (DAC) demonstration facility at our Kobe Works that captures atmospheric CO_2, as an essential technology for addressing residual emissions as well as achieving negative emissions, in addition to the technology designed to capture CO_2 from exhaust gases. We will accelerate the decarbonization of local communities and industries through technological improvements and social implementation.

The facilities consist of two types of equipment: direct air capture equipment (on the left in the photo) that captures CO_2 from the atmosphere and post-combustion capture equipment (on the right in the photo) that captures CO_2 from the exhaust gases of the factory's in-house power generation equipment.

Company profile

Location (Tokyo Head Office)
1-14-5, Kaigan, Minato-ku, Tokyo 105-8351, Japan
(Kobe Head Office)
Kobe Crystal Tower, 1-3, Higashikawasaki-cho, 1-chome, Chuo-ku, Kobe, Hyogo 650-8680, Japan

Established October 1896

Capital 104.484 billion yen (as of March 31, 2025)

Representative President Yasuhiko Hashimoto

WEBSITE https://global.kawasaki.com/en/

Department in charge

Department name
External Affairs Department

TEL +81-3-3435-2111
+81-78-371-9530

E-mail Please contact us through our website.

#HighPressureGasCylinder #PressureVessel
#HighPressureTechnology

Produc-tion | Transport /Storage | Utili-zation

Comprehensive manufacturer of high-pressure gas cylinders, with proven reliable technology and performance

Koatsu Showa Cylinders Co., Ltd.

As a comprehensive manufacturer of high-pressure gas cylinders, we manufacture stainless steel cylinders and clean cylinders for filling corrosive gas and high-purity gas, which are destined for the semiconductor field, focusing on seamless steel cylinders for ordinary use. We also offer many kinds of long cylinders and high-capacity welded cylinders suitable for mass transport and large-scale consumption of such gases. In addition, we manufacture bundle units—in which these cylinders are integrated and frames, piping, and other components are incorporated—and we can propose the optimal solutions.

Hydrogen initiatives / Delivery records

We jointly developed an ultrahigh-pressure type (design pressure 95 MPa, volumetric capacity 300 L) hydrogen station-specific pressure vessel offering the features of (1) low cost, (2) high quality, and (3) high durability with The Japan Steel Works, Ltd. This pressure vessel realized a lightweight and compact structure with the lid portion downsized by drawing at both ends through the application of long-held hot forging technology to the end drawing portions of cylinders loaded on hydrogen tube trailers, thereby enabling cost reductions. Also, by making the end portions larger-bore compared with conventional long vessels, non-destructive inspection and visual inspection of inner surfaces can be performed, which ensures a high level of quality. The world's highest level of durability is realized as the service life is unlimited with more than 300,000 use times or more. In the hydrogen-related field, we have long-manufactured cylinders of hydrogen tube trailers (715 L at the maximum) and cylinder cradles (50 L, etc.) and hold a high domestic share. In addition, pressure vessels have been adopted for domestic hydrogen stations since their market launch in 2019.

Cylinders of hydrogen tube trailers

Next action / Business plan

Toward creating a hydrogen-based society, we look to expand production and sales of hydrogen pressure vessels as well as achieve further cost reductions. We also aim to expand our product lineup to meet various customer demands..

High-pressure-type pressure vessel for hydrogen stations (cut sample)

Company profile

Location	2-4-12 Nakazakinishi, Kita-ku, Osaka-shi, Osaka, 530-0015 Japan		
Established	1972	**Capital**	90 million yen
Representative	President Sato Manabu	**WEBSITE**	https://www.koatsu-showa.co.jp/

Department in charge

Department name
Osaka Sales Office

TEL +81-6-7711-3360
E-mail sato-m@koatsu-showa.co.jp

Materials testing technology supporting the safety of high-pressure hydrogen

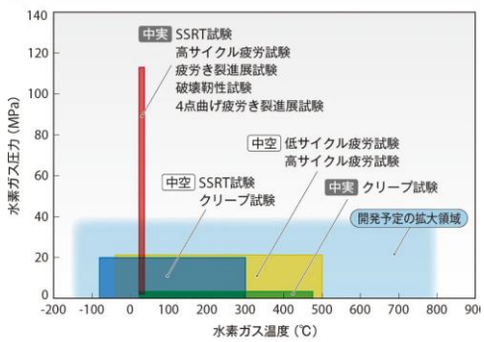
Kobe Material Testing Laboratory Co., Ltd.

<Kobe Material Testing Laboratory – Head Office>
The facility is equipped as an advanced materials evaluation center, including a dedicated area specifically designed for high-pressure hydrogen testing.

Kobe Material Testing Laboratory Co., Ltd. is one of Japan's largest independent testing laboratories, specializing in a wide range of materials testing and failure analysis. We provide testing services that support quality assurance and safety improvement across diverse industries, including aerospace, energy, plant engineering, and automotive. In recent years, we have strengthened our capabilities in hydrogen embrittlement testing under high-pressure hydrogen environments, as well as in advanced evaluation techniques using miniature specimens. We operate a highly reliable testing framework aligned with international standards and ISO certifications, enabling us to support global projects.

Hydrogen initiatives / Delivery records

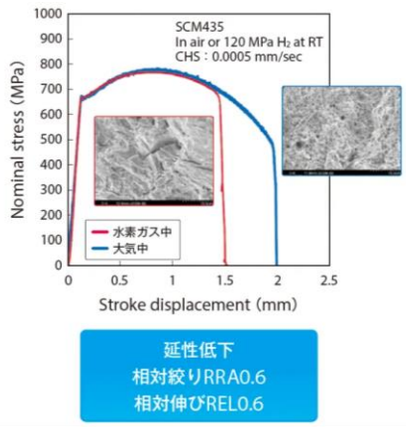
Kobe Material Testing Laboratory Co., Ltd. develops advanced evaluation technologies to ensure the safety and durability of materials used throughout the hydrogen value chain. Focusing on hydrogen embrittlement—including delayed fracture and reductions in ductility, fatigue strength, and fracture toughness—we offer testing solutions such as SSRT, fatigue life evaluation, crack growth testing, and miniature-specimen techniques under high-pressure hydrogen environments. Our dedicated, certified hydrogen test facility enables safe and highly reliable testing services for industrial applications.



<Test Area Map>
This diagram shows the range of materials testing available under various hydrogen pressure and temperature conditions. It illustrates our capability to evaluate materials in hydrogen environments up to 120 MPa.

Next action / Business plan

Kobe Material Testing Laboratory Co., Ltd. is enhancing its capabilities to support the safe design, integrity assessment, and lifetime management of hydrogen-related equipment. We are expanding services such as on-site sampling using miniature-specimen techniques and system-wide integrity diagnostics to meet growing needs for evaluating existing facilities. In collaboration with international institutes in France and Germany, as well as AIRBUS, we promote joint research and testing harmonization, while actively contributing to ISO standardization. Through these efforts, we aim to be a key partner in ensuring the safety of global hydrogen infrastructure.



<SCM435 Test Results>
SSRT testing of SCM435 steel was conducted in a 120 MPa hydrogen gas environment. Compared with atmospheric conditions, a reduction in ductility was observed, and fracture surfaces characteristic of hydrogen embrittlement were confirmed.

Company profile

Location	47-13 Niijima, Harima-cho, Kako-gun, Hyogo		
Established	March 1950	**Capital**	50 million yen
Representative	Executive Vice President Nobuhito TSURUI	**WEBSITE**	https://www.kmtl.co.jp/

Department in charge

Department name
Nobuhito TSURUI, Executive Vice President

TEL +81-79-435-5010

E-mail n-tsurui@kmtl.co.jp

Providing unique value to address the challenges facing both hydrogen producers and users

Kobe Steel, Ltd.

Hydrogen separation membrane cartridge

Kobe Steel's machinery business began with the development of Japan's first air compressor in 1914, and we have knowledge and technology cultivated in various fields over more than 100 years. We place importance on providing solutions for customers and today's and tomorrow's social challenges by taking advantage of this knowledge and technology. In addition, as a commitment to the transition toward realization of CO_2 emissions reduction by hydrogen, we promote the coexistence of multi-source infrastructure and the creation of parallel infrastructure that starts small and grow large.

Hydrogen initiatives / Delivery records

<Compressors>

We have a proven track record of performance in the delivery and introduction of many screw, turbo, and reciprocating compressors in Japan and abroad in a wide-ranging hydrogen supply chain, including storage, transportation, supply, and utilization, as well as hydrogen production. We have accumulated a wealth of high-pressure technology and gas seal technology developed through our manufacturing experience in compressors for diverse applications, as well as knowledge related to low-temperature materials and hydrogen embrittlement.

<Vaporizers and heat exchangers>

We have delivered more than 600 diffusion-bonded compact heat exchangers (DCHEs) to domestic and overseas hydrogen stations. In addition, as vaporizers (ORV, IFV, and DCHE) and aluminum plate-fin heat exchangers (ALEXs) can be used for various applications other than LNG, we look to introduce them as vaporizers and liquefiers for hydrogen.

Screw compressor
for liquefied hydrogen production plants

Next action / Business plan

<Compressors>

We offer compressor technology and products that meet various needs of the hydrogen supply chain (production, storage, transportation, supply, and utilization) toward realization of a carbon-free society.

<Vaporizers and heat exchangers>

For economical utilization of liquid hydrogen, efficient use of cold energy is required, as is the case with LNG. Our heat exchangers can be used in various fields that utilize cold energy, such as turbine suction air cooling, boil-off gas (BOG) reliquefaction, and air separation, where we expect further sales expansion.

Diffusion-bonded compact heat exchanger (DCHE)

Company profile

Location	2-2-4 Wakinohama-kaigandori, Chuo-ku, Kobe-shi, Hyogo 651-8585 Japan		
Established	June 1911	**Capital**	250.9 billion yen
Representative	President & CEO Yoshihiko Katsukawa	**WEBSITE**	https://www.kobelco.co.jp/english/

Department in charge

Department name

〈Compressors〉
Compressor Section, Energy & Chemical Machinery Department, Sales & Marketing Division, Machinery Business
〈Vaporizers and heat exchangers〉
Static Equipment Section, Energy & Chemical Machinery Department, Sales & Marketing Division, Machinery Business

E-mail 〈Compressors〉rotating-1@kobelco.com
〈Vaporizers and heat exchangers〉dche@kobelco.com

Holding the largest market share in Japan for hydrogen station construction and maintenance

KOBELCO E&M Co., Ltd.

The company began its business in 1962, focusing on the manufacture of equipment and construction work at Kobe Steel's steelworks and civil engineering work, and later expanded its operations to include engineering and maintenance of steel-related equipment. In 2004, the company merged with Shinko Plant Construction , whose business base was the engineering of chemical and energy plants. As a comprehensive engineering company capable of design, procurement, construction, and maintenance, the company aims to contribute to the development of society by providing its customers with reliable technology, products, and services.
On April 1, 2022, the company name was changed from Shinko Engineering & Maintenance to Kobelco E&M.

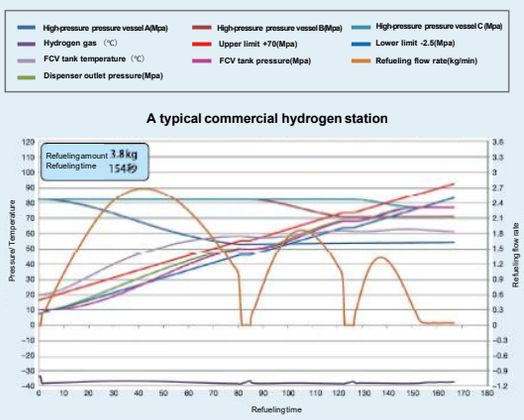
Hydrogen initiatives / Delivery records

We have a track record of planning, designing, constructing, and maintaining stationary hydrogen stations, including one on-site/off-site type, ten off-site types and one on-site type. In 2023, we built a hydrogen station using electrolytic hydrogen from Kobelco Eco-Solutions, thus expanding our track record of success in this area.
We are currently building our 13th hydrogen station in Hyogo Prefecture.
We have strengths in our proprietary hydrogen refueling simulation technology and control system technology and are striving to improve the reliability of hydrogen station planning, design, and maintenance. We have an extensive track record of delivering products to high-pressure gas plants and natural gas stations, utilizing Kobe Steel's precoolers and Kobelco Eco-Solutions' water electrolysis high-purity hydrogen and oxygen generators (HHOGs). We also boast the largest market share in Japan for the construction and maintenance of hydrogen stations.

The following is an example of potential equipment specifications that meet the requirements generally applied in Japan (refueling amount of 5 kg per FCV, 3 min refueling).

〈Basic specifications for a typical commercial hydrogen station〉

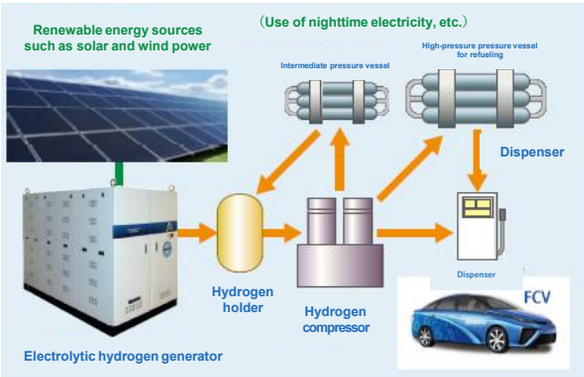
- Hydrogen supply capacity — 300Nm³/h
- Hydrogen-filling pressure class — H70(70MPa class)
- Hydrogen precooler temperature class — T40 (−40℃ ~ −33℃)
- Refueling amount per FCV — About 5kg
- Refueling time amount per FCV — About 3 minute



Equipment Specification Example

Next action / Business plan

Currently, a demonstration experiment is under way on a hybrid hydrogen gas supply system that combines the technologies and products of Kobe Steel, Kobelco Eco-Solutions, and Kobelco E&M and uses both green hydrogen produced using renewable energy and hydrogen gas vaporized from liquid hydrogen.



An example of a proposal for a hydrogen station supplying renewable energy-derived hydrogen

Company profile

Location	4-5-22 Iwayakitamachi, Nada-ku, Kobe-shi, Hyogo, Japan		
Established	November 2004	**Capital**	150 million yen
Representative	President Hideki Asada	**WEBSITE**	https://www.Kobelco-em.jp

Department in charge

Department name:
Sales and Marketing
DivisionPlant Sales Section

TEL +81-78-881-3357
E-mail yoshimi.hironaga@kobelco.com

Contributing to the creation of a hydrogen society with hydrogen generators that boast top-class performance in Japan

Kobelco Eco-Solutions Co.,Ltd.

