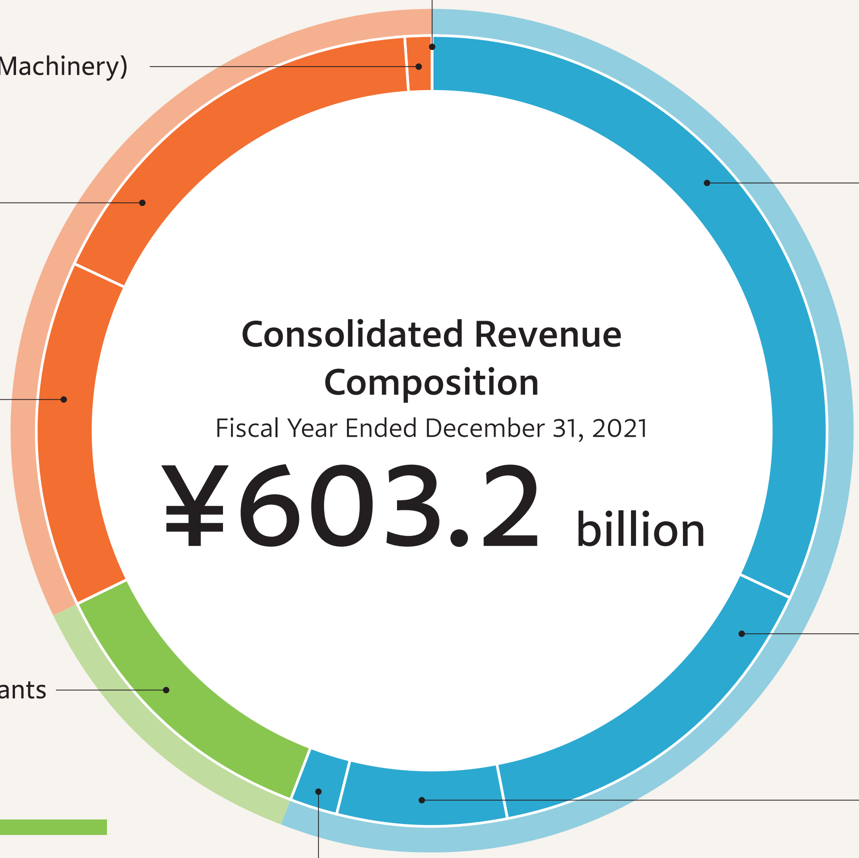
Three Businesses Supporting Social and Industrial Infrastructure

(Billions of yen)

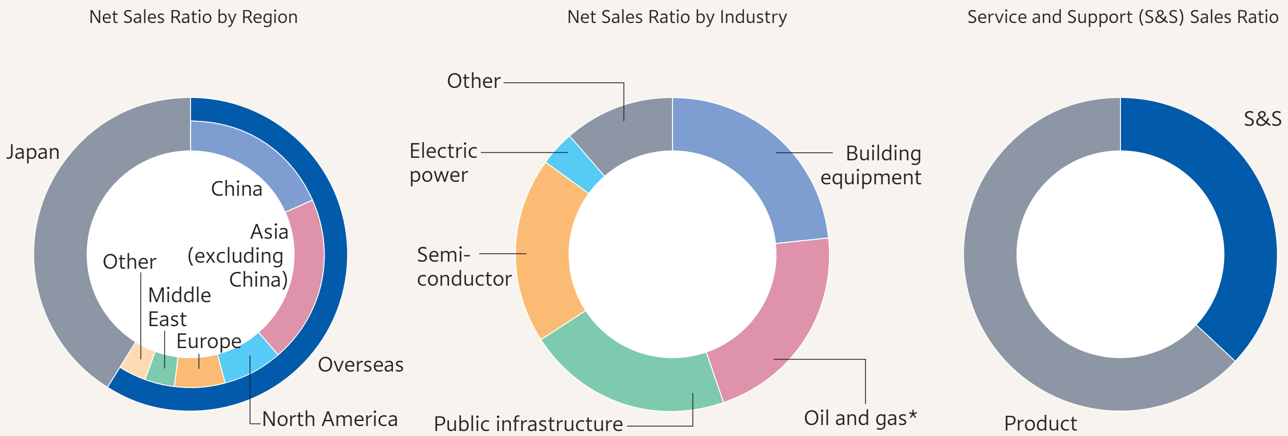
Precision Machinery Business
32%

Fluid Machinery & Systems Business
56%



Environmental Plants Business
12%

Companywide



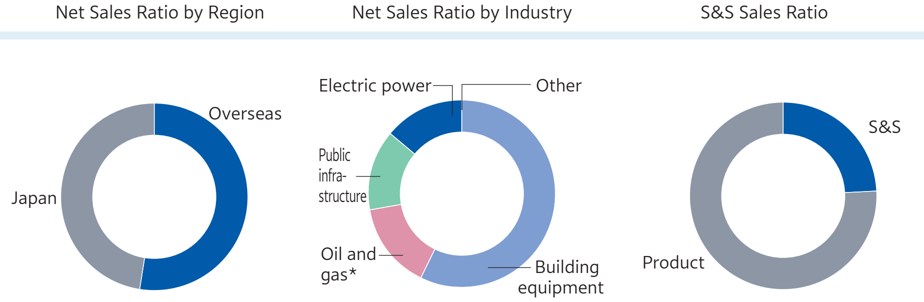
* Mostly downstream businesses

Fluid Machinery & Systems Business

→P.27–30

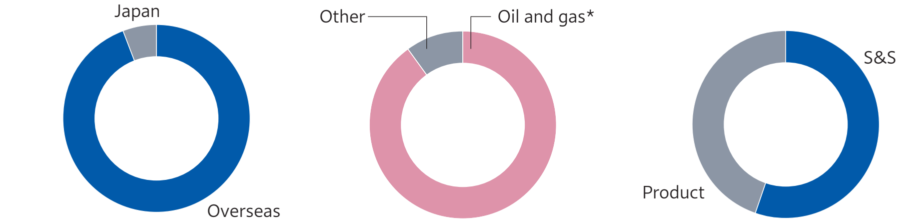
Pumps Business

Offers large-scale, high-pressure custom pumps for use in sewage facilities, rainwater drainage systems, petrochemical plants, and other facilities as well as standard pumps for use in high-rise buildings, condominiums, industrial facilities, and others



