


Integrated Energy



Driving the transformation into our role as an energy & living total service provider

The Integrated Energy Business sells household and commercial LPG delivered nationwide under the MaruiGas brand name, as well as industrial LPG and LNG for factory use. Together with efforts to grow market share based on the promotion of M&A activities that draw on our nationwide network, we will evolve into an energy & living total service provider.

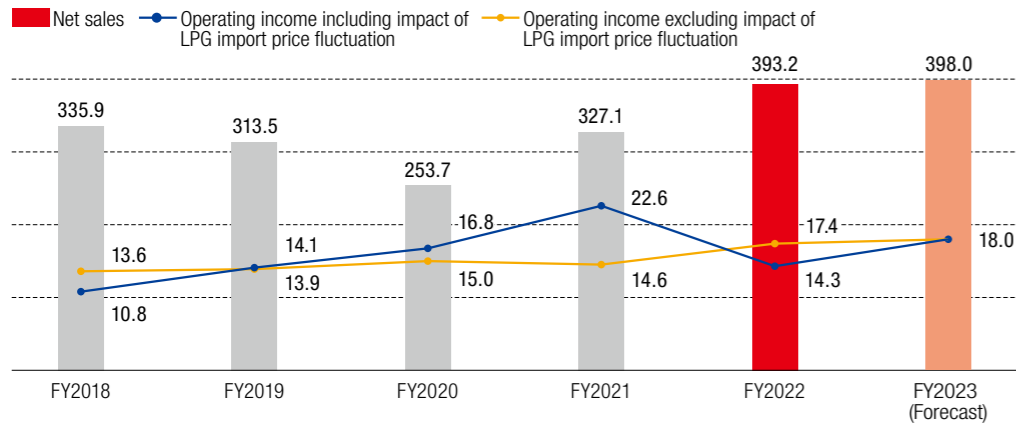
Hirozumi Hirota Senior Managing Officer, Member of the Board
General Manager, Integrated Energy Business Group

Main products

- LPG
- Electricity, city gas (safety inspection)
- Gas equipment, products essential to daily life, health foods
- Portable gas cooking stoves, cassette gas canisters

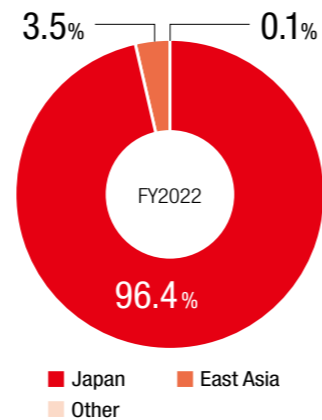
Business highlights and position

Trends in net sales and operating income (¥ billion)



* The Accounting Standard for Revenue Recognition and other accounting standards have been applied since FY2021. Figures shown for FY2020 have been restated through the retroactive application of these accounting standards.
* Business segment categories were revised with the FY2023 corporate reorganization. Figures for FY2022 reflect these segment changes.

Sales composition by region



Sales composition

Segment net sales ¥393.2 billion (FY2022)

Segment	Percentage
LPG (consumers)	49%
LPG (industrial)	13%
Gas supply equipment, gas appliances	19%
Other fuel-related	11%
Portable gas cooking stoves, cassette gas canisters	7%
LPG (international)	1%

Energy-related equipment

- Gas stove
- Ene-Farm system
- LPG supply equipment
- LPG-powered emergency generator

Cartridge gas products

- Portable gas cooking stove
- Cassette gas canister

Non-LPG

- LNG
- Kerosene

LPG

From LPG import to delivery to households

Strengths, Opportunities, Risks

Strengths

1 LPG last-mile services, stable supply structure

- As a leading player in the LPG field, we operate a stable supply structure for deliveries to customers across Japan, including five import terminals, 110 filling stations, and 130 distribution centers.
- We support living and business continuity planning (BCP)—for example, promoting the adoption of LPG-powered emergency generators—to ensure disaster preparedness.
- In the event of a disaster, the MaruiGas Disaster Relief Corps, made up of Marui-Kai members from across Japan, rushes to the scene to inspect and restore LPG service.

Opportunities

- Growing demand for fuel conversion in response to the rising need to reduce CO₂ emissions
- Structural changes amid the decarbonization movement within the LPG industry
- Growing need for solutions to community issues

2 Capacity to propose optimal energy mixes for decarbonization purposes

- We propose comprehensive solutions only Iwatani can provide, including fuel conversion to LPG and LNG, green LPG, hydrogen, ammonia, and renewable energy.

3 Business infrastructure for solutions to community issues

- Our broad-ranging support structure for solving the issues faced by communities and customer households draws on a sales force of approximately 3,200 persons at about 280 sales offices across Japan, together with the digital solutions made possible by the Iwatani GateWay platform.

Risks

- Declining demand for energy due to changing community demographic trends
- Delays in raising the adoption of renewable energy

Business Capital Serving as Sources for Value Creation

Nationwide real contact network and LPG dealership organization (Marui-Kai)

- A nationwide network, from import terminals to filling stations
- Disaster-resistant core LPG centers in communities across Japan
- A network of sales and distribution facilities across Japan
- Expanding the customer base through our brand power and strengths in safety

Sales offices	Distribution centers
● Approx. 280 sites	● Approx. 130 sites
● Approx. 3,200 employees	● Approx. 1,600 employees
	● Approx. 1,300 vehicles

Japan's largest and most unique nationwide private sector disaster prevention organization (MaruiGas Disaster Relief Corps)

- A nationwide disaster prevention organization established jointly with distributors to ensure rapid LPG recovery in response to disasters
- Made up of some 3,600 qualified gas technicians from various companies
- Conducting annual concurrent nationwide drills to maintain and strengthen disaster response capabilities



The Iwatani GateWay digital platform, used for solutions to community issues across Japan

- An IoT platform for connecting with customers
- A new infrastructure for providing services and value to support consumer lifestyles



Cassette gas canister production plants designed for safe, reliable quality control and stable supply

- Quality control and brand power based on integrated production and sales structures
- The capacity to develop new products reflecting customer needs
- Structure for stable supply using domestic and international manufacturing facilities

Number of cassette gas canisters sold in China

Total domestic and international sales volume (FY2022)

Product	Sales Volume
Portable gas cooking stoves	4.291 million
Cassette gas canisters	157 million