Water electrolysis-based high-purity hydrogen and oxygen generator Hydrogen server: 10 N㎥/h

Kobelco Eco-Solutions Co., Ltd. is responsible for the environmental business within the Kobe Steel Group, is involved in the manufacture and sale of water supply and sewerage systems and industrial water treatment equipment, and operates businesses related to waste incineration plants, cooling towers, and hydrogen. In the hydrogen business, we provide water electrolysis-based high-purity hydrogen and oxygen generators (HHOG) that employ a solid polymer electrolyte membrane (PEM) to supply high-purity hydrogen gas using tap water on-site. We have a wide line off products with hydrogen generating capacity ranging from 5 N㎥/h to 100 N㎥/h and have a proven track record of delivery in a variety of fields.

Hydrogen initiatives / Delivery records

HHOG uses renewable energy sources such as solar and wind power to electrolyze water and produce CO_2-free hydrogen. In addition to its features of generating high-purity hydrogen gas, high reliability, and simple operation, it does not use any dangerous chemicals, and the amount of gas generated is automatically and instantly controlled within the range of 0 to 100% depending on the amount used. Over the more than 30 years since sales began in 1994, we have delivered over 260 units both domestically and internationally for a wide range of hydrogen production and utilization applications, including industrial use, research and development, demonstration purposes, and the use of hydrogen as an energy source, achieving the largest market share in Japan. We also have a dedicated maintenance team with a proven track record; with a solid backup system, we can meet a wide range of needs related to hydrogen supply.

Water electrolysis-based high-purity hydrogen and oxygen generator
Skid-mounted type: 20 N㎥/h

Next action / Business plan

In recent years, as efforts towards carbon neutrality have progressed, deliveries of HHOG have increased as a source of hydrogen for energy applications such as hydrogen boilers and hydrogen stations. We have delivered over 10 units with a production capacity of 100 N㎥/h. Looking ahead to the future hydrogen society, we plan to further increase the capacity and will meet all hydrogen demands, from small to large.

Water electrolysis-based high-purity hydrogen and oxygen generator
Skid-mounted type: 100 N㎥/h

Company profile

Location	4-78, 1-chome, Wakinohama-cho, Chuo-ku, Kobe, Hyogo, Japan		
Established	June 1954	**Capital**	6.02 billion yen
Representative	President, Representative Director Hideki Okumura	**WEBSITE**	https://www.kobelco-eco.co.jp/english/

Department in charge

Department name:
Process Equipment Division
Hydrogen Business Promotion Department

TEL +81-3-5931-3704
E-mail sakamoto.kentaro@kobelco.com

Over 20 years of experience in the hydrogen and fuel cell fields
One-Stop R&D Support

KRI, Inc.

"Your Innovation Partner" - Reliable research partner like Himalayan Sherpa.

KRI is a unique private contract research company that contributes to technological development through contract research, analytical evaluation and investigation for companies engaged in R&D. We aim to be a reliable research partner, like Himalayan Sherpa, who thinks together with our clients and works toward the goal alongside them. We have a wide variety of proprietary technologies, including functional materials, electronic devices, secondary batteries, hydrogen and fuel cells, environment and biotechnology, process engineering, analysis and data analysis, material degradation analysis, technology planning and research. We have over 20 years experience in the hydrogen and fuel cell fields.
We are working on water electrolysis and provide technical support from basic electrode reactions to the development of electrodes for mass production. We are also involved in the engineering of ammonia, including the development of utilization systems, thermal and chemical process technologies, and equipment.

Hydrogen initiatives / Delivery records

○R&D: Support for electrolysis, fuel cell development and evaluation, hydrogen generator development, organic hydride process development, hydrogen storage materials development, etc.

○Investigation and feasibility study: Hydrogen application and market research, feasibility study, etc.

○Simulation: Thermal fluid analysis, process simulation, etc.

○Analysis: Elemental mapping analysis of various components and analysis and evaluation of material degradation due to hydrogen

○Data analysis: Degradation data analysis, equipment interconnection-related measurements, related equipment failure prediction, etc

Single-cell evaluation equipment (about 50 units)

Next action / Business plan

We can undertake contract R&D and testing of green hydrogen production using electrolysis and thermal processes. We also conduct investigation, R&D, testing and evaluation, and feasibility study for hydrogen production. We have facilities that can distribute hydrogen gas and various other gases (water vapor, ammonia, etc.), as well as thermal analyzers, which enable us to test the reaction behavior of hydrogen. We also promote the use of hydrogen in fuel cells and other applications. In addition, we have introduced the 100kW fuel cell evaluation equipment and will further strengthen the fuel cell evaluation system.

100kW fuel cell evaluation equipment

Company profile

Location	Kyoto Research Park, 134 Chudoji Minami-machi, Shimogyo-ku, Kyoto-shi, Kyoto 600-8813, Japan		
Established	February 1987	**Capital**	300 million yen
Representative	Representative Director & President Shigesada Hiroaki	**WEBSITE**	https://www.kri-inc.jp/english/index.html

Department in charge

Department name
New Energy Device R&D Laboratory

TEL +81-6-6464-9237

E-mail kri-ned@ml.kri-inc.jp

Strengths in integrated production, from design, manufacturing and cycle & burst tests to evaluations;
A user-friendly hydrogen tank is currently being developed in Japan!

MaruHachi Corporation

Types 3 and 4 high-pressure hydrogen tank and liquid hydrogen tank for hydrogen aircraft

Type 3 small oxygen container (black) Type 4 high-pressure hydrogen container

Right: Container certificate from KHK

We aim to develop Japan's first ultra-lightweight and long-life plastic liner 2000 L-class largecapacity high-pressure hydrogen tank and liquid hydrogen tank by 2030, replacing metal liner hydrogen tanks, and to commercialize them after obtaining special permission from the High Pressure Gas Safety Institute of Japan (KHK). We plan to promote the development of these products in collaboration with Osaka University, the University of Tokyo, Sumitomo Corporation, and other organizations, with a view to both domestic and overseas markets. Hydrogen tanks, which are the result of Maruhachi's advanced composite materials and Type 4 high-pressure hydrogen tank manufacturing technology and Osaka University's design analysis simulation technology for composite materials and high-pressure vessels, are recognized worldwide, winning an award at JEC World, the world's largest exhibition of advanced composite materials held annually in Paris. With the support of JAXA, we will also take on the challenge of developing a large liquid hydrogen tank. We will make further efforts to achieve carbon neutrality by 2050 and the SDGs.

Hydrogen initiatives / Delivery records

Maruhachi Corporation is cooperating with Osaka University, and owns the technology to design and manufacture large and small diameter, long and short length, variable filling pressure Type 4 high-pressure hydrogen tanks. To supply tanks optimized for various applications, such as large trucks, buses, aircraft, drones, and trains that emit large amounts of CO_2 , we plan to obtain special permission for 20 L- to 360 L-class tanks from KHK and supply them by FY2026. We also aim to develop simple high-pressure hydrogen supply systems and simple hydrogen storage devices for forklifts, heavy machinery, agricultural machinery, etc. Our aim is to provide tanks and systems that contribute to hydrogen utilization in industries that consume large amounts of hydrogen other than FCVs. Our Type 4 tank using plastic liner is ultra-lightweight and long-lasting. We are also aiming to develop next-generation linerless tanks and high-performance hydrogen tanks that will lead to Type 5. In addition, we have experience in prototype development for research institutes and automotive companies. We have top-class technology in Type IV containers and were the first company in Japan to win the award in the high-pressure container category at JEC World, the world's largest exhibition of composite materials.

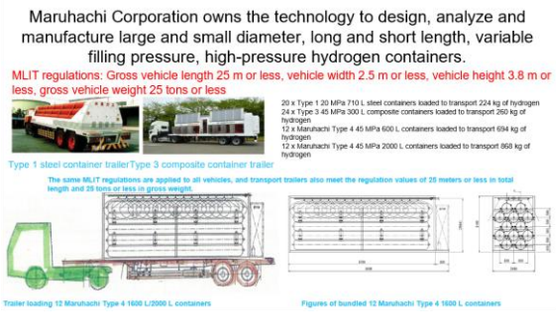
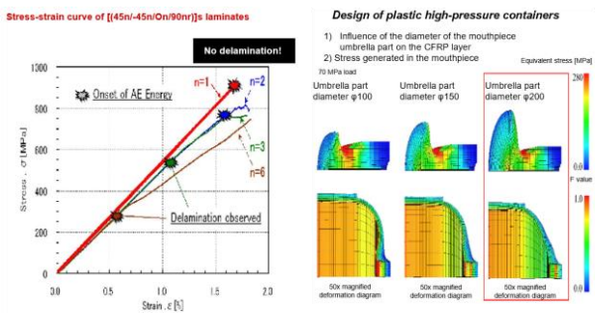


Figure of trailer loading Type 4 large-diameter long-length 2000 L high-pressure containers Excellent hydrogen transport capability, four times that of conventional steel containers



Example of high-pressure container design analysis and simulation

Next action / Business plan

We plan to obtain special permission from KHK for a ultra-lightweight and durable Type 4 hydrogen tank and 30 L to 1000 L-class tanks mainly for heavy-duty trucks by the end of FY2030. We will also develop systems for social implementation of infrastructure for hydrogen transportation, storage, and utilization.

Company profile

Location	12-1 Gennyo, Maruoka, Sakai-shi, Fukui 910-0276, Japan		
Established	August 1968 (Founded in August 1936)	**Capital**	80 million yen
Representative	President & CEO Toshi Sugahara	**WEBSITE**	https://www.maruhati.co.jp/en/

Department in charge

Department name
Hydrogen Tank Division

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E-mail m.sugahara@maruhati.co.jp
toshi@maruhati.co.jp

#Rubber Resin Metal Composite Sealing Material
#High Pressure Hydrogen

Produc-tion | Transport /Storage | Utili-zation

Technical expertise to create the future

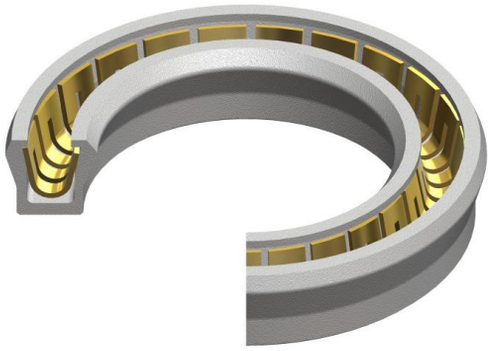
MITSUBISHI CABLE INDUSTRIES, LTD.

Minoshima Works, our main production base

We develop, produce and sell sealing materials (O-rings, high-performance rubber molded products, etc.) made from rubber, resin, metal materials and composite materials that combine these materials.
The company started its business by manufacturing electrical wires for aircraft and expanded its sealing business by applying its insulated cable technology to domestically produce O-rings for the Ministry of Defense. Since then, the company has been involved in aircraft parts and the nation's domestic rocket development project from the early stages, leading to the supply of parts for the latest H3 rocket. Subsequently, the company has supported social infrastructure in a wide range of sectors, including the semiconductor, automotive, medical, aerospace, and energy industries. In particular, in the semiconductor sector, the company counts major semiconductor manufacturing equipment manufacturers as customers. Many of the products are customized, and the company's technological capabilities that enable it to meet even the most detailed requests from customers are a major asset.

Hydrogen initiatives / Delivery records

Since our founding, we have flexibly customized materials and shapes to meet the wide range of requests from customers in a variety of industries, including those for special usage environments. We efficiently propose optimal seals for issues such as reducing frictional resistance, improving durability, and miniaturization by utilizing CAE technology to analyze the current situation and design products. They have earned a high reputation as seals for hydrogen recently. So, if you have any problems, please feel free to contact us.
[O-rings for high-pressure hydrogen]Utilizing our aerospace seal compounding technology, we are developing sealing materials that are suitable for low-temperature and high-pressure applications. O-rings for hydrogen are used in high-pressure hydrogen supply valves, hydrogen tanks for fuel cells, etc.
[SUNFLON® U-Seal] SUNFLON® is a registered trademark of Mitsubishi Cable Industries, Ltd.SUNFLON® U-Seal is a seal that combines a U-cross sectioned SUNFLON® ring and a U-shaped SUS spring with high resistance to fatigue from flexing. It is mainly used under conditions where rubber seals cannot be used, such as high temperatures, high pressures, and cryogenic temperatures.
[Various resin/metal/rubber composite seals]
Various resin, metal, and/or rubber composite seals are used under special conditions where it is difficult for rubber, resin, or metal alone to cope with.



SUNFLON® U-Seal is used under conditions where rubber seals cannot be used, such as high temperatures, high pressures, and extremely low temperatures.

Extensive line of products that meets a wide variety of needs

Next action / Business plan

Towards the creation of a hydrogen energy society, we will rapidly design and develop products that meet customer needs. In terms of manufacturing, we will meet demand by increasing our production capacity; while our main factory is the Minoshima Works (Wakayama Prefecture), we are also building a new factory at our Kumagaya Works (Saitama Prefecture). For realizing these missions, we value "trust with stakeholders," "human resource development," "manufacturing technologies" and "a challenging spirit," and we will always be conscious of innovations to live up to your expectations.

Company profile

Location	Shin-Kokusai Building, 3 Chome-4-1 Marunouchi, Chiyoda-ku, Tokyo, Japan		
Established	28 June 1917	**Capital**	8 billion yen
Representative	President Hiroshi Tajima	**WEBSITE**	https://www.mitsubishi-cable.co.jp/en/contact/

Department in charge

Department name
Sales Headquarters,
Industrial Equipment Group

TEL +81-6-6411-1550

E-mail yasuwaji@mitsubishi-cable.co.jp

Validation of technologies for power generation and hydrogen production is in progress in Takasago Hydrogen Park.

Mitsubishi Heavy Industries, Ltd.

The MHI Group declared to become carbon neutral by 2040.

The Mitsubishi Heavy Industries Group declared “MISSION NET ZERO” in October 2021 to become carbon neutral by 2040. We are promoting the Energy Transition Strategy to realize a carbon-neutral society, and as part of this strategy, we are working to build a value chain from hydrogen production to utilization by further integrating and evolving existing energy infrastructure technologies and hydrogen-related technologies. Through the Group’s products, technologies, and services that can contribute to CO_2 emissions reduction, we will cooperate with our partners around the world and contribute to the realization of Net Zero for the entire global society with new solutions and innovations.

Hydrogen initiatives / Delivery records

In November 2023, with the use of a state-of-the-art JAC-series gas turbine with an inlet temperature of 1,650℃, we successfully conducted the operation of the Combined Cycle Power Plant Validation Facility in Takasago Hydrogen Park, using fuel mixed with 30% hydrogen. In addition, a 400kW class SOEC demonstration machine began operation in the spring of 2024.

Central control room during a 30% hydrogen co-firing

Next action / Business plan

In Takasago Hydrogen Park, we plan to advance validations with the aim of commercializing hydrogen production equipment with different characteristics, such as an anion exchange membrane water electrolysis system that enables cost reduction and downsizing of equipment and a methane pyrolysis system that thermally decomposes methane into hydrogen and solid carbon. In addition, we will further improve equipment for the validation operation, using the JAC gas turbine with over 30% hydrogen co-firing.