Compressors and Turbines Business

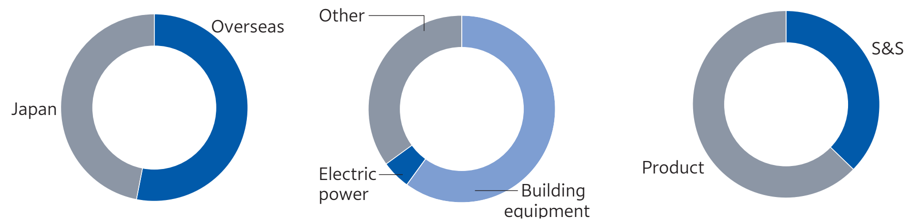
Provides compressors and turbines for oil refineries and petrochemical plants



* Mostly downstream businesses

Chillers Business

Handles chillers, cooling towers, and related systems for use in the air-conditioning equipment of buildings and large-scale commercial facilities



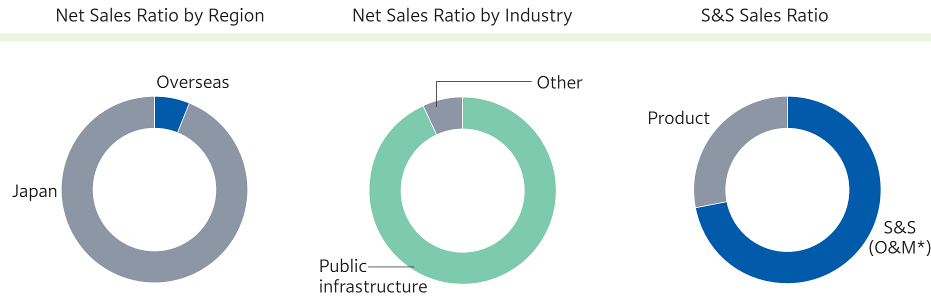
Other Businesses

Provides fans for use in applications such as tunnel ventilation as well as electricity, telecommunications, and energy control equipment

Environmental Plants Business

→P.31–33

Uses EBARA's incinerator and gasification plant technologies to perform processes encompassing the design, construction, operation, and maintenance of municipal solid waste incineration plants and other waste treatment facilities

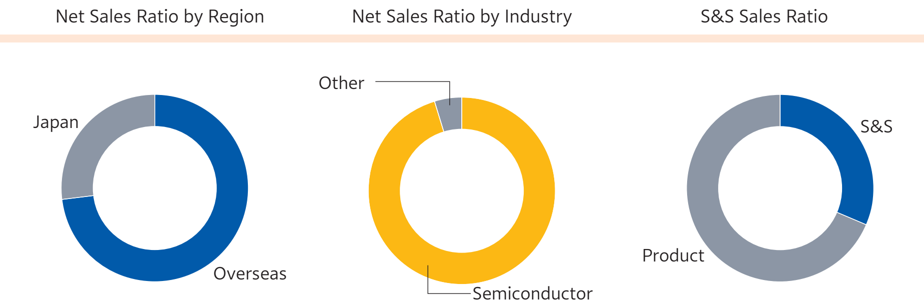


* Operation & Maintenance

Precision Machinery Business

→P.34–36

Provides products that contribute to the manufacturing processes of semiconductors, flat panel displays, and other devices indispensable to a super-smart society including the dry vacuum pumps that create the required vacuum environments and the CMP systems that can polish semiconductor wafers with nano-level precision



Fluid Machinery & Systems Business

We aim to develop new fields and markets from a market-in perspective.

Shu Nagata
Executive Officer
President, Fluid Machinery & Systems Company

The recovery in economic activity following the COVID-19 pandemic contributed to the year-on-year increase in both sales and operating profit for the fiscal year ended December 31, 2021, and operating profit reached a new record high, despite some regional discrepancies.

In the Standard Pumps Business, sales grew significantly, especially in overseas markets, thanks to synergies from the acquisition of a Turkish pump manufacturer in April last year and the establishment of a base in Canada. In addition, the oil and gas market was brisk, especially in China and the Middle East, due to soaring crude oil prices. Orders for compressors, turbines, and custom pumps increased significantly from the previous year. At the same time, major changes became apparent in the external environment of our business. These include surging raw material and energy prices, along with difficulties in obtaining certain parts and materials. Various measures are being taken in response to these impacts, including supply chain restructuring, design changes, and pricing strategy reviews.

We will strengthen our market-in perspective and change from selling single products to providing integrated solutions by combining and controlling various products, in order to meet our customers' needs. With further promoting DX acceptable in the with-COVID era, we also provide new services such as remote monitoring and operation management, predictive maintenance, and energy efficiency. The Company will also actively develop products and technologies that leverage our long-standing expertise in fluid and gas technologies to enter the growing decarbonization market.

SWOT Analysis of Fluid Machinery & Systems (FMS) Business

Strengths
- Fluid, numerical analysis, material, analytical, and other fundamental technologies cultivated over the years (entire FMS Business)
- Capability for developing highly efficient, high-quality, and highly reliable products (entire FMS Business)
- Diverse, global employee base and network (entire FMS Business)
- Presence in Asia (entire FMS Business)

Weaknesses
- Lacking presence in Europe and the United States (pumps, chillers)
- Insufficient lineup of products matched to overseas specifications (pumps)
- Dependence on highly volatile markets (compressors and turbines)

Opportunities
- Increases in infrastructure investment in conjunction with rising water demand attributable to population growth and urbanization in emerging countries (pumps)
- New opportunities arising from industrial structure changes occurring in conjunction with progress in 5G, IoT, and other technologies (pumps, chillers)
- Growing demand for EBARA products in tandem with growth in demand for LNG, hydrogen, and other forms of clean energy (pumps, compressors and turbines)

Threats
- Intensification of price competition stemming from domestic market contraction (pumps, chillers)
- Increased competition due to maturity of technologies and improvement of technological capabilities of emerging manufacturers (entire FMS Business)

E-Vision 2030 and E-Plan 2022 Business Strategies

Business Vision (E-Vision 2030)