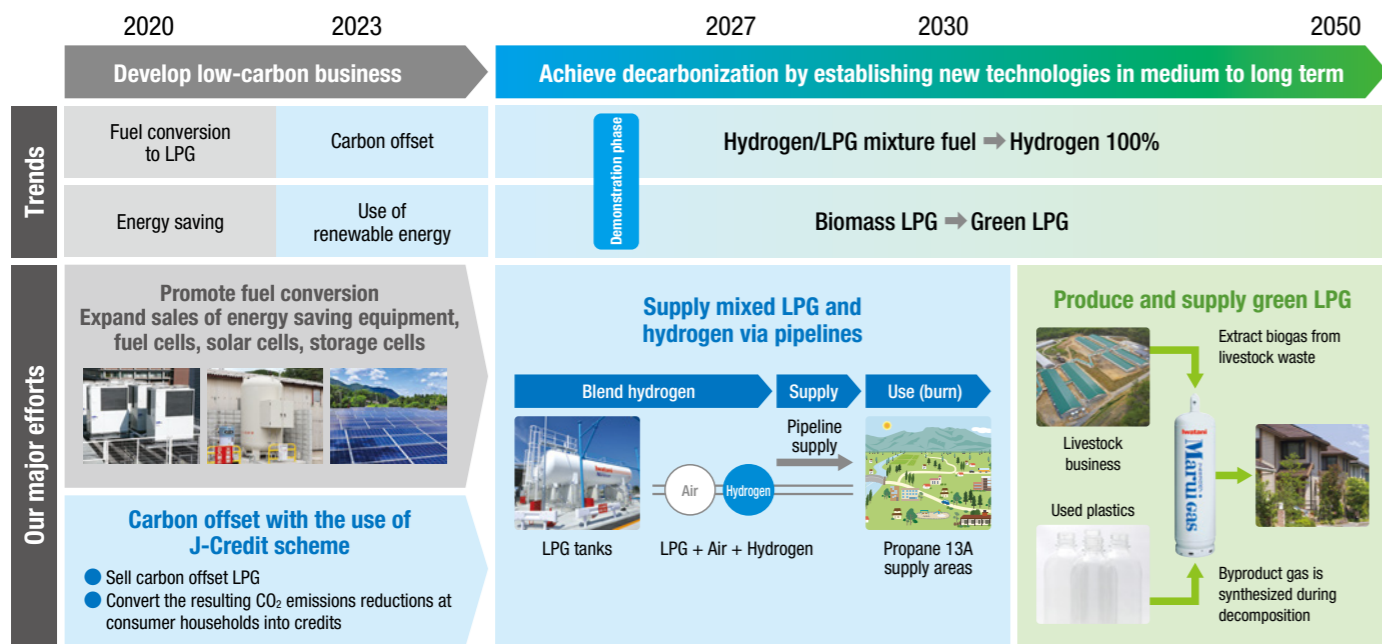
Major Initiatives

* Growth measures for the LPG business are described under Domestic Energy & Service Strategies (p. 27).

Contributing to a carbon neutral society and striving to decarbonize LPG

In addition to proposing solutions in areas such as fuel conversion from heavy oil and other fuels to LPG and LNG, which generate fewer CO₂ emissions, and energy-saving equipment, Iwatani has launched services to generate, and return to customers, environmental value from the CO₂ emissions reductions achieved through these services. To meet the needs of highly eco-conscious customers, we sell carbon offset LPG using the J-Credit scheme and propose the use of solar power and other renewable energy sources, as we support a wide range of customer decarbonization efforts.

We are developing next-generation energy for the future. Among these efforts, we are focusing on the development of green LPG, a key topic for the LPG industry as a whole as society makes progress on decarbonization. We are proceeding with various green LPG development initiatives, including those focusing on technologies for the production of LPG from hydrogen and CO₂ and from biogas extracted from wastes generated by the livestock business. We intend to lead the LPG industry toward the implementation of green LPG.



Proposing life products and services to meet customer needs

We have a nationwide LPG customer base and sell products for business continuity planning (BCP) needs, including LPG emergency power generators and gas heat pumps (GHPs), as well as products that contribute to decarbonization via three types of power cells (storage cells, solar cells, and fuel cells) and high-efficiency water heaters. We offer the essentials of daily life, including our own

ALALA (natural household detergents) and Natural Mineral Water from Mt. Fuji (water delivery) brands. We also offer services that improve quality of life, including remodeling and community safety services. We help make the lives of our customers even better by providing the products and services needed by our customers and communities.



Using our domestic brand and product strengths to grow the cartridge gas business in Japan and around the world

In 1969, for more than half a century since we introduced Cassette-Feu, Japan's first hose-free portable cooking stove, our cartridge gas business has earned trust and helped support consumer home dining needs through portable gas cooking stoves and cassette gas canisters. We plan to grow into a brand recognized around the world via various measures, including the development of new products and new fields targeting growing needs for outdoor, emergency, and other uses and efforts focusing on international business growth.

Yasushi Sakai Senior Managing Officer
General Manager, Cartridge Gas Division

Measures to achieve domestic market growth

In Japan, we will seek to stimulate existing demand by introducing products with outstanding designs and features while growing demand in new applications and fields, utilizing our own manufacturing plants and other resources. We will focus on product development to meet emerging and growing needs related to outdoor recreational activities and for emergency use.

	FY2022 sales	FY2027 sales target	vs. FY2022
Portable gas cooking stoves	2.2 million	3.4 million	+54%
Cassette gas canisters	98 million	130 million	+32%

New product development and sales for outdoor use



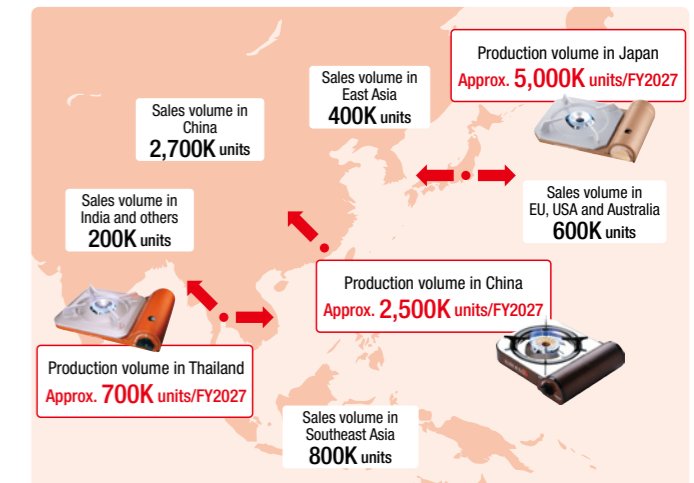
Introducing products with outstanding designs and features



Business growth in international markets

Since we began manufacturing and selling portable gas cooking stoves and cassette gas canisters in Zhuhai, China, in 1996, our international business growth has focused on the China market. In addition to our operations in China, in April 2023, we opened a new portable gas cooking stove plant in Thailand. This facility will serve as a base for promoting competitive products developed over a long history of sales in Japan in various markets, including Taiwan and Southeast Asia, areas where consumer demand is expected to grow. We will also introduce new products in the United States, which has a large market for outdoor goods.