A 400kW class SOEC demonstration machine being technically validated in Takasago Hydrogen Park

Company profile

Location (Head Office)
3-2-3 Marunouchi, Chiyoda-ku, Tokyo 100-8332, Japan
(Takasago Machinery Works)
2-1-1 Shinhama, Arai-cho, Takasago-shi, Hyogo, 676-8686, Japan

Established January 11, 1950 **Capital** 265.6 billion yen (as of March 31, 2025)

Representative President & CEO Eisaku Ito **WEBSITE** https://www.mhi.com

Department in charge

Department name
Communications & Government Relations Group,
Strategy Planning Department, Energy Systems

Inquiry https://power.mhi.com/inquiry

#HydrogenRelatedProducts
#HydrogenFlameDetection #DisasterPreventionSecurity

Produc-tion | Transport /Storage | Utili-zation

Contributing to safety measures for a hydrogen-based society with our proprietary hydrogen sensing technology

MURAKAMI GIKEN CO.,LTD.

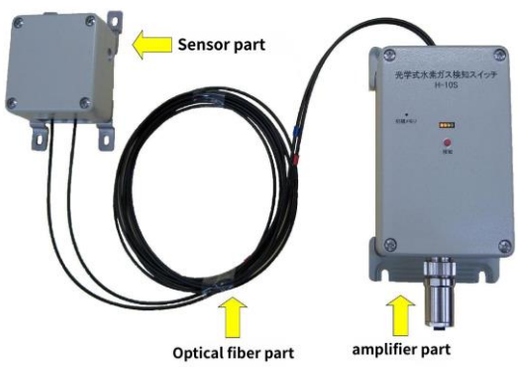
Explosion-proof flame detector (model: BFL-3WW)

Since our founding, giving priority to "advancing technology, pioneering ideas," we have been engaged in the development of mechanically and electrically integrated equipment and have delivered highly reliable sensors and electronic devices to society, which have earned us a great deal of trust.
In May 1979, we were incorporated and changed our business name to Murakami Giken Co., Ltd. We aim to make greater leaps forward with sharp enthusiasm that has been with us since our founding, refining our technological capabilities to meet the needs of the global era and offering original one-of-a-kind products that no other company can offer in the fields of factory automation, surveying, and security.

Hydrogen initiatives / Delivery records

Our explosion-proof flame detectors have been widely adopted as safety equipment to monitor hydrogen flames in dispensers, pressure vessels, etc. for hydrogen stations as well as other flames.
Our explosion-proof flame detector can immediately detect hydrogen flames, which are hardly visible to the naked eye.
The detection function is based on ultraviolet rays emitted together with the flame. Its features include high sensitivity and not being easily affected by sunlight, etc., using our proprietary signal analysis technique. (The ultraviolet hydrogen flame detection mechanism has been patented by Murakami Giken.)
We developed an optical hydrogen gas detection switch as a new hydrogen gas detection system. The optical hydrogen gas detection switch detects hydrogen gas when the sensor element (a thin alloy film) changes in color due to a reaction with hydrogen gas. (The device has been patented.)
The device is extremely safe in terms of disaster prevention because no electric current is directly passed through the sensor element. In addition, it can also detect hydrogen gas in oxygen-free environments as well as flows of hydrogen gas. (The device has been patented.)

Explosion-proof flame detector (model: BFL-3WW)



Optical hydrogen gas detection switch
(model: H-10S)

Next action / Business plan

Our products are not limited to hydrogen station sensors, but are adopted and deployed as safety devices, from hydrogen production to transportation and storage.
We are also proceeding with the development of sensors that are compatible with use in the marine field, envisioning the use of hydrogen at sea as well as on land.

Company profile

Location	3-9-55 Ikegami-cho, Izumi City, Osaka, Japan 594-0083		
Established	May 1979	**Capital**	10 million yen
Representative	Representative Director Koichi Murakami	**WEBSITE**	https://www.murakamigiken.co.jp/

Department in charge

Department name
Sales/Technology Department

TEL +81-725-45-0321

E-mail murakami@murakamigiken.co.jp

Comprehensive manufacturer of fluidcontrol systems with a focus on valves

NAKAKITA SEISAKUSHO CO., LTD.

Sales and Service Offices

Since our founding in 1930, we have striven, under the corporate motto of “Frontier Spirit,” to provide a one-stop reply to all of our customers’ needs, from development, to manufacture, to maintenance, when it comes to fluid control systems, centered on valves.
However, as the world is constantly changing, we have adopted the new theme of"cha11enge" with regard to taking on new opportunities while also clinging on to the " now." Our goal is to continue to refine our product development that has up until now put our customers'requests into a concrete shape, while taking up new technology development and providing our customers with new value and convenience. we at Nakakita Seisakusho co., Ltd. will take our spirit of enterprise into new arenas, and we hope that we can rely on your unchanging understanding and support going forward.

Hydrogen initiatives / Delivery records

As part of our commitment to realizing a hydrogen society, we have developed a Large-diameter Cryogenic Butterfly Valve designed specifically for LH2, playing a crucial role in marine transportation within the hydrogen supply chain. This valve is suitable for installation on large LH2 carriers as well as at shipping and receiving terminals dedicated to LH2 operations.
Recognized by Japan Ministry of Economy, Trade and Industry(METI) as a company taking on the zero・Emissions challenge Nakakita has been recognized as a company taking on the zero・Emissions challenge for its undertaking of national projects related to the 39 themes set forth in the Environment Innovation strategy.

Prototype for LH2 test at JAXA
Noshiro Rocket Testing Center

Next action / Business plan

We are now expanding our product lineup to include not only large diameter butterfly valves but also small- to medium-diameter globe valves. This expansion enables us to offer a comprehensive range of valves suitable for a wide variety of applications.

cryogenic valves

Company profile

Location	［Head Office and Plant］ 1-1 Fukonominamicho, Daito, Osaka 574-8691, Japan		
Established	May 1930	**Capital**	1.15 billion yen
Representative	President Teruhisa Miyata	**WEBSITE**	https://www.nakakita-s.co.jp/en

Department in charge

Department name
ENGINEERING DEPARTMENT

TEL +81-72-871-6003

E-mail ono@nakakita-s.co.jp

Developing hydrogen-fired ovens towards decarbonization of the kitchen industry

NAKANISHI MFG. CO., LTD

Our corporate slogan is "Creating the future of *itadakimasu* (meaning 'I humbly receive the food')."
The image depicts the Gunma Plant.

Nakanishi Mfg. Co., Ltd. is a manufacturer of commercial kitchen equipment founded in 1946. The company handles everything from development to manufacturing, sale, design, installation, and after-sales support for kitchen equipment for school lunch services. We are currently expanding our services to a variety of cooking facilities, including hospitals, welfare facilities, employee cafeterias, and major restaurant chains, and are helping to create a safe, secure, and efficient cooking environment. Furthermore, in order to create a sustainable society, we are actively working on developing environmentally friendly kitchen equipment, reducing the number of people required in the kitchen, ensuring occupational safety, providing career support, and collaborating on food education.

Hydrogen initiatives / Delivery records

Nakanishi has jointly developed a continuous hydrogen-fired oven with its partner company, Heat Energy Tech Co., Ltd. This was made possible by combining Heat Energy Tech's hydrogen burner development technology with our know-how accumulated through the development, manufacture and sale of large-scale commercial kitchen equipment, such as dishwashers, rice cooking systems, and continuous superheated steam cookers. Foodstuffs on a conveyor are cooked by purpose-designed hydrogen burners placed inside the oven, and various safety devices are built in, so you can use the oven with peace of mind. The greatest feature of this product is that it combines cooking quality with environmental friendliness. By taking advantage of the high temperature of hydrogen combustion and the fact that it combines with oxygen during combustion to produce water (steam), food can be cooked to a crisp on the outside and juicy on the inside in a short amount of time. Because the combustion gas is odorless, it has the advantage of preserving the original aroma and flavor of foodstuff compared to conventional combustion cooking. Moreover, hydrogen combustion is an environmentally friendly cooking method as it does not emit carbon dioxide (CO_2). We will continue to strive for continuous technology development to create a carbon-free society and reduce the environmental impact of cooking sites.

Hydrogen combustion burner developed in collaboration with Heat Energy Tech

We plan to exhibit at a wide range of exhibitions and events. We conduct hydrogen cooking tests with various food companies and restaurant-related customers and make proposals to them.

Next action / Business plan

With an eye toward practical application and commercialization, we are currently planning a product lineup for food factories, mass cooking facilities (central kitchens), and restaurants. By developing products that take advantage of the features of hydrogen cooking in parallel with the development of cooking software, we aim to create a new use of hydrogen as a new cooking method in the kitchen, to create a trend toward a decarbonized society in the kitchen industry, and to contribute to providing a new food culture and dining experience.

Company profile

Location	Shinkawa NS Building, 1-26-2 Shinkawa, Chuo-ku, Tokyo, Japan		
Established	August 1958	**Capital**	1.4456 billion yen
Representative	CEO Kazuma Nakanishi	**WEBSITE**	https://www.nakanishi.co.jp/en/

Department in charge

Department name
Manufacturing R&D Department

TEL +81-270-30-5300

E-mail Please contact us through our website.

#Experimental apparatus used in high-pressure hydrogen gas
#Plant construction #Pipe welding

Produc-tion | Transport /Storage | Utili-zation

Production and maintenance of high-pressure hydrogen gas equipment
Supports small to large equipment

Nakatec Co., Ltd.

R&D Center established by Nakatec group companies

Nakatec Co., Ltd. is the core company of the Nakatec Group, which is made up of 14 companies, including Nihonkai Sangyo Co., Ltd., a designated safety inspection institution and a KHK-certified inspection business for high-pressure gas equipment, and Piplant Co., Ltd., a company that welds high-pressure gas piping, etc. The R&D Center established by Nakatec group companies conducts fundamental research on hydrogen, such as methods for analyzing the concentration of hydrogen dissolved in metal materials, elucidating the mechanism by which hydrogen penetrates into metals from aqueous solution environments, and developing welding techniques for stainless steels used in high-pressure hydrogen atmosphere, contributing not only to solving challenges not only in our own company but also in local companies.

Hydrogen initiatives / Delivery records

We have set up the secretariat of the Fukui Hydrogen Energy Council in our company, which is organized with the aim of building a hydrogen-based society in Fukui Prefecture, promoting and sharing variou hydrogen and ammonia utilization projects within Fukui Prefecture. The council and Nakatec Co., Ltd. collaborate with Fukui prefecture and public research institutions, playing its role as a center for hydrogen research and utilization.
In March 2025, The council installed the small-scale hydrogen station in Ohi Town, Fukui Prefecture, and has supplied hydrogen as fuel for the “Mahoroba”, a hydrogen fuel cell ship used to transport visitors to the Osaka-Kansai Expo.
We have track records in (1)fabrication of hydrogen supply equipment for the torch used in the National Sports Festival held on Fukui Prefecture, and conducting its on-site work, and (2)hydrogen station construction work, etc.

The hydrogen station Ohi Uminpia in Ohi-cho

Next action / Business plan

With the aim of building a hydrogen-based society in Fukui Prefecture and supporting the research on hydrogen, we collaborate with local governments and companies to conduct various research projects and produce research equipment.

In addition, as the secretariat for the Fukui Hydrogen Energy Council, we contribute to promoting better understanding of hydrogen energy by gathering and disseminating information on hydrogen energy. Furthermore, we hope to receive government subsidies to promote projects to build a hydrogen-based society in Fukui Prefecture.

Development results of the welding methods for stainless steels used in high-pressure hydrogen atmosphere

Company profile

Location	37-9 Fujiwashiduka, Harue-cho, Sakai-shi, Fukui, Japan		
Established	October 1979	**Capital**	30 million yen
Representative	Representative director Hiroyuki Nakayama	**WEBSITE**	https://www.nakatec.co.jp/

Department in charge

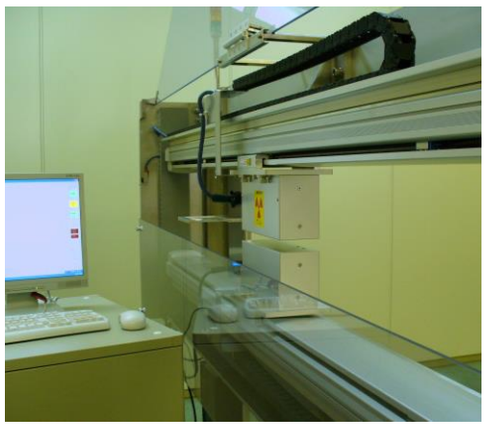
Department name
Sales/Technology Department

TEL +81-766-51-1666

E-mail info@nakatec.co.jp

NanoGray contribute to non-contact measurement under high temperature for mass hydrogen production process

nanoGray Inc.



X-ray thickness gauge SX-1100
(NanoGray Inc. is radiation measurement instrument manufacture)

We are a manufacturer of various measuring instruments (thickness gauges, level gauges, and density meters) using weak radiation. Since we received design-certification by the Nuclear Regulation Authority, our instruments can be used without licenses and requiring a controlled area setting in Japan.

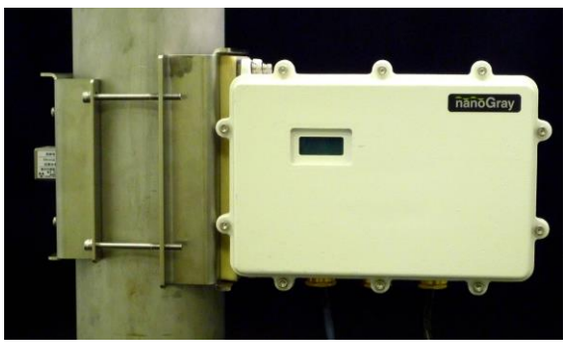
In addition, due to the use of our unique high-sensitivity detector (radiation) safety can be compatible with high accuracy. Taking advantage of the feature of perfect non-contact, many of these instruments are used to measure points that are typically difficult to measure by other measurement methods or hard to measure objects. These instruments are used for chemical, electronic, automotive, power plant, paper-making, and other diverse applications.

Hydrogen initiatives / Delivery records

○Gamma density meter, gamma level gauge:
For high temperature chemical process for mass hydrogen production line.

○MEA catalyst coating gauges (X-ray weight gauges):
For CCM production lines for fuel cells.

○Basis weight gauge for Tow Prepreg Rc measuring equipment :
For vehicle-mounted hydrogen tank production lines.



gamma density meter PM-1000A : is applied high temperature chemical process for mass hydrogen production.

Next action / Business plan

We are looking to expand our gamma-ray level gauges and density meters lineup in order to expand the scope of application. With the basis weight gauges for Tow Prepreg Rc measuring equipment, improvements will be continuously made to make the measuring equipment easier to use.

