



EBARA Group Integrated Report  
**2022**

Looking ahead,  
going beyond expectations  
*Ahead > Beyond*



**EBARA** CORPORATION

**Head Office**

11-1, Haneda Asahi-cho, Ota-ku, Tokyo 144-8510, Japan  
URL: <https://www.ebara.co.jp/en/>

CONTENTS

2 EBARA Group at a Glance

VALUE CREATION STRUCTURE

- 3 EBARA Group's Purpose and the "EBARA Way"
- 5 The History of the EBARA Group
- 7 Value Creation Story
- 9 Social Value Created by EBARA

MEDIUM- TO LONG-TERM CORPORATE VALUE CREATION

- 11 Message from the President
- 15 E-Vision 2030 (Long-Term Vision) and E-Plan 2022 (Medium-Term Management Plan)
- 17 Five Material Issues (EBARA's Materiality) for E-Vision 2030 and Key Measures and KPIs for E-Plan 2022
- 19 Financial and Non-Financial Highlights
- 21 Financial Strategies as Explained by the Finance Executive

BUSINESS STRATEGIES

- 25 Three Businesses Supporting Social and Industrial Infrastructure
- 27 Fluid Machinery & Systems Business
- 31 Environmental Plants Business
- 34 Precision Machinery Business
- 37 New Business: Hydrogen Business

DIALOGUE

- 39 Management and Diversity

SPECIAL FEATURE

- 43 Technical Human Resource Strategy

FOUNDATION FOR VALUE CREATION

- 47 Human Resources Strategy
- 51 R&D and Intellectual Property Strategy
- 53 DX Strategy
- 55 For the Environment Initiatives
- 57 Climate Change Response Measures
- 59 Social Initiatives
- 61 Conversation with the Chairman of the Board of Directors
- 63 Composition of the Board of Directors
- 65 Board of Directors
- 67 Brief Personal Histories of Directors
- 69 Corporate Governance
- 77 Risk Management
- 79 Compliance
- 81 Executive Officers

CORPORATE DATA

- 83 10-Year Financial Summary
- 85 Consolidated Financial Statements
- 89 EBARA Group's Global Network
- 91 Corporate Profile / Stock Information

EBARA Group Integrated Report Key Points of this Report

The *EBARA Group Integrated Report 2022* explains the how the Group creates value for society and improves its corporate value, and details how the Group is working to solve social issues, such as achieving the SDGs and working towards decarbonization, through specific examples. The 2022 report also focuses on human capital, with a dialogue on management and diversity and a special feature on the Group's new initiative, the technical human resources strategy.

Editorial Policy

The EBARA Group has issued this integrated report to provide stakeholders with financial and non-financial information about its medium-to-long-term value creation activities. This report was created with reference to the Value Reporting Foundation (VRF)'s International Integrated Reporting Framework; the Ministry of Economy, Trade and Industry (METI); the Guidance for Integrated Corporate Disclosure and Company-Investor Dialogues for Collaborative Value Creation: ESG Integration, Non-Financial Information Disclosure, and Intangible Assets into Investment (Guidance for Collaborative Value Creation); and the Global Reporting Initiative (GRI) Standards. A table detailing the referenced GRI Standards is available on the Company's corporate website.

Information Regarding the Group

  Corporate Website <https://www.ebara.co.jp/en/>

Financial Information	Non-Financial Information
  <b>Integrated Report 2022</b> Compiles noteworthy information	  <b>Annual Securities Report</b>
 Investor Relations <a href="https://www.ebara.co.jp/en/ir/index.php">https://www.ebara.co.jp/en/ir/index.php</a>	 Sustainability <a href="https://www.ebara.co.jp/en/sustainability/index.html">https://www.ebara.co.jp/en/sustainability/index.html</a>
	 <b>Corporate Governance Report</b>

 To contact EBARA CORPORATION, please use the following contact form. <https://www.ebara.co.jp/en/contact/index.html>

Company References

"EBARA" and "the Company" refer to EBARA CORPORATION while "the EBARA Group," "the Group," or "we" refer to EBARA CORPORATION and its domestic and overseas subsidiaries and affiliates.

Target Readers

All stakeholders of the EBARA Group

Reporting Period

The fiscal year ended December 31, 2021 (January 1, 2021, to December 31, 2021)  
(Notice will be provided when the period differs from the above.)

Scope of Reporting

EBARA CORPORATION and its subsidiaries (of which 103 are consolidated) and four affiliates that collectively comprise the EBARA Group (as of December 31, 2021).  
Notice will be provided when the scope of data collection differs from the above.

Japanese Publication Date

July 28, 2022

Cautionary Statement with Regard to Forward-Looking Statements

Certain of the statements made in this integrated report are forward-looking statements, which involve certain risks and uncertainties that could cause actual results to differ materially from those projected. Readers are cautioned not to place undue reliance on these forward-looking statements, which are valid only as of the date thereof. EBARA undertakes no obligation to republish revised forward-looking statements to reflect events or circumstances after the date hereof or to reflect the occurrence of unanticipated events.

Revenue  
**¥603.2 billion**

Revenue by Region (Overseas/Domestic)  
**59.0%/41.0%**

Operating Profit  
**¥61.3 billion**

Operating Profit Ratio  
**10.2%**

ROIC  
**10.7%**

ROE  
**14.5%**

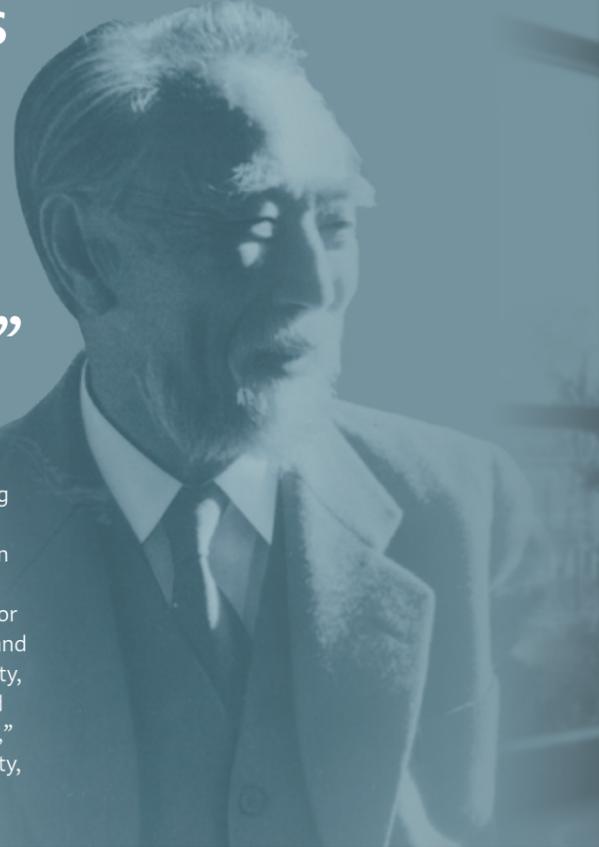
Foundation  
**110th Anniversary**

Number of Affiliated Companies  
**107**

## EBARA Group's Purpose and the "EBARA Way"

Our mission is to contribute to society by providing products and services that support society, industry, and daily life. Our mission begins with the spirit of "Netsu to Makoto" (Passion and Dedication).

EBARA Corporation was founded in 1912 by Issey Hatakeyama with the aim of spreading the use of the Inokuty-type volute pump. Applying the world-renowned volute pump research of Dr. Ariya Inokuty, EBARA sought to contribute to the modernization of Japan by producing the first domestically manufactured waterworks pumps, installing water infrastructure to prepare for natural disasters, and developing the first water purifiers for waterworks manufactured in Japan. Driven by the spirit of "Netsu to Makoto" (Passion and Dedication) to support the modernization of Japan and solve the problems facing society, EBARA has determined its mission is to contribute to society by providing products and services that support society, industry, and our daily lives. Inspired by "Netsu to Makoto," our employees seek to continuously cultivate our technological capabilities and reliability, which are the sources of our growth.



熱と誠

### The EBARA Way

Since the EBARA Group's founding, we have continually provided value to society through our business in addition to fulfilling our social responsibilities.

In conjunction with the 100th anniversary of the Company's founding in 2012, we reflected on the type of company we are and want to be and reorganized those fundamental values and ethics into the EBARA Group Business Ethics Framework, to support our ethical operation over the next 100 years. As part of this undertaking, we redefined the Group's Founding Spirit, corporate philosophy, and CSR Policy as the "EBARA Way," the transcendental value shared across the EBARA Group. The pursuit of the EBARA Way serves as the catalyst for increasing the value of the entire EBARA Group.

Moving forward, the EBARA Group will honor our Founding Spirit of "Netsu to Makoto" (Passion and Dedication), a philosophy of engaging with work and people with passion and dedication that inspires us to contribute to society in the areas of water, air, and the environment. Guided by this spirit and our CSR Policy, we maintain high ethical standards throughout our business activities and foster relationships of trust with our stakeholders.

### A Driving Force to Create Value Cultivated Over Many Years

#### "Netsu to Makoto" (Passion and Dedication)

EBARA founder Issey Hatakeyama acted in accordance with his philosophy of approaching daily tasks with passion, dedication, integrity, and ingenuity in order to spur personal and corporate growth, and encouraged employees to adopt the same approach. The founding spirit of "Netsu to Makoto," or Passion and Dedication, forms the basis of all the EBARA Group employees' attitudes, ideas, and work ethic.

#### Technological Capabilities

The technologies of the EBARA Group originated from the Fluid Machinery & Systems Business, going back to the Company's founding. These technologies gave rise to the technologies of the Environmental Plants Business, and together, they evolved to produce the technologies of the Precision Machinery Business. For more than a century since its founding, the EBARA Group has continued to provide the products and services desired by customers and society, accumulating the technologies necessary to offer support across the entire product lifecycle. Currently, our technological capabilities lie in our diverse accretion of core product technologies from our five main business segments.

We aim to make our fluid technologies, numerical analysis techniques, materials, analysis, and other foundational technologies the very best in the world. By incorporating advanced techniques and methodologies such as digital transformation applications in data science and design and production technologies nurtured in each business based on these technologies, we will work to further enhance our products and services while developing the technologies for the future.

#### Reliability

The passion and dedication all employees exercise in their work and the tenacity they exhibit in the face of adversity have won EBARA a strong reputation for reliability among its customers. We continue to build upon this reputation of being a reliable and steadfast partner by remaining true to our spirit of passion and dedication and by proactively solving issues customers may be facing. Strengthening our trust-based relationships with customers and other stakeholders will unlock new possibilities for EBARA.

### EBARA Group Business Ethics Framework

#### Elements of the "EBARA Way": Founding Spirit of Passion and Dedication

Both employees and the Company shall strive for growth with passion and dedication to bring forth originality and ingenuity, rather than simply fulfilling the task at hand.

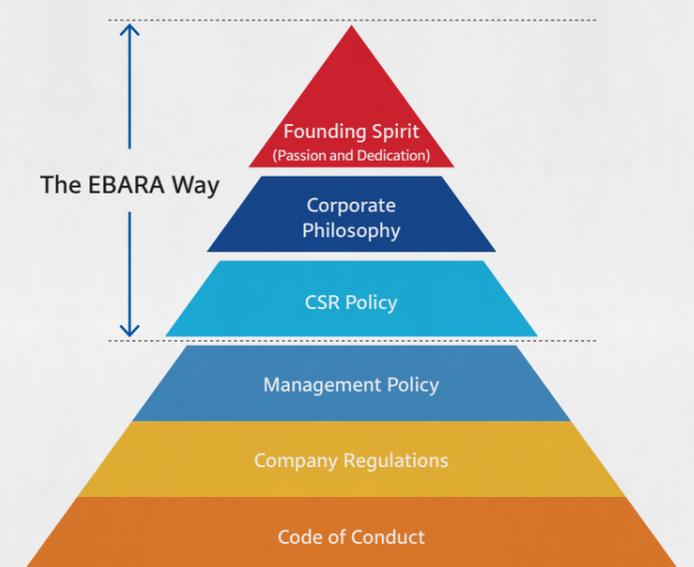
When working with passion and dedication, there is nothing that cannot be communicated to others.

#### Corporate Philosophy

We contribute to society through high-quality technologies and services relating to water, air, and the environment.

#### CSR Policy

We seek to foster trust with our valued stakeholders by conducting our business with a strong sense of ethics.



## The History of the EBARA Group

# History of Growing While Addressing the Social Issues of Every Era with Technologies and Reliability

Over the years, the EBARA Group has continued to grow by responding to the needs of society through businesses supporting social and industrial infrastructure. Behind this growth has been the constant enhancement of the Group's technologies and reliability through the exercise of its Founding Spirit of "Netsu to Makoto." By applying, evolving, and combining the core technologies that originate from the Inokuty-type volute pump, we have developed products and services that meet the needs of every era. Going forward, we will pursue future growth by further honing our technological prowess to deliver new products and solutions.

### EBARA's History

#### 1912-

##### Development of the EBARA Group's Foundations

EBARA was founded by Issey Hatakeyama with the goal of supplying products based on Dr. Ariya Inokuty's world-renowned volute pump research. In the years that followed, EBARA continued to contribute to the modernization of Japan by producing the first domestically manufactured waterworks pumps, installing water infrastructure to prepare for natural disasters, developing the first water purifiers for waterworks manufactured in Japan, and undertaking other initiatives ahead of its time.

#### 1945-

##### EBARA Technologies Responding to Social Demand

EBARA contributed to the stabilization of the lives of people in Japan after World War II by mass producing pumps for increasing food production and for farmland reclamation. In addition, we delivered the first domestically manufactured feed water pump for supercritical pressure power plants to help address power shortages. At the same time, the Group began exporting plant equipment and establishing overseas bases to lay the groundwork for its overseas expansion.

#### 1980-

##### EBARA Technologies Permeating Society

It was during this time that the Group succeeded in developing and realizing practical application of a gasification and ash melting furnace for use as a next-generation waste treatment facility capable of completely decomposing dioxins and recycling residue. In addition, technologies accumulated thus far were applied to the development of dry vacuum pumps, resulting in the start of the Precision Machinery Business.

#### 2000-

##### Frameworks for Future Growth

Energy-efficient, high-efficiency pumps and chillers were developed to help reduce environmental impacts while pump technologies were created for urban rainwater drainage systems. The Group also developed sophisticated, ultra-precise, high productivity CMP and plating systems.

#### 2010-

##### Centennial Anniversary and Pursuit of Future Growth

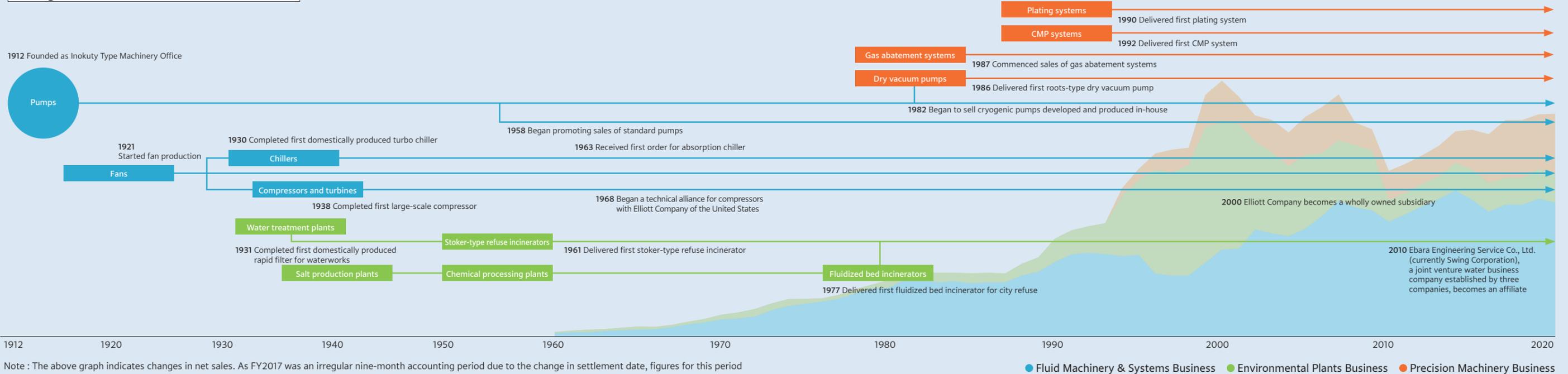
The Group began investing in its global competitiveness, following its success in improving its financial base through the selection and concentration of businesses. These investments include strengthening corporate governance, implementing new human resource systems, bolstering our overseas service and support (S&S) bases, introducing automated assembly lines powered by Internet of Things (IoT) and artificial intelligence (AI) technologies, and other environmental, social, and governance (ESG) management initiatives.

#### 2020-

##### Continue to Contribute to Society and Become a Globally Excellent Company

Under the slogan of "Technology. Passion. Support Our Globe," over the next decade, we will make sustainable contributions to society through ESG management and to the achievement of the SDGs, and enhance our corporate value by simultaneously improving the social, environmental, and economic value.

### Changes in Business and Business Structure



### Pressing Social Issues

#### 1912-

##### Modernization of Japan

- Installation of water infrastructure
- Lack of arable land
- Reconstruction after the Great Kanto Earthquake
- Widespread industrialization

#### 1945-

##### Post-World War II Reconstruction and Japanese Postwar Economic Miracle

- Lack of food and other basic necessities for people of Japan
- Power shortages
- Advancement of heavy and chemical industries
- Increased construction of plants overseas

#### 1980-

##### Development of the Information Society

- Ozone depletion, desertification, and advancement of climate change
- Lack of waste disposal sites
- Need to realize recycling-oriented society
- Growth of semiconductor market and increased semiconductor demand

#### 2000-

##### Search for Path to Sustainability

- Increased concern for environmental issues and acceleration of global warming countermeasures
- Rising demand for energy-saving and highly efficient technologies
- Extreme rain resulting from urban heat island phenomenon
- Development of information and communication technologies (ICT) and accelerated advancement of semiconductor technologies

#### 2010-

##### Toward a More Diverse and Inclusive Society

- Digitization driven by proliferation of the IoT and AI
- Social pressure for workstyle reform
- Increasing expectation for companies to contribute to realizing a sustainable society due to rising interest in climate change and ESG issues and the adoption of the United Nations Sustainable Development Goals
- Raising awareness of climate change measures and ESG issues

#### 2020-

##### Towards the Realization of a Sustainable Society

- Accelerating efforts to achieve carbon neutrality
- Growing demand for social and economic change during and after the COVID-19 pandemic
- Increasing importance of human capital management that views human resources as capital

Value Creation Story

# “Technology. Passion. Support Our Globe.”—A Mission to Be Fulfilled Based on the “EBARA Way”

Guided by the core of the “EBARA Way” and the Founding Spirit of “*Netsu to Makoto*” (Passion and Dedication), the EBARA Group has continued to contribute to the resolution of social issues with the strengths of its technological capabilities and reliability throughout its 110-year history. We will further build on these strengths while advancing business activities based on our desired vision for EBARA. This is the approach we will take in supporting the globe into the future and ensuring that EBARA can continue to grow over the next century.

## Key Points of the EBARA Group’s Value Creation Story

### Medium- to Long-Term Strategies for Realizing Vision

Looking ahead to the next 100 years of human society and the changing global environment, lifestyles are expected to undergo profound transformations. Factors driving this transformation will include more severe weather abnormalities and natural disasters stemming from global warming; depletion of food, water, and other resources; and the evolution of the information society. Given this operating environment outlook, our long-term vision, E-Vision 2030, was created based on the belief that meeting this moment in an effective way requires a clear vision for the future with straightforward policies and strategies for realizing that vision. Based on the slogan “Technology. Passion. Support Our Globe,” E-Vision 2030 is oriented around augmenting and leveraging the EBARA Group’s strengths to address five issues determined to be material to our business.

Meanwhile, E-Plan 2022 is a medium-term management plan formulated through the identification of issues remaining from the previous medium-term management plan in addition to backcasting from E-Vision 2030. We aim to generate a cycle of improvement in social, environmental, and economic value and ultimately achieve greater corporate value through the implementation of the basic policies laid out in this plan.

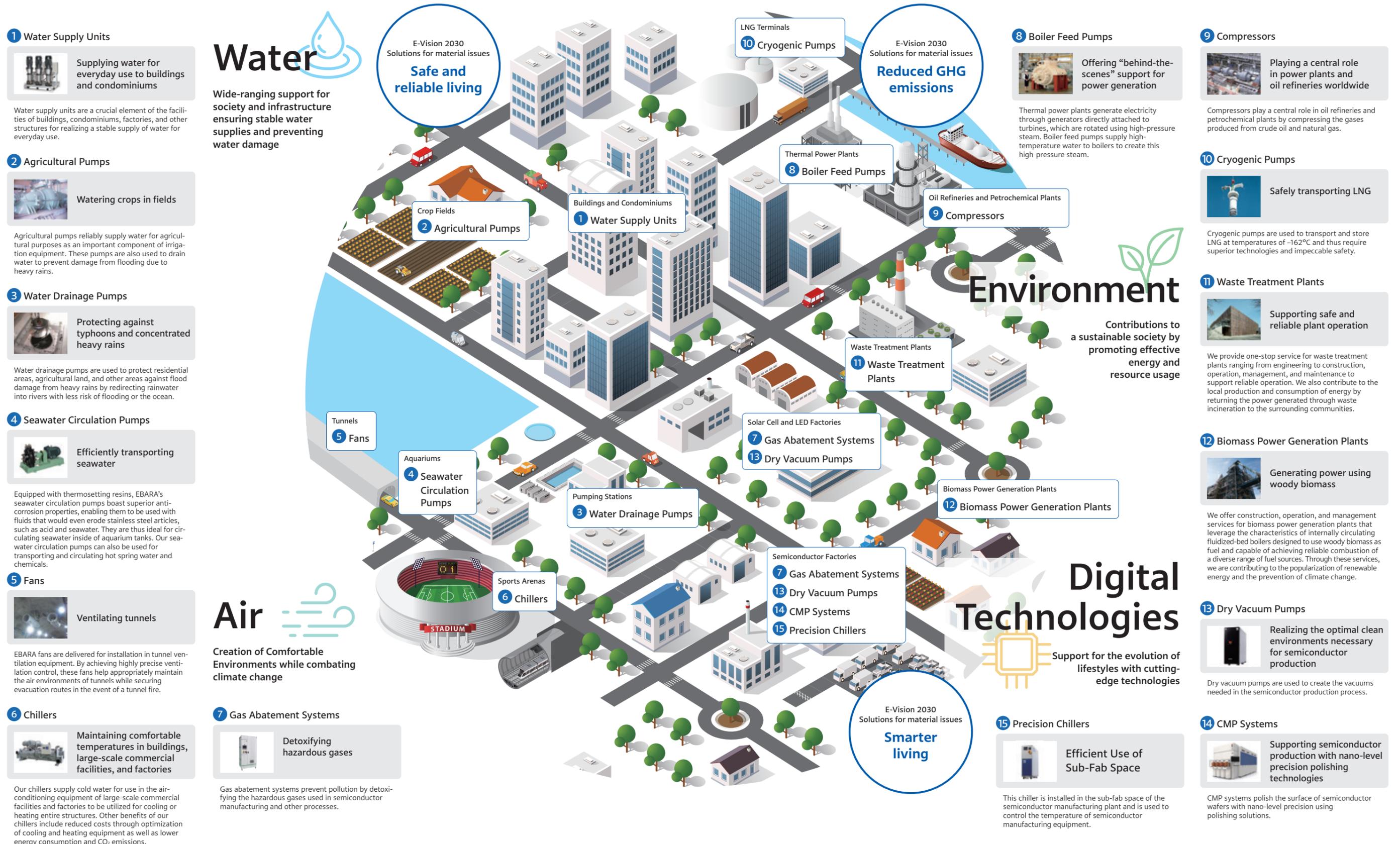
INPUT		OUTCOME	
As of December 31, 2021		As of December 31, 2021	
<b>Financial Capital</b>		<b>Financial Capital</b>	
Total capital:	¥321.6 billion	Revenue:	¥603.2 billion
Interest-bearing debt:	¥112.0 billion	Operating profit:	¥61.3 billion
Credit rating:	R&I Issuer Rating <b>A</b>	ROIC:	10.7%
<b>Intellectual Capital</b>		ROE:	14.5%
R&D investment:	¥40 billion (3 years of E-Plan 2022)	Total dividends:	¥15.1 billion
<b>Social and Relationship Capital</b>		Dividend payout ratio:	35.2%
Start-ups funded:	4 companies (cumulative)	Operating cash flow:	¥72.8 billion
Social contribution expenditures:	¥867 million	Free cash flow:	¥41.4 billion
<b>Manufactured Capital</b>		Total shareholder return (TSR):	+433.1% (10 years) +18.2% (annual)
Capital investments:	¥100 billion (3 years of E-Plan 2022)	<b>Intellectual Capital</b>	
Domestic manufacturing bases:	5	Number of patent applications (annual):	
Overseas manufacturing bases:	20	Domestic:	289
<b>Human Capital</b>		Overseas:	450
Employees (consolidated):	18,372	<b>Human Capital</b>	
Of these, at overseas consolidated subsidiaries:	10,332	Female employees:	15.6%
Training investment per employee:	¥41,799	Female managers:	8.8%
<b>Natural Capital</b>		Foreign employees (EBARA and domestic Group companies):	1.7%
Electricity usage:	178,434 MWh	Local employees in global key positions at overseas offices:	22%
Water consumption:	1,088 km <sup>3</sup>	Engagement Index in the Global Engagement Survey:	79%
		<b>Manufactured Capital, Social and Relationship Capital</b>	
		Chemical mechanical polishing (CMP) systems:	3,000 units shipped (cumulative as of January 2022)
		Dry vacuum pumps:	200,000 units shipped (cumulative as of July 2022)
		<b>Natural Capital</b>	
		Scope 1 + 2 GHG emissions:	104,000 tons
		Water discharge:	726 km <sup>3</sup>
		Total waste discharge:	17,608 tons
		Material recycling rate:	96.9%



## Social Value Created by EBARA

EBARA products are used under a variety of circumstances, supporting social infrastructure around the world.