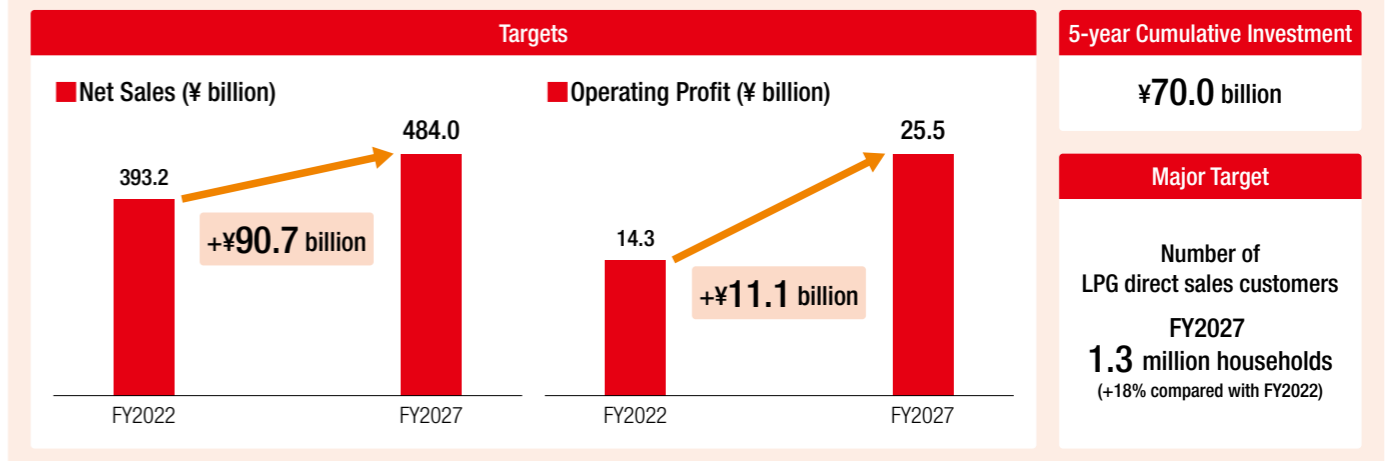
Portable gas cooking stove production facilities and major regional sales plans



FY2027 overseas sales targets

Portable gas cooking stoves	4,700K units (+118% compared with FY2022)
Cassette gas canisters	120,000K units (+96% compared with FY2022)

PLAN27 medium-term management plan targets



Industrial Gases & Machinery



Targeting a position as a major industrial gas player in global markets by advancing into growth markets

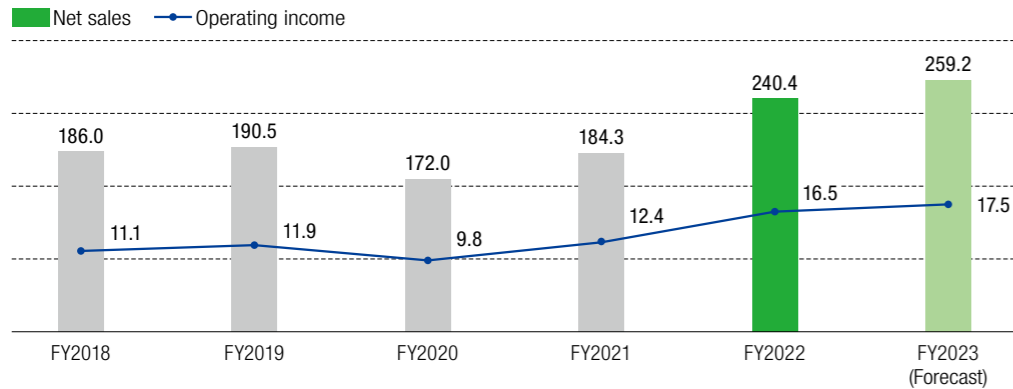
The Industrial Gases & Machinery business consists of the Industrial Gases business, whose products include air separation gases (oxygen, nitrogen, and argon), hydrogen, helium, carbon dioxide, semiconductor material gases, and medical gases, and the Machinery business, which includes production and supply equipment for a wide range of gases, factory automation systems, welding equipment, semiconductor manufacturing equipment, and environmental equipment. We support the industry by proposing solutions to meet customer needs, drawing on the technological capabilities accumulated over many years and our wide-ranging lineup of gas and machinery products.

Yasuhisa Ueda Senior Managing Officer, General Manager, Industrial Gases Division

- Main products**
- Industrial gases (air separation gases, hydrogen, helium, carbon dioxide, etc.)
 - Gas production and supply equipment, industrial machinery

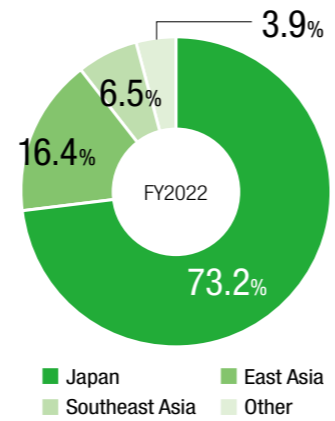
Business highlights and position

Trends in net sales and operating income (¥ billion)



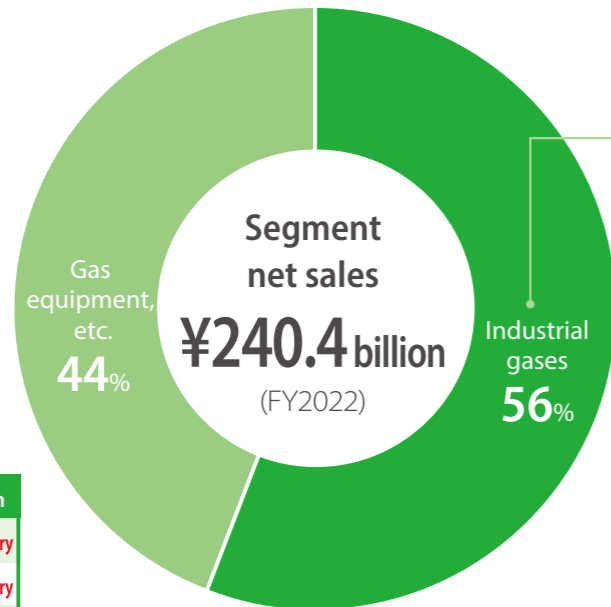
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Sales composition by region