Basis weight gauge for Tow Prepreg Rc measuring equipment

Company profile

Location	1-11-16, Senba-higashi, Minoh-shi, Osaka		
Established	January 2006	**Capital**	10 million yen
Representative	President Hiraku Miyashita	**WEBSITE**	https://www.nanogray.co.jp

Department in charge

Department name
Sales department

TEL +81-72-726-4000

E-mail toiawase@nanogray.co.jp

#GasAlarm #GasSensor #LowPowerConsumption

Produc-tion | Transport /Storage | Utili-zation

Contributing to the creation of a safe hydrogen society with residential and industrial gas detectors.

New Cosmos Electric Co., Ltd.

Gas sensor research facility “Cosmos Sensor Center”

Since our founding in 1960, we have grown our business as a gas detector manufacture with the goal of “eliminating gas accidents around the world”. Our product lineup includes residential gas alarms, fire alarms, industrial fixed gas detectors, portable gas detectors, as well as odor level indicators and environmental monitors. With an unwavering focus on the gas sensors which form the heart of this range, we are directly engaged in R&D, production, sales and maintenance of our products. We are the only gas detector manufacture in Japan that handles both industrial and residential products, and we proudly hold the top share of the domestic residential alarm market.

Hydrogen initiatives / Delivery records

We contribute to the safety of hydrogen refueling stations by supplying fixed detection and alarm systems, portable detectors for hydrogen leak detection in piping and related equipment, and hydrogen flame detectors that meet stringent hydrogen explosion-proof standards.

In addition, our in-vehicle hydrogen leak detectors are adopted as safety-critical components in fuel cell electric vehicles (FCEVs), including Toyota’s MIRAI, fuel cell buses and trucks, which are now seeing wider deployment. By combining our proprietary catalyst technology, which provides both fast response times and high durability, with mass-production capabilities cultivated over many years of manufacturing residential gas alarms, we ensure a steady supply of gas sensors.

In 2025, we developed the world’s first battery-powered residential hydrogen alarm, and pilot installations have begun, primarily in Europe, where the introduction of hydrogen as a household energy source is under consideration.

Our gas detection units are installed in 80% of hydrogen stations in Japan.

Our in-vehicle hydrogen detectors are adopted in FCEVs, including Toyota's MIRAI.

Next action / Business plan

With the launch of laser-based ammonia detectors, and through ammonia flame detection using existing infrared and ultraviolet hydrogen flame detection technology, we are working to enhance safety at sites handling ammonia and will continue to further support the promotion of carbon neutrality.

Company profile

Location	2-5-4Mitsuyanaka, Yodogawa-ku, Osaka 532-0036, Japan		
Established	June 1960	**Capital**	1.46 billion yen
Representative	President and Representative Director Yoshinori Takahashi	**WEBSITE**	https://www.new-cosmos.co.jp/en/

Department in charge

Department name
Overseas Division

TEL +81-6-6309-8680

E-mail Please contact us through our website.

#Hydrogen Refining #Hydrogen production equipment
#Hydrogen embrittlement resistance

Production / Transport /Storage / Utilization

Compact and energy-saving small dehydrogenation reactor
Contributing to cutting-edge industries by refining hydrogen to ultra-high purity

Nippon Seisen Co., Ltd.

Stainless steel wire product group

Since our founding in 1951, Nippon Seisen has provided our customers with valuable products and services such as our unique, high value added products such as stainless steel wire based NASLON (metal fiber) and high alloy steel wires.
In an age where the industrial structure has progressed towards environmentally friendliness, clean energy and computerization, there has been increased expectations of the stainless steel field, and there have been calls for the field to move towards “thinner, stronger, and more precise.”
As the leading manufacturer of stainless steel wires, we have made “Micro & Fine Technology” as our new slogan to meet these expectations, and we will continue to be the leader in next generation materials and technological development.

Hydrogen initiatives / Delivery records

Basic experiments have been completed on a hydrogen production device that uses catalytic wire to extract hydrogen from MCH, a liquid containing hydrogen. Currently, verification tests are being conducted using the recovered and purified hydrogen as atmospheric gas for the heat treatment furnace on the premises, with safety as the top priority.
In addition, our hydrogen separation membrane modules for hydrogen purification have been highly reliable and have a long lifespan, and have been well received by customers. Until now, we have focused on sales of small flow rates, but there are now more cases where larger flow rates are required, and we have been able to increase the processing capacity by more than 20 times.

Hydrogen Separation Membrane Module

Next action / Business plan

Based on the data obtained from the demonstration test, we aim to commercialize the hydrogen production equipment as a small-scale plant that can be used on a small scale.
We are also expanding sales of hydrogen separation membrane modules for applications requiring extremely high purity hydrogen gas, such as hydrogen purification equipment in various hydrogen production devices, and in the field of ultra-high purity hydrogen gas purification used in the next-generation semiconductor industry, including power semiconductors.

Hydrogen Generator

Company profile

Location	4-1-1Koraibashi, Chuo-ku, Osaka-shi, Osaka 541-0043 Japan		
Established	June 1951	**Capital**	5 billion yen
Representative	President and CEO Kazuhiro Toshimitsu	**WEBSITE**	https://www.n-seisen.co.jp/en/

Department in charge

Department name
Hydrogen Business Development Section, R&D Department

TEL +81-72-840-1265

E-mail RandD_div@n-seisen.co.jp

#Membrane #Alkaline Water Electrolysis #Energy Efficiency

Produc-tion | Transport /Storage | Utili-zation

Offering water-electrolysis materials with excellent gas barrier properties and ion conductivity

NIPPON SHOKUBAI CO., LTD.

Since its founding in 1941, Nippon Shokubai has provided a stable supply of basic chemicals such as acrylic acid and ethylene oxide using world-class vapor phase oxidation reaction, as well as superabsorbent polymers and other various polymer products.
Currently, based on our unique catalytic technology, we are making full use of organic synthesis technology and polymer synthesis technology to provide high-performance products in a wide range of fields such as electronics, energy, and daily use materials.
In energy-related fields, our product lineup includes electrolyte sheets for solid-oxide fuel cells (SOFCs) and electrolyte for lithium-ion batteries “LiFSI” (IONEL™).
Recently, we have been focusing on expanding business in energy-related fields, and developed a membrane for alkaline water electrolysis, which is a key material in green hydrogen production.

Hydrogen initiatives / Delivery records

Our membrane for alkaline water electrolysis offers excellent gas barrier properties and ion conductivity, as well as high handling because of dry type. By introducing this membrane into the electrolyzer, it is expected to improve the amount of hydrogen produced per electricity and the purity of the generated hydrogen.
For mass production process, we have already installed large equipment and can provide membranes with a width of up to 1.2 m.
With the support of NEDO (New Energy and Industrial Technology Development Organization), we have also considered further enlargement and have succeeded in developing a 1.8 m wide membrane so far.
With our unique organic-inorganic composite technology and sheet forming technology, we can meet a wide range of customer requirements by flexible material design and physical property control.

Membrane for Alkaline Water Electrolysis

Next action / Business plan

Currently, we are taking advantage of our European bases to strengthen marketing activities to local manufacturers. We have conducted sample work with multiple manufacturers in Japan and abroad, and some of them have received high reputations.
In addition, we are establishing a production system and verifying technology with the aim of commercializing membranes as soon as possible.
By doing so, we will support the spread of green hydrogen and contribute to reducing CO_2 emissions.

Company profile

Location Osaka Office
Kogin Bldg.,4-1-1 Koraibashi, Chuo-ku, Osaka 541-0043, Japan
Established August 1941
Capital 25.038 billion yen
Representative President & CEO, Representative Director Kazuhiro Noda
WEBSITE https://www.shokubai.co.jp/en/

Department in charge

Department name
Battery Materials Research Department
TEL +81-6-6317-2232
E-mail https://www.shokubai.co.jp/ja/inquiry/product/

#Quick start up Quick response speed
#High selectivity #High durability& maintenance-free

From the world's first installation in fuel-powered vehicles to a proven track record of global adoption.

Nissha Co., Ltd.

We are a global manufacturer headquartered in Kyoto, founded in 1929. Building on the printing technologies developed during our early years, we operate three core businesses: Industrial Materials, Devices, and Medical Technologies. Our products-including decorative films for automobiles and home appliances, touch sensors, gas sensors, and medical devices—are manufactured and sold worldwide, contributing to a sustainable society.

Hydrogen initiatives / Delivery records

Our hydrogen detectors detect and quickly notify of hydrogen leakage in fuel cell vehicles (FCVs) and other hydrogen-fueled mobilities and in stationary fuel cells. Fast start-up (<1 sec.), fast response (<2 sec.), high hydrogen selectivity, long life (expected lifespan of over 10 years), environmental resistance, and compact size enable a wide range of applications. We offer not only hydrogen detectors but also other products consistent with market needs, from sensors and sensor modules to finished products, in the form that meets our customers' requirements. We also provide solutions for wireless sensor networks, etc. Our products have been used in the world's first mass-produced hydrogen fuel cell vehicles and have been used in a wide variety of vehicles around the world, establishing an unshakeable position as a top brand.

Detecting hydrogen leaks from stationary fuel cell systems, fuel cell vehicles, hydrogen engine, hydrogen tanks, etc…

Next action / Business plan

We have focused on expanding small size and compact handling sensor with a low power consumption. We are also strengthening solutions such as wireless sensor networks. Furthermore, we aim to contribute to the realization of a hydrogen based society through a wide range of applications, including hydrogen refueling stations, underground pipelines, power generators utilizing hydrogen fuel, and hydrogen production systems.

Nissha SenseEvolve is a brand that offers a wide range of sensors

Company profile

Location	3 Mibu Hanai-cho, Nakagyo-ku, Kyoto, 604-8551, Japan		
Established	December 1946	**Capital**	¥12,119.79 million
Representative	Chairman of the Board and Group CEO Junya Suzuki	**WEBSITE**	https://www.nissha.com/english/index.html

Department in charge

Department name
Sales Department,Device Business Unit

TEL +81-75-823-5217

E-mail D_Sales@nissha.com

Hydrogen generator and fuel cell system that can produce high-purity hydrogen anywhere.

NISSHIN KASEI CO., LTD

Silicon nanoparticles for hydrogen generation made from recycled industrial silicon waste

Since our founding in 1958, we have developed markets as a specialized chemical trading company, focusing on specialty chemicals and synthetic resins, and have also engaged in research and development of our own products, creating businesses that contribute to society by providing products such as binders for electronic components, pharmaceutical additives, and pharmaceutical manufacturing machinery. We have now succeeded in developing inexpensive, environmentally friendly silicon nanoparticles by recycling silicon industrial waste generated during the production of silicon wafers and semiconductors and applying special processing to it. These silicon nanoparticles have high surface activity and react easily with water to generate hydrogen, making them a new carrier that can be safely transported. We expect that they will make a significant contribution to the utilization of hydrogen, which is attracting attention as a next-generation energy source.

Hydrogen initiatives / Delivery records

Hydrogen gas is a hazardous material, and its transportation, storage, and use are subject to regulations such as the Fire Service Act and the High-Pressure Gas Safety Act. Our unique low-cost hydrogen generation process is not subject to these regulations, making it possible to obtain high-purity hydrogen "anytime," "anywhere," and "easily," .We are currently working with Chuo Engineering Co., Ltd. to jointly develop a hydrogen generator that utilizes this low-cost hydrogen generation process, as well as a 200W to 300W fuel cell power supply system that combines a hydrogen generator with a fuel cell, and are currently demonstrating this with a mass-produced demo unit. It is scheduled to be released in 2026.

A small hydrogen generator and fuel cell power system (300W model) currently under development

Next action / Business plan

We are currently developing a 200W to 300W class small hydrogen generator/fuel cell power supply system that utilizes a low-cost hydrogen generation process, and are working on developing a larger system with a capacity of 1KW to 8KW. We are also developing permanent equipment for factories that generate silicon waste, such as those related to semiconductors.

Image of the 8KW model

Company profile

Location	7-10, 1-Chome Doshomachi, Chuo-ku,Osaka, 541-0045, Japan		
Established	February 1958	**Capital**	75 million yen
Representative	President and CEO Motohiko Uemura	**WEBSITE**	https://www.nisshinkasei.co.jp/english/index.html

Department in charge

Department name
Electronic Materials Development Dept.

TEL +81-6-6203-1891

E-mail higo@nisshinkasei.co.jp

#TankValve #Lightweight #FuelCell

We will contribute to the creation of a hydrogen-based society with our smoothness technology.

NISSIN MANUFACTURING GROUP CO., LTD.

Head office

Nissin Manufacturing Group was founded on the founder's philosophy of "pursuing happiness through the production of excellent products." Currently our corporate group manufactures and sells products used in mobility solutions and machine tools worldwide. We bring together our technical capabilities in precision parts manufacturing to provide high-precision parts processing services for a wide range of industries, including the automotive industry as well as the aerospace, medical, and semiconductor industries. With the production and quality control systems we have developed over many years as a Tier 1 supplier, we will meet the diverse needs of our customers and contribute to the creation of a hydrogen-based society and to the future of manufacturing.

Hydrogen initiatives / Delivery records

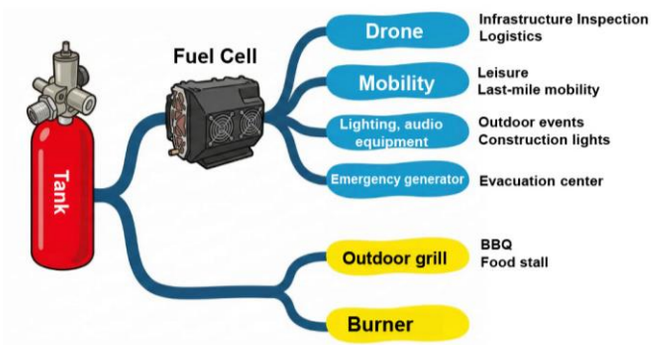
We are developing a tank valve with a pressure reducing mechanism and flow rate switching capability (prototype sales have begun) and a fuel cell module for general-purpose equipment using small, lightweight cells (under development).

Left：Tank valve with a pressure reducing mechanism and flow rate switching capability

Right：Compact fuel cell module for general-purpose equipment using small, lightweight cells

Next action / Business plan

While we offer 35 MPa tank valves, we are currently improving the products to make them compatible with even higher pressures and reduce their costs. Additionally, we are working to improve the performance and reliability of fuel cell modules, with development proceeding with the aim of launching them in 2027.
We will develop small and lightweight tank valves and fuel cell modules that are essential for the general use of hydrogen, including in small mobility vehicles and drones, which are expected to become more widespread in the future.