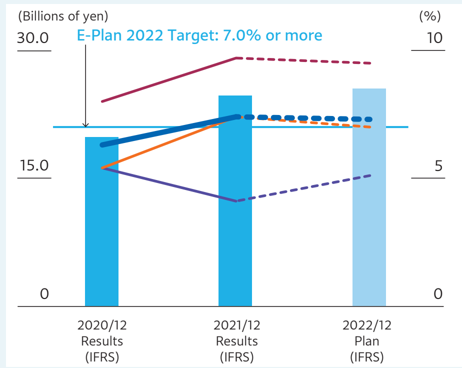
Become a top-class industrial machinery manufacturer that continues to advance into new fields supported by the fundamental technological prowess forged over years of operation

E-Plan 2022 Business Strategies

- Establish business structure that ensures reliable profits
- Improve presence in overseas markets
- Create products matched to customer needs in unexplored and other markets

Numerical Targets

Operating Profit Ratio:
7.0% or more (IFRS)



E-Plan 2022 Targets / Progress in 2021

Numerical Targets (Operating profit ratio) (IFRS)	2021/12 Results (IFRS)	2021/12 Achievements	Future Initiatives
Pumps Business 6.5% or more	7.4%	Standard Pumps • Domestic: Strengthened S&S structure, bringing to market a condition-monitoring system that combines IoT sensors and cloud computing • Overseas: Acquired a Turkish pump manufacturer, established a new base in Canada, and strengthened SCM*1 • Expanded lineup of global core products and regional products	• Domestic: Expand scale of S&S sales, expand new products and sales • Overseas: Accelerate expansion of bases and launch new products that meet regional needs • Market and develop products at the top of their niche
		Custom Pumps • Undertook selective order acceptance for export projects and reassignment of personnel from products to S&S • Advanced business standardization and efficiency through digital transformation • Strengthened SCM for S&S expansion	• Expand S&S sales through collaboration with Compressors and Turbines Business and by strengthening service systems at overseas bases • Continue selective incoming orders, including design review prior to acceptance • Reinforce technology proposal capability to generate sales in decarbonization-related markets
Compressors and Turbines Business 8.0% or more	9.7%	• Undertook selective order acceptance for products, procurement cost reduction (LCC*2 utilization), lead time shortening through automated design • Opened profitable cryopump testing facility	• Continue selective incoming orders and increase procurement from LCCs • Restructure global service system
Chillers Business 5.0% or more	4.1%	• Domestic: Strengthened S&S system, launched precision chiller for semiconductor manufacturing process onto the market • China: Introduced new products in line with local needs	• Expand new products and sales • Expansion of S&S sales scale

*1. SCM: Supply chain management
*2. LCC: Low cost country

E-Plan 2022 Progress and KPIs

The Fluid Machinery & Systems Business has wide-ranging opportunities to contribute to a sustainable society. We have set KPIs for many approaches, including providing a stable water supply to diverse regions as well as contributing to energy-saving products and technologies that reduce environmental impact. The following are some of our business-segment specific KPIs.

Related Materiality	Measures and KPIs	2022/12 Targets	2021/12 Results	2021/12 Achievements	Future Initiatives
1	**Stable water supply to diverse regions**				
	Expansion of solar pump sales (Standard Pumps)	Achieve a unit sales volume target of 100%	Achieved sales volume targets	Sales exceeded target in Brazil	Sales expansion outside of Brazil
	Contribution to technologies that reduce environmental impact				
	Development and market launch of products for liquid hydrogen plants (Custom Pumps)	Achieve 100% commercialization	Continued to promote product development	Companywide project for hydrogen-related business Market launch of hydrogen compressors	Manufacture and testing of small prototypes
	Making products more energy efficient				
	Complete development and commercialization of new steam turbine series (Compressors and Turbines Business)	Achieve 100% commercialization	Continued to promote product development	Continued to promote technological development of high-speed, compact, and high-efficiency steam turbine series	Commercialization and market launch
	Environmental load management				
	Reduction of GHG emissions through sales of low-GWP* products (Chillers)	Reduce annual GHG emissions by the equivalent of 33,000 tons of carbon dioxide	Reduced annual GHG emissions by the equivalent of 17,300 tons of carbon dioxide	Expanded series of new refrigerants and Turbo Chillers	Expanded sales of new refrigerant products, Turbo Chillers, and retrofit technology

* GWP: Global Warming Potential

Topic 1 Standard Pumps Business: Strengthening Global Production, Sales, and Service Systems

In the Standard Pumps Business, we have been expanding business sites to achieve the goal of "Delivering Water to 600 million People Worldwide" as stated in E-Vision 2030, our long-term vision. To date, we have acquired Vansan in Turkey to strengthen our access to the European, Central Asian, Middle Eastern, and African markets, and established an office in Mexico to gain a foothold in expanding our coverage of the North and Central American markets. We also established an office in Canada in 2021 and in Kenya in 2022 to further expand our global sales network. With the establishment of these new locations, we will further enhance our sales and service structure in each region and expand the coverage of the Standard Pumps Business. In addition, measures to strengthen the supply chain are continuing, and we have expanded the range of products handled at our distribution center in Vietnam, which began operations in 2020. We will continue to further strengthen our supply chain by adding knock down capabilities to our existing sales offices.

In pursuing the realization of our long-term vision, we are taking on the challenge of creating new business models in addition to improving existing frameworks. Ebara Pumps Europe S.p.A. has signed a sponsorship agreement with German startup Boreal Light GmbH to launch a new business in Kenya called WaterKiosk. In this project, we installed water purifiers using EBARA pumps at the site of a local special needs school and pumped water from a deep well to provide clean, free drinking water to approximately 160 students, and also sold the surplus drinking water to the local community at a WaterKiosk, a small shop-like stand. In addition, EBARA Bombas América do Sul Ltda. (EBAS) has launched its first e-commerce site, Virtual Antenna Shop. Thanks to registration of the inventory of EBAS products held by distributors and sales representatives on the site's online platform, customers can choose where to purchase products by comparing prices among dealers and stores near their living areas throughout the vast country of Brazil.