We contribute to safe, secure, and fulfilling lifestyles.



**1 Water Supply Units**

Supplying water for everyday use to buildings and condominiums

Water supply units are a crucial element of the facilities of buildings, condominiums, factories, and other structures for realizing a stable supply of water for everyday use.

**2 Agricultural Pumps**

Watering crops in fields

Agricultural pumps reliably supply water for agricultural purposes as an important component of irrigation equipment. These pumps are also used to drain water to prevent damage from flooding due to heavy rains.

**3 Water Drainage Pumps**

Protecting against typhoons and concentrated heavy rains

Water drainage pumps are used to protect residential areas, agricultural land, and other areas against flood damage from heavy rains by redirecting rainwater into rivers with less risk of flooding or the ocean.

**4 Seawater Circulation Pumps**

Efficiently transporting seawater

Equipped with thermosetting resins, EBARA's seawater circulation pumps boast superior anti-corrosion properties, enabling them to be used with fluids that would even erode stainless steel articles, such as acid and seawater. They are thus ideal for circulating seawater inside of aquarium tanks. Our seawater circulation pumps can also be used for transporting and circulating hot spring water and chemicals.

**5 Fans**

Ventilating tunnels

EBARA fans are delivered for installation in tunnel ventilation equipment. By achieving highly precise ventilation control, these fans help appropriately maintain the air environments of tunnels while securing evacuation routes in the event of a tunnel fire.

**6 Chillers**

Maintaining comfortable temperatures in buildings, large-scale commercial facilities, and factories

Our chillers supply cold water for use in the air-conditioning equipment of large-scale commercial facilities and factories to be utilized for cooling or heating entire structures. Other benefits of our chillers include reduced costs through optimization of cooling and heating equipment as well as lower energy consumption and CO<sub>2</sub> emissions.

# Water

Wide-ranging support for society and infrastructure ensuring stable water supplies and preventing water damage

E-Vision 2030 Solutions for material issues  
**Safe and reliable living**

E-Vision 2030 Solutions for material issues  
**Reduced GHG emissions**

E-Vision 2030 Solutions for material issues  
**Smarter living**

# Air

Creation of Comfortable Environments while combating climate change

# Environment

Contributions to a sustainable society by promoting effective energy and resource usage

# Digital Technologies

Support for the evolution of lifestyles with cutting-edge technologies

**9 Compressors**

Playing a central role in power plants and oil refineries worldwide

Compressors play a central role in oil refineries and petrochemical plants by compressing the gases produced from crude oil and natural gas.

**10 Cryogenic Pumps**

Safely transporting LNG

Cryogenic pumps are used to transport and store LNG at temperatures of -162°C and thus require superior technologies and impeccable safety.

**11 Waste Treatment Plants**

Supporting safe and reliable plant operation

We provide one-stop service for waste treatment plants ranging from engineering to construction, operation, management, and maintenance to support reliable operation. We also contribute to the local production and consumption of energy by returning the power generated through waste incineration to the surrounding communities.

**12 Biomass Power Generation Plants**

Generating power using woody biomass

We offer construction, operation, and management services for biomass power generation plants that leverage the characteristics of internally circulating fluidized-bed boilers designed to use woody biomass as fuel and capable of achieving reliable combustion of a diverse range of fuel sources. Through these services, we are contributing to the popularization of renewable energy and the prevention of climate change.

**13 Dry Vacuum Pumps**

Realizing the optimal clean environments necessary for semiconductor production

Dry vacuum pumps are used to create the vacuums needed in the semiconductor production process.

**14 CMP Systems**

Supporting semiconductor production with nano-level precision polishing technologies

CMP systems polish the surface of semiconductor wafers with nano-level precision using polishing solutions.

**8 Boiler Feed Pumps**

Offering "behind-the-scenes" support for power generation

Thermal power plants generate electricity through generators directly attached to turbines, which are rotated using high-pressure steam. Boiler feed pumps supply high-temperature water to boilers to create this high-pressure steam.

**10 Cryogenic Pumps**

LNG Terminals

**8 Boiler Feed Pumps**

Thermal Power Plants

**9 Compressors**

Oil Refineries and Petrochemical Plants

**11 Waste Treatment Plants**

Waste Treatment Plants

**7 Gas Abatement Systems**

Solar Cell and LED Factories

**13 Dry Vacuum Pumps**

**12 Biomass Power Generation Plants**

Biomass Power Generation Plants

**7 Gas Abatement Systems**

Semiconductor Factories

**13 Dry Vacuum Pumps**

**14 CMP Systems**

**15 Precision Chillers**

**15 Precision Chillers**

Efficient Use of Sub-Fab Space

This chiller is installed in the sub-fab space of the semiconductor manufacturing plant and is used to control the temperature of semiconductor manufacturing equipment.

## Message from the President



**Masao Asami**

Director, President and  
Representative Executive Officer

## We will continue to challenge ourselves to solve social issues and support the world with technology, passionately, for the next 100 years!

The COVID-19 pandemic remains prevalent around the world, including in Japan. On behalf of the EBARA Group, I would like to express our deepest condolences to anyone who has suffered or lost loved ones due to the COVID-19 pandemic, and our prayers for the speedy recovery of those who have contracted the virus and those in difficult circumstances.

The EBARA Group is committed to fulfilling its social responsibility to support industries and livelihoods around the world, and will continue its operations while putting the safety of its employees and stakeholders first and supporting worldwide recovery from the pandemic.

### Review of the Fiscal Year Ended December 31, 2021

In the second year of the medium-term management plan, E-Plan 2022, significant progress was made in two respects. One is the significant improvement in the profitability of both the Custom Pumps Business and the Compressors and Turbines Business. In the Custom Pumps Business in particular, the Futtsu Plant improved productivity, promoted

fixed cost optimization, and thoroughly implemented front-loading. We employ this strategy to determine our ability to receive additional orders by reviewing specifications and delivery dates, then moving up (or frontloading) the manufacturing process so we can determine whether or not additional orders can be received. This will be the third year we've been implementing the policy of making decisions that balance the difficulty of specifications and delivery time. As a result, profitability at the Futtsu Plant has improved dramatically while delivery delays have decreased.

In the Compressors and Turbines Business, we can confirm specifications and other information prior to receiving an order using 3D parametric design, an automated design technology that we are proud of. However, we occasionally overlooked the profitability of new orders because of the service and support (S&S) base network's profitability. Therefore, we changed our policy to strategically accept or reject orders based on expected return, and also thoroughly manage delivery dates and prices. The increased profitability of these two

Message from the President

businesses, which were positioned for improvement in E-Plan 2022, was one of the factors that enabled us to achieve the operating income ratio target in E-Plan 2022 one year ahead of schedule.

The second aspect of our significant progress was in the Precision Machinery Business. In this growth business, we were able to meet demand from the semiconductor industry, which has grown significantly. The automated dry vacuum pump plant has been operating at near-full capacity since the summer of 2021, and this increase in production and processing capacity has helped us meet growing demand and improved profitability.

In response to the difficulties in procuring parts and materials, as well as price increases that occurred in 2021, we successfully reviewed the entire procurement and supply chain, a process which we began in 2020. The Global Procurement and SCM Strategy Department has taken the lead in bringing together procurement managers from the business units to discuss and take action on the EBARA Group’s direction in terms of indirect and direct materials and logistics, item by item, many times at meetings we call councils, which I attended every time. At first, there were barriers between departments, but communication improved as the meetings continued. In 2022, a procurement and

logistics hotline was established to respond to the global shortage of materials across the EBARA Group. The number of consultations has gradually increased and is now in the tens of thousands. The EBARA Group has offices around the world, each with its own procurement personnel. By combining their strengths, we were able to continue supplying products to customers despite the shortage of parts and materials. Although there were delivery delays, I felt this truly showed the underlying strength of the EBARA Group.

Looking Ahead to the Final Year of E-Plan 2022 and Beyond

The fiscal year ending December 31, 2022 will be the final year of E-Plan 2022. The main goal of E-Plan 2022 was achieved last year, one year ahead of schedule, and we aim to exceed that number this year, treating our original goal as a stepping stone to the next achievement. What we must do as a company is to improve profitability, plant seeds for growth, and take on new challenges.

In the Standard Pumps Business, which is also positioned as a growth business, we are working to expand the number of overseas offices to more than ten with the goal of expanding coverage in growth markets. In 2020, we established two sites in Vietnam and Mexico, then in 2021,

acquired a pump manufacturer in Turkey and completed one site in Canada, and in 2022, six sites are being established in the Europe, South America, and Africa regions.

Demand is growing in the Precision Machinery Business, another growth business, and we are taking measures to respond to it. We are already starting to see the results of our heightened presence in China.

As for new business, we launched a corporate project for hydrogen-related business in August 2021, and we are working on various initiatives to create the de facto standard. I believe that hydrogen will replace LNG. EBARA’s technology for handling extremely low temperatures is essential for transporting liquefied hydrogen. Hydrogen is extremely difficult to handle. Precisely because of this, I believe EBARA is perfectly positioned to make strides in the industry.

Along with achieving the numerical targets of E-Plan 2022, it is important to accomplish what we have set as our basic policy. The implementation of ERP for upgrading management and business infrastructure is underway with more than 300 employees. In addition, one thing that must be done in the mid- to long-term is the promotion of diversity. In January 2022, we launched the Diversity Project in order to make EBARA a company where people can continue to work with peace of mind and continue their careers in the long term, without being limited by life events.

In January 2022, we launched the Carbon Neutral Project in order to achieve our environmental goal of becoming carbon neutral by 2050. We have begun working toward achieving carbon neutrality and achieving our E-Vision 2030 goal of reducing greenhouse gas emissions by the equivalent of approximately 100 million tons of CO<sub>2</sub>.

Strengthening the Market-In Perspective for the Next Medium-Term Management Plan

In 2022, we are also formulating a new medium-term management plan that will start in the next fiscal year. In the next medium-term plan, we intend to strengthen our market-in approach. The market-in strategy values being located physically close to customers. From the customer’s viewpoint, how can EBARA contribute to outcomes for society or the global environment? What added value will customers and society appreciate in EBARA’s products? In order to contribute and be valued, we will have to be close to our customers and solve their problems. I tell our employees on the ground to remember the basics and think about whether or not they are properly listening to customer feedback like “I want something like this” or “I’m having trouble with that.”

At the root of our market-in philosophy is the desire to make our customers happy and to benefit people across the world. EBARA has been aiming at this goal since the very

beginning and over the past century, EBARA has conducted business with the aim of solving social issues. I believe that our ability to demonstrate EBARA’s technology and strengths is what continues to drive our business today. Even within the Company, we often say that the more difficult a problem, the better. By taking on and solving difficult challenges, we pave the way for a new future. That’s the kind of company we aim to continue to be.

EBARA has cultivated a culture that encourages taking on new challenges. These challenges then create opportunities for serendipity. To continue maintaining this culture, we need to foster the right human resources. Rather than just staying in one place, it is very important for people to benefit from stimulation outside of the Company. To this end, we have invested in and sent employees to Spiber Inc. and the Real Tech Global Fund, to name just two examples.

One of the things I tell my employees about human resources is the importance of leadership qualities. I believe there are four: curiosity, insight, courage to take risks, and influence. If you are not interested in your work and prefer to just do what you are told, nothing will happen. If you have the curiosity to think about the meaning of the work you are interested in, the insight to see how you can satisfy the other party, the courage to try things for the first time with determination, and the influence to get other people involved, things will naturally move in the right direction. The EBARA Group aims to be a company with employees of all nationalities and genders who think independently, work with speed, actively take on new challenges, and produce tangible results by 2030. These leadership qualities will be essential for this goal.

Supporting the World while Changing with the Times

To this day, the EBARA Group has continued to operate by providing what society and industry need. EBARA will continue to support the world over the next 50 and 100 years, changing in accordance with the times. This can only be accomplished by working as an ecosystem consisting of diverse people, including suppliers, rather than as the EBARA Group alone. We will continue to support the world, passionately and with technology, while listening to our stakeholders’ feedback and maintaining a relationship of trust.



Masao Asami  
Director, President and Representative Executive Officer

Progress of Medium-term Management Plan “E-Plan 2022”

Achieved targets for ROIC and operating profit ratio, the key performance indicators, one year ahead of schedule

Key Performance Indicators (KPI)	E-Plan2022				
	2019/12	2020/12	2021/12	2022/12 Targets	E-Plan2022 2022/12 Forecast
	JGAAP	IFRS	IFRS	IFRS	IFRS
ROIC	6.5%	6.4%	10.7%	10.5%	7.6% or more
Operating Profit Ratio	6.8%	7.2%	10.2%	10.0%	8.5% or more
<b>Target Achievement Indicators</b>					
ROE	8.3%	8.6%	14.5%	—	11.2% or more
Debt-to-Equity Ratio	0.29 times	0.34 times	0.36 times	—	0.4–0.6 times
<b>Operating Profit Ratio by Business</b>					
FMS Business	5.3%	6.3%	7.4%	7.3%	7.0% or more
Pumps Business	6.3%	5.5%	7.4%	7.0%	6.5% or more
Compressors and Turbines Business	5.1%	8.0%	9.7%	9.5%	8.0% or more
Chillers Business	4.9%	5.4%	4.1%	5.1%	5.0% or more
EP Business	10.8%	10.2%	7.8%	7.0%	9.5% or more
PM Business	8.1%	8.3%	14.5%	15.0%	13.0% or more

## E-Vision 2030 (Long-Term Vision) and E-Plan 2022 (Medium-Term Management Plan)

### Long-Term Vision E-Vision 2030

The EBARA Group has formulated a 10-year long-term vision and the path towards that goal, E-Vision 2030, as its value creation story. Under the slogan of “Technology. Passion. Support Our Globe,” we aim to become an excellent global company. Through our business, we will contribute to the United Nations Sustainable Development Goals (SDGs), other social issues, and the creation of a sustainable society while simultaneously increasing the social, environmental, and economic value we generate. We believe this will earn greater corporate value and recognition as an excellent global company.

E-Vision 2030 sets out five material issues (EBARA’s materiality) for the Group to address by 2030.

For every issue, we organized the approaches to be taken by each division, setting separate divisional KPIs and targets. For details, please refer to pages 17-18.

Reference Materiality Determination Process <https://www.ebara.co.jp/en/sustainability/think/information/materiality.html>

### Five Material Issues (Materiality)

**1. Contribute to the creation of a sustainable society**

We will utilize our technologies to passionately support the creation of a sustainable, environmentally friendly world with ample food and water, and safe and reliable social infrastructure.

For people and society

**2. Elevate standards of living and support abundant lifestyles for all**

We will utilize our technologies to passionately support economic development that enables the world to end poverty and realize ever-evolving and abundant lifestyles.

For industry

**3. Conduct comprehensive environmental management**

We will promote the reduction of CO<sub>2</sub> emissions from our business operations and maximize our use of renewable energy to move toward a carbon-neutral world.

For our business activities and supply chain

**4. Promote working environments that encourage challenge**

We will promote a Group culture of competition and challenge, and provide diverse employees with meaningful work and comfortable working environments.

For our employees

**5. Enhance corporate governance**

We will lay out a vision for and pursue growth through offensive and defensive governance that supports high-level management capabilities.

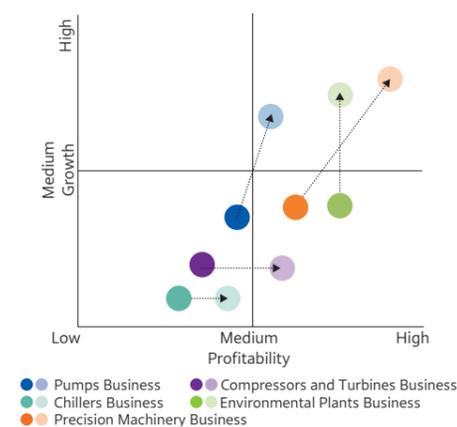
For sustainable management

### Medium-Term Management Plan E-Plan 2022

E-Plan 2022 is a medium-term management plan covering the period from 2020 to 2022. This plan comprises management policies and strategies for the three-year period that are formulated based on backcasting from what we want to achieve in the next decade, as indicated by E-Vision 2030, and by reflecting on the previous medium-term management plan (E-Plan 2019) to identify issues that still need to be resolved. E-Plan 2022 is positioned as the stage to “Reconstruct the foundations of growth” as we progress toward our vision in 2030.

E-Plan 2022 has four basic policies: (1) strive for growth, (2) improve the profitability of existing businesses, (3) refine management and business infrastructure, and (4) enhance ESG-focused management. For existing businesses, we have classified them into growth businesses and profitability improvement businesses according to our business portfolio, and have set strategies for each.

#### Target Business Portfolio



## Vision for 2030

# Excellent Global Company

Enhance EBARA’s corporate value through the improvement of social, environmental, and economic value

Social / Environmental Value

**Solve social issues through our business**

- Reduce GHG emissions to approximately 100 million tons of CO<sub>2</sub>
- Deliver water to 600 million people
- Contribute to development of ICAC5: Challenge 14Å

Economic Value

**Sustainable Groupwide growth and efficient management**

- ROIC of 10.0% or more
- Roughly ¥1 trillion in sales

¥1 trillion

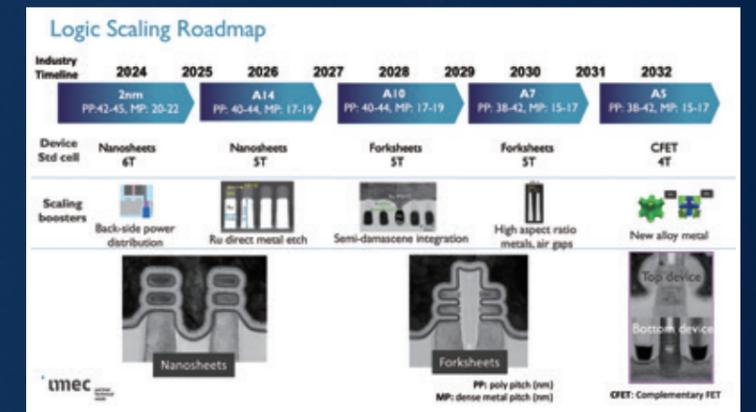
in market capitalization

#### Progress on Social and Environmental Value Target “Contribute to Development of ICAC5: Challenge 14Å”

The Belgian independent nanotech semiconductor research institute Interuniversity Microelectronics Centre (imec) has published a logic device roadmap\* to 1nm (10Å) and beyond. Imec is collaborating with companies around the world in development and is currently working on 2-3nm (20-30Å) technology nodes. EBARA has concluded a Joint Development Program (JDP) agreement with imec and now collaborates with them in the area of Chemical Mechanical Polisher (CMP) development.

\* We assume that by 2030, we will have 7Å in development and 14Å for commercial use.

#### imec’s Logic Device Roadmap



#### Progress in the Second Year of E-Plan 2022

In the fiscal year ended December 31, 2021, the COVID-19 pandemic caused difficulties in procuring parts and materials and price increases, but we were able to control the impact on our business performance by taking relevant measures in each of our businesses. Our most important indicators (ROIC and the operating profit to revenue ratio) have further improved from 2020, achieving the E-Plan 2022 target one year ahead of schedule.

	E-Plan 2022				
	2019/12	2020/12	2021/12	2022/12 Plan	E-Plan 2022 2022/12 Targets
<b>Key Performance Indicators (KPIs)</b>	JGAAP	IFRS	IFRS	IFRS	IFRS
Return on Invested Capital (ROIC)	6.5%	6.4%	10.7%	10.5%	7.6% or more
Operating Profit Ratio	6.8%	7.2%	10.2%	10.0%	8.5% or more
<b>Target Achievement Indicators</b>					
Return on Equity (ROE)	8.3%	8.6%	14.5%	—	11.2% or more
Debt-to-Equity Ratio	0.29 times	0.34 times	0.36 times	—	0.4~0.6 times

# Five Material Issues (EBARA's Materiality) for E-Vision 2030 and Key Measures and KPIs for E-Plan 2022

In order to resolve the five material issues (EBARA's materiality) set forth in E-Vision 2030, our long-term vision, we have established concrete measures, clarified our desired outcomes, organized the actions to be taken by each division, and set divisional KPIs and targets in

E-Plan 2022, our mid-term management plan. We will continuously monitor the KPIs and implement the PDCA cycle to achieve our targets and realize our desired outcomes. For progress on each division's KPIs and targets, please refer to the respective pages in Business Strategies.