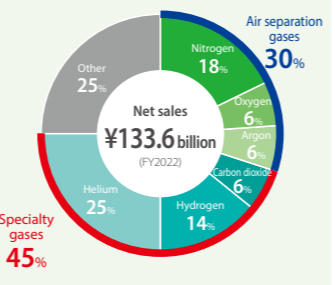


Sales Breakdown

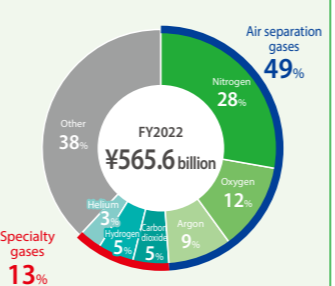
Gas facilities and other



Breakdown by gas type



Industrial gases market size in Japan



Market share of specialty gases in Japan

- Hydrogen (incl. liquid hydrogen) approximately 70% **No. 1 in industry**
- Liquid hydrogen 100% **No. 1 in industry**
- Helium approximately 50% **No. 1 in industry**

Source: Gas Georama in Japan 2023, Company estimates

Strengths, Opportunities, Risks

Strengths

- Business development based on stable procurement and stable supply as a producer**
 - Helium: Competitive strength in global markets based on our multiple procurement sources, use of own containers, etc.
 - Hydrogen: Handling in house all activities from production through transport, storage, use, and maintenance
 - Air separation gases: Building a stable nationwide supply structure based on our advanced ISO 9001-certified quality management structure
- Years of experience, expertise, and handling technologies in hydrogen**
 - See Hydrogen Strategies on p. 21.

Opportunities

- Advancing automation, labor saving, and decarbonization in manufacturing
- Market expansion in China, Southeast Asia, and the United States

- Capacity to propose solutions to specific customer challenges**
 - A wide range of gas application technologies, including low-carbon and zero-carbon solutions
 - Capacity to propose comprehensive solutions with integration of diverse industrial gases and machinery and equipment
- Technological development capabilities of the Iwatani R&D Center and the Iwatani Advanced Hydrogen Technology Center**
 - See Non-financial Strategies – Technology Strategy on p. 34.

Risks

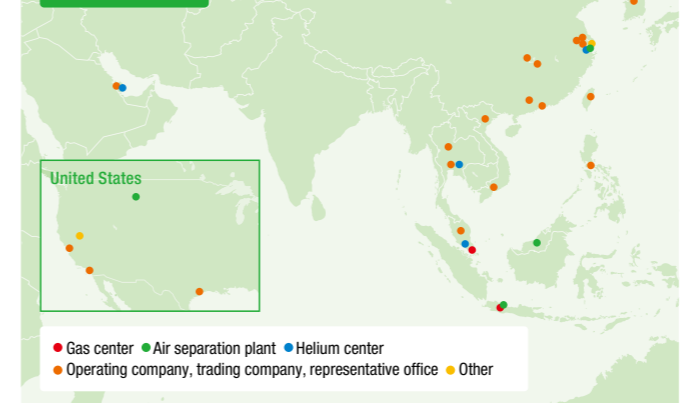
- Evolving domestic and international industrial structures
- Country-specific risks, policy trends, and other aspects

Business Capital Serving as Sources for Value Creation

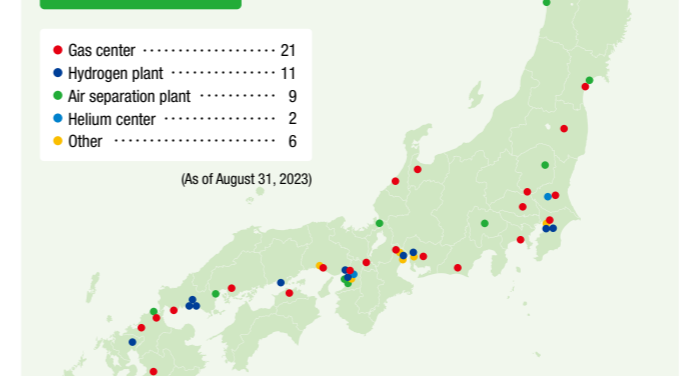
Safe, precise, and speedy gas supply and service network

- Building stable domestic and international supply chains from production through supply
 - Establishing regional maintenance structures
 - Customizing gas supply systems depending on customer needs
 - Ensuring stable supply through procurement from two sources: Qatar and the US
 - Establishing a distribution network centered on Japan and Asia using our own helium containers
- Helium**
- Ensuring stable supply through procurement from two sources: Qatar and the US
- Hydrogen**
- Building structures for stable supply of compressed hydrogen and liquid hydrogen

Global network



Domestic network



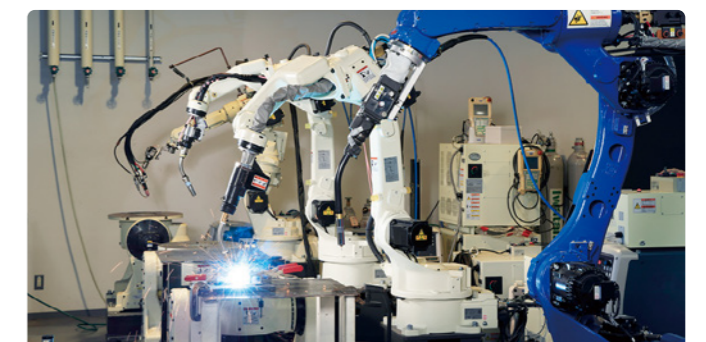
Applications technologies capable of handling diverse gases in accordance with their properties

- Capacity to propose solutions backed by the gas handling technologies, extensive track record in their adoption, and integrated capabilities from design through maintenance accumulated over many years
 - Continuing development of new gas technologies while responding swiftly to customer needs and issues
- Example: Hydrocut® hydrogen-based premixed fusing gas that significantly reduces CO₂ emissions; high-density oxygen solution equipment, which is seeing increasing use in inland aquaculture; liquid nitrogen and storage containers used to freeze and store regenerative medical products such as cells



Comprehensive abilities combining gases with machinery

- The Iwatani Group can provide services from gas supply through machinery and equipment for using gas
- Our extensive product lineup and broad-ranging domestic and international networks, in addition to years of expertise, support customer production activities



Major Initiatives

Business growth in priority regions

To achieve medium- to long-term business growth, the Industrial Gases business is actively expanding in the markets of North America, China, and Southeast Asia, while strengthening its revenue foundations in Japan.