We will continue to expand our coverage and the creation of new business models to ensure the realization of our vision of "Delivering Water to 600 million People Worldwide."

Vansan

Mexico base

WaterKiosk®

Virtual Antenna Shop e-commerce site

Topic 2 Chillers Business: Started Sale of Precision Chiller Model RJ-SA*[1] for Semiconductor Manufacturing

In the Chillers Business, in collaboration with the Precision Machinery Business, we started sale of the Model RJ-SA precision chiller for semiconductor manufacturing processes. This product was developed specifically to meet the needs of customers in the semiconductor manufacturing process market, where demand is increasing for chillers that are compact, high-power, and enable efficient use of sub-fab space*[2] amid the rapid advance of our information-dominant society.

We achieved a compact footprint with this product by incorporating the super small pump model SSPD.*[1] It can be used with nonflammable, low-GWP refrigerants, which reduce environmental impact and the risk of leakage. In addition, it can precisely control temperature, contributing to improved process stability and yield. We will make maximum use of our Precision Machinery Business brand in the field of semiconductor manufacturing equipment, and will work to develop a wide variety of precision temperature controllers based on the heat supply technology and knowledge for various applications that we have cultivated in the Chillers Business.

We will continue to take on challenges with technologies that meet the expectations of our customers and contribute to the further development of the diversifying semiconductor industry. As stated in our long-term vision, E-Vision 2030, we are working to realize ever-evolving and abundant lifestyles.

Model RJ-SA precision chiller

*1. Model RJ-SA and SSPD are EBARA model numbers.
*2. The under-floor environment in a semiconductor manufacturing plant.

Topic 3 Compressors and Turbines Business: New Cryopump Test Stand

Elliott Group Holdings, Inc., which is in charge of the Compressors and Turbines Business, opened a new cryogenic pump test stand in Jeannette, Pennsylvania in October 2021. Cryogenic pumps are used in liquefied natural gas (LNG) and liquefied petroleum gas (LPG) plants to transfer low-temperature liquefied gas. The facility is equipped with two cryogenic pump test rigs for a wide range of product sizes and a dedicated cryogenic liquid expander test rig, allowing testing using liquid nitrogen, LNG, or LPG according to customer requirements. In addition, it is equipped with the latest instrumentation technology, which enables us to provide more reliable cryogenic pumps to the world quickly.

With the construction of the new test stand, we will increase production capacity and meet customers' delivery requirements. By expanding the capacity of the number of testing units and the scope of testing, we aim to meet the growing demand in the LNG market and expand the scale of sales. Elliott Group Holdings, Inc. will continue to strengthen its competitiveness in the LNG industry, providing cutting-edge technology, high-quality products, and highly reliable services.

Outside the cryogenic pump test stand

Environmental Plants Business

We will provide a wide range of resource recycling solutions for decarbonization and help build a sustainable society.

Atsuo Ohi
Executive Officer
President, Environmental Engineering Company

Under the long-term vision E-Vision 2030, the Environmental Plants Business has been strengthening its activities to become a resource circulation solutions provider for a wider range of fields, with the construction and operation of waste treatment plants as its core business. As the global movement toward decarbonization accelerates, the Japanese government has declared its goal of becoming carbon neutral, reducing greenhouse gas emissions to virtually zero by 2050, and is aiming for a 46% reduction in greenhouse gas emissions by fiscal 2030 compared to fiscal 2013 levels. The corporate environment is also undergoing major change.

In addition, the Act on Promotion of Resource Circulation for Plastics aimed at recycling plastics came into effect in April 2022. We expect that efforts to improve the recycling rate of waste plastics will accelerate in the future. We aim to promote digital transformation using AI/ICT, robot technology, etc. to achieve advanced plant operation technology, further improve energy efficiency, and reduce CO_2 emissions. We will focus our efforts on building a sustainable society and realizing decarbonization by strengthening our activities toward the practical application of chemical recycling technology for waste plastics.

SWOT Analysis of Environmental Plants Business

Strengths
- Integrated system for providing services ranging from engineering and construction to operation and maintenance
- Track record of constructing more than 400 plants worldwide utilizing a wide range of incinerator technologies
- O&M expertise founded on industry-leading operation contracting track record
- Cutting-edge plant operation initiatives employing AI and ICT
- Gasification technologies related to chemical recycling

Weaknesses
- Dependence on public infrastructure industry in Japan
- Geographic overconcentration of customers
- Labor-intensive facility operation businesses

Opportunities
- Reconstruction and upgrade demand stemming from aging of waste treatment plants
- Increased outsourcing of plant operation to the private sector
- Increased demand for renewable energy
- Growing need for waste plastic recycling

Threats
- Growing need for waste plastic recycling
- Consolidation of plants in response to domestic population decline
- Workforce contraction
- Intensification of cost competition

E-Vision 2030 and E-Plan 2022 Business Strategies

Business Vision (E-Vision 2030)

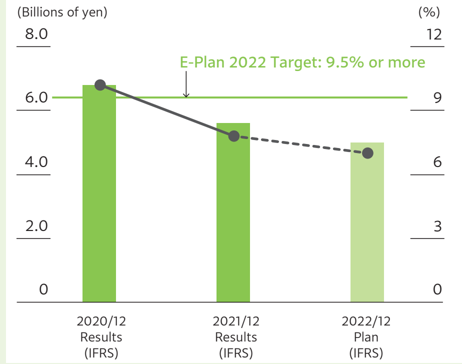
Expand business to become a resource circulation solutions provider with operations centered on waste treatment plant construction and operation that provides integrated EPC services primarily to local government

E-Plan 2022 Business Strategies

- Reinforce core operations
- Develop new businesses
- Step up waste treatment equipment liquidation and sales activities in China and promote offshore trading
- Improve non-price evaluation of design, build, and operate (DBO) projects

Numerical Targets

Operating Profit Ratio:
9.5% or more (IFRS)