Five Material Issues (EBARA's Materiality)	Related SDGs	Desired Outcomes	Challenges	Key Measures and KPIs	2022/12 Targets	2021/12 Results
<p><b>1 Contribute to the creation of a sustainable society</b></p> <p>We will utilize our technologies to passionately support the creation of a sustainable, environmentally friendly world with ample food and water, and safe and reliable social infrastructure.</p>		<p>Respond to serious environmental problems and economic development at the global level, by creating social and industrial infrastructure that will both reduce CO<sub>2</sub> emissions and stimulate economic activity</p> <p>Ensure infrastructure is operating stably for safe and secure living</p> <p>Realize resilient cities that do not expose people to risks to life in the event of a natural disaster</p> <p>Ensure stable water supply to meet increasing water demand due to population growth and social development</p> <p>Be less vulnerable to climatic and geographic conditions, ensuring a stable supply of food</p>	<p><b>Sustainable, environmentally-friendly world</b> Economic and social development will accelerate in line with population growth, especially in developing countries, which will increase CO<sub>2</sub> emissions and environmental impact at the global level and exacerbate climate change.</p> <p><b>Social infrastructure for safe and secure living</b> Economic and social development due to population growth, especially in developing countries, will require the development of social infrastructure. In Japan and other countries, aging social infrastructure needs to be maintained or updated. Increasingly severe weather events will increase the frequency with which people are exposed to natural disaster risks.</p> <p><b>A society with no food or water shortages</b> Water demand will increase with population growth and social development in developing countries. In developed countries, it will be important to secure a stable supply of water and ensure its efficient use. Demand for food will increase in developing countries due to population growth. Countries with low food self-sufficiency, such as Japan, should increase self-sufficiency rates and correct excessive dependence on food imports.</p>	<p><b>Improving energy saving and reducing product weight</b></p> <ul style="list-style-type: none"> <li>Fluid Machinery &amp; Systems Business: Complete development and commercialization of new steam turbine series</li> <li>Precision Machinery Business: Weight reduction of target products</li> </ul> <p><b>Environmental load management</b></p> <ul style="list-style-type: none"> <li>Fluid Machinery &amp; Systems Business: Reduction of GHG emissions through sales of low-GWP*1 products</li> <li>Environmental Plants Business: Generation of renewable energy from waste</li> <li>Precision Machinery Business: Reduction of GHG emissions through gas abatement systems</li> </ul> <p><b>Contribution to technologies that reduce environmental impact</b></p> <ul style="list-style-type: none"> <li>Fluid Machinery &amp; Systems Business: Development and market launch of products for liquid hydrogen plants</li> <li>Environmental Plants Business: Practical application of Internally circulating fluidized-bed gasification system (ICFG)</li> </ul> <p><b>Stable operation of social infrastructure</b></p> <ul style="list-style-type: none"> <li>Environmental Plants Business: Long-term comprehensive contracts for DBO projects (cumulative total)</li> <li>Environmental Plants Business: Crane upgrades and AI crane installation</li> </ul> <p><b>Stable water supply to diverse regions</b></p> <p>Fluid Machinery &amp; Systems Business: Expansion of solar pump sales</p>	<ul style="list-style-type: none"> <li>Achieve 100% commercialization</li> <li>12% (per unit compared to 2019)</li> <li>Reduce annual GHG emissions by the equivalent of 33,000 tons of carbon dioxide</li> <li>130,000 MWh</li> <li>Achieve 100%</li> <li>Achieve 100% commercialization</li> <li>Construction of demonstration units, achieve an order target of 100%</li> <li>19</li> <li>Achieve 100% installation target</li> <li>Achieve a unit sales volume target of 100%</li> </ul>	<ul style="list-style-type: none"> <li>Continued product development</li> <li>11%/unit CO<sub>2</sub> Equivalent Reduction 17,300t/year</li> <li>164,279 MWh</li> <li>65%</li> <li>Continued product development</li> <li>Basic and additional tests ongoing</li> <li>16</li> <li>33% of installation target achieved</li> <li>Achieved sales volume target</li> </ul>
<p><b>2 Elevate standards of living and support abundant lifestyles for all</b></p> <p>We will utilize our technologies to passionately support economic development that enables the world to end poverty and realize ever-evolving and abundant lifestyles.</p>		<ul style="list-style-type: none"> <li>Contribute to the development of the semiconductor industry (technological progress and production optimization) to realize convenient and abundant lifestyles for all (ICACS)</li> <li>Enable advanced factory operations through smart products and services</li> <li>Ensure that aging industrial plants and facilities built during the period of rapid economic growth can be operated safely and stably</li> </ul>	<p>In a world where highly advanced technology is assured, continuous technological evolution is required in the industrial sector (realization of Society 5.0).</p>	<p><b>Development of manufacturing equipment to meet the evolutionary roadmap for semiconductors</b></p> <ul style="list-style-type: none"> <li>Precision Machinery Business: Development of new models arising from priority projects</li> <li>Precision Machinery Business: Development of elemental technologies for the next generation of target products</li> </ul>	<ul style="list-style-type: none"> <li>Achieve 100%</li> <li>Achieve 100%</li> </ul>	<ul style="list-style-type: none"> <li>111%</li> <li>75%</li> </ul>
<p><b>3 Conduct comprehensive environmental management</b></p> <p>We will promote the reduction of CO<sub>2</sub> emissions from our business operations and maximize our use of renewable energy to move toward a carbon-neutral world.</p>		<p>Simultaneously reduce environmental impact and increase economic value</p>	<p>Minimize the environmental impact of the Group's business activities as part of our response to climate change and other increasingly serious global environmental issues</p>	<ul style="list-style-type: none"> <li>Reduce CO<sub>2</sub> emissions from business activities</li> <li>Improve the recycling rate of waste materials</li> </ul>	<ul style="list-style-type: none"> <li>2030: 26% reduction (compared to 2018)</li> <li>2030: 95% or higher</li> </ul>	<ul style="list-style-type: none"> <li>11% reduction</li> <li>97.1%</li> </ul>
<p><b>4 Promote working environments that encourage challenge</b></p> <p>We will promote a Group culture of competition and challenge, and provide diverse employees with meaningful work and comfortable working environments.</p>		<p>Build a corporate culture throughout the Group of competition and challenge and increase employee engagement</p>	<p><b>Job Satisfaction</b> To continue enhancing social and environmental value through our global business, it is essential that our diverse workforce is able to maximize and enhance their capabilities.</p> <p><b>Ease of Work</b> Create an environment in which employees feel comfortable and motivated to work so that they can maximize their abilities and achieve the best performance possible</p>	<p><b>Establishing a foundation to achieve sustainable global growth</b></p> <ul style="list-style-type: none"> <li>Global development of human resources system</li> <li>Reduction of total recordable incident rate (TRIR)</li> </ul> <p><b>Transform into a Group with a corporate culture of competition and challenge</b></p> <ul style="list-style-type: none"> <li>Reduce total average work hours</li> <li>Promote diversity by increasing the ratio of women in key positions*2 as well as the percentage of female employees and non-Japanese citizens joining EBARA</li> <li>Improve global engagement survey score</li> <li>Continue investing in human resource development (training costs per person)</li> <li>Increase the ratio of local employees in global key positions at overseas operating sites</li> </ul>	<ul style="list-style-type: none"> <li>P.47</li> <li>2023: 0.80</li> <li>1,920 hours</li> <li>P.47</li> <li>83</li> <li>¥46,795</li> <li>2030: 50%</li> </ul>	<ul style="list-style-type: none"> <li>P.47</li> <li>3.09</li> <li>2,037 hours</li> <li>P.47</li> <li>79</li> <li>¥41,799</li> <li>22%</li> </ul>
<p><b>5 Enhance corporate governance</b></p> <p>We will lay out a vision for and pursue growth through offensive and defensive governance that supports high-level management capabilities.</p>		<ul style="list-style-type: none"> <li>Ensure transparency and accountability through proactive corporate information disclosure and dialogue with stakeholders</li> <li>Pursue the EBARA Way, the EBARA Group's universal values, to enhance corporate value</li> <li>Established a system to systematically identify, evaluate, and minimize risks</li> <li>Supply chain risks are minimized to ensure business continuity.</li> <li>Internal controls are properly implemented in the Group, and a system to audit the controls is in place.</li> <li>Ensure compliance with laws and regulations in all regions without exception, and ensure that the Group operates based on high ethical standards</li> </ul>	<p><b>Corporate Governance</b> Realize transparent, fair and boldly challenging management to ensure continued sustainable growth for the EBARA Group</p> <p><b>Risk Management</b> Minimize risk in today's rapidly changing social structure by refining corporate risk management</p> <p><b>Compliance</b> Thoroughly and sincerely comply with not only laws and regulations, but also internal rules, social norms, and standards of common sense and decency</p>	<ul style="list-style-type: none"> <li>Expand opportunities for dialogue with stakeholders</li> <li>Promotion of the EBARA Way (participation rate for training related to the EBARA Way)</li> <li>Strengthen supply chain management</li> <li>Thoroughly implement internal controls on a global scale</li> <li>Ongoing corruption prevention training</li> </ul>	<ul style="list-style-type: none"> <li>P.59-60</li> <li>100% participation rate</li> <li>P.59</li> <li>P.75-76</li> <li>P.79-80</li> </ul>	<ul style="list-style-type: none"> <li>P.59-60</li> <li>Domestic Group: 98.9% Overseas Group: 95.4%</li> <li>P.59</li> <li>P.75-76</li> <li>P.79-80</li> </ul>

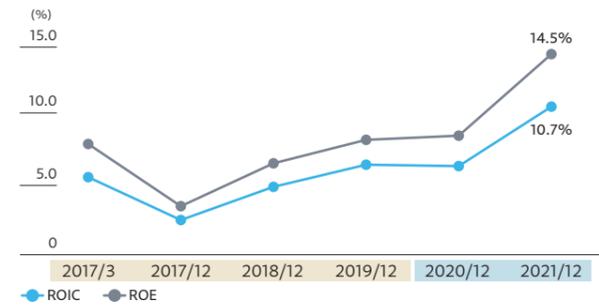
\*1. GWP: Global warming potential \*2. Key positions: Employee positions equivalent to managers

## Financial and Non-Financial Highlights

The occurrence of the irregular nine-month period ended December 31, 2017, is the result of a change in the settlement date used by EBARA CORPORATION and consolidated subsidiaries. Effective from the fiscal year ended December 31, 2021, the Company has adopted IFRS in place of the previously used Japanese GAAP. The financial figures for the fiscal year ended December 31, 2020 are also presented in accordance with IFRS.

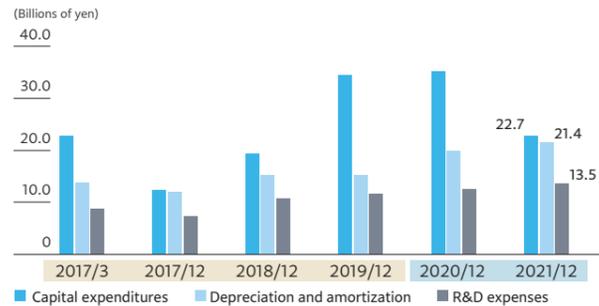
### Financial Indicators

#### ROIC\*1 / ROE\*2



ROIC, a key performance indicator, was 10.7% for the fiscal year ended December 31, 2021, exceeding the previous year's results. ROE was 14.5%, also exceeding the previous year's results. The medium-term management plan, E-Plan 2022, set final year targets of 7.6% for ROIC and 11.2% or more for ROE. These were achieved ahead of schedule.

#### Capital Expenditures / Depreciation and Amortization / R&D Expenses



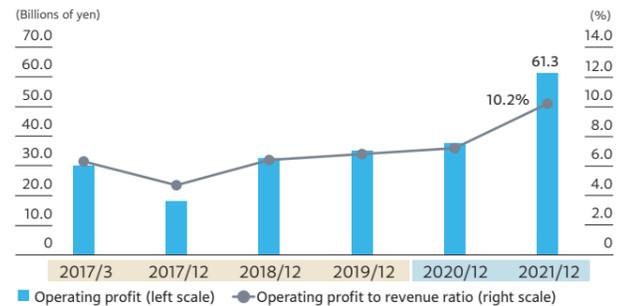
In the Precision Machinery Business, we strengthened our development capabilities in semiconductor manufacturing equipment, expanded production lines, and renovated facilities at overseas sites that overhaul dry vacuum pumps to meet increasing demands. In addition, the Fluid Machinery & Systems Business maintained and upgraded existing facilities and, continuing from last year, introduced ERP to strengthen its management base. Depreciation and amortization have been increasing, mainly due to the expanding scale of the Precision Machinery Business, including the full-scale operation of our automated dry vacuum pump plant.

#### Equity attributable to owners of the parent / Ratio of equity attributable to owners of parent (Shareholders' equity\*5/Equity ratio)



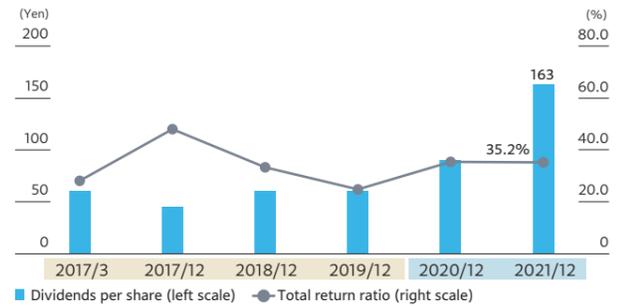
The ratio of equity attributable to owners of parent as of December 31, 2021 was 43.4%, down from the previous year, mainly due to an increase in interest-bearing debt and the impact of the adoption of IFRS.

#### Operating Profit / Operating Profit to Revenue Ratio



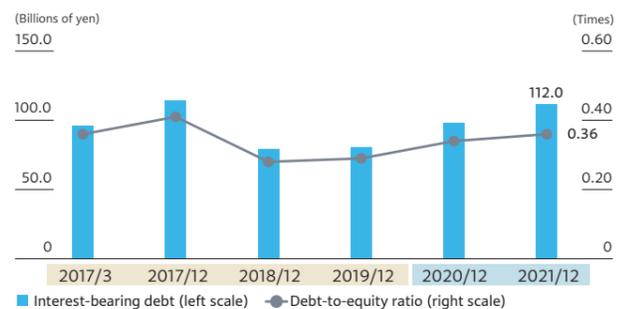
The operating profit to revenue ratio was 10.2% in the fiscal year ended December 31, 2021, exceeding the previous year's results. This was due to an improvement in the operating profit to revenue ratio of the Fluid Machinery & Systems Business, from 6.3% to 7.4%, and significant gains in the Precision Machinery Business, which rose from 8.3% to 14.5%.

#### Dividends per Share\*3 / Consolidated Dividend Payout Ratio\*4



Our basic policy for shareholder returns is to target a consolidated dividend payout ratio of 35% or more and a consolidated dividend on equity (DOE) ratio of 2.0% or more.

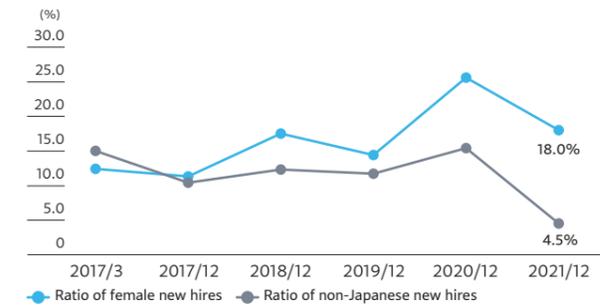
#### Interest-Bearing Debt / Debt-to-Equity Ratio



On December 31, 2021, the debt-to-equity ratio was 0.36 times, lower than the level of 0.4 times-0.6 times (IFRS) targeted over the period of E-Plan 2022.

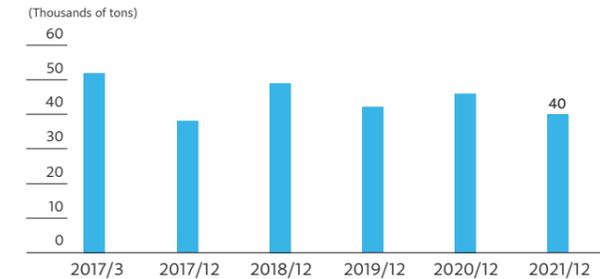
### Non-Financial Indicators

#### Ratio of Female New Hires / Ratio of Non-Japanese New Hires\*6



The EBARA Group believes that diversity is essential for innovation and that the employment of human resources with diverse backgrounds will contribute to improved business performance. In the fiscal year ended December 31, 2021, the Company hired 111 new employees, of which 20, or 18.0%, were women and 5, or 4.5%, were non-Japanese.

#### CO<sub>2</sub> Emissions (Scope 1 and 2)\*8



Our Environmental Goal 2030 aims to reduce CO<sub>2</sub> emissions (Scope 1 and 2) by 26% from 2018 levels, but our entire plan is under review following the revision of the Japanese government's CO<sub>2</sub> reduction target announced in 2021. The results for 2021 were down 12% from 2018 and down 7.2% from the previous year (2020).

### Progress on E-Vision 2030 Social and Environmental Value Targets

#### Contribution to ICAC5: Challenge to 14Å

Ongoing R&D on the **2-3 nm (20-30Å)** Technology Nodes

The Belgian independent nanotech semiconductor research institute Interuniversity Microelectronics Centre (imec) has published a logic device roadmap\* to 1 nm (10Å) and beyond. imec is collaborating with companies around the world in development and is currently working on 2-3 nm (20-30Å) technology nodes. EBARA has concluded a Joint Development Program (JDP) agreement with imec and now collaborates with them in the area of Chemical Mechanical Polisher (CMP) development (see page 16 for details).

\* We assume that by 2030, we will have 7Å in development and 14Å for commercial use.

\*1. ROIC: IFRS: Profit attributable to owners of parent ÷ [Interest-bearing debt (average between beginning and end of period) + Equity attributable to owners of parent (average between beginning and end of period)]  
JGAAP: Profit attributable to owners of parent ÷ [Interest-bearing debt (Average between beginning and end of period) + Shareholders' equity (Average between beginning and end of period)]

\*2. ROE: IFRS: Profit attributable to owners of parent / Shareholders' equity (Average between beginning and end of period)

JGAAP: Profit attributable to owners of parent / Equity attributable to owners of parent (Average between beginning and end of period)

\*3. EBARA conducted a consolidation of common shares at a rate of one share for every five shares with an effective date of October 1, 2016. Figures for dividends per share have been adjusted based on the assumption that this consolidation was conducted on April 1, 2015.

\*4. When the annual dividend of ¥36.00 for the fiscal year ended March 31, 2017 (including an interim dividend of ¥6.00), is converted after the consolidation of shares, it is equivalent to ¥60.00 per share, consisting of an interim dividend of ¥30.00 and a year-end dividend of ¥30.00. Accordingly, the total return ratio is calculated based on an annual dividend of ¥60.00 per share.

\*5. Shareholders' equity: Total net assets - (Subscription rights to shares + Non-controlling interests)

\*6. EBARA CORPORATION (non-consolidated)

\*7. EBARA CORPORATION (non-consolidated) and EBARA Group companies (consolidated, in Japan)

\*8. The sum of Scope 1 and Scope 2 emissions for EBARA CORPORATION (non-consolidated) and EBARA Group companies (consolidated, in Japan). The target reference year is the fiscal year ended December 31, 2018, and annual values based on the Act on Rationalizing Energy Use are applied for the emission coefficient.

\*9. Figures for the fiscal year ended March 31, 2017 are totals for EBARA CORPORATION (non-consolidated) and EBARA Group companies (consolidated, in Japan). Figures include overseas Group companies from the fiscal year ended December 31, 2017.

## Financial Strategies as Explained by the Finance Executive

We aim for sustainable growth and the long-term enhancement of corporate value through appropriate capital allocation, taking into consideration the balance between financial soundness and capital efficiency.



**Shugo Hosoda**  
Executive Officer, Group Management Strategy,  
Division Executive, Finance & Accounting Division

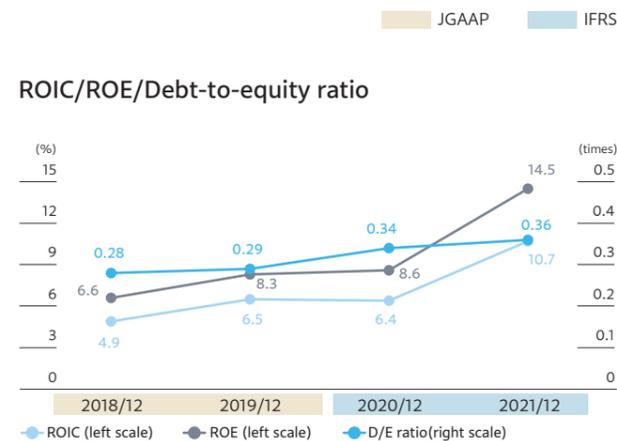
### Strengthening ROIC Management

Under the current medium-term management plan, E-Plan 2022, we set ROIC as a key performance indicator (KPI) for the entire Group, along with the operating profit to sales ratio, and have set a target of 7.6% or more (IFRS) in the final year of the plan (fiscal year ending December 31, 2022). For the fiscal year ended December 31, 2021, the Group as a whole achieved a ROIC of 10.7%, achieving its target ahead of schedule before the final year of the plan. Our weighted average cost of capital (WACC) is estimated to be around 6%, putting the spread between ROIC and WACC in the range of 4.5% to 5.0% for the fiscal year ended December 31, 2021. This is significant. We were able to further improve our earning power relative to invested capital and clearly see the results of this improvement in our business performance.

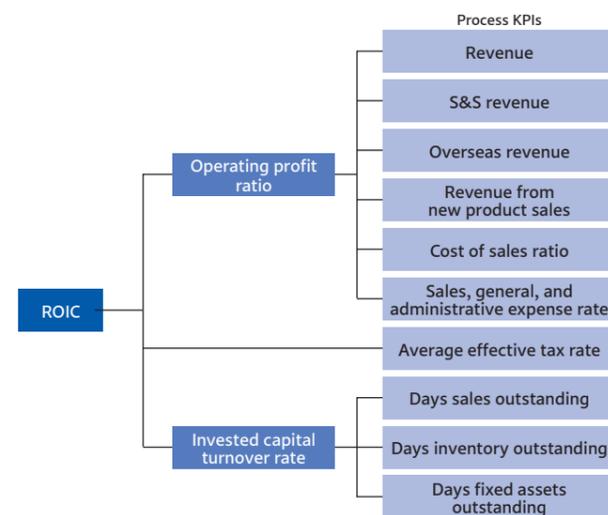
We view ROIC management as a useful technique to bridge the gap between maximizing corporate value, which is important to shareholders, and maximizing business value, which is the focus of the business units. In EBARA's ROIC management, we set a WACC (hurdle rate) to be managed by each business unit and for each unit to develop measures to maximize the ROIC and WACC spread. Using a ROIC tree helps break down the indicators into manageable factors for each business unit, and these indicators are positioned as action plans for the responsible individuals, with progress monitored monthly as process KPIs. We have been utilizing ROIC management for several years, and I can see that the results are beginning to take shape.