General use examples of hydrogen

Company profile

Location	22 Chitose, Mineyama, Kyotango, Kyoto, Japan		
Founded	September 1946	**Capital**	850 million yen
Representative	President Akira NISHIKOHRI	**WEBSITE**	https://www.nissin-mfg.co.jp/en/

Department in charge

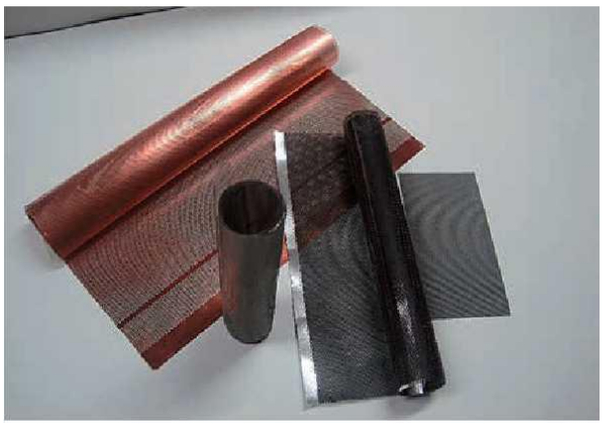
Department name:
NISSIN PREVO CO., LTD.
Planning Dept. Sales Section

TEL +81-722-62-7007

E-mail parts-sales@nissin-mfg.co.jp

Production and sale of precision expanded metals and perforated metals; In-house design and development of dies to quickly respond to the speed of customer development

NK PLUS TEC Co., Ltd.



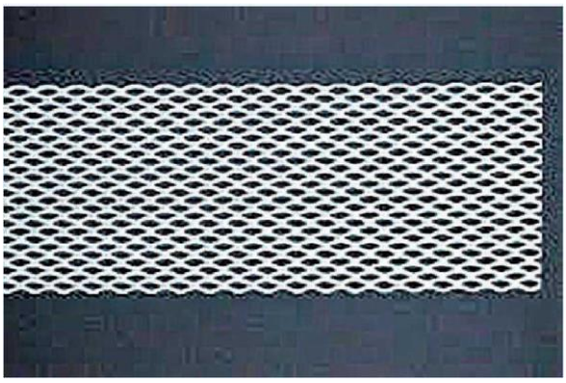
We are engaged in the production and sale of various mesh products, focusing on precision expanded metals and perforated metals, and have a proven track record in delivery to a wide range of industries, including light electrical appliances, automobiles, and plant manufacturers. We also have a strong track record in materials for secondary cell and primary cell electrodes, various electrode materials related to energy, and filter-related products. Specializing in the processing of foil materials of 100 μm or less, we have experience in mass production processing of steel, stainless, nickel, titanium, copper, aluminum, Inconel, PVC, resins, and various other materials. Currently, we are also working on materials that are more difficult to process, and one of our characteristics is that we design and fabricate dies for processing these materials in-house.

Hydrogen initiatives / Delivery records

As electrode substrates (current collectors, feeders, etc.) used for hydrogen production equipment and fuel cells, we can offer lath substrates (precision expanded metals) and perforated metals using titanium and nickel as materials. One of our strengths is that we can handle electrode substrates of various sizes tailored to small, medium-sized, and large hydrogen production equipment. While high flatness is required for electrode substrates, we meet this requirement by our technical expertise cultivated over more than 50 years of mass production processing of electrode members. Furthermore, we can apply plating and other surface treatments to our substrates in collaboration with our partner companies. Specifically, we can handle nickel, tin, copper, and silver plating.

We have started supplying titanium lath substrates as electrode substrates to several hydrogen production equipment manufacturers. In addition to existing mass-produced products, we are jointly working on next-generation development projects.

Titanium lath substrate for hydrogen production equipment electrode (large size)



Titanium lath substrate
for hydrogen production equipment electrode
(small size, Pt-plated surface)

Next action / Business plan

The market for electrode substrates used for hydrogen fuel cells is extremely large from a worldwide perspective. We will meet wide-ranging market needs by focusing our efforts on sales channel development and technological development.

Company profile

Location	2-10-2 Hashirii, Toyonaka-shi, Osaka, 561-0891, Japan		
Founded	August 1924	**Capital**	13 million yen
Representative	President Terunori Fukushima	**WEBSITE**	https://www.nkplustec.co.jp/index.html

Department in charge

Department name:
Sales Department
TEL +81-6-6843-6133
Contact Form
https://www.nkplustec.co.jp/contact.html

#FlexibleTube #FillingHose

Pioneer of ultrahigh-pressure and ultralow-temperature metallic flexible hose

Osaka Rasenkan Kogyo Co., Ltd.

Since our founding in 1912, we have continued to develop and produce superior products in Japan and across the world as a specialized manufacturer of flexible hose and bellows.
We contribute to society by producing products that are closely related to all aspects of life and industry: steel, shipbuilding, petrochemicals, gas, water, electricity and other key industries; hydrogen-related, solar power, and other energy-related industries; semiconductor manufacturing equipment, superconductivity, ultralow-temperature, nuclear power, space development and other high-tech industries; and industries that protect human life, including medical equipment and disaster prevention.

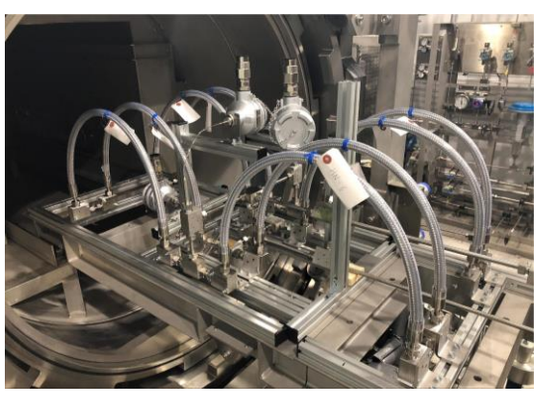
Hydrogen initiatives / Delivery records

We provide 50 MPa/90 MPa ultrahigh-pressure spec metallic flexible hoses for hydrogen station facilities and for various test stations of vehicle-mounted tanks, etc. In addition to the features of zero hydrogen permeation and high flexibility under high pressure, our hoses support precooling and comply with the High Pressure Gas Safety Act. Furthermore, they have SUS316 and SUS316L for the gas contacting parts. Taking advantage of these features, they have been selected for use as filling hoses at hydrogen filling facilities and vehicle-mounted tank leak test facilities.

Flexural state of flexible hose

Next action / Business plan

We will continue to closely monitor market trends toward the creation of a hydrogen-based society and promote product development in line with these needs.
In recent years, demand for products for liquefied hydrogen has been growing. We plan to expand our range of compatible products.
We will continue to make prototypes and conduct experiments on ultrahigh-pressure flexible hoses, aiming for even higher pressure and service life.



Hydrogen impulse test
(durability test at Iwatani R&D Center)

Company profile

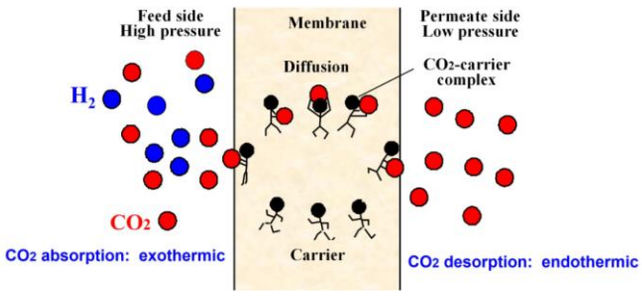
Location	3-12-33, Himesato, Nishiyodogawa-ku Osaka-shi, Osaka, 〒555-0025, Japan		
Founded	March 1912	**Capital**	80 million yen
Representative	Directorate president Seiji Koizumi	**WEBSITE**	https://www.ork.co.jp/en/

Department in charge

Department name
Head Office Engineering Department
TEL +81-6-6473-6151
E-mail orkhq1@ork.co.jp

Innovative CO_2 membrane separation technology and high-performance catalysts that accelerate the creation of a low-carbon society

RENAISSANCE ENERGY RESEARCH CORPORATION

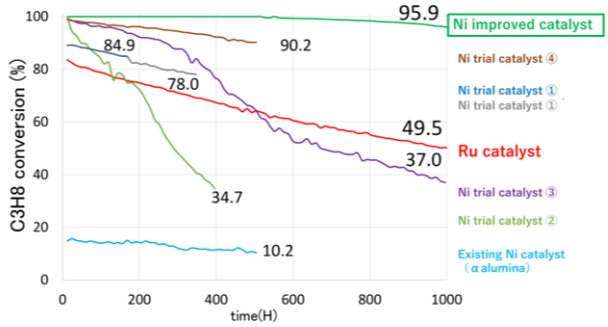


Schematic diagram of a facilitated transport membrane that utilizes the selective reaction between CO_2 and a carrier

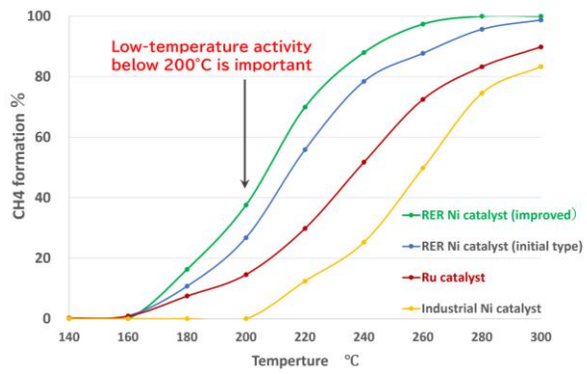
Renaissance Energy Research Corporation was established in 2004 for the purpose of expanding the business of catalyst-related technology, which the founder Osamu Okada developed while he was employed at Osaka Gas, in a wide range of fields. By utilizing production, distribution, and licensing rights granted under relevant patents by Osaka Gas, we target markets that would prove difficult to enter for a gas company. Currently, in addition to distribution of various catalysts for hydrogen production to domestic and overseas chemical and petroleum companies, we are also developing applications of CO_2 selective permeation membranes originally developed in cooperation with Kobe University to CO_2 separation and capture technology.

Hydrogen initiatives / Delivery records

We have an extensive track record of producing and selling various catalysts for hydrogen production as well as licensing of catalysts and process technologies to many domestic and overseas chemical and petroleum companies, etc. We also have a track record of selling reformers for fuel cell systems to manufacturers both in Japan and overseas. Regarding reformers for fuel cell systems, we have succeeded in developing the world's first ultra-high-order desulfurization catalyst, which enables desulfurization at 0.1 ppb level, as well as a high-performance ruthenium-based reforming catalyst, making a significant contribution to the practical application of phosphoric acid fuel cells. These serve as the bases for various catalysts used in the reforming systems of home fuel cell systems (ENE-FARM) that use solid polymer electrolyte fuel cells, which are currently becoming increasingly popular. Furthermore, in a JST program in which we participated together with the National Institute of Technology, Hachinohe College and others, we succeeded in developing a high-performance nickel catalyst, using heat-resistant γ-alumina, which is an alternative to highly resource-limited ruthenium.



Continuous evaluation results of high-performance steam reforming catalysts



Temperature dependency of high-performance methanation catalysts

Next action / Business plan

This CO_2 membrane separation process will enable higher efficiency, downsizing, and cost reduction of hydrogen stations, which still face major challenges. In the future, utilizing the features of the CO_2 membrane separation process, we will apply and roll out it to various fields, such as biogas, direct air capture (DAC), and space. Additionally, through the successful development of methanation catalysts with better low-temperature activity, we look to develop technology to recycle CO_2 removed by CO_2 membrane separation, contributing to the creation of a low-carbon society.

Company profile

Location 102 Advanced Chemical Technology Center in Kyoto 105 Jibu-cho, Fushimi-ku, Kyoto 612-8374

Established July 2004 **Capital** 10 million yen

Representative CEO Osamu Okada **WEBSITE** https://www.r-energy.com/

Department in charge

Department name
Kyoto Development Center

TEL +81-75-634-9817

E-mail nakato@r-energy.com

Power electronics contributes to a hydrogen-based society

SANSHA ELECTRIC MANUFACTURING CO., LTD.

Since our founding in 1933, we have supported the development of power electronics and other social infrastructure fields, as well as industrial and various other fields. "Advance society through power electronics and creativity." Based on this purpose, we focus on research and development of power conversion and control technologies and provide highly reliable and efficient products and solutions in a wide range of fields, including renewable energy, industrial equipment, and information and communications. In recent years, we have also strengthened our efforts to contribute to a decarbonized society. We continue to take on energy conservation and other challenges with the aim of creating a sustainable society by utilizing the technological capabilities and creativity we have developed so far.

Hydrogen initiatives / Delivery records

We participated in a hydrogen project led by Iki City to build an off-grid microgrid that integrates solar power, hydrogen, and storage battery energy sources to ensure a stable supply of electricity for water purification treatment for pufferfish farming. Surplus solar power is used to charge storage batteries and conduct electrolysis of water, which produces hydrogen and oxygen for storage. Electricity is regenerated using the resulting hydrogen and supplied to the facilities. The by-product oxygen and waste heat from the fuel cell system are also fully utilized. Regenerated electricity serves as backup at night or on cloudy days. When the hydrogen runs out, the microgrid automatically switches to grid power to continue operation. For this project, we provided inverters equipped with power semiconductors developed by us, as well as converters for various applications.

Integrated system consisting of storage battery, fuel cell, and water electrolysis systems

Next action / Business plan

Going forward, we will leverage our strengths, particularly in power electronics, to proactively promote the development of hydrogen-related infrastructure and participation in new projects, anticipating growing demand both in Japan and overseas. We will expand our business in a variety of areas, including improving the efficiency of green hydrogen production using renewable energy, building distributed energy systems that promote local production and consumption of hydrogen, and optimizing products that link hydrogen with power grids.

In addition, we will also focus on demonstration projects through industry-academia-government collaboration and on developing new technologies that combine high environmental performance with economic efficiency.

DC power supply for water electrolysis that supports various power supply capacity requirements

Company profile

Location	3-1-56,Nishiawaji, Higashiyodogawa-ku, Osaka, Japan		
Established	April 1948	**Capital**	2.7742775 billion yen
Representative	President&CEO Hajimu Yoshimura	**WEBSITE**	https://www.sansha.co.jp/eng/

Department in charge

Department name
Public Relations Department

TEL +81-6-6321-0321

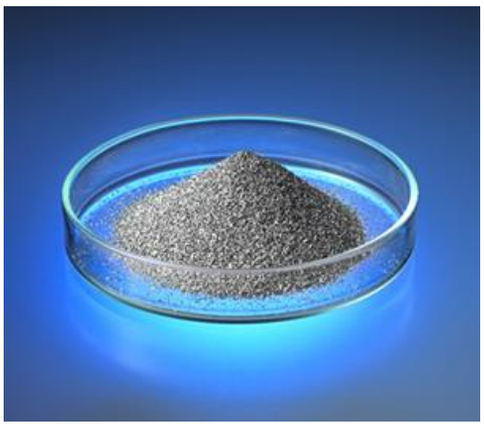
E-mail sanrex-info@sansha.co.jp

#HydrogenStorageAlloy
#LowPressureHydrogenStorage #SpaceSaving

Produc-tion | Transport /Storage | Utili-zation

Compact, low-pressure, and safe ways of storing hydrogen gas

Santoku Corporation



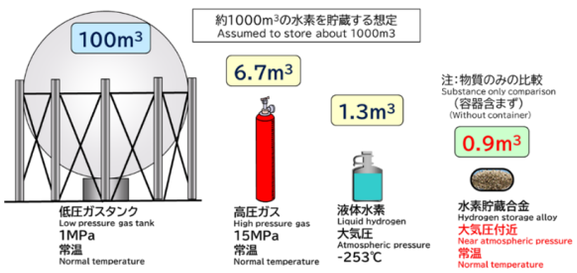
Hydrogen storage alloy manufactured using our proprietary rapid quenching of alloys

Since its founding in 1949, Santoku has accumulated its original manufacturing process technology and expertise over the years, including the world's first success in conducting molten salt electrolysis of rare earth elements and the mass-production of rapidly quenched rare earth alloys. Using this technology and expertise, we manufacture and sell rare earth, magnetic, and battery materials. In recent years, we have been developing hydrogen storage alloys specialized for hydrogen storage applications. We manufacture and sell TiFe-based hydrogen storage alloys that offer superb hydrogen storage capacity, safety, and cost performance.