E-Plan 2022 Targets / Progress in 2021

Numerical Targets (Operating profit ratio) (IFRS)	2021/12 Results (IFRS)	2021/12 Achievements	Future Initiatives
9.5% or more	7.8%	• Received contracts for DBO projects for municipal governments as well as EPC projects for the private sector as a result of customer-oriented proposals	• Improve profitability of receiving new EPC/DBO projects by improving non-price related elements of proposals
		• Received contracts for facility life-extension projects for municipal governments due to our highly-evaluated, long-term track record in maintenance, management, and operation	• Continue efforts to incorporate peripheral operations of the comprehensive, long-term service projects and propose lifespan extensions
		• Increased the number of facilities equipped with AI cranes and the number of facilities eligible for remote monitoring support by implementing digital transformation	• Further R&D towards reduction of O&M costs by making full use of digital transformation technologies and improvement of plant performance
		• Developed new technologies for societal implementation of chemical recycling	• Conduct demonstration tests of chemical recycling

E-Plan 2022 Progress and KPIs

We are working to provide high-quality services by implementing digital transformation at facilities with operational support. In addition to utilizing our incinerator operation know-how, we are also working on the further improvement of power generation efficiency and reduction of carbon dioxide emissions with the help of digital transformation technologies. We have set KPIs for each of our initiatives, some of which are introduced below.

Related Materiality	Measures and KPIs	2022/12 Targets	2021/12 Results	2021/12 Achievements	Future Initiatives
1 	**Environmental load management**				
	Generation of renewable energy from waste	130,000 MWh	164,279 MWh	Exceeded volume target for contracted power as a result of positive municipal responses to our initiatives to generate power locally for local consumption	Conduct proposal activities to sign long term contracts for the generation of renewable energy from waste
	Stable operation of social infrastructure				
	Long-term comprehensive contracts for DBO projects (cumulative total)	19	16	Conducted proposal-based sales activities that take into account the individual circumstances of customers to ensure the stable operation of municipal solid waste treatment facilities, an essential part of the social infrastructure	Focus on facility design as well as local power production for local consumption to make our facilities into symbols of a recycling-oriented society
	Crane upgrades and AI crane installation	Achieve 100% installation target	Installation target 33% achieved	Introduced AI cranes to municipal facilities for their labor-saving and stable incinerator functions	Implement crane upgrades and widespread adoption of AI cranes based on the needs of the domestic public and private sectors
	Contribution to technologies that reduce environmental impact				
	Practical application of internally circulating fluidized-bed gasification system (ICFG)*	Construction of demonstration units Achieve an order target of 100%	Basic testing conducted and follow-up testing ongoing	Continued to conduct basic tests on the chemical recycling of waste plastics using the ICFG at a test facility	Continuation of activities to conduct basic and demonstration tests

* ICFG is a system to recover high-calorific fuel gas, consisting mainly of hydrocarbons, from low-grade materials like biomass. The product gas can be used as an alternative energy to fossil fuels, thus reducing new fossil fuel usage. ICFG is a chemical recycling technology that can be integrated into existing industrial processes with massive energy consumption to realize innovative systems that utilize biomass and waste energy as alternative fuel for manufacturing industries. ICFG is a registered trademark in Japan of Ebara Environmental Plant Co., Ltd.

Topic 1 DBO, Consecutive Orders for Long-Term Comprehensive Projects

The Environmental Plants Business provides a full range of services from design and construction to operation and maintenance of municipal solid waste treatment facilities. With the strength of our track record of delivering more than 400 facilities in Japan and overseas based on our many incinerator technologies, we have accurately understood customer needs such as the recent trend of rebuilding and renovating aging municipal solid waste treatment facilities and the trend of outsourcing facility operation to private companies. In fiscal 2021, we received five additional large public works projects.

The projects awarded by Urayasu City, Chiba Prefecture, and Kosai City, Shizuoka Prefecture, are for long-term comprehensive operations, from operation and management to maintenance, in addition to large-scale renovation of existing facilities, based on our technological capabilities and know-how accumulated through years of involvement in facility operations. The Urayasu City Clean Center was completed in March 1995, and we were awarded its first long-term comprehensive contract in 2012, and we have now been entrusted with its second long-term comprehensive contract. This renovation will allow the facility to remain in use for more than 40 years after its original construction. The project awarded to Kosai City will also include a large-scale renovation, bringing the incineration facility back into operation after more than a decade of closure, and installing a new power generation system that uses waste heat to reduce the amount of electricity consumed by the facility.

Under the long-term comprehensive contract awarded by the Takahashi Regional Administrative Association in Okayama Prefecture, the facility will be operated for 10 years starting in April 2021. It is expected that the movement to make effective use of existing facilities and to outsource facility operation to private companies will continue to advance in the future, and Ebara Environmental Plant Co., Ltd. will be involved in the operation of safe and secure facilities by utilizing the technology and know-how we have cultivated over many years of facility operation.

We were awarded two projects that involve the refurbishment of aging municipal solid waste treatment facilities, as well as the construction of new facilities. One is with the Gosen Area Sanitation Facility Association in Niigata Prefecture and the other is with the Atsugi Aiko Environmental Facility Association in Kanagawa Prefecture. We have also been commissioned to operate the facilities for 20 years after construction.

From a long-term perspective, we will help reduce CO_2 emissions, contribute to local revitalization, and help realize a sustainable local community through the development and operation of safe and secure facilities by stably processing waste generated from the local community.

Rendering of the Atsugi Aiko Environmental Facility Association central waste treatment facility

Rendering of the Gosen Area Sanitation Facilities Association central waste treatment facility

Topic 2 Promoting Chemical Recycling

As the global movement to decarbonize accelerates, Japan is also accelerating various efforts to achieve carbon neutrality by 2050. We are concerned with the issue of waste plastics in the field of solid waste management, which has become a global challenge. In Japan, there is growing discussion centering on the resource recycling of plastics, and in June 2021, the Act on Promotion of Resource Circulation for Plastics was enacted (enforced in April 2022).

Against this backdrop, Ebara Environmental Plant Co., Ltd. has been working towards the practical application of chemical recycling of waste plastics using its proprietary ICFG technology. Using ICFG, waste plastics are pyrolyzed to produce high-value products such as pyrolysis gas and oil. The goal is to use waste plastic as a resource by substituting the pyrolysis products for such fossil raw materials as petroleum and petrochemicals in industrial processes. In addition, ICFG can pyrolyze a wide range of feedstocks (including not only plastics but also general waste, woody biomass, and sewage sludge), to create pyrolysis products. This eliminates the need to select a single feedstock from among miscellaneous plastics, plastics contaminated with non-burnable materials or food residue, or other raw materials. Therefore, this technology has significant potential to facilitate the switch from thermal recycling (incineration that generates electricity is currently the mainstream method) to chemical recycling that produces raw materials.