We are entering North America, among the largest industrial gas markets, by leveraging our special strengths in hydrogen, helium, and specialty gases. We are growing our businesses actively through M&A activities, including the acquisition of a North American industrial gases dealership in 2019 and the January 2023 acquisition of Aspen Air U.S., LLC, which manufactures and sells air separation gas.


We plan to accelerate this expansion by enhancing the industrial gases sales and moving forward with strategic investments.

In the markets of China and Southeast Asia, which are experiencing rapid economic growth, we are investing to strengthen our position as a producer and expanding our air separation unit (ASU) and helium center networks in response to growing demand. Our goal is to achieve further business growth by enhancing our existing supply chains still further and boosting sales centered on air separation gases, helium, and specialty gases.

Japan

Focus on growth fields such as decarbonization demand
Expand sales of machinery and equipment (decarbonization and automation)

- Business environment** Rising energy costs, growth of decarbonization field, changes in industrial structure
- Investment** Growth investment in existing and new businesses




Helium container

United States

Full-scale entry into market through M&As of industrial gas businesses and further business expansion

- Business environment** World's largest industrial gases market
- Investment** Development of industrial gas plants M&As of industrial gases dealerships




Aspen Air US, LLC

Four Priority Regions

China

Expand business area and product range

- Business environment** Mega market that continues to grow
- Investment** Expansion of industrial gas plants (venture inland)




Air separation plant (Jiaxing Iwatani Industrial Gases Co., Ltd.)

Southeast Asia

Enhance supply capacity of industrial gases and expand product range
Expand sales of machinery and equipment (robotics and semiconductor related)

- Business environment** Market expansion due to population growth
- Investment** Expansion of industrial gas plants to meet growing demand M&As of industrial gases dealerships



Helium center (Iwatani Corporation (Thailand) Ltd.)

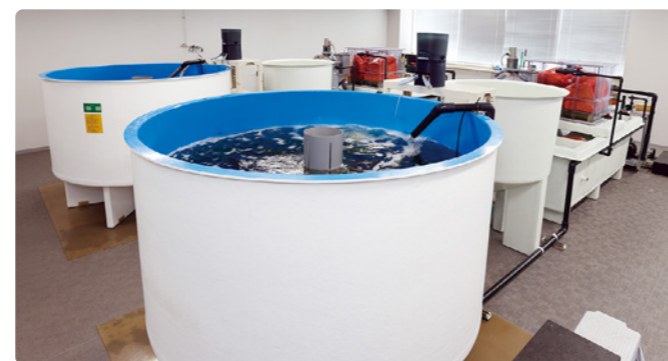
Tackling new growth areas

The Industrial Gases & Machinery Business focuses not just on decarbonization, but on regenerative medicine and onshore aquaculture. In the area of regenerative medicine, we are focusing on establishing industry standards in areas such as cell storage and distribution, based on joint research with universities and joint efforts with our business partners, centered on research facilities at the Iwatani R&D Center.

We are working to expand our businesses into the field of onshore aquaculture, drawing on the oxygen dissolving technologies amassed over the years, to promote fish breeding and raising. In February 2023, we set up a research facility at the Iwatani R&D Center, where we plan to grow our businesses in the aquaculture field by increasing knowledge of onshore aquaculture and thereby to deliver solutions to social challenges such as food shortages.



Cell culture



Onshore aquaculture facility



The Machinery Division will drive business growth

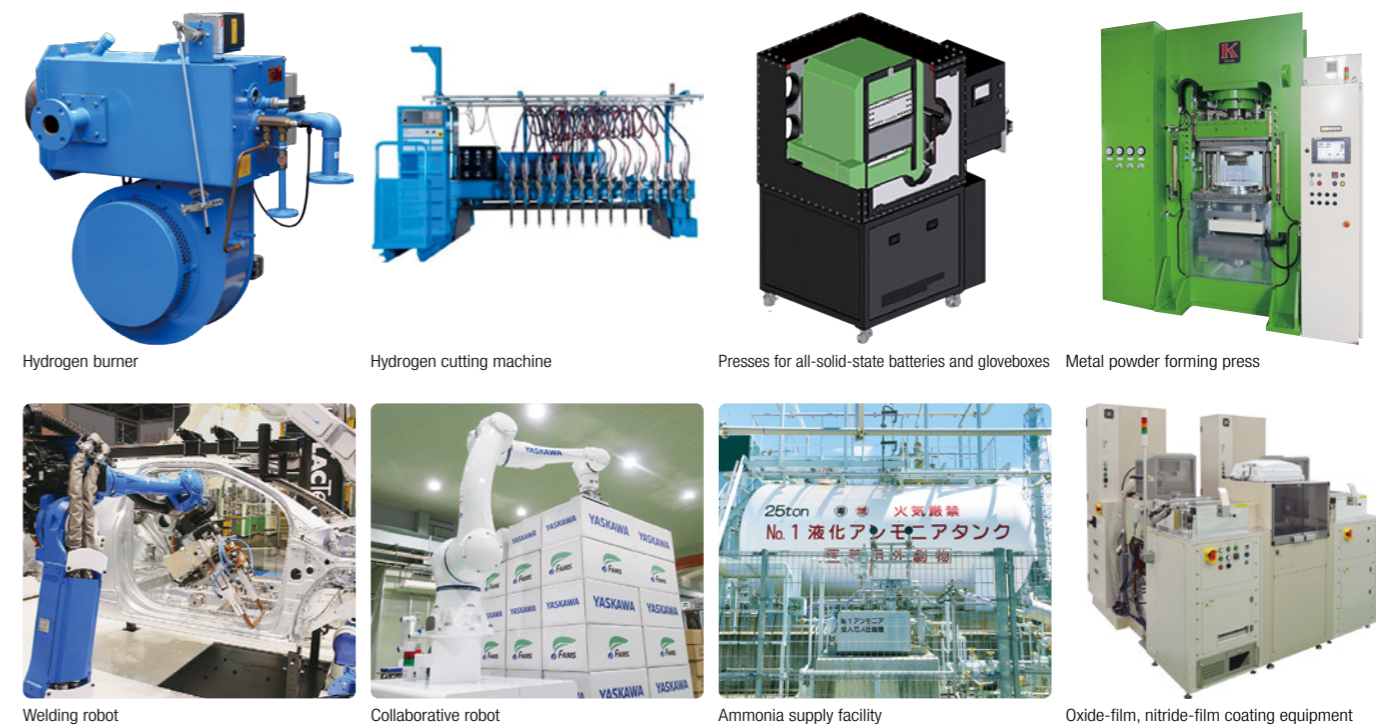
The Machinery Division is expanding sales of various types of machinery, from welding, cutting, and industrial robotics machinery through electronic components production equipment, equipment related to semiconductors, medical and pharmaceutical products, and the environment, and machine tools. Drawing on our extensive domestic and international networks, the comprehensive capabilities of the Iwatani Group in gas supply and other areas, our wide-ranging product lineup, and years of expertise in machinery adoption and solutions, we help customers overcome various challenges.