### Financial Soundness and Capital Efficiency

From a financial discipline perspective, we position ROIC as a KPI along with ROE, the debt-to-equity ratio as monitoring indicators because we aim for an optimal capital structure that balances financial soundness and capital efficiency. E-Plan 2022 sets targets for ROE at 11.2% or higher and a debt-to-equity ratio of 0.4 to 0.6 times (IFRS). At the end of the fiscal year ended December 31, 2021, ROE had risen to 14.5% and the debt-to-equity ratio stood at 0.36 times. Capital efficiency (ROE) increased from the 8% level of the

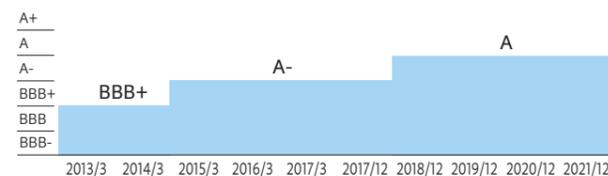


### ROIC Tree



\* KPI: Key Performance Indicator

### R&I Credit Rating Information



previous fiscal year, while we also maintained financial soundness as shown by the level of credit ratings and other factors. As the Group's visibility increases thanks to the Precision Machinery Business, we will continue to pursue an optimal capital structure, taking into consideration the required level of financial soundness based on business composition, scale, and risk.

We have been steadily working to reduce assets outside of our main businesses to improve capital efficiency. We completed the disposal of all of our listed cross-shareholdings in June 2020, and have also begun to dispose of unlisted cross-shareholdings. In recent years, we have increased our cross-shareholdings with strategic management intentions, such as investments in startup companies, while actively disposing of investments that are no longer advantageous.

### Taxation Governance

In June 2022, the Company established and disclosed the EBARA Group Tax Policy, which focuses on maximizing shareholder value while complying with relevant tax-related laws and regulations in each country and jurisdiction. It aims to make contributions to those countries and jurisdictions through appropriate tax payments, while striving to maximize shareholder value. Based on this policy, we will expand our tax governance structure and optimize tax costs, which are important components of the ROIC tree. The Group's average effective tax rate for the fiscal year ended December 31, 2021 was 23.0%, which is lower than the effective statutory tax rate (30.6%) and the average\* tax rate among other companies in the same industry (24.8%).

\* Average of 11 machinery companies included in both the Nikkei Stock Average and the JPX Nikkei 400 as of the end of June 2022.

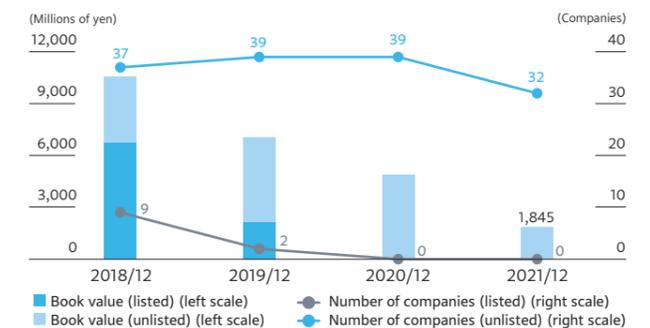
### Capital Allocation, Growth Investment, and Shareholder Returns

#### Growth Investment

During the three years of E-Plan 2022, we planned to make a total of ¥100 billion in capital investment and ¥40 billion in R&D investment. The table on the right shows the results for fiscal 2020 and 2021, as well as the planned amounts for fiscal 2022. Both existing and new businesses have received a steady stream of growth investments in accordance with the plan. In the fiscal year ended December 31, 2021, we invested mainly in the Precision Machinery Business to strengthen development capabilities, expand production lines, and upgrade facilities at overseas sites offering overhaul services. In addition, as in the past year, we are continuing to introduce the enterprise resource planning (ERP) system to strengthen the Companywide management foundation. Regarding M&A, the acquisition of Vansan in Turkey was completed in April 2021.

Increasing cash inflows, which include cash flows from operating activities, have been achieved in recent years. For the foreseeable future, we expect to continue vigorously allocating these inflows to investments for growth to realize E-Vision 2030. We will continue to optimize capital allocation as needed, including our flexible stance on share buybacks.

### Cross-Shareholdings



### Tax Payments by Region for the Fiscal Year Ended December 31, 2021

Region	Income Tax Paid (Billions of yen)
Japan	6.3
Asia (excluding Japan)	3.7
North America	1.1
Other	0.8
<b>Total</b>	<b>11.9</b>

\* Based on the figures in the consolidated financial statements for the fiscal year ended December 31, 2021, the amount of income taxes paid in fiscal 2021 by location of Group companies.

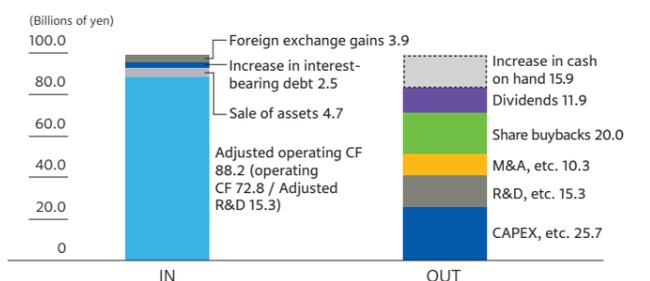
Reference Tax Policy

<https://www.ebara.co.jp/en/sustainability/governance/information/tax.html>

### Growth Investments

	E-Plan 2022 Cumulative Total (Target) (3 years)	FY20 Results	FY21 Results	FY22 Forecast	FY 20-22 Results + Forecast (3 years)
CAPEX	100.0	35.0	22.7	47.0	104.7
R&D	40.0	12.5	13.5	17.5	43.5
M&A	—	—	10.7	—	10.7

### Capital Allocation (Fiscal Year Ended December 31, 2021)



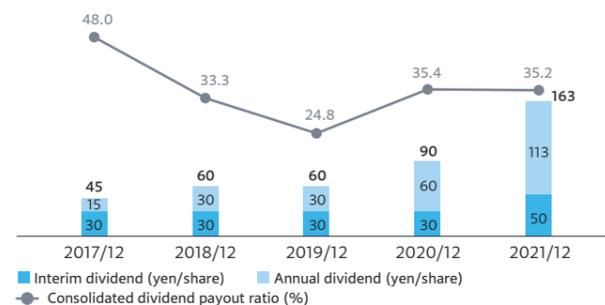
Financial Strategies as Explained by the Finance Executive

Shareholder Returns

EBARA views shareholder returns as one of its most important management policies. The shareholder return policy laid out in E-Plan 2022 is linked to the Company's business performance each fiscal year, calling for a consolidated dividend on equity (DOE) of 2.0% or more, while targeting a consolidated dividend payout ratio of at least 35.0%.

For the fiscal year ended December 31, 2021, the consolidated dividend payout ratio was 35.2%, and the annual dividend per share was ¥163, an increase of more than 80% compared to the previous year's ¥90. Furthermore, in 2021, we completed the largest ever repurchase of EBARA shares, amounting to ¥20.0 billion, and cancelled the newly acquired treasury shares. From the perspective of total shareholder returns (TSR), the Company has significantly outperformed the market as of December 31, 2021. We will continue to enhance shareholder returns in accordance with our medium-term capital policy.

Shareholder Returns



Changes in Share Buybacks

	2018/12	2019/12	2020/12	2021/12
Share buybacks (Billions of yen)	5.0	15.0	—	20.0

Analysis of Business Results

In the fiscal year ended December 31, 2021, the global economy continued to recover due to widespread vaccinations and other factors, although uncertainty remained due to the prolonged impact of COVID-19. In Japan, demand increased moderately and capital investment showed signs of recovery, although some economic activities were restrained by state of emergency declarations and the implementation of priority measures to prevent the spread of disease, etc., mainly in major metropolitan areas.

In the oil and gas market, the Group's main market, crude oil prices recovered to pre-COVID-19 levels and there was movement in some projects. In the semiconductor market, demand remained at a high level and customers continued to expand capital investment. The building equipment market showed signs of recovery from the impact of COVID-19. In addition, public investment related to Japan's initiatives to build national land resilience remained strong.

Orders in the Fluid Machinery & Systems Business for the fiscal year ended December 31, 2021 exceeded the previous year's thanks to a recovery in demand, especially in China, compared to last year when the global economy stagnated due to the impact of the COVID-19 pandemic. In the Environmental Plants Business, orders received for municipal solid waste treatment facilities increased 109% from the previous fiscal year, a large year-on-year increase, due to several new large orders. The Precision Machinery Business received orders from semiconductor manufacturers expanding their capital investment due to strong demand for semiconductor applications such as in 5G, AI, and data centers. In addition, customers continued to place orders ahead of schedule against the backdrop of global component supply shortages. Revenues were higher than the previous year in all businesses due to these high order levels.

Operating profit improved significantly due to continued profitability improvement in the Fluid Machinery & Systems Business, increased sales in the Precision Machinery Business, and the impact of the depreciation of the yen. Although rising raw material and logistics costs and

prolonged parts shortages have had a widespread impact on the supply chain, we have worked to minimize the impact on our performance by shifting costs to selling prices, implementing cost reduction measures, and strengthening supply chain management.

As a result, for the fiscal year ended December 31, 2021, orders totaled ¥771.4 billion (up 50.9% year on year), revenue rose to ¥603.2 billion (up 15.5%), operating profit surged to ¥61.3 billion (up 63.4%), and net profit attributable to owners of the parent soared to ¥43.6 billion (up 80.0%). All of these categories reached new record highs.

Results by Business Segment

Fluid Machinery & Systems Business

Revenue was ¥336.9 billion (up 7.6% year on year), and operating profit was ¥24.7 billion (up 25.2%).

Pumps Business

Revenue from sales of standard pumps for the building equipment market increased due to the contribution of Vansan, the Turkish pump manufacturer acquired in April 2021. Operating profit increased due to higher sales of standard pumps and continued efforts to improve profitability of custom pumps.

Compressors and Turbines Business

Although the small backlog of orders at the beginning of the period resulted in lower sales, especially in the equipment business, operating profit increased while income decreased due to improved profitability from selective order acceptance and cost reductions.

Chillers Business

Although orders and sales in the Chinese market remained strong, soaring component prices and sluggish demand for service and support in Japan led to an increase in sales but a decrease in profit.

Environmental Plants Business

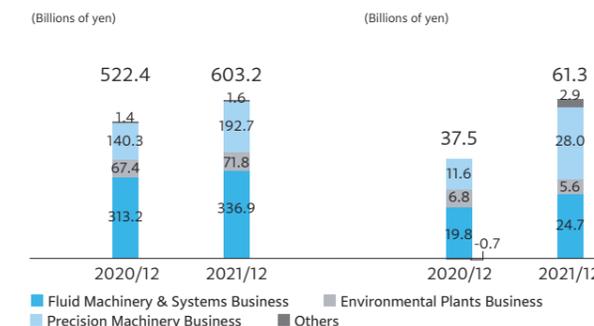
Revenue was ¥71.8 billion (up 6.5% year on year) and operating profit was ¥5.6 billion (down 18.0%). Although the number of engineering, procurement, and construction

(EPC) projects increased due to progress in construction, overall profitability declined due to a decrease in the ratio of projects involving operations and maintenance in sales, and a deterioration in the profitability of some EPC projects.

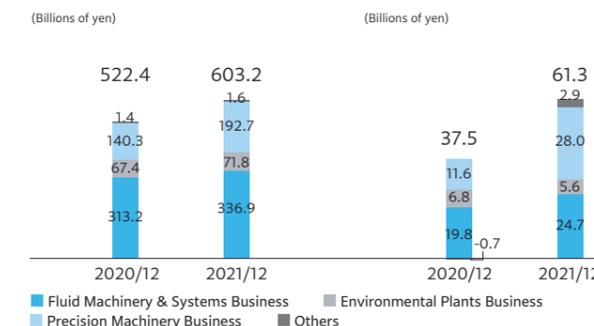
Precision Machinery Business

Revenue was ¥192.7 billion (up 37.4% year on year) and operating profit was ¥28.0 billion (up 141.1%). In the semiconductor market, capital investment by customers in general remained at a high level, and customers who were concerned about the long delivery times placed orders early, resulting in a significant increase in orders and sales for both products themselves and service and support. In addition to the effect of increased revenues, operating profitability has improved significantly due to increased sales from high-profitability projects such as the operation of an automated dry vacuum pump plant and CMP modifications.

Revenue



Operating Profit



Analysis of Financial Status

Assets

Total assets as of December 31, 2021 amounted to ¥719.7 billion, an increase of ¥74.9 billion from the end of the previous fiscal year, mainly due to an increase of ¥19.7 billion in inventories, ¥15.9 billion in cash and cash equivalents, and ¥11.7 billion in goodwill and intangible assets.

Liabilities

Total liabilities as of December 31, 2021 rose by ¥50.1 billion to ¥398.0 billion, mainly due to a ¥19.8 billion increase in trade and other payables; ¥13.6 billion in bonds payable, borrowings and lease obligations; and ¥9.7 billion in contract liabilities.

Net Assets

At the end of the fiscal year ended December 31, 2021, the Company acquired ¥20.0 billion in treasury stock and paid cash dividends of ¥10.4 billion. On the other hand, profit attributable to owners of parent amounted to ¥43.6 billion. Total equity was ¥321.6 billion, an increase of ¥24.7 billion

from the previous fiscal year, due to an increase of ¥5.9 billion in translation of foreign operations, among other factors. Equity attributable to owners of the parent was ¥312.3 billion, and the equity ratio was 43.4%.

Balance Sheet



Analysis of Cash Flows

For the fiscal year ended December 31, 2021, net cash provided by operating activities amounted to ¥72.8 billion yen (an increase of ¥4.0 billion year on year), supported by strong operating profit. Net cash used in investing activities amounted to ¥31.3 billion (an increase of ¥2.1 billion year on year), mainly due to purchase of fixed assets totaling ¥25.7 billion and the ¥10.3 billion purchase of shares of subsidiaries resulting in change in scope of consolidation.

Free cash flow, the sum of cash flows from operating and investing activities, showed a net cash inflow of ¥41.4 billion, an increase of ¥1.8 billion yen from the previous year. Net cash used in financing activities amounted to ¥29.4 billion (an increase of ¥15.0 billion from the previous year), mainly due to a net increase of ¥7.5 billion in short-term loans payable and long-term loans payable. On the other hand, the purchase of treasury shares of ¥20.0 billion and cash dividends paid of ¥10.4 billion contributed to a net cash outflow of ¥29.4 billion (an increase of ¥15.0 billion year on year). As

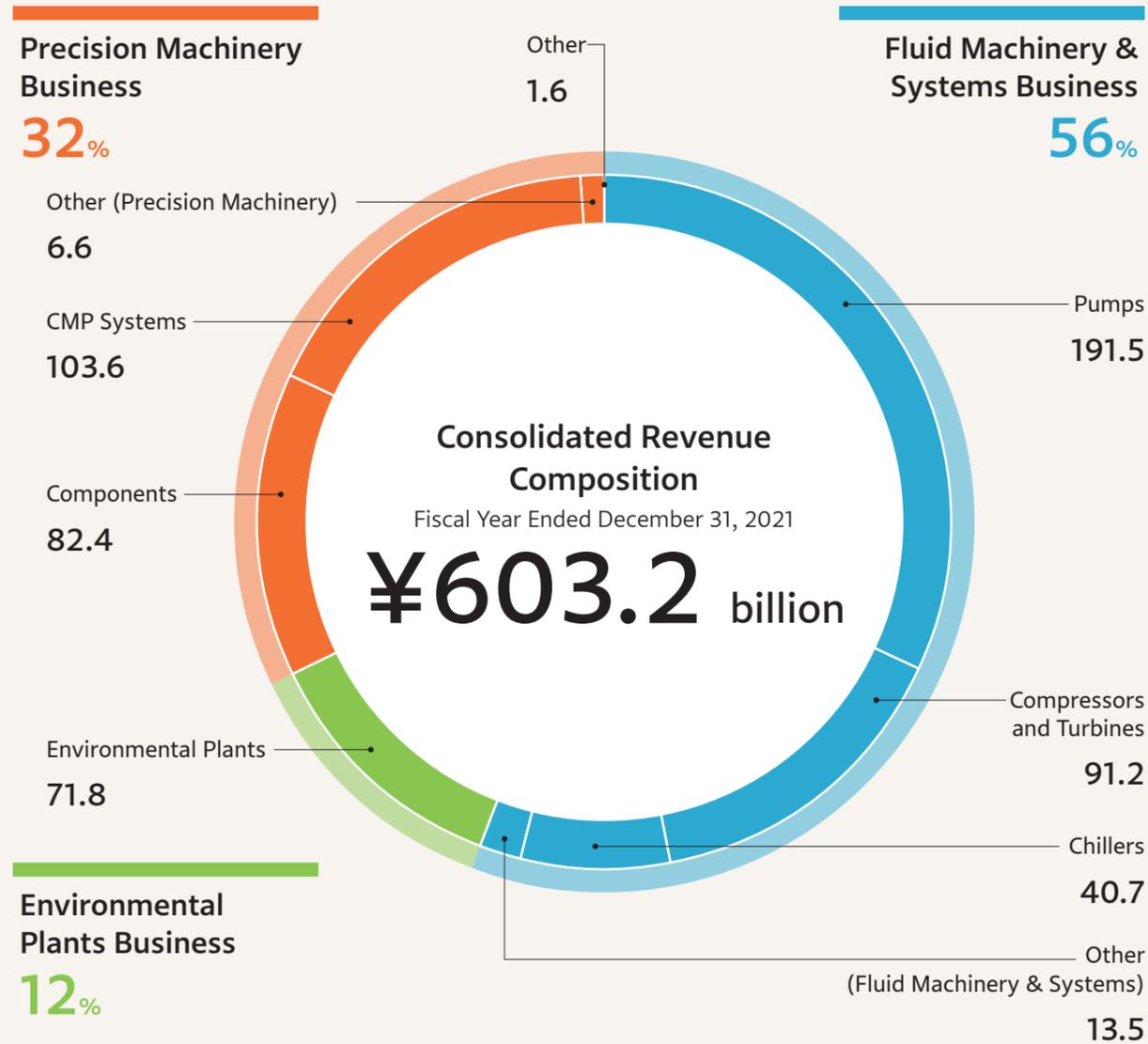
a result, cash and cash equivalents at the end of the fiscal year totaled ¥136.4 billion, up ¥15.9 billion year on year.

Changes in Cash Flows

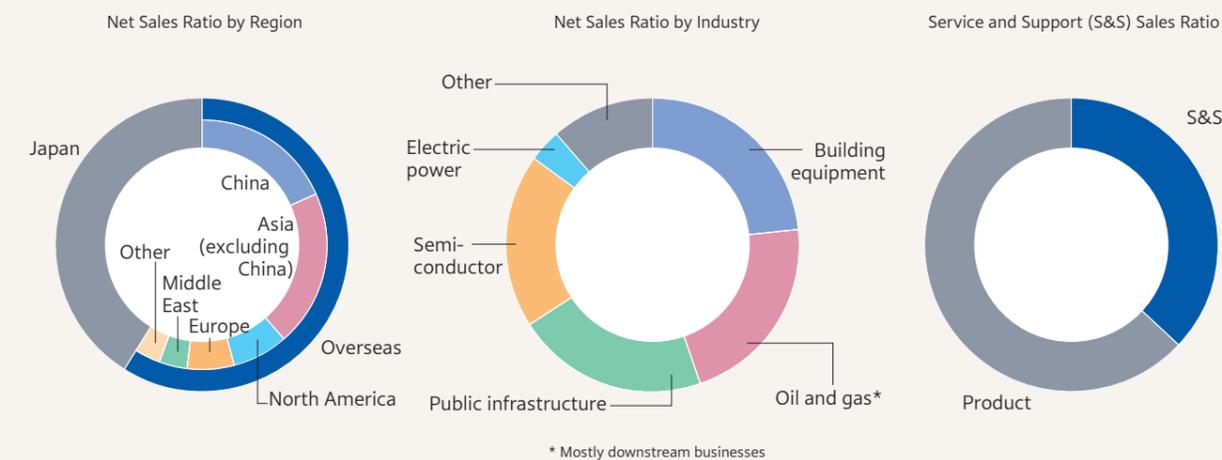


### Three Businesses Supporting Social and Industrial Infrastructure

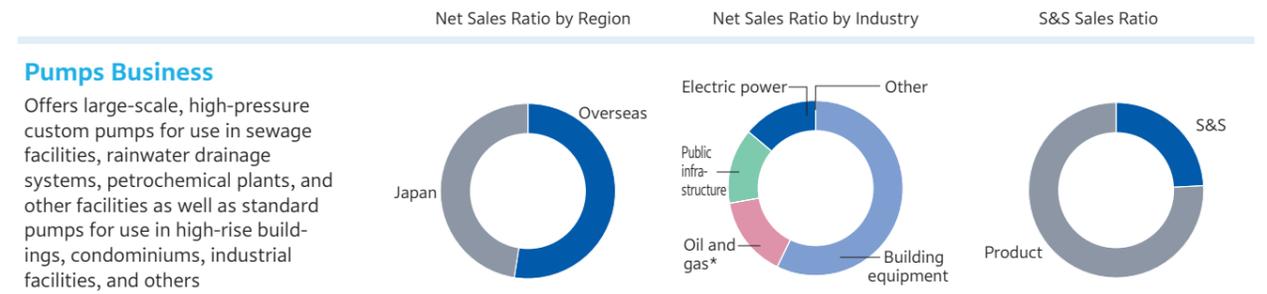
(Billions of yen)