We will further accelerate our efforts and incorporate the perspective of carbon dioxide emissions, using life-cycle assessment, into a new evaluation axis, aiming to realize chemical recycling of waste plastics that contributes to decarbonization.

Precision Machinery Business

We will work to strengthen our product competitiveness and our ability to provide solutions to realize a sustainable society.

Tetsuji Togawa
Executive Officer
President, Precision Machinery Company

Orders, sales, and operating profit were all at record highs in the fiscal year ended December 31, 2021, and we achieved the target set in E-Plan 2022 one year ahead of schedule. This was due to a rapid increase in capital investment by our customers against a background of semiconductor shortages caused by the spread of ICAC5 (IoT, Cloud, AI, Car, 5G), DX, and GX.

In E-Plan 2022, we are striving to improve our technology to further strengthen our product competitiveness and our ability to provide solutions. In the fiscal year ended December 31, 2021, we introduced new models of dry vacuum pumps, gas abatement systems, and chemical mechanical polishing (CMP) systems, as well as exhaust systems for EUV lithography equipment to support cutting-edge semiconductor manufacturing and to promote joint development with research institutes and next-generation product development. The market in China continues to grow at a high rate, and we are developing relationships with new customers in addition to operating a dry vacuum pump overhaul center. We have also increased the capacity of our automated dry vacuum pump plant and expanded the production line for CMP systems in order to respond flexibly to changes in customer demand.

In the fiscal year ended December 31, 2022, we further improved automated production of dry vacuum pumps and constructed a new equipment-related production facility at the Kumamoto Plant to meet future market demand growth, while constructing a new building for equipment-related development at the Fujisawa Plant to strengthen our ability to provide solutions. To contribute to the SDGs, we are promoting development aimed at energy and resource conservation in our products as we strive to reduce the environmental impact of our customers' business activities.

We will contribute to the realization of a more enriched world by cultivating partnerships with our customers and providing solutions based on our unique technology.

SWOT Analysis of Precision Machinery Business

Strengths

- Rotating machinery, fluid equipment, machine control systems, gas decomposition and abatement, and energy conservation technologies
- Sophisticated technological capabilities and manufacturing technologies that contribute to resource conservation
- Bases positioned near customers worldwide
- Flexible, high-quality customer support capabilities
- Long-term employee retention contributing to technology accumulation and transfer
- Diverse base of technically skilled employees around the world
- Robust supply chain

Weaknesses

- Lack of optimization of production systems (i.e., fully automated plants, etc.)
- Faltering share expansion in growth-promising Chinese market
- Slow launches to new business initiatives

Opportunities

- Spread of IoT, AI, and automated driving technologies
- Diversification of workstyles through teleworking and other methods utilizing cloud and communications technologies
- Increased demand for semiconductors due to the spread of DX and the metaverse and increased investment in GX
- Aggressive semiconductor investment in China
- Increased demand for capital investment in Taiwan, South Korea, Europe, the U.S., and Japan

Threats

- Fluctuations in semiconductor demand and inconsistent pace of semiconductor capital investment following slowed pace of semiconductor complexity increases
- Raw material price hikes due to COVID-19 and the situation in Ukraine
- Diminishment of market share due to supply chain issues and other factors leading to insufficient production capacity
- Impacts of trade dispute between the United States and China

E-Vision 2030 and E-Plan 2022 Business Strategies

Business Vision (E-Vision 2030)

Contribute to the development of society through partnerships and distinctive technologies centered on the semiconductor field while helping create a more enriched world through endeavors in new fields

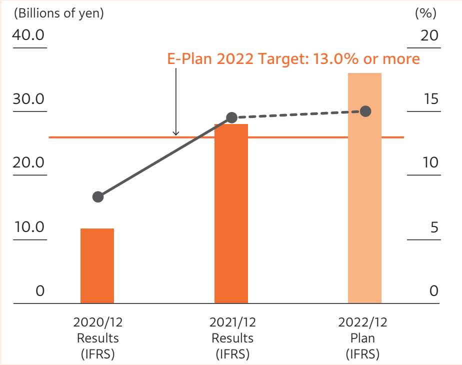
E-Plan 2022 Business Strategies

- Transition from a supplier of standalone equipment to a solutions provider
- Create new businesses with new technologies at their core
- Pursue highly efficient management and develop operations on a global scale

Numerical Targets

Operating Profit Ratio:

13.0% or more (IFRS)



E-Plan 2022 Targets / Progress in 2021

Numerical Targets (Operating profit ratio) (IFRS)	2021/12 Results (IFRS)	2021/12 Achievements	Future Initiatives
13.0% or more	14.5%	• Increased production by expanding the Fujisawa Automated Plant and Kumamoto Plant line to meet rapidly growing demand • Announced new products as a way to strengthen product competitiveness • Conducted joint development with international research organizations	• Reinforce production system to meet further demand growth and start construction of a new equipment-related development building to strengthen our ability to provide solutions

E-Plan 2022 Progress and KPIs

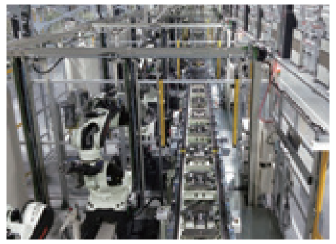
We are further improving energy conservation and weight reduction in our products, and are promoting joint development with partners whose products and services support the realization of next-generation semiconductors. We will realize E-Vision 2030 by reducing GHG emissions through our products and ensuring stable operations for our customers through the expansion of S&S. We have set more than ten categories of KPIs and are monitoring the progress of all of our initiatives.