Hiroyuki Yano Managing Officer
General Manager, Machinery Division

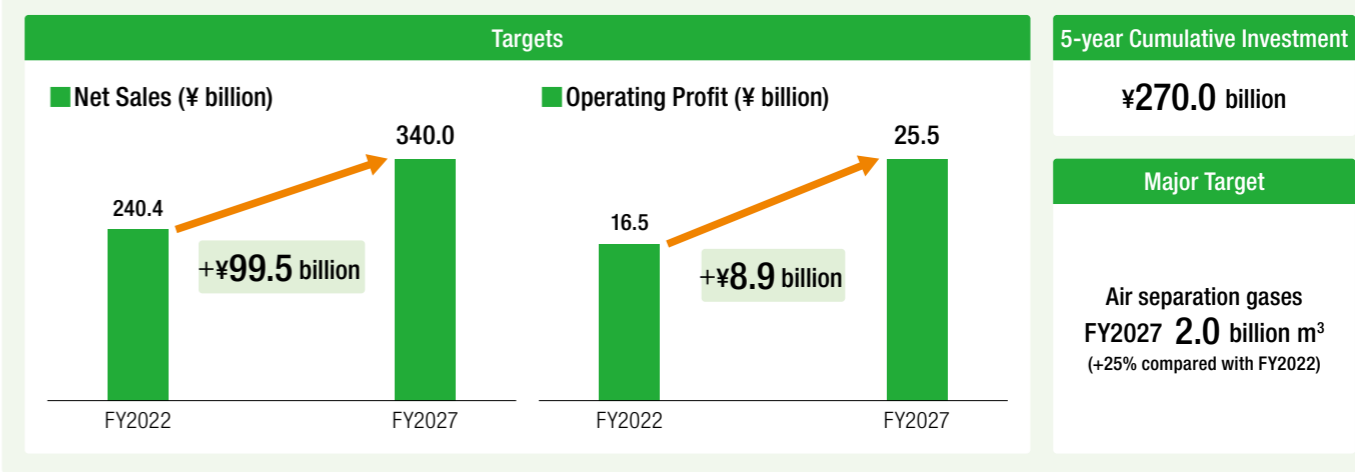
The Machinery Division is active in machinery and equipment related to production lines, including welding machinery and robotics. Among its strengths is the capacity to directly ascertain what customers need even before production activities begin. In addition to identifying customer needs and proposing optimal machinery at the stage at which customers are considering production, we are able to propose solutions across a wide range of areas, including gas supply, maintenance, and supply of materials.

Striving for optimal solutions to customer challenges, we seek to grow the Iwatani Group's businesses. We also receive numerous inquiries about decarbonization of production lines, and we are responding in cooperation with partner companies through means including development of machinery using hydrogen in production processes. Taking advantage of the Iwatani Group's special strengths, we will boost corporate value through new product development and expansion of the scope of business.


Iwatani's machinery lineup



PLAN27 medium-term management plan targets



Materials



Contributing to a resource-circulating and carbon-free society by expanding our lineup of eco-friendly products

The Materials business was an early actor in developing mineral resources, including mineral sands, and related applications. Our emphases are procurement and development of functional plastics, advanced metals, and other resources essential to the environmental, electronics, and automotive fields. It also contributes to the realization of a carbon-free society through biomass fuels and other sustainable eco-friendly products.

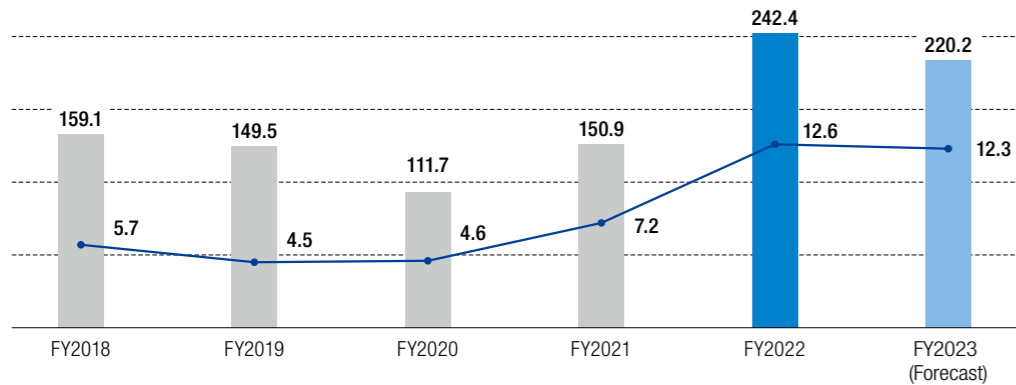
Kenji Motoori Senior Managing Officer, General Manager, Materials Division

Main products

- Eco-friendly PET resins (biomass PET resins, aluminum-catalyst PET resins)
- Biomass fuels
- Battery-related materials (lithium, cobalt)
- Mineral sands (titanium ore, zircon sand)
- Stainless steel
- Metal processing products
- Functional films

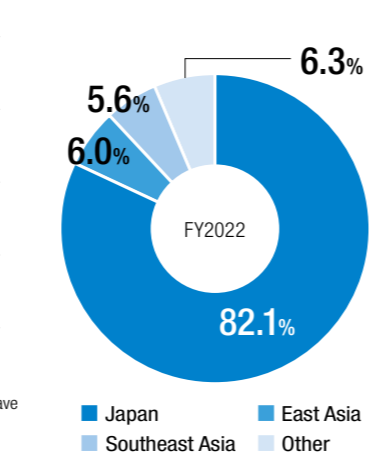
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Trends in net sales and operating income (¥ billion)



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Sales composition by region




Breakdown of sales

Electronic Materials

- Battery-related materials
- Display materials

Related industries: Electronics, automotive batteries, etc.