### Companywide



### 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

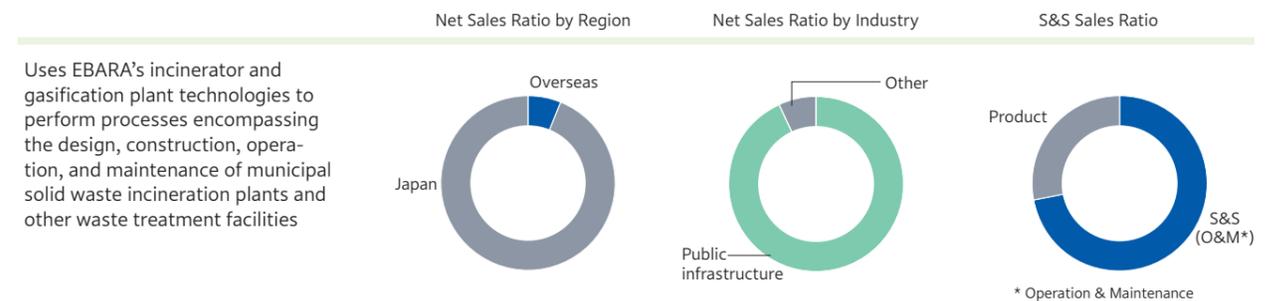
#### Chillers Business

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

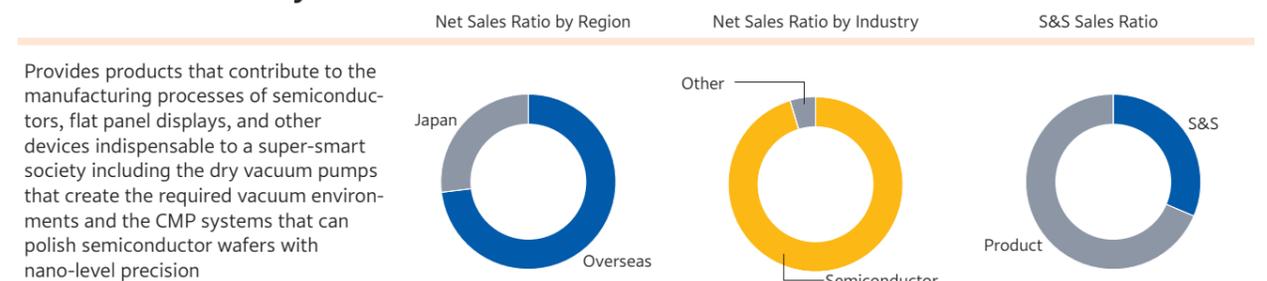
#### Other Businesses

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



### Precision Machinery Business →P.34-36



# 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
<b>Pumps Business</b> 6.5% or more	7.4%	<b>Standard Pumps</b> <ul style="list-style-type: none"> <li>• Domestic: Strengthened S&amp;S structure, bringing to market a condition-monitoring system that combines IoT sensors and cloud computing</li> <li>• Overseas: Acquired a Turkish pump manufacturer, established a new base in Canada, and strengthened SCM*1</li> <li>• Expanded lineup of global core products and regional products</li> </ul> <b>Custom Pumps</b> <ul style="list-style-type: none"> <li>• Undertook selective order acceptance for export projects and reassignment of personnel from products to S&amp;S</li> <li>• Advanced business standardization and efficiency through digital transformation</li> <li>• Strengthened SCM for S&amp;S expansion</li> </ul>	<ul style="list-style-type: none"> <li>• Domestic: Expand scale of S&amp;S sales, expand new products and sales</li> <li>• Overseas: Accelerate expansion of bases and launch new products that meet regional needs</li> <li>• Market and develop products at the top of their niche</li> </ul> <ul style="list-style-type: none"> <li>• Expand S&amp;S sales through collaboration with Compressors and Turbines Business and by strengthening service systems at overseas bases</li> <li>• Continue selective incoming orders, including design review prior to acceptance</li> <li>• Reinforce technology proposal capability to generate sales in decarbonization-related markets</li> </ul>
<b>Compressors and Turbines Business</b> 8.0% or more	9.7%	<ul style="list-style-type: none"> <li>• Undertook selective order acceptance for products, procurement cost reduction (LCC*2 utilization), lead time shortening through automated design</li> <li>• Opened profitable cryopump testing facility</li> </ul>	<ul style="list-style-type: none"> <li>• Continue selective incoming orders and increase procurement from LCCs</li> <li>• Restructure global service system</li> </ul>
<b>Chillers Business</b> 5.0% or more	4.1%	<ul style="list-style-type: none"> <li>• Domestic: Strengthened S&amp;S system, launched precision chiller for semiconductor manufacturing process onto the market</li> <li>• China: Introduced new products in line with local needs</li> </ul>	<ul style="list-style-type: none"> <li>• Expand new products and sales</li> <li>• Expansion of S&amp;S sales scale</li> </ul>

\*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	<b>Stable water supply to diverse regions</b>				
	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
	<b>Contribution to technologies that reduce environmental impact</b>				
	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
	<b>Making products more energy efficient</b>				
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	
<b>Environmental load management</b>					
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\*<sup>1</sup> 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\*<sup>2</sup> 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.\*<sup>1</sup> It can be



Model RJ-SA precision chiller

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.

\*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<sub>2</sub> 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)

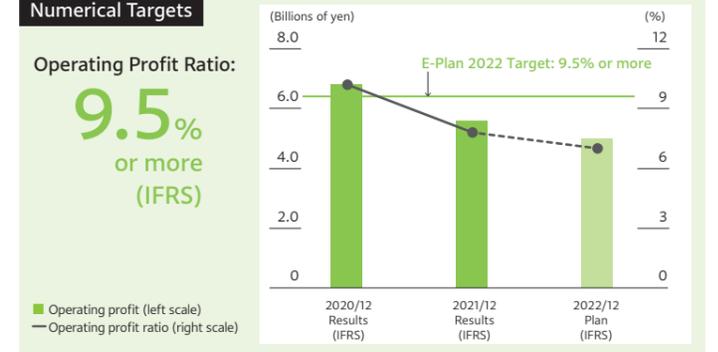
Expand business to become a resource circulation solutions provider with operations centered on waste treatment plant construction and operation that provides integrated EPC services primarily to local government

#### 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%	<ul style="list-style-type: none"> <li>• Received contracts for DBO projects for municipal governments as well as EPC projects for the private sector as a result of customer-oriented proposals</li> <li>• Received contracts for facility life-extension projects for municipal governments due to our highly-evaluated, long-term track record in maintenance, management, and operation</li> <li>• Increased the number of facilities equipped with AI cranes and the number of facilities eligible for remote monitoring support by implementing digital transformation</li> <li>• Developed new technologies for societal implementation of chemical recycling</li> </ul>	<ul style="list-style-type: none"> <li>• Improve profitability of receiving new EPC/DBO projects by improving non-price related elements of proposals</li> <li>• Continue efforts to incorporate peripheral operations of the comprehensive, long-term service projects and propose lifespan extensions</li> <li>• Further R&amp;D towards reduction of O&amp;M costs by making full use of digital transformation technologies and improvement of plant performance</li> <li>• Conduct demonstration tests of chemical recycling</li> </ul>

#### 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	<b>Environmental load management</b>				
	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
	<b>Stable operation of social infrastructure</b>				
	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
<b>Contribution to technologies that reduce environmental impact</b>					
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.

Environmental Plants Business

**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<sub>2</sub> 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

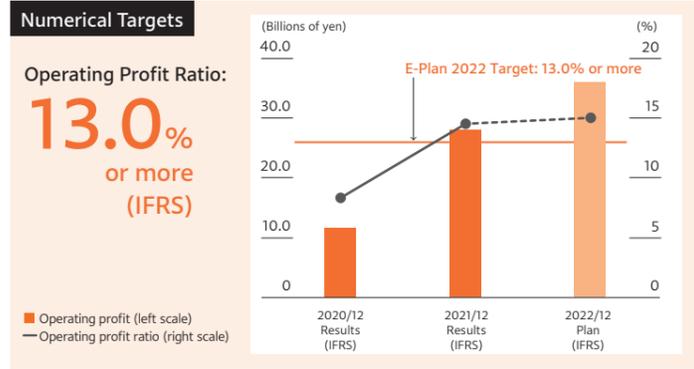
Precision Machinery Business

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



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%	<ul style="list-style-type: none"> <li>• Increased production by expanding the Fujisawa Automated Plant and Kumamoto Plant line to meet rapidly growing demand</li> <li>• Announced new products as a way to strengthen product competitiveness</li> <li>• Conducted joint development with international research organizations</li> </ul>	<ul style="list-style-type: none"> <li>• 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</li> </ul>

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	<b>Environmental load management</b>				
	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
2	<b>Product weight reduction</b>				
	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
	<b>Development of manufacturing equipment to meet the evolutionary roadmap for semiconductors</b>				
	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<sub>2</sub> 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.

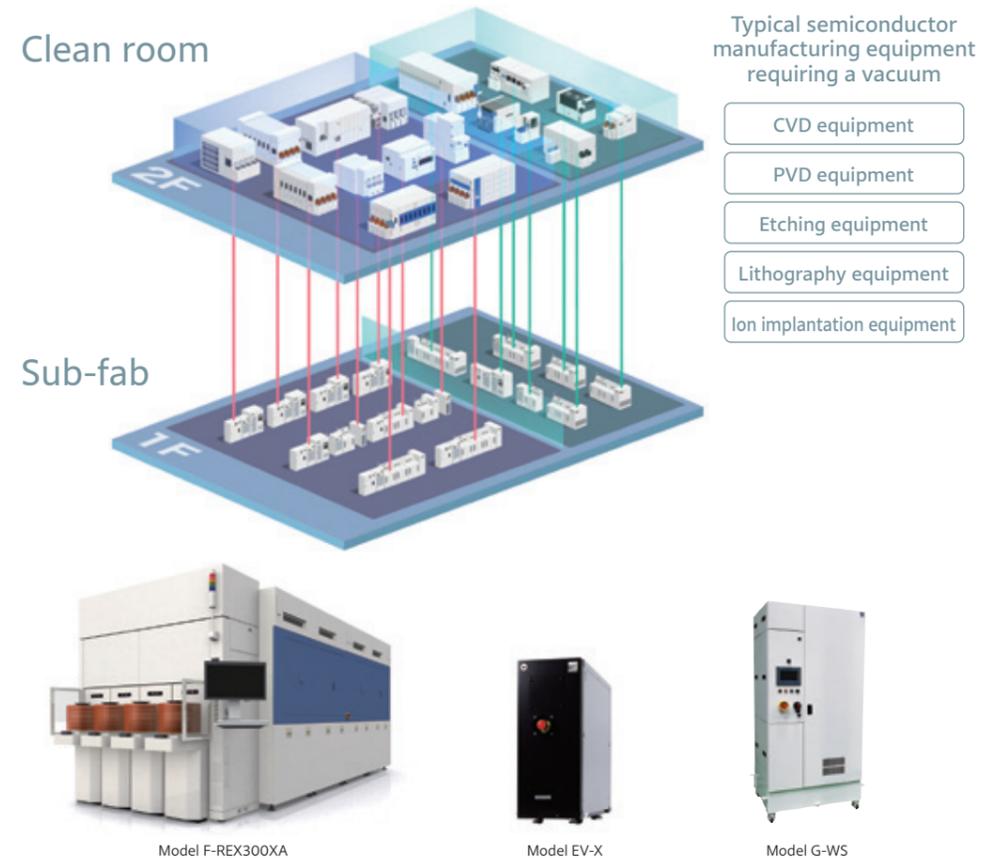


Automated dry vacuum pump assembly line

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.



# New Business: Hydrogen Business

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

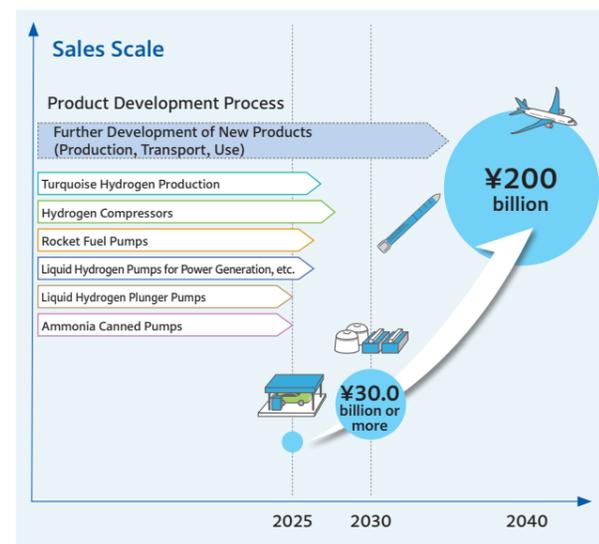
It has been almost one year since The CP Hydrogen Business Project launched in August 2021. In the meantime, the global movement toward carbon neutrality has been gaining momentum, and the importance of energy security has also received renewed attention.

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.

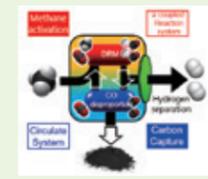
	Helpful	Harmful
<b>Internal origin</b>	<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>World-class core technologies such as compressors and cryogenic pumps</li> <li>Plastic waste gasification technology and plant design and construction knowhow</li> <li>Sales network in Japan and around the world</li> <li>Companywide momentum for fostering new businesses</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>No major new businesses have been established</li> <li>Delayed entry into hydrogen production and fuel cell area (history of fuel cell withdrawal)</li> </ul>
<b>External origin</b>	<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>Paris Agreement (global long-term goal of 2°C, pursuing efforts to limit the temperature to 1.5°C)</li> <li>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</li> <li>Expected growth in liquid hydrogen, compressed hydrogen, ammonia, and MCH, especially liquid hydrogen, compressed hydrogen, and ammonia</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>Situation in Ukraine causing decline in decarbonization momentum</li> <li>Disappearance of hydrogen energy market (all electric with renewable electricity)</li> </ul>

### 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.



© Interstellar Technologies Inc.

### 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

## Transport

Providing Essential Technology

All Modes of Transportation

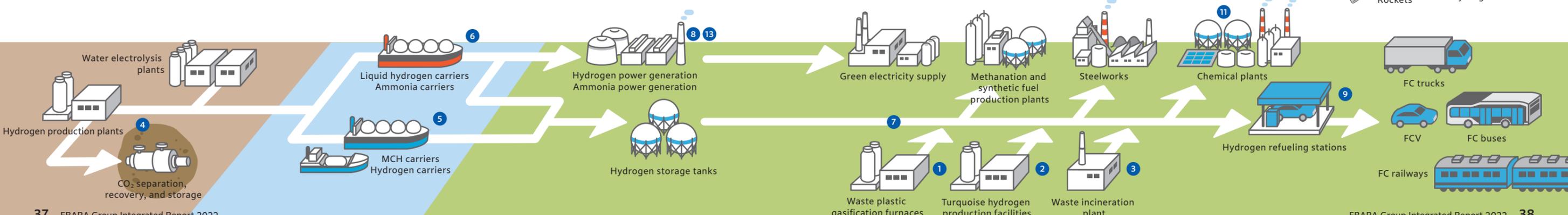
## Use

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

- Gasification and hydrogen production from waste plastics, etc.
- Turquoise hydrogen production
- Hydrogen production from surplus electricity from waste incineration plants
- CO<sub>2</sub> compression and storage technology

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

- Technology for large-scale hydrogen power generation
- Technology for hydrogen refueling stations
- Rocket engine fuel supply pump technology
- Hydrogen-fired absorption chiller/heater technology
- Hydrogen aircraft fuel pump technology
- Technology for large-scale ammonia power generation



# Management and Diversity

In June 2022, Professor Iriyama of Waseda University, who specializes in business administration, and President and Representative Executive Officer Asami discussed the topic of Management and Diversity. They also exchanged views on human resources and organizational challenges.



MASAO ASAMI



AKIE IRIYAMA

## Dr. Akie Iriyama

### Profile

Professor, Graduate School of Business and Finance, Waseda University and Waseda Business School, Waseda University  
B.A. in Economics from Keio University, M.A. in Economics from Keio University, M.A. in Economics from Keio University

After working at Mitsubishi Research Institute, where he was engaged in research and consulting mainly for automotive manufacturers, as well as domestic and foreign government agencies, he received his Ph.D. from the University of Pittsburgh School of Management in 2008. Since that same year, he worked as an assistant professor at the State University of New York at Buffalo School of Business. After becoming an associate professor at Waseda Business School, Waseda University Graduate School in 2013, he was promoted to professor in 2019, and now specializes in Business Administration.

## Promoting Task Diversity

**Asami:** EBARA is a company that has continued for more than 100 years by developing and providing products and services that were needed for each era. EBARA's origins began with a university venture and the goal of creating a pump made in Japan, but reality has turned out so completely different that I think our founder would be surprised if he saw EBARA today. EBARA has dynamically adapted to the changes, but there do remain some rather stagnant parts of the Company, perhaps because of the sense of security from lasting for a century.

By 2030, the Group aims to become a place where regardless of nationality or gender, people can think for themselves, take on new challenges proactively and with a sense of speed, and enjoy achieving results. However, I do sense some resistance to change: the current EBARA is centered in Japan and has been around for one hundred years, so why not keep doing what has been working? I believe we lack speed in some areas, so we are implementing various initiatives to improve these areas.

For example, so far, diversity & inclusion has been centered on the promotion of women's activities, but in the fall of 2021, we decided to focus not only on women, but also a broader range of people to make the Company more diverse and enable people to continue their careers even after life events. We launched the new diversity project and have started recruiting members (details on page 49). More than 40 people applied for the 15 spots, with a variety of ages, nationalities, and divisions represented.

**Iriyama:** To be honest, I was surprised to learn that EBARA is proceeding with such a focus on diversity.

**Asami:** I suspect that it may mainly be the other project members and I that presently share this thinking. It will take time for this to permeate throughout the entire Company.

In fact, I have noticed this in my conversations with the project members, and it has taught me that visible differences as well as our individual aptitudes are equally important. It was at that time that I learned about the term "task diversity,"\* and we are currently working on that initiative.

In addition to the diversity project, we are also implementing HR tech. In hiring interviews, people who have good rapport with the interviewer are more likely to be hired, which tends to bias the aptitude of the personnel. We also use aptitude data and are trying to expand data-driven recruitment based on objective fact.

\* Invisible diversity of experiences, ideas, majors, work history, etc.

## Strategically Create HR and Organizations

**Iriyama:** My general impression of EBARA was that it was quite stiff and traditional.

**Asami:** It is very stiff! Let's not kid ourselves. Many people do things because they are supposed to do them or because they are told to do them by their supervisor. I believe that there are few people who have the sensitivity and imagination to consider what others will think about what they do and do their jobs. This is where EBARA needs to change.

**Iriyama:** I believe that many major Japanese companies face these same kind of problems. A company is ultimately about people and organization, and I understand that the biggest reason for these challenges is that

Japanese companies have not strategically created personnel and organization.

There are two issues that major Japanese companies face with regard to human resources and organization. One is that top management in Japan has not been strategic about it, maintaining the strategy of developing human resources through a specific corporate culture. I think it is great that you are committed to this change. If the president won't do it, you would need a strong chief human resources officer instead.

**Asami:** We have a new Human Resources Division Executive as of April 2022, and I expect he will be even more passionate than I am.

**Iriyama:** That's good! Another thing is that HR work takes time. People don't change easily. It's possible for an individual to decide to change themselves, but people don't easily change from outside influence. We need to allow a good amount of time to create space for change. I think that changing HR will take at least ten years and, if that is not enough, then perhaps twenty years.

I'm very impressed by EBARA's efforts, and it is important to know how you are working over the long term. I believe that the reason why Japanese companies are not addressing diversity is because the term of office of the president tends to be short. If the president changes after two or three years, the initiative will not be continued. I believe that the presidency should be a one-year term renewed annually, and if the person is very good at the job, he or she should be prepared to continue for twenty years or so.

## Company Vision Aligns with Employee Ambitions

**Iriyama:** I believe that what your company is trying to do is the kind of work that will be required of humanity in the future. On the other hand, what is lacking is a sense of urgency. If people in the company are not moving, it means that there is not enough urgency. It is important to show a concrete sense of crisis that EBARA will no longer exist in 10 or 20 years if things continue as they are.

If people recognize that, then despite the crisis, we will actually be able to exert tremendous power in the future as social contribution and business are integrated, I think it will be easier to recruit a diverse workforce.

**Asami:** I wanted to increase profitability first, so I sent out a video to employees about what I wanted to do. In my message, I said that if we can increase profitability, we will have the resources to achieve E-Vision 2030, and we have since achieved the current operating profit ratio. I believe that by continually exhorting employees to continue growing and by envisioning the bright future that can result, they have gradually come to understand what the Company is trying to do and become more engaged.

**Iriyama:** That's very good.

**Asami:** Professor, you say that experiencing a sense of crisis is important. Through these experiences, diversity will grow. I agree with that. I have been in sales for a long time and lived in the U.S. for more than seven years, and I have found that people grow the most when

they have the experience of having to go abroad alone as a minority and learn to live in a different country.

**Iriyama:** One of the things I try to touch on at the end of my lectures on diversity is the topic of the minority experience. Japanese middle-aged men in top Japanese companies have only had majority experiences in their lives.

A society in which everyone is a minority is a diverse society, and in such a society, people can accept others, but those who have only had majority experiences won't feel that way.

**Asami:** If you have been abroad and experienced not being able to communicate in your native language at all, you can sympathize, but those who have not had that experience do not know what the situation is like. It's almost like a battlefield.

**Iriyama:** Yes, I agree. I am all in favor of having people experience these challenges, but a very large problem with Japan's human resources today is that they are unable to make decisions, and decision-making personnel are not being cultivated.

In Japanese companies, it is easy to nurture people who can reliably carry out orders that come down from above. But an important skill is being able to make decisions in situations where there is no right answer and then, once a decision is made, to explain the decision and work through it. People who have "battlefield" experience are able to do this.

**Asami:** I tell my employees not to just do what has been decided, but to think about what can be done better or what can be changed. I say do the right thing, but the right thing is not the same today as it was yesterday. It's okay to be wrong and to take risks and make decisions. We need people who can make such decisions to become leaders.

After I became president, I heard from an outside firm interviewing candidates for executive positions as part of a training program that everyone is serious and unusually loyal, but they have no vision. When asked what they think the company should look like three or five years from now and how they intend to contribute to that, they can't answer the question.

When I train the next generation of leaders at EBARA, I first ask, "Do you all know why you are here?" I tell them, "You are only here because you have done what you had to do and have continued to produce results, but you have probably never thought about the Company's current situation or where it is going." I tell them that I don't want them to stay the same and that

I want them to think carefully about it. After three years of doing this, I have the impression that things are gradually changing.

**Iriyama:** That is also a very important issue, and what's just as important is making sense of broader context. Since Japanese companies have been employing people for their entire lives as their hiring style, employees do not understand why they are working there. Japanese company education does not allow them to plan their dreams for the future.

Therefore, the first important thing is to have a clear idea in mind of what you want to do in the distant future. It is ideal when a company's vision and each employee's ambitions overlap.

### Active Discussions and Psychological Safety

**Asami:** Since I became president, I have been saying that we should have more discussions at EBARA. At least three people, preferably four or five, should get together to discuss an issue, and if they get stuck there, they can invite more people to come and talk. However, we also believe that it is not enough and that we must promote the concept of task diversity.

**Iriyama:** Diversity is not easy, and a diverse organization is essential for innovation, but diversity makes meetings very contentious, and that directly leads to innovation.

Really active discussion is important, and these lively discussions lead to decisions and innovation.

**Asami:** Right. The results of a survey of employees conducted by the Diversity Project highlighted the importance of "psychological safety. In reality, a flat organization is ideal, but because of the hierarchy, it is difficult for lower-level employees to speak when their superiors are speaking. They don't ask questions or express their opinions because if they say something



they will be criticized or told to do it themselves. However, if you don't ask questions, the discussion will not begin. I keep saying internally, "Let's ask questions first. If you don't speak your mind, there is no point in being here." However, I also unconsciously use words such as boss and subordinate, senior and junior, so I'm trying to stop and instead use words such as team, member, and leader.

**Iriyama:** I think it is important because that kind of psychological safety is lacking in Japan, but on the other hand, I recognize that it will take time. I believe management is the key, do you do anything about that in your management training?

**Asami:** Communicating with subordinates in one-on-one meetings has become much more widespread. I used to be a person who rarely listened to others and did what I thought was right like a bulldozer, but in coaching before I became president, I was told that was not good enough and that I should become a good listener.

I was instructed to do one-on-one meetings of 15-30 minutes with thirteen people each week, including business managers, and not to speak up during meetings until I was asked for my opinion.