Hydrogen initiatives / Delivery records

Our products are used in hydrogen storage tanks and canisters.

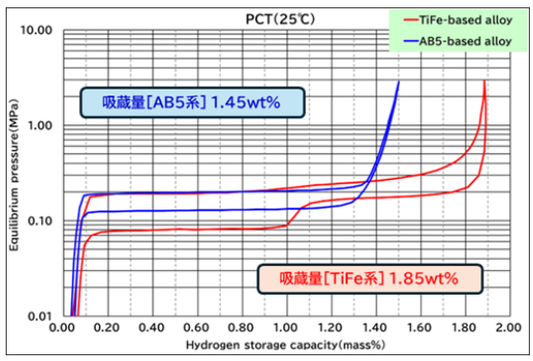
We also develop alloys and manufacture prototype alloys according to customer requirements.



Safe and compact ways of hydrogen storage

Next action / Business plan

Recently, we have developed a TiFe-based hydrogen storage alloy that is less expensive than conventional nickel-containing hydrogen storage materials and can increase hydrogen storage capacity by approximately 20% in terms of weight. In particular, TiFe-based hydrogen storage alloys ensure improved safety and have a larger hydrogen storage capacity, making them ideal for hydrogen utilization in places where safety and security are required or where installation space is limited (e.g. urban areas, residential areas, and factories). We are currently preparing for the production of alloys to be used in large quantities in future hydrogen society.



TiFe-based hydrogen storage alloy that can increase hydrogen storage capacity by approximately 20% in terms of weight

Company profile

Location	4-14-34 Fukaekitamachi, Higashinada-ku, Kobe-shi, Hyogo, Japan		
Established	September 1949	**Capital**	1.5 billion yen
Representative	CEO Sakoda Kazunori	**WEBSITE**	https://www.santoku-corp.co.jp/

Department in charge

Department name:
Sales Department

TEL +81-78-431-0531

E-mail Please contact us through our website.

Controlling film deposition, plasma, and heat based on vacuum technology Vacuum professionals solve your problems

SHINKO SEIKI CO., LTD

We have proven track records as exhaust system for extra-large containers (such as space chambers).

We develop, design and manufacture various components such as vacuum pumps, vacuum valves, vacuum gauges, as well as equipment for film deposition, plasma and heat treatment under vacuum.
We have been involved in vacuum technology for over 70 years since our founding, and have contributed to the innovation of manufacturing processes in society and industry with cutting-edge technology.
We are known as a development company that connects new functions.
As a comprehensive vacuum technology company, we contribute to society by "Manufacturing of No. 1 products."

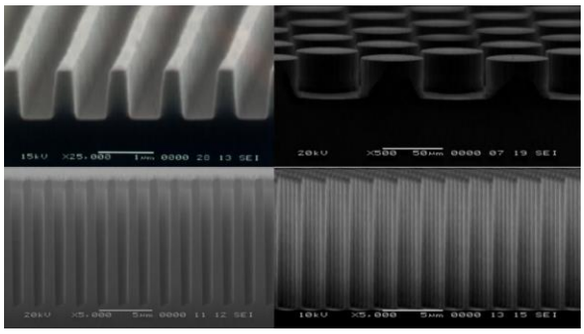
Hydrogen initiatives / Delivery records

We have a proven track record of proposing optimal vacuum pumping systems for a variety of applications, purposes, and operating environments, including drying and pearlite filling associated with vacuum insulation.
We can also develop materials against embrittlement in hydrogen environments, and apply surface treatments such as film deposition, plasma, and heat treatment to drive parts, thereby extending the life of parts and contributing to labor savings by reducing the coefficient of friction.
Our original n-DLC (Nano-multilayer Diamond Like Carbon) film is used in the drive parts of H2 high-pressure valves.

Examples of application of DLC films and other hard films to various parts

Next action / Business plan

We aim to solve problems by utilizing various surface treatment technologies, aiming to apply vacuum technology in cryogenic (liquefied hydrogen) environments and improve tribological properties and component lifespan.
We are exploring expansion into overseas markets, and exhibited our original n-DLC film technology at HYDROGEN Technology WORLD EXPO 2025, where it received an overwhelming response.
Furthermore, as part of broad carbon neutral initiative, we are promoting sales of our dry pumps suitable for CO_2 capture (DAC equipment) applications.



Various examples of surface micromachining applications

Company profile

Location	3-1-35, Takatsukadai, Nishi-ku, Kobe, Japan		
Established	January 1949	**Capital**	100 million yen
Representative	President Takashi Kitanaka	**WEBSITE**	https://www.shinko-seiki.com/english/

Department in charge

Department name
Kobe branch office

TEL +81-78-332-3400

E-mail a-nisimura@shinko-seiki.com

Achieving the storage and transportation of hydrogen as MCH using a small system
Utilizing manufacturing technology for energy

ShinMaywa Industries, Ltd.

Based on our management philosophy "ShinMaywa Group will contribute to the overall well-being of humanity, bringing unstinting innovation for a stable society and positive living environment," we provide various products and services that support social infrastructure under the five business domains of special purpose truck, parking systems, industrial machinery & environmental systems, fluid, and aircraft. In recent years, with an eye on a vision of a future society beyond 2030, we are working to create new value in social infrastructure related to cities, transportation, and the environment. One of these activities is to develop methylcyclohexane (MCH)-related technology that solves the problems of hydrogen transportation and storage.

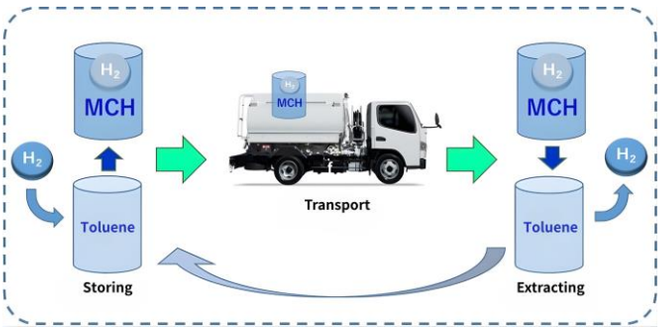
Hydrogen initiatives / Delivery records

With Hrein Energy Inc. headquartered in Sapporo, Hokkaido, we developed a small system that uses organic hydride technology which facilitates the storage and transportation of methylcyclohexane (MCH), which is produced through catalytic hydrogenation of toluene, with a specific focus on utilizing hydrogen energy that promotes the use of renewable energy. With this technology, we will be able to handle major components of the hydrogen supply chain. This will be achieved by converting and storing clean hydrogen produced with renewable energy (solar, wind, biomass, etc.) overseas and in Japan into MCH, which is stable and can be transported at normal temperature and pressure, transporting it to the point of consumption, and then extracting hydrogen from the MCH. In 2023, we completed an in-house demonstration system (water electrolyzer, hydrogenation system, dehydrogenation system, etc.) and have been demonstrating a process to add hydrogen to MCH and a process to remove hydrogen from MCH. Hydrogen is expensive to store and transport, but the use of MCH will increase convenience in storing and transporting hydrogen.

In-house demonstration system

Next action / Business plan

With the goal of using MCH to supply hydrogen to various equipment, we intend to establish a supply chain together with hydrogen suppliers. In addition, in order to establish microgrids, we will aim to achieve social implementation of MCH for long-term energy storage with the involvement of local governments.



Hydrogen supply chain using MCH

Company profile

Location	1-1 Shinmeiwa-cho, Takarazuka, Hyogo, Japan		
Established	5 November 1949	**Capital**	15.98197 billion yen
Representative	President Tatsuyuki Isogawa	**WEBSITE**	https://www.shinmaywa.co.jp/english/

Department in charge

Department name
New Business Development Department

TEL +81-45-584-1323

E-mail Please contact us by phone.

#HydrogenGasBurner #DecarbonizedIndustrialFurnace
#HydrogenCombustionTest

Produc-tion | Transport /Storage | Utili-zation

Various tests with hydrogen combustion available

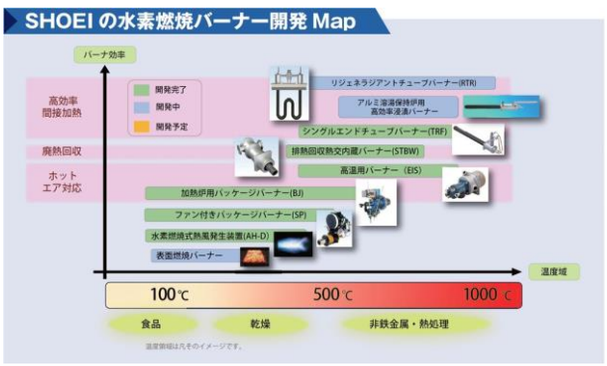
SHOEI MFG.CO.,LTD.

Thermal Technology Laboratory (Ikoma District, Nara Prefecture)

Since its establishment in 1959, Shoei has been supplying gas burners and industrial furnaces to a variety of fields. Leveraging the combustion and heat utilization technologies we have developed through that experience, we are working to develop hydrogen and ammonia combustion technology and low-carbon heat facilities.
The Thermal Technology Laboratory can conduct hydrogen gas burner combustion tests, as well as paint drying and aluminum melting tests using hydrogen combustion. The Laboratory can also perform various other tests to solve problems with thermal equipment. As thermal equipment professionals, we will contribute to the realization of carbon-neutral manufacturing.

Hydrogen initiatives / Delivery records

We have been working to develop hydrogen gas burners and now offer various types of hydrogen gas burners, ranging from those for high temperature applications, such as heat treatment furnaces, to those for low temperature applications, such as hot-air generators and food ovens.
These hydrogen gas burners are installed in industrial furnaces and heating equipment and are used in verification tests, etc.We are also conducting verification tests of hydrogen combustion on production facilities on-site. We will convert or temporarily modify a gas burner at your factory to meet hydrogen combustion specifications and connect it to our hydrogen supply unit. By using it for your regular operation, you can check the impact of hydrogen combustion on your products.
In addition, the Thermal Technology Laboratory is available for you to bring in your product for testing. The paint drying test equipment allows for testing using hydrogen combustion, as well as comparative tests using various heat sources such as electric infrared heaters, gas infrared heaters, and far-infrared panels. Please feel free to contact us for consultations regarding testing or tours.



Our line of hydrogen gas burner products

Next action / Business plan

We promote the development of products in a wide range of fields so as to contribute to the realization of a decarbonized society.
With the uncertain outlook for future energy supplies, we will continue to offer our extensive experience and technology for your activities, ranging from making steady energy conservation efforts to using next-generation fuels.

Aluminum melting test using hydrogen combustion

Company profile

Location	Room A, 8F, Tennoji Garden Square,11-11 Horikoshicho,Tennoji-ku, Osaka-shi, Osaka		
Established	February 1959	**Capital**	88 million yen
Representative	President & CEO Shota Habaki	**WEBSITE**	https://www.shoei-mfg.co.jp/

Department in charge

Department name
Engineering Department,
Combustion Equipment Division

TEL +81-743-57-2244

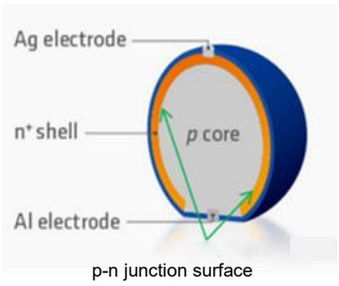
E-mail toiawase@shoei-mfg.co.jp

#Spherical solar cell integrated water electrolysis device
#Downsizing of water electrolysis equipment
#Lowering the cost of hydrogen production

Produc-tion | Transport /Storage | Utili-zation

The spherical solar cell integrated water electrolyzer saves space and is low cost !

Sphelar Power Corporation



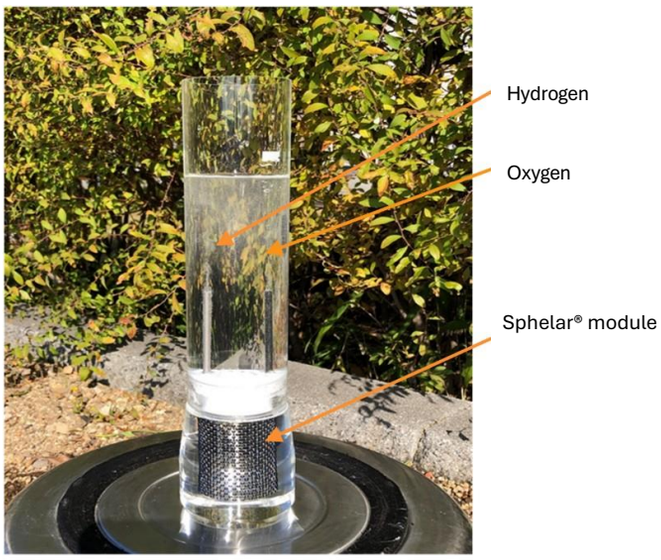
p-n junction surface

Appearance and enlarged cross section of Sphelar®

The spherical solar cell “Sphelar®” is the world‘s only three-dimensional photovoltaic solar cell, developed in 1996 by Kyoto Semiconductor Corporation, the predecessor of our company. Sphelar® is constructed by forming a pn junction on a spherical silicon sphere 1 to 2 mm in diameter, as shown in the left figure, with a pair of dot-shaped electrodes on each surface. As it is designed to generate electricity from incident light in any direction, it has the advantage of being able to increase the amount of electricity generated during solar radiation. By connecting these solar cells in series and parallel in a mesh pattern, a power generation module with the required output voltage and current can be obtained. By attaching this module to the periphery of a water electrolysis cell, a compact, highly efficient water electrolysis device can be created.