Related Materiality	Measures and KPIs	2022/12 Targets	2021/12 Results	2021/12 Achievements	Future Initiatives
1, 2	**Environmental load management**				
	Reduction of GHG emissions through gas abatement systems	Achieve 100%	65%	Contribute to the reduction of GHG emissions by detoxifying the gases generated in the semiconductor manufacturing process	Develop and expand sales of products that are more beneficial to customers
	Product weight reduction				
	Weight reduction of target products (Per unit compared to 2019)	Achieve 12% reduction	11%	Launched lightweight dry vacuum pump Model EV-X* in November 2021	Accelerating sales expansion of the Model EV-X launched last year
	Development of manufacturing equipment to meet the evolutionary roadmap for semiconductors				
	Development of new models arising from priority projects	Achieve 100%	111%	Completed the number of models targeted for completion during fiscal 2021	Further increase the number of models developed
	Development of elemental technologies for the next generation of target products	Achieve 100%	75%	Development is almost complete, with a few remaining cases	Development on track for release by the end of this quarter

Topic EBARA Technology Supporting Semiconductor Production

EBARA supports customers' semiconductor production with a wide range of products featuring unique technologies and high environmental performance.

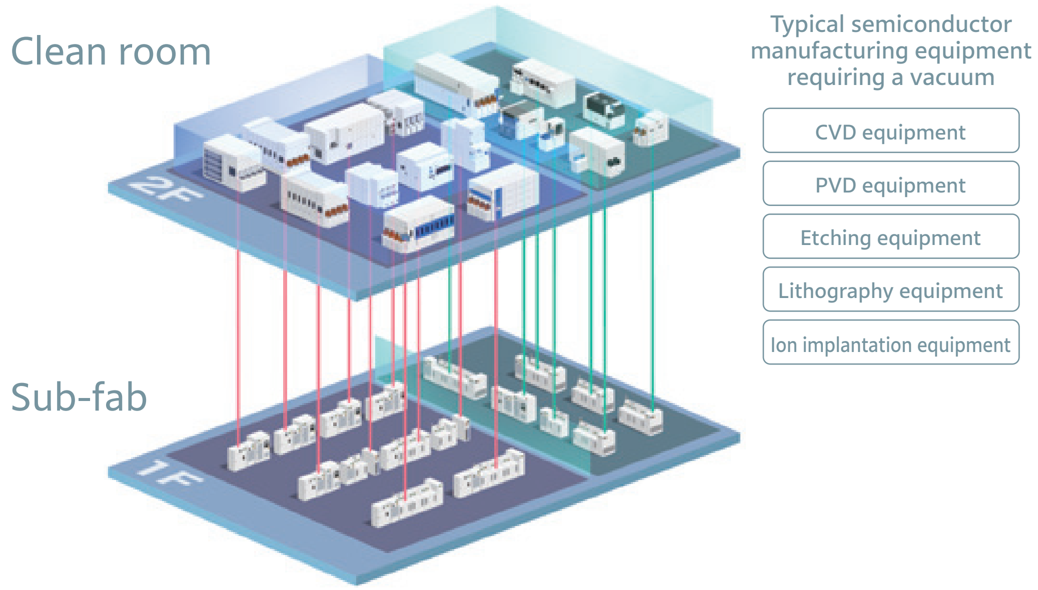
Our CMP systems, which perform a pivotal stage of semiconductor manufacturing in the clean rooms of semiconductor factories, are highly reliable and highly productive thanks to EBARA's one-table, one-head, dual-module system. Last year, we launched the Model F-REX300XA,* which has the highest productivity in EBARA history and reduces CO_2 emissions in the supply chain by reducing the number of parts in addition to reducing power consumption by 10% compared to the current model. Our dry vacuum pumps are installed in the sub-fab area below the clean room floor in semiconductor plants to create the vacuum environment that is essential for many stages of the semiconductor manufacturing process. Last year, we launched the new dry vacuum pump Model EV-X* for medium-load processes, which can reduce power consumption by 25-50% compared to our current models and contribute to lower total cost of ownership (TCO) by lengthening the parts replacement cycle. In the waste gas treatment field, there is demand for equipment with lower environmental impact, and we have launched the Model G-WS,* a wet-type gas abatement system that reduces both TCO and environmental impact. In addition to these products, we launched a vacuum pumping system for EUV lithography equipment and a chiller for semiconductor manufacturing equipment in collaboration with our Chillers Business, thereby enhancing synergies across our products and businesses.


Automated dry vacuum pump assembly line

The automated dry vacuum pump plant that started operation at the Fujisawa Plant two years ago continues to operate smoothly and will continue to lead the world in the evolution of automation technology, making products that meet market needs in a timely manner.

By providing solutions to meet a wide range of customer needs, we will continue to contribute to the further development of the semiconductor industry, which is diversifying and accelerating, as well as to the ever-evolving and abundant lifestyles as stated in E-Vision 2030.

* F-REX300XA, EV-X, and G-WS are EBARA model numbers.




Model F-REX300XA


Model EV-X


Model G-WS

New Business: Hydrogen Business

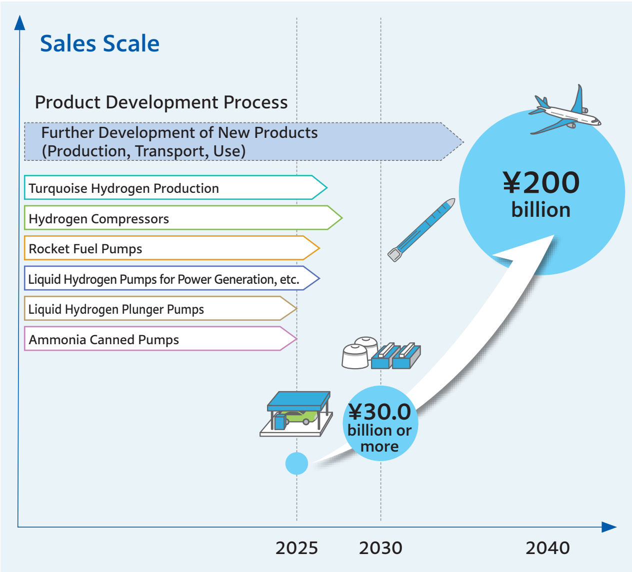
EBARA Groupwide Co-Creation and Realization of a Hydrogen Supply Chain

It has been almost one year since The CP Hydrogen Business Project launched in August 2021. In the meantime, the global movement toward carbon neutrality has been gaining momentum, and the importance of energy security has also received renewed attention.