**Iriyama:** I think it is very important for a president to listen and refrain from speaking. For innovation to occur, discussions need to be active, and without psychological safety, such discussions will not take place. What is important for this is facilitation. We live in an age where AI does the management, so what leaders do is facilitation. The secret of facilitation is simple: don't speak. It is important that the idea of psychological safety be extended to the middle-management level, which tends to speak a lot.

**Asami:** There are many managers who just do one-on-ones because the company tells them to. Members who don't feel comfortable with the manager won't say what they really think, and then they won't know what the one-on-one is for. In the end, it may end up feeling like a top-down lecture.

**Iriyama:** If we don't have a clear idea of what we are doing and why, we will just do it because it came from above. So, with regard to diversity, the most important thing is to get it into your gut what you are doing it for. If that is not the right place to start, we will never proceed. The simplest reason why we do what we do is because it is essential for innovation.

In a rapidly changing world, if we don't innovate 20 or 30 years into the future, the company will collapse. To



innovate, you need to combine different types of knowledge, and diversity is necessary for this purpose. And since psychological safety is necessary for diversity, the bosses are told that they should not talk in meetings.

**Asami:** Managers have to coax out input.

**Iriyama:** Exactly. Even though Mr. Asami and those around him know the feeling, it has not yet permeated the entire company, which of course means that it will take time, but I think it is important to get people to understand why it is necessary deep down.

### Change the Whole Picture, Not Just Diversity

**Iriyama:** Another thing I would like to mention about diversity is path dependency. A company is complex, and it runs because a lot of things fit together. Conversely, it is impossible to change only those parts of the company that do not fit the times. Since your company is also an old company, I think it is possible that it has been running well with the system in place at a time when changes were not as drastic as they are now. That system is set up with high homogeneity and low psychological safety, but it is impossible to change just that, so the whole system needs to be changed. It can be verbalized as path dependence. It isn't possible to do only diversity, so it is very important to change the whole process.

**Asami:** It means that we have to re-create our system with the intention of discarding everything that has been done before.

**Iriyama:** I think that the direction you are taking EBARA is excellent.

**Asami:** I believe that we need to change our personnel system and hiring practices, as well as other aspects of our business, toward innovation in the future. Thank you very much for your time today.

## Technical Human Resource Strategy

# Visualization of Technical Human Resources Will Open Up the Future

The EBARA Group will update the visualization of its entire portfolio of technologies and competencies, as well as its technical and skilled human resources (technical human resource map) to further accelerate positive strategic investment in technology and human resources based on the evidence revealed by the data. In this section, the heads of human resources and technology, R&D, and intellectual property discuss the significance of the formulation of the technical human resource map and future developments.



Facilitator

**Kazunori Suda**

Division Executive, Marketing Division  
Project Leader for the Development of the Technical Human Resource Map

**Yoji Sato**

Executive Officer  
Division Executive,  
Human Resources Division

**Hiroshi Sobukawa**

Executive Officer  
Division Executive, Technologies,  
R&D & Intellectual Property  
Division Executive, Advanced  
Technology Division,  
Precision Machinery Company

**Suda:** EBARA formulated a technical human resource map by updating and combining data summarizing the Group's technologies and human resources, and created the visual Strategic Table of Technological Capabilities from this map.

**Sato:** The recently published Strategic Table of Technological Capabilities is pivotal. Although the visualization of technology has been popular for a while, this displays something completely new for the first time.

**Sobukawa:** Technological differentiation is essential for EBARA to survive and thrive. Indeed, it can be seen as central to the mission of the Company. For successful differentiation, it is important to accurately grasp the Company's strengths and whether they are being maintained and strengthened, but the truth is that we had not been able to simultaneously visualize or objectively comprehend the overall picture. The term "core technology" is used frequently, and although we had a rough idea of what it meant, we did not have a concrete grasp of who was responsible for which technology in each department. Since it is people who carry on technology, if those people disappear, the technology will be weakened. When you try to do something new with your core technology, you may actually realize that you don't have the people to do it, and lose a great opportunity.

**Suda:** How will this "technical talent map" contribute to the EBARA Group's human resource and technical strategies for growth?

**Sato:** Attendance management, salaries, retirement benefits, employee benefits and other conventional features of human resource management are viewed as a cost, and therefore, the core of standard HR policies is to maximize performance with minimal cost. In human capital management, as described in the *Ito Report* and other publications, investments are made in people, the same way as facilities, and we believe that this creates value, in terms of corporate value and performance, that exceeds the investment. The technical talent map will help us to identify which areas need more attention so that we can improve and balance our human resource strategies, such as hiring more people in one area or transferring some to a slightly different area. There must be fields that have not yet been established as EBARA's technological "elements," and we aim to address this.

**Sobukawa:** From now on, we can systematically strengthen our technology. I am very excited and hopeful that we now have the foundation in place to build a solid management and business strategy based on technology.

**Sato:** The latest term is Human Resource Business Partner (HRBP), and the archetypal labor manager who used to sit in the back and calculate salaries is now expected to join in the business and technology, supporting sought-after dreams and goals through human resources. We need a common language, and areas that tended to be tacit knowledge in the past can be understood at a glance through the creation of a technical human resource map and a Strategic Table of Technological Capabilities.

**Sobukawa:** In order to fulfill our mission of "Technology. Passion. Support Our Globe," E-Vision 2030 clearly defines five material issues, and advocates steadfast support of infrastructure for a sustainable society as we contribute to the creation of evolving, abundant lifestyles. The only way to achieve this Companywide is with differentiating technologies.

It can be said that in the past, EBARA tended to only work with its own technology. Now, the direction is to utilize mergers and acquisitions as well. For M&A to be successful, management must understand and plan well what synergies are expected in light of the objectives and how to complement missing technologies.

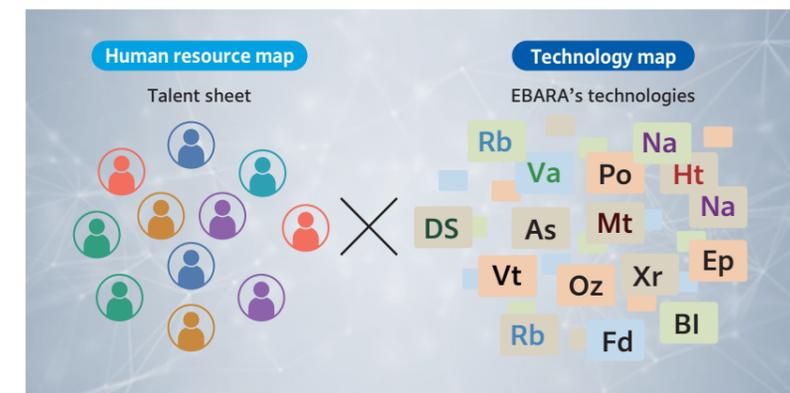
**Suda:** The EBARA Group has offices not only in Japan but also around the world. How can we utilize the technical human resource map to realize your vision globally?

**Sato:** The technical talent map is a language system in itself. As a platform that allows us to communicate in the same language, we believe this will be a great tool for any of our global offices to study. It enables them to reflect on the shape of their business portfolio and what they need to do to expand their business.

As someone in human resources, I believe this will provide an opportunity to create a global strategy that does not need to go through Japan in order to meet emerging global requests, as long as we view them not only in terms of people, but also as a set of people with technology.

**Sobukawa:** EBARA has already reached a state where it cannot exist without talking about technologies held overseas, such as the development of standard pumps in Italy, and the important role of manufacturing in Indonesia, Vietnam, China, and other countries. Therefore, it is clear that the technical talent map must also operate from a global perspective.

We hope that this map will lead to new insights not just for engineers, but for all employees. It would be wonderful if



Concept of the technical human resource map (see p. 45 for the symbol key)

the technical database on which this map is based could be used to get to the correct information without losing time. I believe there have been times when our employees have not been able to demonstrate their true technological capabilities simply because they were unaware of technology available within the Company. We hope that this will be a tool to help EBARA realize its inherent potential.

**Suda:** What are the significance and expectations regarding the release of the Strategic Table of Technological Capabilities to external stakeholders?

**Sato:** The technical talent map is truly diversity made visible. It is said that companies should both increase their competitiveness through demographic diversity, and then go beyond the more superficial differences, such as nationality and gender, by advancing task diversity in the future. Task diversity is the diversification of abilities, experience, knowledge, and competence. We aim to maximize our performance as a company by providing the greatest possible stage for each of our employees according to their abilities and experience.

The technical talent map is a tool and strategy for maximizing people's capabilities and embodies task diversity. I believe that this will create the power to attract like-minded people, including sympathetic career personnel and students, and of course, people of any nationality. We would like to link this to our human resource strategy to create a Group that attracts higher quality personnel.

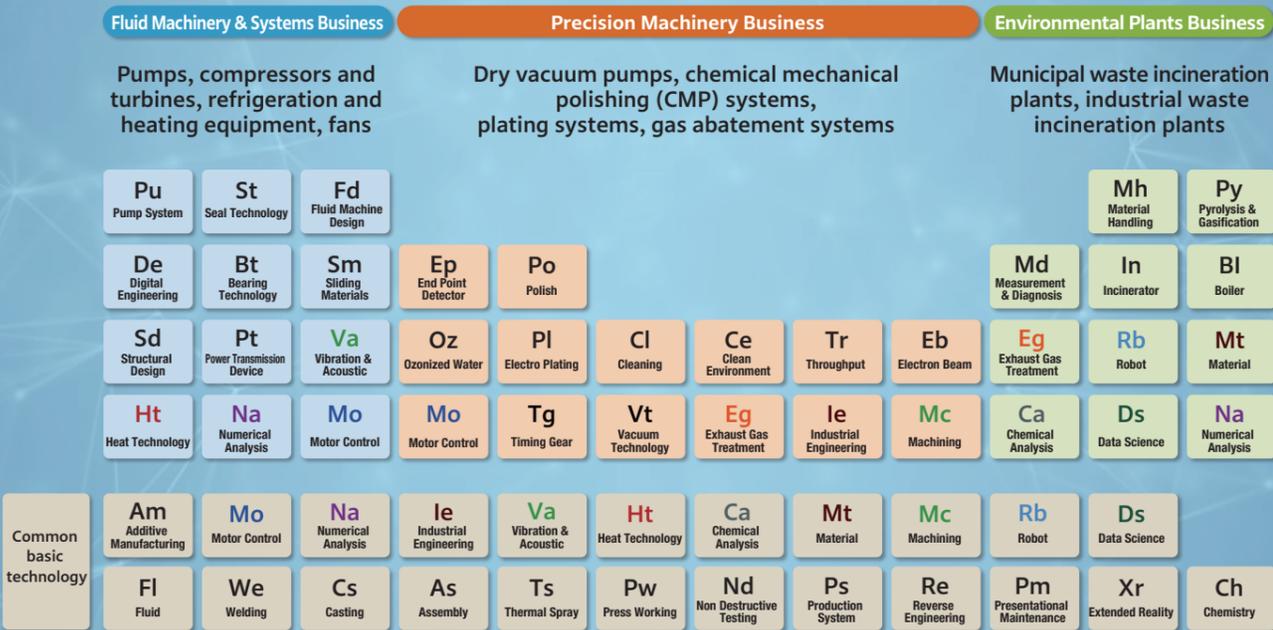
**Sobukawa:** We still need to work out the details for specific operations, and the most important thing is to create a system that keeps these tools updated.

**Suda:** Conviction and passion are what I've taken away from these top leaders in technology and human resources. On the project side, we need to work hard to realize this passion. Thank you very much for your time today.

Technical Human Resource Strategy

The EBARA Group's Strategic Table of Technological Capabilities

We have created a "Strategic Table of Technological Capabilities" to visualize the EBARA Group's technological capabilities and talents.



EBARA's technology from the Fluid Machinery & Systems Business, which supports social and industrial infrastructure, has been cultivated since the Company was founded in 1912, and became the parent of the technology for the Environmental Plants Business, which supports safe and secure lifestyles. The technology of these two businesses has developed into the technology of the Precision Machinery Business, which supports the realization of an advanced information-oriented society. Therefore, our products benefit from technologies that developed independently in each business, as well as those that are shared. Each business takes the lead in developing its own proprietary technologies, while the corporate research and production technology divisions take the lead in advancing cross-sectional technologies. By organically integrating these technologies into new technologies and products, the products of the EBARA Group support society, industry, and daily life as a behind-the-scenes force.

The strategic table of technological capabilities shown here represents as symbols the main technologies behind current EBARA Group products. We plan to build a database linking the technology corresponding to each symbol and the human resources specializing in that technology, which will be useful for technology inventory and efficient human resource development.

The detailed Strategic Table of Technological Capabilities will be posted on the Company's website in September.

Meaning and Technology Indicated by Symbols

Example: Mt (Material)

**Mt Material**  
Environmental business: Technologies related to the selection of optimal materials, evaluation and diagnosis, and the development of new materials in the high-temperature corrosive environment unique to waste incinerators and biomass boilers

**Mt Material**  
Common basic technology: Basic and applied technologies related to corrosion protection, sliding and wear, and structural strength of metallic materials

The EBARA Group acquires and forms its unique material technologies by conducting research and development on materials that adapt to special environments (high temperature, corrosion, sliding, fluid, etc.) in which EBARA products are used in combination with its fluid technologies and vibration technologies.

The People Behind the EBARA Group's Technologies

The EBARA Group has a number of specialized human resources (talent) who support the technologies that have been refined over the years as the Group's business has developed.



Shrunali Ranade

Fluid Machinery Development Department, Business Development Division, Fluid Machinery & Systems Company



We are developing a new type of submersible pumps that discharge sewage in a sanitary way. The pumps are being designed to be highly efficient as fresh water pumps as well as be non-clogging for foreign matters. In order to achieve this, we optimized the designs using fluid analysis techniques which not only include the conventional design method but also the inverse design method. In addition, to ensure product reliability and extend the product life, we are striving for further product improvement through repeated structural and vibrational analysis and verification.



Takashi Maeda

Custom Pump Division, Futtsu Plant Production Department, Fluid Machinery & Systems Company



The Futtsu Plant offers products and services that support various public and industrial infrastructures. To satisfy our Customer's specifications, we possess, among various manufacturing technologies, the capacity to assemble parts machined to 1/1,000th of a millimeter. We are also promoting the digitalization of tacit knowledge and craftsmanship to explicit databases by incorporating DX. The design and production departments can then leverage this data to enable us to operate at a level resulting in improved customer satisfaction.



Tomoko Owada

Process Control Division, Equipment Division, Precision Machinery Company



We are developing polishing heads for CMP, which planarizes the surface of semiconductor substrates at the nano-level. CMP is a polishing technology that combines the chemical action of slurry and the mechanical action of relative motion, and yields improved polishing performance by achieving further planarization with a more sophisticated polishing head. In addition, a high product performance is required for process stability, maintainability, throughput (processing speed), and cost. To solve our customers' problems with technology, we work every day to create new ideas and develop them into reality.



Satomi Nakagawa

Project Engineering Department, Engineering Division, Ebara Environmental Plant Co., Ltd.



We are studying the reuse of unreacted exhaust gas treatment chemicals remaining in fly ash. We are returning fly ash, generated by burning refuse, to the front of the dust collector and recirculating it. Polishing and classifying fly ash before recirculation improves the efficiency of reaction with exhaust gas and reduces the amount of fly ash generated and chemicals used, which should help reduce the load on final disposal plants and improve life cycle assessment. I find it rewarding to be able to make better proposals to our customers and society by conducting verification tests and data analysis under the guidance of senior employees and reflecting the results in the design implementation.



Technical Superintendent Akira Goto

Technical Superintendent Hirokuni Hiyama

Technology, R&D & Intellectual Property Management Department

The corporate research organization promotes basic, emerging technology, and applied research, as well as cutting-edge research in computational science, materials informatics (MI) and cross reality (xR). In this context, the technical superintendent not only supports and promotes in-house R&D with their extensive knowledge and achievements related to specific technological fields, but also plays a role in improving the status of the EBARA brand and promoting collaboration through contributions and collaborative activities with universities, academic societies, research institutions, and industry.

# Human Resources Strategy



## We view human resources as capital, maximize their value, and strengthen human capital management globally and throughout the Group.



**Yoji Sato**  
Executive Officer,  
Division Executive,  
Human Resources Division

E-Vision 2030 sets out five material issues that the EBARA Group will work to resolve and improve by 2030. One of these is to pursue job satisfaction and ease of work to promote the success of diverse employees. For EBARA to continue to grow as a company, we need to view human resources as capital, maximize their value, and further strengthen human capital management throughout the Group and globally. To achieve further growth, we will implement human resource policies that enhance the engagement of all EBARA Group employees globally and promote a Group culture of competition and challenge.

**Reference** Human Resource Development Policy  
<https://www.ebara.co.jp/en/sustainability/social/information/talent-management.html>

### Human Resource Vision (E-Vision 2030)

Create a corporate culture of competition and challenge by providing safe and stimulating working environments where diverse employees can engage in meaningful work and utilize their full potential.

#### E-Plan 2022 Progress and KPIs

Related Materiality	Measures and KPIs	2022/12 Targets	2021/12 Results	Scope	2021/12 Achievements	Future Initiatives		
<b>Establishing a foundation to achieve sustainable global growth</b>								
4	Global expansion of the role grading system	100%	50%	Global	The introduction of grades has been completed for 50% of the employees of EBARA Group companies abroad; after the Companywide introduction of the role grading system is completed in 2022, it is expected that personnel will be actively transferred between countries and regions; to this end, the GMP (Global Mobility Policy) will be established by the end of 2021, and the treatment of employees posted overseas will be standardized on a global basis.	The Company will complete the implementation of a talent management system in progress since 2021, to centrally manage basic personnel information as well as grade, succession, evaluation, and other information to enable the search for excellent and promising personnel; to this end, we will begin designing a unified evaluation system.		
	Global expansion of the performance evaluation system	2025 100%	0%					
	Global expansion of the succession program system	2025 100%	1%					
	Reduction of total recordable incident rate (TRIR) (by 2023)	2023 0.80	3.09	Consolidated, in Japan	In the event of an industrial accident, in addition to the department where the accident occurred, an analysis of the cause of the accident and risk assessment is conducted by an industrial safety consultant, and is deployed Companywide to reduce the occurrence of similar accidents.	Detailed information on each occupational accident, its cause, and countermeasures are shared in a timely manner; share detailed information on each occupational accident, its cause, and countermeasures in a timely manner, and use the information to prevent similar accidents at other sites and establish a common Companywide system to monitor the implementation status and effectiveness of countermeasures		
<b>Transform into a Group with a corporate culture of competition and challenge</b>								
	Reduce total average work hours	1,920 hours	2,037 hours	EBARA CORPORATION	The paid leave utilization rate increased by about 5%; operating days increased by +2 days compared to last year, and working hours increased in many business units and Companywide.	Plan, implement, and expand a telework system that increases productivity; promote health and stress management; and encourage the use of paid leave		
	Promote diversity by increasing the percentage of female candidates for key positions*	6.8%*2	6.4%				Dispatched to external training programs, held child-care consultations with COVID-19 precautions, and conducted evaluation system training; signed the Women's Empowerment Principles (WEPs)	Conduct training for young female employees to improve their skills at an early stage and increase the number of female candidates for key positions
	Promote diversity by increasing the percentage of female new hires	30%	15.9%				Maintained a certain level of recruitment of foreign nationals despite continuing immigration restrictions due to COVID-19; promoted recruitment of women and foreign nationals through various recruitment methods such as the alumni system and referral system	Diversify recruitment methods to accelerate the acquisition of diverse human resources in anticipation of the end of the COVID-19 pandemic; establish recruitment by job classification, which has already been introduced
	Promote diversity by increasing the percentage of non-Japanese new hires	25%	5.4%					
	Improve global engagement survey score	83	79	Global	Efforts were made to improve communication, including increasing the frequency of messages from management; many items improved over time due to changes in working methods during the COVID-19 pandemic.	Each department will formulate an action plan based on survey results and work toward improvement		
	Continue investing in human resource development (training costs per person)	¥46,795	¥41,799	EBARA CORPORATION	Leader development training, such as next-generation management development, and selective training are conducted in person as much as possible during the COVID-19 pandemic.	Reduce the number of hierarchical training programs in which all eligible employees participate, and strengthen the provision of learning opportunities to those who wish to attend		
	Increase the ratio of local employees in global key positions at overseas operating sites (by 2030)	2030 50%	22%	Global	Planned a global leadership training program that GKP candidates of any nationality can take at the same time, for overseas local employees to acquire the leadership qualities needed to take on GKP responsibilities	Gather future GKP candidates from around the world for global leadership training planned for 2021; this will enable us to select excellent human resources from overseas and secure a pool of GKP human resources for local employees by 2030		

\*1 Key position: employee positions equivalent to managers  
\*2 The goal is to exceed 7% by April 2023 and 8% by April 2025.

## Strategies and Measures to Strengthen Human Capital

### Global Engagement Survey

Starting in 2019, we have been conducting a global engagement survey of all employees of domestic and international Group companies to determine what employees think about the Company and their work. Based on the survey results, action plans to improve engagement have been developed and implemented throughout the Company and in each department, resulting in a continuous increase in positive employee responses from 2019 to 2021. Through continuous communication of the corporate vision from management, implementation of measures to take on the challenge of new initiatives and one-on-one dialogue, we aim to create an environment in which each and every employee who supports sustainable business growth understands and agrees with the direction the Company is heading and can maximize their motivation and abilities to achieve it.

### EBARA New Workstyle

The EBARA Group is studying the EBARA New Workstyle (ENW) under the concept of changing the way employees work so that they can thrive. Our aim is to achieve an environment where the Company and employees can grow together. ENW is introducing measures to improve and promote ease of work for employees in today's era of significant change and diversity in workstyles. As measures to expand working place and time options, the remote work system is being upgraded so that it can continue to be used post-COVID. We are simultaneously examining options including partnerships with external satellite offices, the introduction of "workcations" that allow employees to work while traveling, a flextime system and a three-day work-week. In addition, as measures to revitalize communication in response to the diversification of workstyles, we are expanding internal communication tools such as thank-you cards, through which employees give each other words of appreciation, and establishing "caretakers," with whom

employees can consult on any matter. Through these measures, we aim to create a work environment in which employees can work effectively and flexibly.

### Strengthen Human Resource Management, Including at Overseas Group Companies

For EBARA to further grow and win globally, local employees of overseas Group companies must play an active role. We have designated positions with globally relevant missions as global key positions (GKP) and believe it is important to discover and develop local human resources who can take on these GKP positions.

Starting in the fiscal year ended December 31, 2019, we began introducing a role grading system as part of the One EBARA HR project to measure the abilities of human resources across the Group on a common scale. In the fiscal year ended December 31, 2021, we have implemented the grading system in approximately 50% of the overseas EBARA Group companies. We will further the project with the goal of introducing the grading system to all overseas Group companies in 2022. Once the system is fully introduced, transfers between countries and regions by talented and promising personnel will increase. To this end, the Global Mobility Policy (GMP) was established in November 2021 to standardize the treatment of employees posted overseas on a global basis. This establishes a fair system that prevents differences in treatment throughout the world, and allows for speedy transfer assignments from the decision of transfer to the arrival at the new position.