Hydrogen initiatives / Delivery records

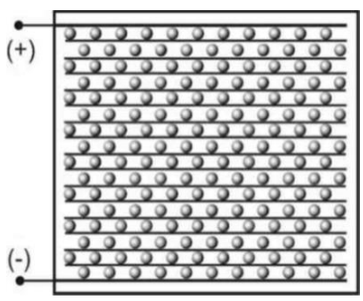
A water electrolysis device is constructed by wrapping a Sphelar® module (see below), which consists of Sphelar® cells connected in series and parallel, around the outer periphery of a water electrolyzer. When sunlight strikes this water electrolyzer, hydrogen is generated from the negative electrode on the left and oxygen from the positive electrode on the right. The generated hydrogen and oxygen are then transported to external tanks for storage. The stored hydrogen and oxygen can be extracted as needed and used as energy. Generating hydrogen and oxygen using solar energy and storing them on-site for use, or transporting them in tanks for use, will help expand the use of solar energy.



▲Water electrolyzer
Height:270mm
Inner diameter:50mm
Electrolyte: 300cc of 10％ NaOH solution

Next action / Business plan

We have delivered the prototype of the water electrolysis device for research purposes.
We would like to develop a larger water electrolyzer that integrates solar cells and a water electrolyzer, and aim to put it to practical use. We would also like to collaborate with external parties regarding the storage, transportation, and use of hydrogen.



Schematic diagram of series-parallel connection of cells in a Sphelar® module

Company profile

Location	Room No. 310, KRP Building No. 6, 93 Chudoji Awata-cho, Shimogyo-ku, Kyoto-shi, Kyoto 600-8815 Japan		
Established	May 2012	**Capital**	99.077 million yen
Representative	President Ikuo Inagawa	**WEBSITE**	http://www.sphelarpower.com/

Department in charge

Department name
General Affairs Department

TEL +81-75-874-1474

E-mail inquiry@sphelarpower.com

We have developed high-pressure hydrogen gas devices with our proprietary technology and have a proven record of performance in delivering many boosters and valves.

SR ENGINEERING CO., LTD

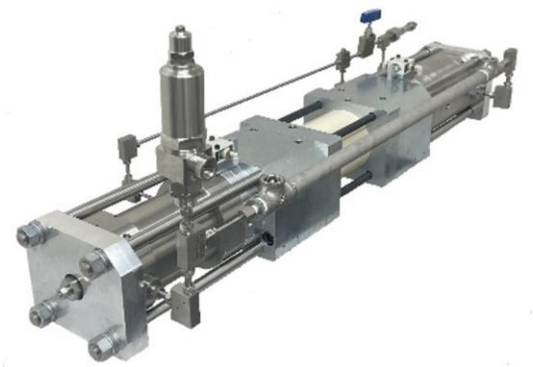
Headquarters Exterior

We have expertise in the combination of advanced oil-hydraulic, pneumatic, and water-hydraulic technologies and mechatronics we have accumulated over many years and the know-how to develop original products.
In addition, our products are used for automobile manufacturing lines, etc., earning a high reputation for their reliability.
We also possess excellent production and quality systems that support the development of these products in conjunction with production technology capabilities, including high-precision processing in our own plant.
We started developing hydrogen gas devices in 2014 and have commercialized hydrogen gas boosters and automatic hydrogen gas valves.

Hydrogen initiatives / Delivery records

We have commercialized automatic hydrogen gas valves, hydraulically driven hydrogen gas boosters, and automatic vessel master valves with a fusible plug-type safety valve.
We carry two models of automatic hydrogen gas valves (with design pressures of 50 MPa and 99.9 MPa) for high-pressure gas facilities and hydrogen stations. These products have been delivered to fuel cell forklift (FCFL) refueling equipment and compact commercial hydrogen stations. Both models are characteristically compact and contribute to space saving, leveraging our original technology.
The hydraulically driven hydrogen gas booster with a discharge pressure of 45 MPa comes in two models: 4 Nm³/h and 5 Nm³/h in discharge rate. They have been proven through 1,000 h durability testing and have a proven track record of delivery. We offer complete support, including maintenance, as the product is manufactured in-house.
We have obtained JPEC-S 0006 for the automatic vessel master valve compatible with 45 MPa composite vessels.

Automatic hydrogen gas valve



Hydrogen gas booster

Next action / Business plan

We plan to expand our line of gas booster products, including the newly rolled out low-pressure hydrogen gas booster system suitable for the efficient use of liquid hydrogen BOG.

Company profile

Location	7-2-17, Minatojimaminamimachi, Chuo-ku, Kobe-shi, Hyogo, Japan		
Established	October 1972	**Capital**	48 million yen
Representative	Representative Director Makoto Ogawa	**WEBSITE**	https://sr-engineering.co.jp/en/

Department in charge

Department name
Domestic Sales Division

TEL +81-78-306-2112

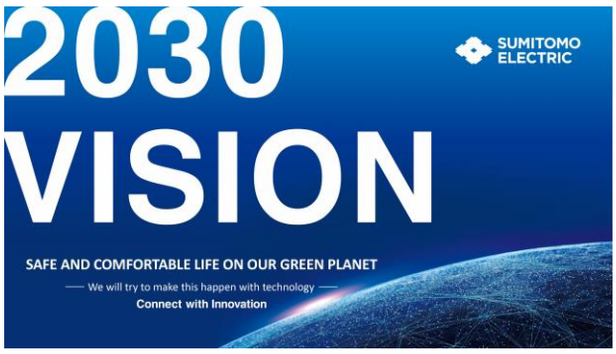
E-mail srke@sr-engineering.co.jp

#water electrolyzers equipment, hydrogen carrier manufacturing equipment
#Products for Fuel Cell Vehicles#hydrogen co-combustion burners

Produc-tion | Transport /Storage | Utili-zation

The Sumitomo Electric Group will continue to widely support a hydrogen-based society through various layers, ranging from materials and components to equipment.

Sumitomo Electric Industries, Ltd.



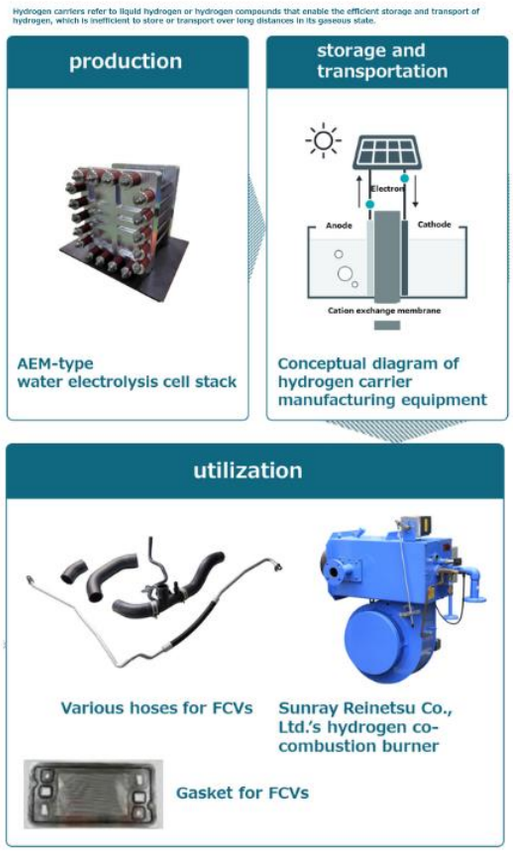
The Sumitomo Electric Group began as a copper wire manufacturing company that evolved from the copper smelting business started by the Sumitomo family some 400 years ago. With the wires and cables business as its foundation, the Group has evolved its technologies to connect and support society and now operates in five business areas: “Environment & Energy,” “Info-Communications,” “Automotive,” “Electronics,” and “Industrial Materials.”

Under the slogan “LIVING IN SAFETY AND COMFORT ON OUR GREEN PLANET — Relentlessly challenging ourselves to use Technology for Good —” in the Sumitomo Electric Group 2030 VISION, the Group is taking on the challenge of R&D that contributes to the sustainability of the planet, such as hydrogen, for decarbonization.

Hydrogen initiatives / Delivery records

Examples of the Group’s potential in the hydrogen supply chain include water electrolyzers that utilize renewable energy in the “production” field, hydrogen carrier manufacturing equipment in the “storage and transportation” field, and hydrogen hoses/water hoses/air control hoses/fuel cell gaskets for FCVs and hydrogen co-combustion burners in the “utilization” field.

Hydrogen hoses, which are components for FCVs, and hydrogen co-combustion burners have already been commercialized. Hydrogen co-combustion burners were jointly developed by Iwatani Corporation and our group company Sunray Reinetsu Co., Ltd. and are sold primarily to industrial-use customers.



Next action / Business plan

We will work to create hydrogen-related products in multiple business areas, with the aim of achieving the “Safer Society”, “More Comfortable Society”, and “Green and Environmentally Friendly Society” envisioned in the 2030 VISION, as well as achieving carbon neutrality by 2050.

Company profile

Location	4-5-33 Kitahama, Chuo-ku, Osaka-shi, Osaka 541-0041 Japan
Established	December 1920 **Capital** 99.737 billion yen
Representative	Representative Director and President Osamu Inoue
WEBSITE	① [Sumitomo Electric Website] https://sumitomoelectric.com/ ② [Sumitomo Electric Group’s GX] https://sei.co.jp/gx/

Department in charge

Department name
Corporate Planning Department

TEL Please contact us through our website.

E-mail Please contact us through our website.

Widely adopted in Japan, Europe, the U.S., and Korea
Highly reliable O-rings for high-pressure hydrogen

Takaishi Industry Co.,Ltd.

Head office

We are actively working on research and development of hydrogen-related seals, and recently, we have developed a high-pressure-hydrogen-compatible rubber material for 70 MPa hydrogen stations. This has been adopted by domestic and overseas hydrogen stations.
As an industrial rubber gasket manufacturer specializing in precision rubber gaskets and O-rings for faucet equipment, gas equipment, air pumps, etc., we have long-standing business relationships with major manufacturers in the industry. Our in-house factories have the capability of kneading, molding, finishing, and inspecting rubber materials in a continuous process, flexibly meeting customer needs not only for mass production but also for prototypes.

Hydrogen initiatives / Delivery records

Today, O-rings for high-pressure hydrogen capable of sealing at – 40℃ are adopted in many devices for hydrogen stations in Japan, Europe, the United States, and Korea.
Examples include breakaway couplings and dispenser valves. Also, for hydrogen compressors and boosters, FKM O-rings that can be used at up to 180℃ have been adopted.
Using subsidies every year, we continue to research rubber materials and seals for high-pressure hydrogen.

Rubber material for high-pressure hydrogen ①

Rubber material for high-pressure hydrogen ②

Next action / Business plan

To further improve quality and performance, we continue to collect experimental data from cycle tests, etc. in hydrogen environments in cooperation with various hydrogen device manufacturers to make improvements. With a view to future market expansion not only in Japan but also overseas, we are vigorously contacting overseas companies, taking opportunities such as exhibitions in Europe.

Company profile

Location	3-18 Arujiharacho, Ibaraki City, Osaka 567-0897, Japan		
Established	April 1948	**Capital**	10 million yen
Representative	President Hideyuki Takaishi	**WEBSITE**	https://Takaishi-ind.co.jp/english/

Department in charge

Department name
Sales Department

TEL +81-72-062-3365

E-mail inquiry@takaishi-ind.co.jp

We successfully achieved a 30% hydrogen co-firing ratio in a commercial large-scale gas turbine on a volumetric basis — the first such accomplishment in Japan.

The Kansai Electric Power Company, Incorporated

Since the establishment in 1951, The Kansai Electric Power Company, Inc. has advanced together with the communities, upholding our mission to deliver safe and stable energy. Today, we operate as an integrated energy company and infrastructure provider, offering not only electricity but also city gas, district heating services, and a wide range of zero-carbon energy solutions that utilize EVs, storage batteries, and distributed resources. Leveraging the collective strengths of our Group—spanning telecommunications, real estate development, and smart-city initiatives—we contribute to enhancing social and digital infrastructure. Under our “Zero Carbon Vision 2050,” we are accelerating the expansion of renewables, the safe and stable use of nuclear power, and the introduction of next-generation energy sources such as hydrogen and ammonia, as we work to shape a sustainable, low-carbon future for society.

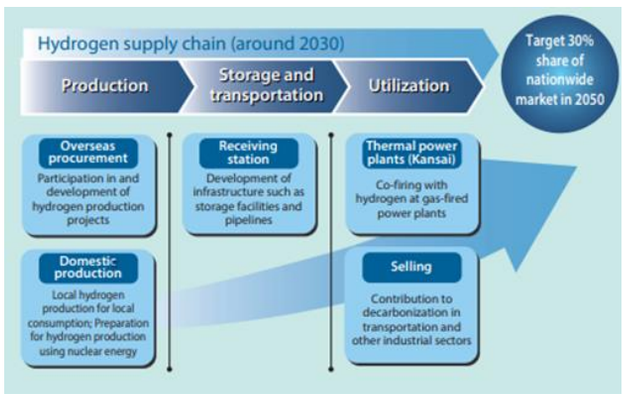
Hydrogen initiatives / Delivery records

As a leading company in zero-carbon energy, the Kansai Electric Power Group is committed to achieving net-zero CO_2 emissions from our business activities by 2050, and to realizing a sustainable society that grows together with local communities. We recognize hydrogen as a key next-generation energy source and are working to build an end-to-end hydrogen value chain—from production and transportation to supply and power generation.

Selected for the Green Innovation Fund Program led by the Ministry of Economy, Trade and Industry (METI) and New Energy and Industrial Technology Development Organization (NEDO), we are conducting a hydrogen co-firing demonstration at the Himeji No. 2 Power Station utilizing an existing gas turbine. The demonstration began in April 2025, and in June of the same year, we achieved a hydrogen co-firing ratio of 30% by volumetric basis—the first such accomplishment in a commercial large-scale gas turbine in Japan. Furthermore, a portion of the electricity generated during the demonstration was supplied to the Expo 2025 Osaka, Kansai, contributing to the practical use of zero-carbon power.

Next action / Business plan

We are advancing studies aimed at establishing an early hydrogen supply chain, including the procurement of hydrogen produced overseas and the development of receiving, storage, and utilization capabilities in the Himeji area. In parallel, we are also examining domestic hydrogen production using renewable energy and nuclear power, with the goal of determining the optimal supply model that reflects regional demand. Building on the knowledge gained through our hydrogen co-firing demonstration, we will further explore the potential of hydrogen power generation and contribute to expanding hydrogen use across the industrial and transportation sectors.



Company profile

Location	3-6-16 Nakanoshima, Kita-ku, Osaka-shi, Osaka, Japan
Established	May 1951 **Capital** 630 billion yen
Representative	Director Representative Executive Officer,President Nozomu Mori
WEBSITE	https://www.kepco.co.jp/english/

Department in charge

Department name
Hydrogen Business Strategy Division
Business Alliance Group

E-mail kanden.h2strategy@a2.kepco.co.jp

Driving hydrogen energy adoption through high-efficiency liquid hydrogen pumps

Torishima Pump Mfg. Co., Ltd.