Smartphone materials | Automotive battery materials

Segment net sales


¥242.4 billion

(FY2022)

Functional Plastics

- Resin raw materials (PET resin, polypropylene, etc.)
- Resin molding products, films, sheets

Related industries: Food and beverage, daily household goods, home electrical appliances, etc.

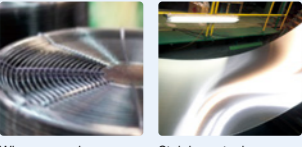


Air conditioner panel | PET resins

Metals

- Stainless steel
- Aluminum
- High alloys
- Precision stainless steel
- Non-ferrous materials
- Metalworking products

Related industries: Electronic components, air conditioning equipment, etc.

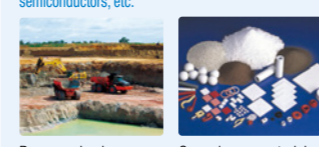


Wire processing | Stainless steel

Resources & Advanced Materials

- Mineral sands (zircon, titanium raw materials)
- Ceramic raw materials (Rare Earth metals, zirconium compounds)
- Biomass fuels
- Refractory raw materials
- Electronic materials

Related industries: Chemicals, ceramics, automotive, semiconductors, etc.



Resource business | Ceramic raw materials

Strengths, Opportunities, Risks

Strengths

- Strong customer network**
 - A strong customer base including leading players with high motivation to achieving carbon-free society and control over markets
- Stable supply structure**
 - Stable procurement capabilities based on strong ties to overseas suppliers and our in-house sources
- Proposing state-of-the-art products**
 - Capacity to propose products that draw on high-value-added advanced technologies to address the needs of society and our customers

Opportunities

- Demand shift toward eco-friendly products during the stage of transition to a carbon-free society
- Rising demand for rare resources
- Growth of China, Southeast Asia, and other emerging markets

Risks

- Market contraction for existing products due to rising environmental awareness
- Rising costs of development, production, procurement, logistics, etc.
- Supply risks associated with rising geopolitical risks and natural disasters

Business Capital Serving as Sources for Value Creation

Business infrastructure in mineral sands

- Ownership of mining concession in Australia
- Building a stable supply structure by diversifying supply sources
- Leading share of sales in Japan in combination with procurement from major resource firms



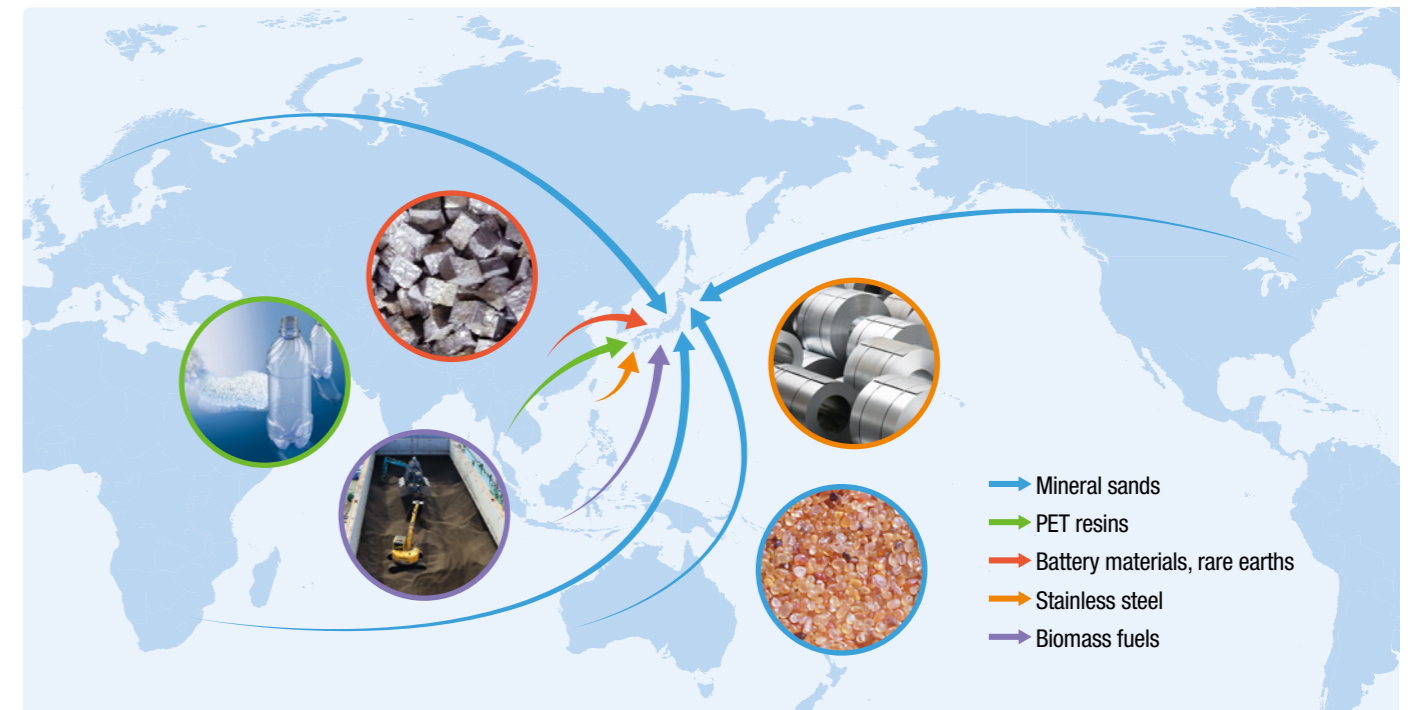
Overseas metal processing plants

- Developing an integrated production structure from raw materials through processing, to target emerging markets (Thailand, China)
- Product development/processing functions to meet customer needs (air conditioning equipment, automotive parts and materials)



Strong ties to suppliers

- Building an extensive network to realize stable procurement from suppliers around the world



Major Initiatives

Growing the environmental solutions business

The Materials Business seeks to balance environmental protection and business growth by providing solutions to customers that will help build a resource-circulating society. A resource-circulating society is one that respects natural cycles and avoids placing burdens on the environment. To reduce consumption of natural resources and minimize environmental impact, we have focused

to date on sales of raw materials with low environmental impacts (i.e., eco-friendly PET resins, biomass fuels, and battery-related materials). As we transition from a low-carbon to a zero-carbon society, we are striving to enhance sales of products and materials with low environmental impact (environmental products) and to develop resource recycling structures.