After the visualization of human resources, a Groupwide training program will be implemented starting in 2022 to identify and systematically develop human resources who can take charge of GKP of the Group overseas in the future. Through this training, we will promote proactive monitoring and training to increase the ratio of local employees to 50% of overseas GKPs, which is one of the key HR policies.

### Expectations for One EBARA HR



**Shamon Jacob**

General Manager, HR & General Affairs, Information Technology  
EBARA MACHINERY INDIA

For EBARA Group's human resources, the alignment of its employee-centered HR activities with its global operations is a major challenge, and the Company has not been able to focus on this issue for decades. We understand the importance of an employee-centric approach and have identified areas of focus including global talent management, regular engagement surveys, global assessment, global grading, and a global mobility policy. Implementing One EBARA HR and identifying the nine focus areas within it will ensure that these challenges are addressed.

One EBARA HR is like a one-stop shop for employee-centered human resource development, and I am confident that this initiative will transform us into a global Company. EBARA MACHINERY INDIA

(EMI) has been very positive about the One EBARA HR initiative and believes that it will add value, improve communication, and involve employees in management, which will lead to increased employee motivation, better talent acquisition, and of course an improved image for the EBARA brand. We hope that the One EBARA HR initiative will help many of our employees to excel in global key positions.

Human Resources Strategy

Diversity & Inclusion

The EBARA Group’s long-term vision, E-Vision 2030, states that the EBARA Group will be a corporate group that embodies a corporate culture of competition and challenge, where diverse employees feel fulfilled and comfortable in their work and can play an active role. We launched the diversity project in January 2022 because we believe that inclusion not only of visible differences such as gender and nationality, but also of invisible differences such as experience and job type, is essential not only for the growth of the Company but also for the growth of each employee. The project is under the direct control of the president. Members of the public were recruited to participate, and the first phase of the project started with 20 members.

The Future of Diversity

The diversity project aims to realize a world in which diverse human resources are connected with knowledge (person to person) to bring about a variety of innovations. We want to innovate by increasing, finding, fostering, and connecting human resources who can flexibly respond to a rapidly changing business environment where there is no single right answer and use this innovation to deliver results. The key is task diversity, a concept referring to the invisible differences in each person’s experiences, ideas, majors, and work history. With task diversity, everyone is the protagonist. The more diverse the workforce, the greater the diversity of knowledge in the organization and the more opportunities for new innovation.

To promote task diversity, we conducted a diversity survey of all employees in March 2022. We are working in a data-driven manner to learn about the experiences and thoughts of our employees and to increase each person’s options based on this information.

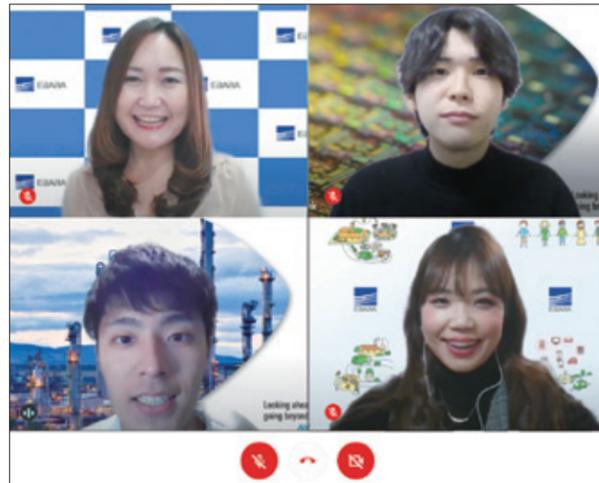
Psychological Safety

Based on the results of the diversity survey, the first step was to create a policy on psychological safety. This begins with avoiding words associated with hierarchical relationships, such as boss and subordinate. We found that many people consider egalitarian relationships, such as teams comprised of members regardless of position, to be ideal, and we believe that using appropriate language was the first step toward a flat organization. Another is to ensure every employee has their camera on during online meetings so that their colleagues can see their reactions. The survey results indicated that there were a number of people who participated with their camera off or said very little. Creating an environment where both parties feel safe to talk to each other leads to psychological safety.

Recruitment

To promote task diversity, the diversity project conducts recruitment activities. Project members played a central role in a video introducing the work, which was produced in-house and published. Project members also took the stage at a corporate information session for students to

promote the Company by expressing diversity. In addition, a project member read the questions in a recorded interview that was incorporated into the first round of new graduate hiring. This is an attempt to motivate job-seeking students and express “Netsu to Makoto” (Passion and Dedication) with warm messages of support, all too often a rather lack-luster aspect of online interviews. By speaking directly to members about their thoughts and feelings through these activities, we aim to attract people with a competitive spirit who like challenges to work at EBARA.



Diversity project members delivering messages of support in recorded interviews

Leader Creation School

We have started the Leader Creation School training program to develop human resources who will lead diversity in the future. The Human Resources Development Department and the Diversity Project collaborated to revamp the skills-based training, which had been conducted separately, into a six-day training set. In addition to encouraging the motivation and skill development of those who are willing to take on challenges, it is also a place where diverse personnel can connect with each other.

Aill-goen AI Matchmaking Application

Under the belief that improving the wellbeing of each and every employee is linked to revitalizing the Company and increasing engagement, we introduced Aill-goen, a matchmaking navigation application, together with the like-minded EBARA CORP•WORKERS’ UNION. This application is exclusively for single employees at trusted companies, and the AI assists them in communicating with good matches outside their company. We look forward to creating more options for those who want a fulfilling work and personal life.

To promote task diversity, we will continue to provide unconscious bias training and opportunities to realize synergy based on the results of the survey.

Promoting Success of People with Disabilities

In 2012, we established a special subsidiary, EBARA EARNEST, to create opportunities for people with disabilities to participate in society and play an active role. In the past, EBARA EARNEST conducted business limited to auxiliary tasks, mainly to comply with the legal employment rate for people with disabilities, but it faced the problem of not fully utilizing the abilities and potential of its employees. Therefore, we are strengthening our manufacturing support business, including parts assembly and annotation,\* to more intricate business processes of the Group. EBARA EARNEST has also started a new business in collaboration with EBARA CORPORATION’s New Business Promotion Team, greatly expanding the scope of activities. We will continue to proactively take on the challenge of new initiatives to realize diversity and inclusion by maximizing the abilities and potential of our employees.

\* Creation of teacher data for AI (artificial intelligence) to learn images



Parts assembly work using electric screwdrivers to install electrical components

People Analytics Initiatives

In 2020, we launched the HR tech project and are using our proprietary people analytics technology to make data-driven, objective, and scientific decisions about policies in the HR domain from a Companywide managerial perspective. Within the HR organization, there are IT personnel such as data scientists and engineers, who not only use specialized DX technology, but are also in charge of policies and actions based on the results of analyses while sharing their wisdom.

For example, in the area of recruiting, we created a model for recruiting the diverse human resources needed for the Company’s growth and conducted data-driven recruiting. In conventional recruitment, the accuracy of screening and the bias of the interviewer’s evaluation tended to result in biased hiring, even when it was intended to be a fair evaluation in accordance with the personnel requirements.

However, by using people analytics, we are now able to look at who we need from different angles and hire a more diverse workforce. Currently, we are working on the use of people analytics not only in recruitment, but also in other HR areas such as labor relations.

We are also designing other comprehensive HR domain organizations and operations while developing data infrastructure, designing databases necessary for operations, visualizing problems, standardizing operations, and making operations unmanned, for smooth people analytics. By designing operations, it has not only become easier to improve efficiency and identify problem areas, but also to create a lot of added value in human resource strategies. We will continue to promote data-driven decision making through people analytics.

COVID-19 Preventive Measures

To fulfill its social responsibility as a company responsible for social and industrial infrastructure, the EBARA Group has placed the highest priority on the health and safety of its stakeholders. To prevent the spread of COVID-19, the EBARA Group has conducted workplace vaccinations at four business sites (Haneda, Fujisawa, Futtsu, and Sodegaura). A total of 13,000 employees of the EBARA Group and its onsite subcontractors, their families, and suppliers were vaccinated, with 22,500 doses administered.

In addition, the COVID-19 Infection Control Headquarters receives weekly reports concerning the on-the-ground infection situation and the infection status of employees, including those at overseas sites, and implements the necessary measures.

We will continue to place the highest priority on the health and safety of our employees, and will work to thoroughly implement infectious disease countermeasures, while at the same time implementing health management measures.



Workplace vaccinations

## R&D and Intellectual Property Strategy



We will develop technologies that lead to future differentiation while strengthening strategic alliances with our businesses.



**Hiroshi Sobukawa**

Executive Officer  
Division Executive,  
Technologies, R&D & Intellectual Property  
Division Executive, Advanced Technology Division,  
Precision Machinery Company

EBARA is strengthening R&D and intellectual property in its own unique way with the threefold BRDIP<sup>\*1</sup> management of business, R&D, and intellectual property and the threefold ABA<sup>\*2</sup> activities of academic societies, business, and industrial associations. Based on a medium- to long-term perspective, we are strengthening strategic collaboration with business divisions by reflecting product strategies on the business side in the research division's roadmaps, while also focusing on research activities and surveys to create new businesses and develop technologies that will lead to future differentiation. In addition, we are working to cultivate the research personnel who will lead the future by providing subsidies towards doctoral degrees and a rotation system with our business divisions. We are promoting efforts to survey and analyze intellectual property, as well as non-IP information, and to then utilize it in new business exploration and the formulation of product and research strategies.

<sup>\*1</sup> BRDIP: An original EBARA Group acronym created from "businesses," "R&D," and "intellectual property"  
<sup>\*2</sup> ABA: An original EBARA Group acronym created from "academia," "businesses," and "associations"

REFERENCE Technologies <https://www.ebara.co.jp/en/technology/technology-top.html>

## R&D and Intellectual Property Vision (E-Vision 2030)

We will further evolve and expand long-term strategic activities and contribute to solving social and environmental issues through our business.

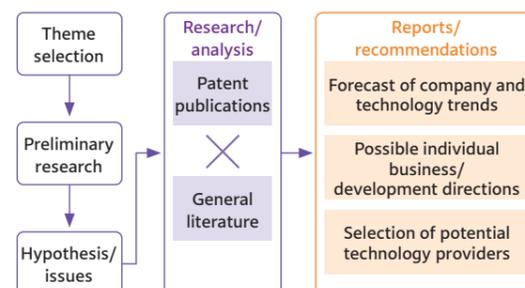
### E-Plan 2022 Progress and KPIs

Related Materiality	Measures and KPIs	2022/12 Targets	2021/12 Results	2021/12 Achievements	Future Initiatives
1	<b>Strengthening development capabilities</b>				
	Formulation of a research roadmap (RM) in key technology areas and implementation of medium- to long-term research themes in line with RMs	E-Plan 2022 target progress: 100%	E-Plan 2022 target progress: 70%	Formed RMs and action plans (APs) in the areas of fluids, materials, machine elements/vibration/acoustics, microinterfaces, numerical analysis, chemistry, and analysis	Complete RM and AP for thermal, electric motors, CMP polishing, and CMP cleaning fields, which began formulation last year, and initiate measures in line with the AP
	<b>Pursue new needs and research opportunities</b>				
2	Propose and implement research themes that lead to new technologies and new businesses	Ongoing proposals of themes for new business fields	Research and development in new fields and exploration of new technologies using external collaboration, etc., and consideration of thematization	In addition to developing materials using MI* and trying to develop various new alloys, we are developing remote work support and training methods using xR and promoting their practical application in actual workplaces; also investigating new technologies based on trends and studying themes for new technologies in cooperation with universities and other organizations *Materials Informatics	Promote cutting-edge research such as MI and xR, and conduct research activities that lead to the formulation of research themes with a stronger awareness of CO <sub>2</sub> reduction
	Conduct patent application and rights acquisition activities based on market and technology trends for every product	Secure 100% of key products	Achieved target for the fiscal year ended December 31, 2021	Continue to select target products and formulate IP strategies in 2021; develop IP activities based on the strategies formulated in 2020, and revise some of the strategies	Expand the range of products covered by the IP strategy and evaluate and update the IP strategy to further improve the competitive advantage of key products

## Intellectual Property Initiatives

- To enhance the competitive advantage of our key products, we are conducting patent application and rights acquisition activities based on the market and technological trends of each product.
- We are formulating the Company's contract policy, preparing contract templates in line with the policy, deploying them to domestic and overseas group companies, and promoting their use.
- EBARA's proactive IP activities comprehensively assess other companies' patent strategies, technology trends, and trademark activities, and then report and submit proposals that contributes to management, business decisions, and investor relations. These activities contribute to the exploration and launch of new businesses and the determination of R&D policies. To develop human resources for such IP strategies, we also promote participation in IP analyst certification courses of the Association of Intellectual Property Education.

### Flow of IP Proactive Activities



## R&D Initiatives That Lead to Increased Corporate Value

We are strategically conducting research and human resource development on the latest technologies necessary for our business, while developing and implementing them in our business.

### Utilizing AI and Human Resource Development

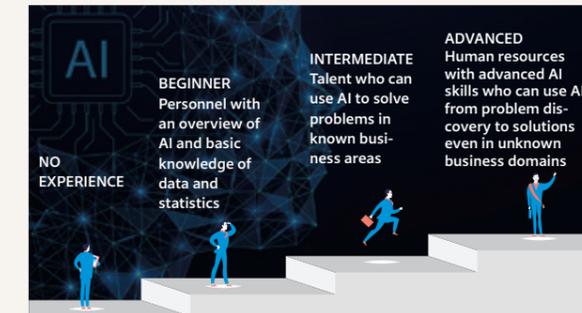
More and more corporations are using AI in business domains to enhance competitiveness, and the EBARA Group is also advancing the use of AI to create new businesses and transform its existing business, as set forth in its long-term vision, E-Vision 2030.

It is necessary for business personnel to have a deep understanding of AI to properly utilize it, but the most important thing is to have an idea of what they want to achieve with AI and what problems they need to solve. In doing so, it is effective to entrust the task to internal or external experts, but to also have the ideas actually be generated by the people responsible for facing business challenges on a daily basis. In order to develop such human resources, we have divided the curriculum into four levels according to skill level. At the same time, by acquiring AI skills that are easy to apply to their own work, they are able to generate ideas in their respective business areas.

Currently, many ideas for business transformation through AI are proposed by those undertaking the curriculum, and data scientists, who are experts in AI, are also participating to study the feasibility of these ideas. Furthermore, we are actively hiring personnel with advanced knowledge in the area of AI and collaborating with outside vendors.

In this way, we are promoting the development of human resources with skillsets ranging from an overall understanding of AI and its application to business, to those who can lead business transformation.

#### AI Human Resource Development concept



**Keisuke Kikuchi**

EBARA CORPORATION  
Marketing Division Data  
Science Section

### Utilizing xR Technology and Human Resource Development

#### Equipment maintenance training using xR technology

Equipment maintenance training technology using xR technology, which began in earnest in 2021, reached a practicable level in the same year. In 2022, we are creating a training program for the CMP system (model F-REX300X), the flagship product of the Precision Machinery Business, for operation in a VR space (Metaverse) using CAD models, as well as for disassembly and assembly procedures. In addition, an electronic manual with video recordings has been created.

#### Construction of on-site support technology using xR technology + AI, and training of AI engineers



**Taro Murase**

EBARA CORPORATION  
Technology, R&D & Intellectual Property  
Management Department,  
Strategic Technology  
Research Section, xR  
Technology Promotion PJT



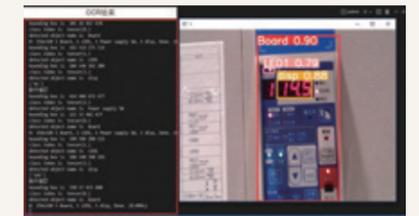
**Kaita Tanabe**

EBARA CORPORATION  
Technology, R&D & Intellectual Property  
Management Department,  
Strategic Technology  
Research Department xR  
Technology Promotion PJT

Technology that connects the workplace to the office is already being used at various locations of the Company through smart glasses, tablets and similar interfaces, with realistic drawing markers and other objects on the screen as augmented reality (AR) from both sides to provide instruction.

In 2022, we started to build AI-based technology to support work. By having the AI learn from the guidance of skilled workers, it recognizes the surroundings of the smart glasses wearer and the work situation, and presents appropriate information to the worker on a case-by-case basis to improve and standardize the quality of the work.

To expand these efforts to service and support a wide variety of EBARA products, we are developing AI engines in-house. Currently, both Mr. Murase and Mr. Tanabe have mastered basic AI engine development and are conducting AI learning by training images and applying it to actual control panels.



A reading from the actual control panel

## DX Strategy



### EBARA is working to improve corporate value by promoting digital transformation through a three-way integration of the management, business, and IT divisions.



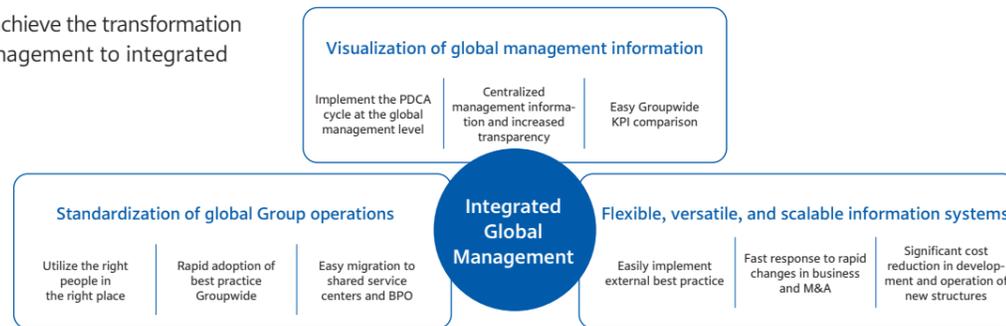
**Hiroyuki Kowase**  
Executive Officer  
Division Executive,  
Information & Communication System Division

We hear more and more about companies struggling with their DX efforts, but if DX is not working, it is probably because the digital (D) is getting too big. The key is to promote transformation (X) based on management and business strategies.

At EBARA, the management, business, and IT divisions are working in unison to actively promote Companywide DX, and results are being achieved at a good pace. As a result, EBARA was selected for the first time as a Noteworthy DX Company for 2022 by the Ministry of Economy, Trade and Industry (METI), the Tokyo Stock Exchange, and the Information-technology Promotion Agency, Japan. We will continue to strive to further enhance corporate value through DX.

### Digital Transformation Initiatives

The EBARA Group will achieve the transformation from international management to integrated global management.



### Digital Transformation Vision (E-Vision 2030)

Transform products, services, and business models and strengthen S&S by driving digital transformation.

#### E-Plan 2022 Progress and KPIs

Related Materiality	KPIs	2022/12 Targets	2021/12 Results	2021/12 Achievements	Future Initiatives
<b>Realization of integrated global management</b>					
1	Global deployment of systems centered on ERP (by 2024)	Determine optimal pilot facilities and deploy systems in advance	One overseas company started operations in March One domestic company started operations in May	Completion of standard business templates for business reform toward global standards	Utilize business standard templates to expand pilot facilities and work toward full implementation in FY2024
2	Integration of global IT infrastructure	100%	66%	Implemented security measures for global sites (21 overseas sites, 14 domestic sites) and infrastructure for integrated authentication	Further integrate EBARA Group's infrastructure by promoting security measures and other important measures for China, where integration has lagged
4	Expansion of centralized global systems	100%	64%	Continue to review workflow and promote operational efficiency through automation	Strengthen IT governance and unify the EBARA Group by implementing a common global system
	Increase of internal IT tools	100%	74%	Steady progress toward goal of 100 robots in operation per year; 223 robots in operation by 2021, contributing to operational efficiency	Continue to revise workflows and optimize operations through automation

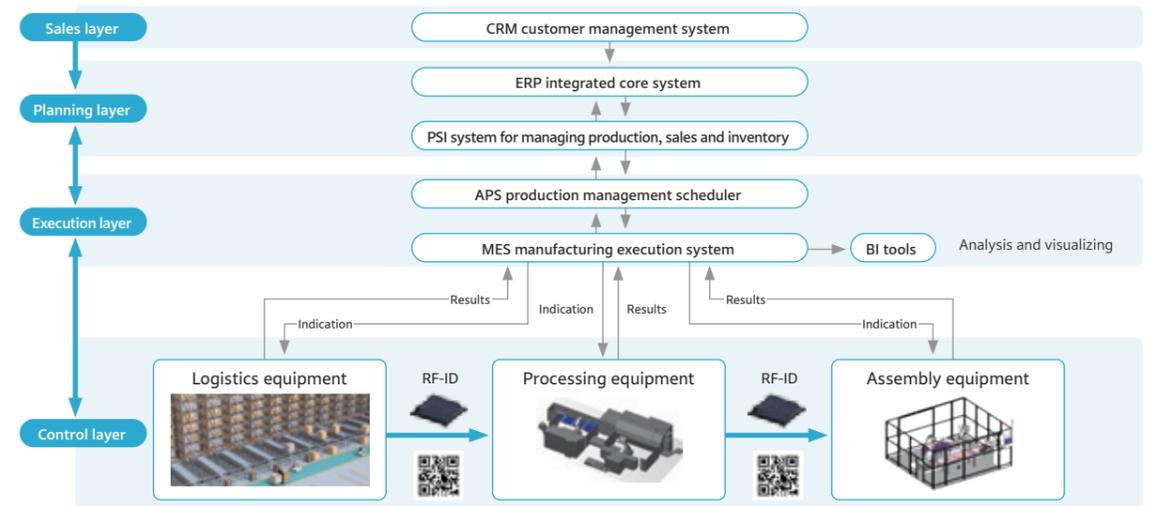
### Utilizing Digital Transformation in Business

#### 1 Automated Plant for Dry Vacuum Pumps Build In-House Systems to Maximize Efficiency of Automated Equipment

In the automated V7 plant, which began full-scale mass production in 2021, we have automated production that had previously been carried out manually. Dozens of robots and many other automated technologies are in operation in the V7 building. In order to operate these automated facilities efficiently, we revamped our internal system to seamlessly link information from order receipt to shipment.

Order information is fed into the PSI system via the ERP system, and based on this information, the AI automatically draws up a production plan. Various instructional information

and production plans for operating automated equipment are sent to the automated equipment at the right time to start production. We also built an IoT system that automatically collects RF-ID, PLC, and production equipment arrival and completion information, quality information, equipment operation information, and other performance information, and stores it in a database. Accumulated information is utilized to improve quality and productivity by quickly implementing the PDCA cycle through measures such as visualization using BI tools.



#### 2 Introduction of AI and Robots for Waste Treatment Facilities at Ebara Environmental Plant Co., Ltd.

##### Automatic crane system outfitted with waste identification AI

At a waste treatment plant, waste from collection trucks and other vehicles is stored in a waste pit. In the pit, in order to stabilize combustion, the operator visually recognizes the properties of the waste and operates the crane to agitate and otherwise equalize the properties of the waste pit. To perform this task without relying on the skill of the operator, we developed an automatic crane system equipped with a waste identification AI. This system uses AI to identify the state of waste agitation, etc., from images captured by cameras in the pit, and uses advanced control equipment to make decisions on crane operation and operate the crane automatically. The system can identify a wide variety of waste, and also determine the degree to which the garbage bags are torn, making it possible to identify and feed waste suitable for combustion into the incinerator, something that was difficult in the past. It can also identify special waste, which would adversely affect equipment or combustion if fed into the furnace in large quantities, and deal with it appropriately.