Founded in 1919. Supporting social infrastructure for over a century through proven expertise and reliable pump technology.

Torishima Pump Mfg. Co., Ltd. is a pump-specialized manufacturer founded in Osaka in 1919, providing advanced pump technologies that have supported social infrastructure for over a century. Focusing on large-scale and high-pressure pumps, the company offers integrated services—from design and manufacturing to installation and maintenance—for a wide range of applications, including water and wastewater systems, power plants, seawater desalination facilities, and various industrial sectors. In recent years, Torishima has contributed to energy savings, CO_2 reduction, and carbon neutrality through the development and supply of high-efficiency pumps and pumps for next-generation energy applications. With globally trusted technological expertise, the company is committed to the sustainable development of society.

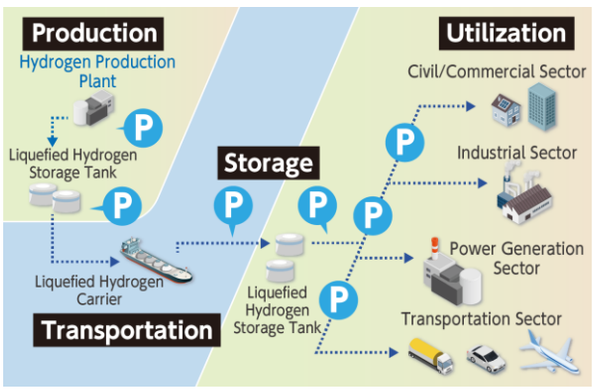
Hydrogen initiatives / Delivery records

Regarding the development of liquid hydrogen pumps, we have been selected for a grant project by NEDO (New Energy and Industrial Technology Development Organization) titled "Technology Development Project for Building a Competitive Hydrogen Supply Chain." In collaboration with JAXA (Japan Aerospace Exploration Agency), Kyoto University, Sanyo-Onoda City University, and NIMS (National Institute for Materials Science), we are advancing the development of the world's first high-flow, high-pressure, and high-efficiency liquid hydrogen pump. Furthermore, we have received an order for liquid hydrogen pumps for a receiving terminal as part of the "Commercialization Demonstration of Liquid Hydrogen Supply Chain," which is being conducted under the Green Innovation Fund Project.

Liquid hydrogen pump featuring high efficiency and large flow rates, serving as a vital component of hydrogen infrastructure.

Next action / Business plan

Our high-capacity, high-efficiency liquid hydrogen pumps play a vital role in supporting large-scale hydrogen supply chains, connecting hydrogen production, transportation, and utilization. Anticipating continued growth in hydrogen demand, we are also advancing the development of liquid hydrogen pumps with even greater capacity and efficiency.
Through these efforts, we support the transition to hydrogen fuel at power plants and various industrial facilities, contributing to the reduction of CO_2 emissions. We will continue to drive technological innovation and strengthen partnerships to support the development of next-generation energy infrastructure and the realization of a carbon-neutral society.



Production, Transport, and Use. Linking the global hydrogen supply chain with advanced pump expertise.

Company profile

Location	1-1-8, Miyata-cho, Takatsuki-city, Osaka		
Established	April 1928	**Capital**	1.593 billion yen
Representative	Representative Director, CEO Kotaro Harada	**WEBSITE**	https://www.torishima.co.jp/en/

Department in charge

Contact Please contact us via our website.

Contributing to a recycling-oriented society using renewable energy, etc. through membrane separation technology

UBE Corporation

Hydrogen separation membrane cartridge

Leveraging the manufacturing technologies the UBE Group has cultivated throughout its long history since its founding in 1897, create the value required by society, in the safe and environmentally friendly manner demanded by society, and deliver that value to the people. And by doing so, help to solve global environmental issues, which have become a common issue for all humankind, and contribute to people's lives and health, and an enriched future society. UBE Group's Purpose (raison d'être) is "Breaking Through with the Chemistry of Hope.". UBE separation membranes, which have proven records in hydrogen recovery at oil refineries and chemical plants, are now being applied to renewable energy production processes that will support a recycling-oriented society in the future. UBE will strive to achieve sustainable growth by providing solutions required by the times and contributing to the sustainable development of customers and society.

Hydrogen initiatives / Delivery records

Polyimide, a material used for UBE separation membranes, has high permeability and selectivity for gases and vapors, as well as excellent heat resistance, chemical resistance, and mechanical strength.
UBE hydrogen separation membranes have been used in approximately 200 installations in Japan and abroad since their commercial application to hydrogen recovery and concentration facilities in 1986. They have started to be used in the production process for renewable fuels such as SAF (sustainable aviation fuel) and biodiesel. And they can widely use in the production processes of e-fuels manufactured using biomass feedstock and/or renewable energy such as e-methanol, e-methane and e-diesel for the production, adjustment and purification of H_2, CO, CO_2 and CH_4.

Hydrogen concentration system

Next action / Business plan

In April 2022, Ube Industries Ltd. changed its trade name to UBE Corporation. We will steer the company toward becoming a specialty chemical business company that contributes to solving global environmental issues. Going forward, we will accelerate growth through the expansion of existing businesses and the creation of new ones. Including UBE separation membranes, we will promote technological development and solution proposals to realize a green society and a hydrogen-oriented society, and aim to develop specialty chemicals in a wide range of fields. In addition, we will actively invest in R&D and pursue M&A to create new specialty businesses.

Feed gas			Product gas	
Hydrogen concentration	Pressure	Capacity	Hydrogen concentration	Pressure
%	MPaG	Nm3/h	%	MPaG
50	2.8	6,000	95	1.5
52	3.0	11,000	95	1.3
66	2.0	21,000	95	0.8
73	2.0	7,300	98	0.5
75	2.3	13,500	98	1.0
82	4.7	8,000	98	1.5
83	8.5	12,000	99	1.5
89	3.4	28,000	99	1.6
90	2.5	14,500	99	1.5
97	1.0	1,500	99.5	0.4
98	1.8	3,300	99.5	0.8

Examples of hydrogen recovery and concentration with separation membranes

Company profile

Location Seavans North Building, 1-2-1, Shibaura, Minato-ku, Tokyo 105-8449, Japan
Established March 1942 (Founded in 1897)
Capital 58.4 billion yen (as of March 31, 2025)
Representative President Yuki Nishida
WEBSITE https://www.ube.com/ube/en/

Department in charge

Department name:
Gas Separation Solutions Business Group, Gas Separation Solutions Business Department, Specialty Products Division
TEL +81-3-5419-6185
E-mail Please contact us through our website.

A New Type of Liquified Hydrogen Level Sensor Using Superconducting Technology

Yamamoto Electric Works Co., Ltd.

Our company is widely recognized as a technological leader in the field of micro differential pressure measurement. Our micro differential pressure gauge, known as MANOSTAR, has become so dominant in Japan that the name itself is often used as a synonym for micro differential pressure gauges.
In recent years, we have been expanding our technological capabilities through M&A and collaborations with universities to enter new fields. Among these efforts, we have placed a strong focus on the hydrogen sector. In partnership with Kobe University, we developed a liquified hydrogen level sensor utilizing superconducting technology—an innovation rarely seen anywhere in the world. Looking ahead to the emerging hydrogen society, we are actively developing a range of hydrogen-related products, including hydrogen leak sensors.

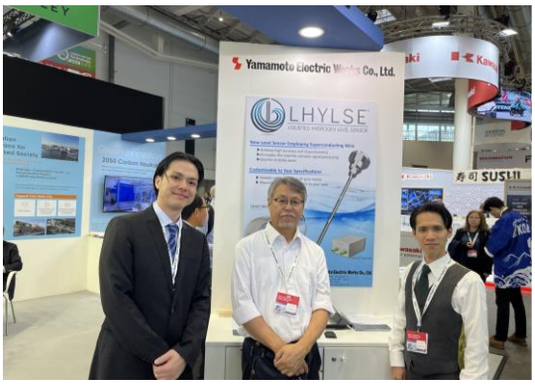
Hydrogen initiatives / Delivery records

We have developed LHYLSE, a completely new type of liquid hydrogen level sensor that uses MgB_2 wire, a superconducting material.
It offers high accuracy and fast response, and is the only liquid hydrogen level sensor capable of reliably measuring dynamic liquid levels, such as those found in mobility tanks.
It was installed on the next-generation LH2 Corolla, which conducted a demonstration run at the final round of the 2025 Super Taikyu Series held at Fuji Speedway, and our LHYLSE technology was exhibited at the event booth.
In addition, the system has been supplied to major manufacturers and universities, demonstrating a proven track record of adoption.

Technology exhibition at Fuji Speedway

Next action / Business plan

We are accelerating R&D to enable deployment beyond automotive applications, including maritime and aviation mobility, while addressing regulatory requirements in Japan and abroad.
In addition, with a view to the European market, which is actively promoting the development of the hydrogen industry, we are actively exhibiting at and visiting trade shows in the region.



Our booth at Hydrogen Technology EXPO 2025

Company profile

Location	1-2-3, Nishishiriike-cho, Nagata-ku, Kobe-shi, Hyogo, Japan		
Established	July 1971	**Capital**	30 million yen
Representative	CEO Hirokazu Yamamoto	**WEBSITE**	https://www.manostar.co.jp/company.html

Department in charge

Department name
Sales department

TEL +81-78-631-6000

E-mail eigyou@manostar.co.jp

Delivering stainless steel for high-pressure hydrogen in small lots and with short delivery times Supplying high-strength products by drawing (secondary processing)

Yamashin Steel Co., Inc.

Stainless steel for high-pressure hydrogen

We are a manufacturer of cold drawn finished steel bars. With our expertise in drawing difficult-to-machine materials based on our technology and know-how cultivated over many years, we can supply products that require a high degree of straightness and accuracy. Our strength lies in our ability to machine materials to a wide range of shapes, including round, hexagonal and flat bars, as well as to a wide range of dimensions. Regarding stainless steel for high-pressure hydrogen, in cooperation with Aichi Steel, we have built a supply system for two types compliant with JIS G 4303 "Stainless steel bars" and JIS G 4318 "Cold finished stainless steel bars (high strength)," which are used for hydrogen station-related equipment, such as compressors, valves, and dispensers, and fuel cell vehicles (FCVs), etc.

Hydrogen initiatives / Delivery records

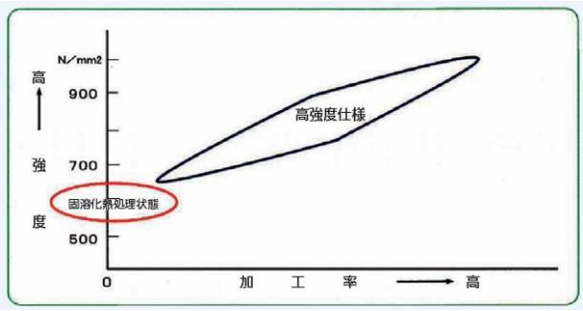
Since 2013, we have stocked and held materials that are permitted for use under high-pressure hydrogen environments (SUS316/SUS316L compliant with the regulation covering Ni equivalents), based on the Regulation on Safety of General High Pressure Gas, and have sold them to various customers. They are made of Aichi Steel-manufactured AUS316L-H2. In cooperation with Aichi Steel in terms of production, delivery time, and quality, we are able to supply products that meet customer needs.

Engaged in secondary processing (drawing), we can supply high-strength products by cold drawing. Drawing materials to optimum dimensions and shapes contributes to functionality and total cost reduction, encompassing machining materials.

Supply of high-pressure hydrogen stainless steel for diverse uses

Next action / Business plan

We will strengthen our supply system so that we can contribute to the creation of a hydrogen-based society in terms of materials. We also will propose materials that meet various customer needs, including adjustment of mechanical properties, by adapting ourselves to manufacturing or secondary processing of products with new shapes and dimensions.



Conceptual figure of high strength by drawing

Company profile

Location	YAMCO Bldg., 1-19-5 Uemachi, Chuo-ku, Osaka 540-0005 Japan		
Established	September 1946	**Capital**	90 million yen
Representative	President & CEO Eiji Yamauchi	**WEBSITE**	https://steel.yamco.co.jp/en/

Department in charge

Department name
Sales Department Yusuke Ueno

TEL +81-6-6763-1395

E-mail y-ueno@yamaco.co.jp

Well-established reputation for economical packaged hydrogen stations and fuel cell systems

Yamato·H2Energy Japan Inc.

E-2500×2 5kW power generation fuel cell system

We were established as a core group company for the hydrogen energy-related business of Yamato Sangyo, which has a 70-year history and proven track record of performance in high-pressure gas equipment.
After becoming independent, we gained certification in the Osaka Top Runner Project, and with the support of the Ministry of Economy, Trade and Industry, we are contributing to building a hydrogen-based society by providing economical hydrogen stations and fuel cell systems.
Our product lineup includes not only hydrogen stations (packaged, small-scale, and mobile hydrogen stations) but also fuel cell systems for stationary, portable, and mobile applications. For example, we offer (stationary) 200 W to 10 kW systems and (mobile) 10 kW to 125 kW systems.

Hydrogen initiatives / Delivery records

Packaged hydrogen stations have been adopted in many factories, such as the Panasonic Kusatsu Factory, providing hydrogen to FCFLs on an individual industrial estate basis using mobile hydrogen stations. Also, mobile dispensers (small, lightweight hydrogen filling devices) have been adopted for use by small-scale forklift users, for road services, and for FCV distributors. We have a demonstrated record of performance in the delivery of many fuel cell systems characterized by high reliability and low cost as emergency backup power sources for electric power companies, offices, and shelters.

Packaged hydrogen station for 70 MPa FCVs and 35 MPa FCFLs

Next action / Business plan

We offer packaged hydrogen stations (for FCFLs and FCVs) and small-scale hydrogen stations at economical prices. Fuel cell systems are attracting attention for stabilizing electricity supply and as emergency power sources (as BCP measures). They are also used as stable power sources combined with renewable energy for regular use, portable power sources, or FCs for mobile systems. What we are working on the most is the recommendation of "a hydrogen supply base using the surplus electricity of renewable energy," which has already been proven in Chiba Prefecture (see the attached photo); we are working on joint demonstrations for practical use, collaborating with local governments in various regions.

On-site hydrogen supply base using renewable energy (Example of our proven track record)

Company profile

Location	Tenjin Daiichi Bldg. 5F, 4-2-26 Nishinakajima, Yodogawa-ku, Osaka-shi, Osaka 532-0011 Japan		
Established	February 2014	**Capital**	50 million yen
Representative	President CEO Ikuo Hirase	**WEBSITE**	http://www.yh2ej.co.jp

Department in charge

Department name
Technical Department

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METI
Kansai Bureau of Economy, Trade and Industry

Published in February 2026

□Publisher
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Natural Resources, Energy and Environment Department
Kansai Bureau of Economy, Trade and Industry
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