Enhancing sales of environmental products

In addition to strengthening sales of products and materials with low environmental impact, such as aluminum catalyst biomass PET resins, biomass fuels, and battery-related materials, we are also working to grow our supply chains and enhance our procurement

capabilities. Leveraging the strong supplier networks built to date in Japan and around the world, we will develop new products by actively promoting efforts to build a resource-circulating society.

● Eco-friendly PET resins

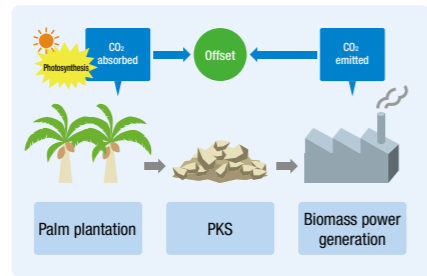
We are focusing on selling biomass PET resins made from plant-based materials, in place of fossil-based materials and aluminum catalyst PET resins that are easily recyclable, as eco-friendly PET resins. Amid rising environmental awareness, demand for these resins is growing, centered on PET bottles for beverages.

● Biomass fuels

We supply palm kernel shells (PKS), a byproduct of the palm oil production process, and wood pellets produced from thinned lumber and other materials, as fuel for use in power generation. Biomass power generation is drawing attention as a renewable energy source that offers the potential to realize carbon neutrality, with no effect on CO₂ levels.

● Battery-related materials

Rechargeable batteries are widely used in various applications, including smartphones and electric vehicles (EVs), as batteries that can be recharged and reused repeatedly. We sell imported raw materials, including cobalt and lithium, to battery manufacturers in Japan. These materials are used as electrode materials for rechargeable batteries. In the future, we plan to grow sales of various new materials, including nickel, while actively developing new battery parts and materials.



Aluminum catalyst biomass PET resins

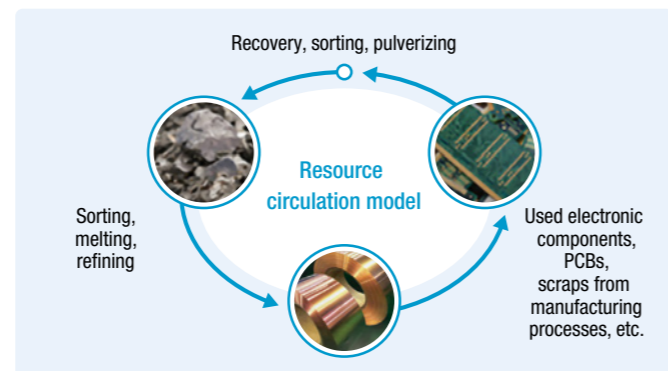
Wood pellets

Rechargeable batteries for electric vehicles

Building a resource circulation framework

● Reclaimed metals business

Amid various challenges, including resource depletion and rising costs affecting underground resources and growing demand for copper due to the spread of EVs and 5G telecommunications, attention is focusing on urban mining to reclaim copper and other materials from the printed circuit boards (PCBs) found in smartphones, computers, and other devices. In partnership with nationally authorized suppliers in India and Southeast Asia, we are developing resource circulation businesses to achieve stable recovery, refining, rolling, and recycling of metals from used PCBs and other sources. We will contribute to an eco-friendly society by recycling metals from products already produced.



Investments in vital mineral resources

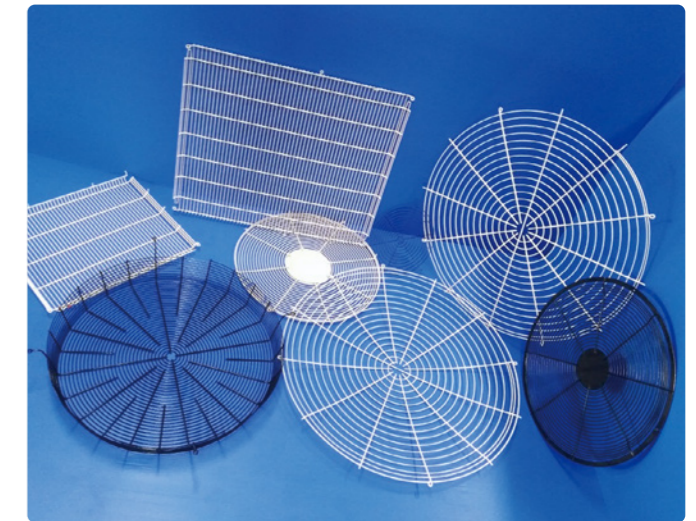
Mineral resources are vital to various applications, including renewable energy equipment and EVs, which are expected to see increased use as we transition to a carbon-free society. Securing stable supplies of mineral resources, which are distributed unevenly among nations, is a pressing issue. We will build more resilient supply chains by enhancing procurement and production functions to meet booming international demand and by promoting green initiatives in response to domestic customer needs for environmental value.



Australian mineral sands concession

Growing the metal processing business

Backed by climate change, the air conditioning business is expected to record continued growth in Asian markets. At the same time, demand is expected to increase for activities related to the transition to energy-saving heat pump water heating systems in markets like Europe and North America. In light of these expectations for continuing growth in demand, we have enhanced the production capacity of our wire processing plant in Thailand. To meet future customer needs, we will enhance our manufacturing and processing functions and grow the metal processing business still further.



Air conditioner exterior unit fan guards

Promoting development and commercialization of advanced materials

Our acrylic foam shock-absorbing materials are widely used in the organic electroluminescent panels used in smartphones. The nonmagnetic stainless steel foil we produce at our plant in China is used in state-of-the-art foldable smartphones. We plan to focus on the development of materials for use in next-generation mobility (electric and fuel-cell vehicles), for which demand is expected to grow rapidly. Our goal is to contribute to a carbon-free society through the development and supply of state-of-the-art materials.



Functional films (vehicle display materials)



Non-magnetic stainless-steel foil (foldable smartphone components)

PLAN27 medium-term management plan targets