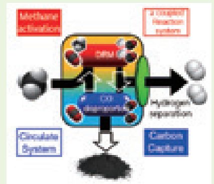
EBARA is taking on the Groupwide challenge to realize a hydrogen-based society, which will be indispensable for sustainability. With co-creation as our basic philosophy, we will work across our organization and in collaboration with stakeholders in industry, government, and academia to achieve this goal for society as a whole. To this end, EBARA will take advantage of its technologies and know-how as we strive to implement clean hydrogen-related technologies in society throughout all areas of production, transport, and use (see below). In particular, we are currently working to advance liquid hydrogen pump-related and rocket fuel supply technologies, as well as turquoise hydrogen (see highlights on the next page). We believe in the clear potential of these technologies for commercialization. In the spirit of "Technology. Passion. Support Our Globe." we will continue to take on difficult challenges and build an even more comfortable society.

	Helpful	Harmful
Internal origin	**Strengths** • World-class core technologies such as compressors and cryogenic pumps • Plastic waste gasification technology and plant design and construction knowhow • Sales network in Japan and around the world • Companywide mechanism for fostering new businesses	**Weaknesses** • No major new businesses have been established • Delayed entry into hydrogen production and fuel cell area (history of fuel cell withdrawal)
External origin	**Opportunities** • Paris Agreement (global long-term goal of 2°C, pursuing efforts to limit the temperature to 1.5°C) • Growth areas are becoming clearer, with the power generation sector growing 10-fold by 2050 and the transportation sector growing 40-fold, especially for heavy-duty commercial vehicles • Expected growth in liquid hydrogen, compressed hydrogen, ammonia, and MCH, especially liquid hydrogen, compressed hydrogen, and ammonia	**Threats** • Situation in Ukraine causing decline in decarbonization momentum • Disappearance of hydrogen energy market (all electric with renewable electricity)

Business Scale Growth



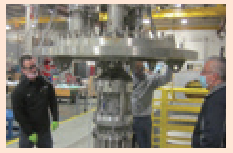
Avoiding Methane's High Global Warming Potential with Separation into Hydrogen and Solid Carbon, Contributing to Resources and Energy



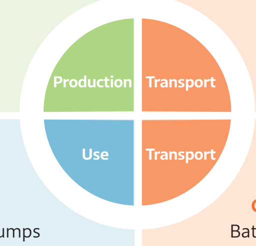
We aim to produce hydrogen and solid carbon in various forms from natural gas and biogas without emitting carbon dioxide. We are constructing a hydrogen production system utilizing reaction field separation, and we are also conducting hydrogen production tests for social implementation of methane pyrolysis technology. The hydrogen production process is separated from the carbon production process, and the production process can be carried out at relatively low temperatures of 800°C or lower. This will make the process energy efficient and solve the problem of simultaneous production of hydrogen and solid carbon. We will implement process construction and partner collaboration with the aim of social implementation after 2026.

* NIMS, Taiyo Koko Co., Ltd. and others will work on this project as part of a commissioned project by the New Energy and Industrial Technology Development Organization (NEDO).

World's First Liquid Hydrogen Fuel Supply Pump, Essential for Hydrogen-Powered Gas Turbines

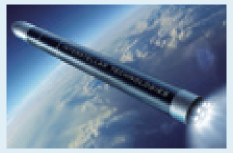


One of the important devices in hydrogen power generation, a field with a promising future, is a pump that supplies cryogenic liquid hydrogen at -253°C. We are trying to develop the world's first liquid hydrogen pump for power generation. We have now completed the -162°C LNG test and will proceed to the next -253°C liquid hydrogen test. The vast difference in liquid properties, coupled with temperatures nearly 100°C cooler, create a major technical challenge in terms of both performance and quality. As a world-leading pump manufacturer, we will leverage our accumulated technologies to support the supply chain in the fields of large-scale hydrogen transportation and power generation.



Cryogenic Rocket Fuel Supply Pumps Supporting the Growth of the Commercial Rocket Market for Satellite Applications

In September 2021, we started joint development of turbo pumps for nano-satellite launch vehicles with Muroran Institute of Technology and Interstellar Technologies Inc., and are proceeding with design studies and elemental tests. We will continue to push forward for the launch in Taiki, Hokkaido. In addition, we have started development of electric pumps to meet the need for electric fuel supply pumps in the small launch vehicle area. We will use our highly reliable technology for commercial rockets for satellites and the space industry, taking on the challenge of high performance, compactness, and light weight.



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Highly Efficient Liquid Hydrogen Plunger Pumps Expected for Hydrogen Refueling Stations for Large and Commercial Vehicles

Battery (BEV) and fuel cell vehicles (FCV) are expected to electrify mobility. Hydrogen is particularly suitable for large and long-distance applications, and high expectations are growing for refueling stations using liquid hydrogen. Utilizing the elemental technology of liquid hydrogen, we are developing a reciprocating liquid-hydrogen plunger pump for use in hydrogen refueling stations. Of particular importance are the reduction of boil-off gas (BOG) lost to evaporation, reliability for continuous operation, and the ability to discharge high pressure and large volumes. In collaboration with our research department (Ebara Open Laboratory), we will use materials research and simulation technology to solve these problems and provide the equipment required by society.

Production

Challenges in Carbon-Free Hydrogen Production

1. Gasification and hydrogen production from waste plastics, etc.
2. Turquoise hydrogen production
3. Hydrogen production from surplus electricity from waste incineration plants
4. CO_2 compression and storage technology

Transport

Providing Essential Technology — All Modes of Transportation

5. Hydrogen compression and transfer technology
Technology for transporting liquid hydrogen at cryogenic temperatures
6. Ammonia transfer technology as a hydrogen carrier
7. Technology to compress and transfer gaseous hydrogen

Use

Promote the Use of Hydrogen in All Aspects of Life and Industry

8. Technology for large-scale hydrogen power generation
9. Technology for hydrogen refueling stations
10. Rocket engine fuel supply pump technology
11. Hydrogen-fired absorption chiller/heater technology
12. Hydrogen aircraft fuel pump technology
13. Technology for large-scale ammonia power generation