As well as increasing the number of facilities where this system is installed, we aim to further expand the scope of application of AI and provide more advanced waste treatment services.



Waste pit seen from the refuse crane operation room

##### Compact traveling robot for continuous measurement of waste heat boiler water pipe thickness

At waste treatment plants, the thickness of boiler water pipes for waste heat recovery is measured periodically to accurately determine corrosion and other age-related deterioration. In the past, a large amount of preparatory work was required, such as having a person physically enter the boiler to take measurements, or only utilizing available external measurement data, or cutting off part of the boiler water pipe to measure the inside. The newly developed robot is inserted through the inspection port, travels to the boiler water pipe to be measured, inserts a sensor to measure the thickness of the water pipe, and automatically and continuously measures it from the inside. This enables efficient and highly accurate measurements and more accurate boiler water pipe life prediction. In the future, we will expand advanced measurement work using this robot to realize safer and more secure facility operation and provide inspection services such as highly accurate lifespan prediction diagnosis using the acquired data.



Compact traveling robot continuously measures waste heat boiler water pipe thickness and laboratory test equipment



**We aim to achieve both business growth and contribution to decarbonization while responding to social and environmental changes.**



**Toru Nakayama**  
Executive Officer  
Division Executive, Legal, Internal Control,  
Risk Management and General Affairs Division

To minimize the adverse effects of climate change, such as abnormal weather, it was agreed at COP26 held in Glasgow, Scotland, in 2021 to pursue efforts to limit the temperature increase to 1.5 degrees Celsius from the pre-industrial era. The Japanese government revised its global warming countermeasures plan in October 2021, declaring its goal of becoming carbon neutral by 2050 (meaning net zero greenhouse gas emissions) and modifying its 2030 CO<sub>2</sub> emissions reduction target from 26% to 46%.

For the Group, addressing environmental issues, including the reduction of greenhouse gas emissions, is positioned as an important theme that forms the core of our advanced ESG management practices. Since March 2021, the Sustainability Committee has held a series of discussions to achieve the Group's goal of carbon neutrality by 2050. Then, in January 2022, I became the project owner and launched the Carbon Neutrality Project and started organizing issues to achieve carbon neutrality. We will conduct a survey of the current status of the entire Group over Scope 1 to 3; coordinate with our business units on medium- and long-term policies, as well as measures toward carbon neutrality; and develop an implementation system.

With regard to the reduction of environmental impact at the Group's sites, we are practicing environmental management from the perspectives of CO<sub>2</sub>, water, and resource recycling in order to realize the EBARA Group 2030 Environmental Targets. As part of our environmental management system, we are working to obtain ISO 14001 certification at all of our manufacturing and maintenance sites in Japan and overseas.

In addition, we will contribute to decarbonization through our business activities, as stated in E-Vision 2030, which aims to reduce CO<sub>2</sub> emissions generated during the use of our products by approximately 100 million tons by 2030.

**Reference** EBARA Group Environmental Policy  
<https://ebara.co.jp/en/sustainability/environment/information/environmental-policy.html>

**Reference** Environmental Management  
<https://ebara.co.jp/en/sustainability/environment/information/environmental-management.html>

**Progress on 2030 Environmental Targets**

2030 Performance Targets	2021/12 Results	2021/12 Achievements	Future Initiatives
Reduce CO <sub>2</sub> , Scope 1 & 2 emissions by 26% from FY2018 levels <small>*26% in reduction is the originally established 2020 target. Currently reviewing targets by backcasting the progress required to achieve 2050 carbon neutrality.</small>	Group total down 11% compared to FY2018, exceeding target for the third year of the 12-year period leading up to 2030	Energy-efficient operation of facilities, expanded procurement of low-CO <sub>2</sub> electricity, introduction of solar power generation facilities	<ul style="list-style-type: none"> <li>• Timely upgrades of facilities with high energy consumption, such as industrial furnaces and transforming equipment</li> <li>• Expanding electrification and low-carbon procurement of electricity</li> <li>• Expanding installation of solar power generation equipment</li> <li>• Utilization of carbon pricing</li> </ul>
Continuously lower water consumption rate	2021: Revenue per unit of production will be 0.180 km <sup>3</sup> /¥100 million, an improvement from the previous year	Water reuse and leakage prevention in ultrapure water production	<ul style="list-style-type: none"> <li>• Implementation of measures for industrial water recycling and against water leakage</li> </ul>
Maintain a waste recycling rate of 95% or more domestic	Achieved 97.1% in Japan, exceeding the target	Promote visualization of the amount of reusable waste through thorough waste separation	<ul style="list-style-type: none"> <li>• Improvement of the recycling rate by thoroughly separating waste and revising waste processing contractors</li> </ul>

**Carbon Neutral Project**

The Carbon Neutral Project, launched in January 2022, is studying ways to reduce GHG emissions from our own activities (Scope 1 and 2), reduce GHG emissions across our supply chain beyond Scope 1 and 2 (Scope 3), and absorb and remove GHGs in order to become carbon neutral by 2050.

For Scope 1 and 2, we first ascertain the actual emissions of the entire Group, and then consider a wide range of reduction measures, including energy-saving equipment, business process improvements, installation of in-house solar power generation, and procurement of electricity with low GHG emission factors. For Scope 3, we are considering measures throughout the entire supply chain. The highest levels stem from Category 11 (GHG emissions from the use

of products and services by customers). We aim to reduce these by promoting more efficient and energy-saving products, and to achieve net zero GHG emissions through products that contribute to GHG decomposition.

Regarding the absorption and removal of GHGs, we will also work on activities that contribute to the prevention of global warming, such as commercializing technology for the chemical recycling of waste plastics to support resource recycling, preventing marine pollution, and reducing CO<sub>2</sub> emissions, along with efforts to develop next-generation fuels, such as hydrogen and ammonia, and strengthening the activities of the CCUS.

**Expand Procurement of Low-CO<sub>2</sub> Electricity**

The EBARA Group procures almost 100% of the electricity needed by its business sites in Japan from the EBARA Environmental Plant Co., Ltd., a Group company engaged in the retail business of low-CO<sub>2</sub> electricity derived from waste

power generation. We will continue to expand our solar power generation facilities to further reduce CO<sub>2</sub> emissions from electricity, which accounts for the majority of the Group's energy consumption.

**Conduct Comprehensive Environmental Management Across Overseas Group Companies**

As part of the goal to conduct comprehensive environmental management set forth in E-Vision 2030, we are working to obtain ISO 14001 certification for Group companies with manufacturing and maintenance plants. As of May 2022, 8 domestic and 24 overseas Group companies have received ISO 14001 certification. In fiscal 2021, Ebara (Thailand) Limited and Ebara Pumps Malaysia Sdn. Bhd. obtained ISO 14001 certification. In 2022, five companies had obtained ISO 14001 certification by May, and by 2024, all Group companies with manufacturing and maintenance plants are scheduled to obtain ISO 14001 certification.

By implementing the PDCA cycle based on the environmental management system at each Group company, we will improve our environmental performance, including the targets set forth in EBARA Group 2030 Environmental Targets, and ensure compliance with environmental laws and regulations.

**Reference** Status of ISO 14001 registration  
[https://www.ebara.co.jp/en/sustainability/environment/information/\\_icsFiles/afiedfile/2022/08/29/ISO14001\\_en\\_20220825\\_r2.pdf](https://www.ebara.co.jp/en/sustainability/environment/information/_icsFiles/afiedfile/2022/08/29/ISO14001_en_20220825_r2.pdf)

# Climate Change Response Measures

## Disclosure Based on TCFD Recommendations

The global environment is the foundation of all life forms and ecosystems that inhabit the Earth, and corporate activities cannot continue without a healthy global environment. Recognizing that climate change is a serious challenge facing the world, the EBARA Group endorsed the TCFD in 2019 and made disclosures in accordance with the recommendations in 2021. Since 2021, we have updated our disclosure information based on COP26 and other climate-related global trends, as well as feedback we received during dialogue with stakeholders.



### Governance

Climate-related issues are addressed under the supervision of the Board of Directors and execution by the Sustainability Committee. Each meeting of the Sustainability Committee held in 2021 had an environmental agenda and reviewed the Company's policies regarding carbon neutrality and environmental management. To achieve the Group's goal of carbon neutrality by 2050, we launched the Carbon Neutrality Project in January 2022 and started to organize issues to achieve carbon neutrality.

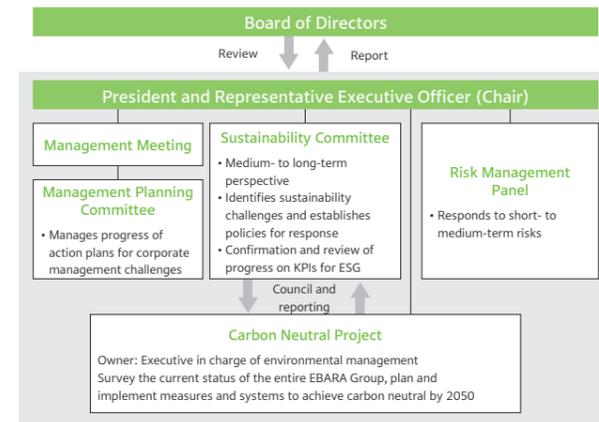
The Board of Directors fulfills its supervisory function by receiving reports from the Sustainability Committee and monitoring the situation on the executive side. Recognizing the need to further enhance our oversight status as a Board of Directors, particularly with respect to the environment and society, the Company has decided to regularly discuss the ESG and sustainability agenda at the Board of Directors beginning in 2022. One of the key themes of the plan is to address climate-related risks and opportunities. The system is designed to allow for discussions on the specifics and promoting management's response, and to provide feedback to the Sustainability Committee.

The Board of Directors will receive a report from the Sustainability Committee on the proposed disclosure of information on climate-related risks and opportunities in 2022 based

on the TCFD recommendations, and the Board of Directors will confirm the content of the report before disclosing it.

**Reference** Climate change governance structure  
<https://www.ebara.co.jp/en/sustainability/think/information/tcfd.html#gov>

### Climate-Related Governance Structure Chart



Focusing on businesses in the oil and gas market and semiconductor manufacturing market, we analyzed how businesses in each market would be affected by the 4°C and 1.5°C temperature rise scenarios, and released them as updated information for 2022.

The comprehensive climate-related information for all businesses disclosed in 2021 was conducted with the year 2030 set as the end of the long-term. In our 2022 analysis of climate-related risks and opportunities for the two market-oriented businesses we focused on, we set the long term as 2050, the year targeted by the Paris Agreement and the Japanese government.

We have estimated the financial impact and updated our disclosure information by considering our strategy toward the Group's E-Vision 2030 by backcasting from 2050.

**Reference** Strategy  
[https://www.ebara.co.jp/en/sustainability/think/information/tcfd.html#sus2022\\_1](https://www.ebara.co.jp/en/sustainability/think/information/tcfd.html#sus2022_1)

### Strategy

After making comprehensive disclosure for all our businesses in 2021 based on the TCFD recommendations, we have received comments from investors and others who expect us to deepen our analysis of climate-related risks in the Group's businesses for the oil and gas market. The Group's business in the oil and gas market, centering on pumps, compressors, and turbines, is currently focused on LNG-related facilities and downstream areas (oil refineries, petrochemicals production, etc.). We examined how climate-related factors might change the market and how they might affect our business.

In addition, we analyzed climate-related opportunities and risks more closely for the semiconductor manufacturing market. We wanted to make our strategy more resilient to growing climate-related opportunities, such as Japan's Society 5.0 initiatives, which include reducing GHG emissions, widespread EVs, and the development of various products and technologies to achieve decarbonization.

### Risk Management, Indicators, and Targets

Please view the Company's website. **Reference** [https://www.ebara.co.jp/en/sustainability/think/information/tcfd.html#sus2022\\_4](https://www.ebara.co.jp/en/sustainability/think/information/tcfd.html#sus2022_4)

## Strategy: Overview of the Identification and Assessment of Climate-Related Risks and Opportunities

**Details** [https://www.ebara.co.jp/en/sustainability/think/information/tcfd.html#sus2022\\_1](https://www.ebara.co.jp/en/sustainability/think/information/tcfd.html#sus2022_1)

	Risks		Priority	Key risks and opportunities	Risks	Opportunities
	Broad classification	Specific classification				
Transition risks	Policy and/ legal	Carbon price, national carbon emission targets and policies	High	<ul style="list-style-type: none"> <li>Carbon price on GHG emissions</li> <li>GHG emission regulations will be imposed at major EBARA production sites.</li> </ul>	●	
	Industry/ markets	Changes in clients, government, and markets	Business for oil & gas market	High	<ul style="list-style-type: none"> <li>Demand trends for oil, gas, and ammonia affect revenues and operating income.</li> </ul>	●
Business for semiconductor manufacturing market			Medium	<ul style="list-style-type: none"> <li>Increased demand for semiconductors will increase demand for PFC gas reduction.</li> <li>Demand for semiconductors will grow due to the spread of EVs and FCVs and the development of smart technologies and a smart society.</li> </ul>		●
Physical risks	Acute	Intensification of extreme weather	High	<ul style="list-style-type: none"> <li>Torrential rains and typhoons can cause production stoppages due to damage at our main production sites and suppliers.</li> </ul>	●	

## Strategy: Overview of the Impact of Climate-Related Risks/Opportunities on Financial Planning and Responses

**Details** [https://www.ebara.co.jp/en/sustainability/think/information/\\_icsFiles/afieldfile/2022/08/02/tcfd\\_6.pdf](https://www.ebara.co.jp/en/sustainability/think/information/_icsFiles/afieldfile/2022/08/02/tcfd_6.pdf)

Target market	Temperature scenario		Business environment scenario (summary)	Countermeasures (Summary)
Oil & gas market	4°C scenario	Risks	<ul style="list-style-type: none"> <li>We estimate that a shutdown of a site producing pumps, compressors, and turbines for the oil and gas market due to heavy rains, typhoons, or hurricanes could result in damages of up to ¥4-6 billion.</li> </ul>	<ul style="list-style-type: none"> <li>Maintain and improve BCM</li> <li>Measures to strengthen competitiveness of products for the chemical market</li> <li>Development of products for advances in CCUS/CCS and hydrogen and ammonia power generation, hydrogen production and storage, products for geothermal and solar thermal power, and compressors for hydrogen liquefaction plants and hydrogen supply pipelines</li> <li>Launch of the CP Hydrogen Business Project</li> </ul>
		Opportunities	<ul style="list-style-type: none"> <li>While the oil and gas sector is showing signs of market contraction and declining revenues for related products, we expect the petrochemicals market to continue to expand and revenue from related products to increase.</li> </ul>	
Semiconductor manufacturing market	1.5°C scenario	Risks	<ul style="list-style-type: none"> <li>We expect the decrease in sales to be in the range of approximately ¥5-10 billion.</li> </ul>	<ul style="list-style-type: none"> <li>Maintain and improve BCM</li> <li>Expansion of production bases</li> <li>Enhanced lineup of high-performance gas abatement systems</li> <li>Entry into the exhaust system market for EUV lithography equipment</li> <li>Joint development with international research institutions, development of next-generation products, and support for cutting-edge technologies</li> </ul>
		Opportunities	<ul style="list-style-type: none"> <li>As the transition to low-carbon technologies continues and the oil and gas market evolves into the next generation energy market, heightened expectations are likely for products related to the CCUS/CCS, hydrogen, and ammonia markets.</li> </ul>	
4°C scenario	Risks	<ul style="list-style-type: none"> <li>We estimate that if a site that manufactures equipment and components for the semiconductor manufacturing market were to suffer damage from torrential rains or typhoons and have to suspend operations, it would incur damages of up to approximately ¥5-7 billion.</li> <li>We anticipate that a disaster could disrupt the supply chain.</li> </ul>		
	Opportunities	<ul style="list-style-type: none"> <li>We expect the low-carbon/decarbonization trend to remain largely unchanged from the current situation.</li> <li>We expect demand for semiconductors to increase in the climate change adaptation sector.</li> </ul>		
1.5°C scenario	Risks	<ul style="list-style-type: none"> <li>We anticipate the risk of damage to our company and suppliers due to torrential rains, typhoons, and hurricanes.</li> </ul>	<ul style="list-style-type: none"> <li>As advanced technologies using semiconductors continue to evolve, including the realization of a low-carbon society through decarbonization, demand is expected to grow for semiconductor manufacturing equipment essential to producing energy-efficient, high-quality semiconductors.</li> <li>With decarbonization, we expect renewable energy, next-generation energy, and smart cities to become more prevalent.</li> <li>We expect demand for energy-saving, high-performance semiconductors to grow further.</li> <li>With the growth of the market and the implementation of the corresponding measures, we expect to see a ¥20-30 billion increase in operating profit over currently estimated levels.</li> </ul>	
	Opportunities	<ul style="list-style-type: none"> <li>We anticipate the risk of damage to our company and suppliers due to torrential rains, typhoons, and hurricanes.</li> </ul>		

## Actions Going Forward

We will conduct climate-related scenario analysis for each of the facing markets for our other businesses, estimate the financial impact of climate-related risks and opportunities, and examine measures to address them.



## The EBARA Group will strengthen its ties with society through the co-creation of value with its stakeholders.

### Targets of E-Vision 2030 and Strategies of E-Plan 2022

#### Targets of E-Vision 2030

Address E-Vision 2030 Material Issues: 1. Contribute to the creation of a sustainable society, 2. Elevate standards of living and support abundant lifestyles for all, and 4. Promote working environments that encourage challenge

#### Strategies of E-Plan 2022

##### Strengthening of Social Ties in Pursuit of Ongoing Business Growth

The EBARA Group CSR Policy defines our commitment to foster trust with our valued stakeholders by conducting our business with a strong sense of ethics. This policy delineates a dedication to creating and delivering social value by creating value with stakeholders for society, industry, and everyday life and supplying safe, reliable products and services through our business activities. We also recognize the importance of contributions to community development, respect for human rights, and other ties with society in our business activities.

[Reference Stakeholder Engagement Overview](https://www.ebara.co.jp/en/sustainability/think/information/stakeholders.html)

### Collaborative Value Creation Partnerships with Suppliers

#### Procurement Policy

The EBARA Group's Procurement Policy encourages partnerships with suppliers of products, materials, and services to pursue the mutual improvement of value through the creation of high-value products and services. In addition, we request that suppliers understand and adhere to the CSR Procurement Guidelines.

[Reference Procurement Policy & CSR Procurement Guidelines](https://www.ebara.co.jp/en/sustainability/social/information/supply-chain.html)

#### Major Measures under E-Plan 2022

##### Initiatives to Strengthen CSR Procurement

The EBARA Group is surveying its major suppliers in Japan and overseas in 2022 to further strengthen its CSR procurement activities, which have been conducted globally for some time. Together with our suppliers and important partners, we will reaffirm the importance of CSR procurement and promote appropriate procurement.

##### Strengthening Supply Chain Resilience

In response to the rapid changes in the supply chain environment, including COVID-19 and the situation in Ukraine, EC established a multi-business hotline across the EBARA Group and a Groupwide coordinated response system to deal with difficulty in obtaining various parts and materials, as well as sudden price increases in logistics costs, and similar issues. In addition to the stable supply of products, we will quickly disclose any impacts on the supply chain and

work to strengthen price competitiveness, aiming for further growth as a united Group.

#### Building an Ecosystem with Our Suppliers

As part of COVID-19 countermeasures, we have established a task force to confirm any impacts on the supply chain. We have also surveyed our supplier partners and are working with them to respond to the impacted suppliers and continue normal business activities where possible. In addition, we are considering creating a system to commend proposals made by our business partners to deepen our relationship and mutual support further.

### Dialogue with Shareholders and Other Investors

The EBARA Group recognizes the development of long-term trusting relationships with shareholders and other investors as one of its most important management tasks. The EBARA Group appropriately discloses corporate information necessary for shareholders and other investors to make investment decisions and strives to further strengthen its trusting relationships with these stakeholders on a continuous basis by engaging in IR activities for enhancing its corporate value through constructive dialogue.

[Reference IR Basic Policy](https://www.ebara.co.jp/en/ir/business/information/ir-basic-policy.html)

### EBARA Group Human Rights Policy

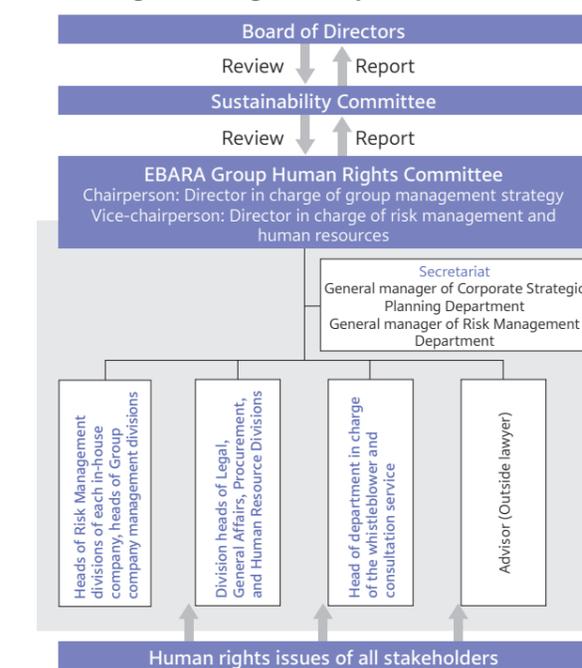
The EBARA Group respects human rights and the diversity of stakeholders as stipulated in the EBARA Group CSR Policy. We have declared our support for and become a signatory of the United Nations Global Compact, and we observe the principles of the International Bill of Human Rights, the International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work, and the UN Guiding Principles on Business and Human Rights.

#### EBARA Group Human Rights Policy

The EBARA Group has established the EBARA Group Human Rights Policy and publicized it internally and externally to practice respect for human rights and diversity as stated in the EBARA Group CSR Policy toward the realization of a society in which all human beings are born free and equal in dignity and rights, as stipulated in the Universal Declaration of Human Rights. Along with the three basic policies, we have established action policies to put them into practice. The EBARA Group Human Rights Policy respects the ILO Declaration on Fundamental Principles and Rights at Work and the UN Guiding Principles on Business and Human Rights.

[Reference EBARA Group Human Rights Policy](https://www.ebara.co.jp/en/sustainability/social/information/respect.html)

#### Human Rights Management System



#### EBARA Group Human Rights Committee

The EBARA Group Human Rights Committee has been established to drive ongoing improvements in human rights frameworks in accordance with the human rights policy. The committee is chaired by the Executive Officer in charge of the Group's management strategy, with the Executive Officer in charge of risk management and the Executive Officer in charge of human resources serving as vice chairpersons.

In 2021, the regular meetings of the EBARA Group Human Rights Committee were held in February and August. The activities of the EBARA Group Human Rights Committee were reported to the Sustainability Committee and Board of Directors at their December meeting.

#### Main Measures of E-Plan 2022 and 2021 Results

External Dialogue	A dialogue was held between WaterAid Japan, a non-profit organization, and the EBARA Group Human Rights Committee on the theme of corporate activities and human rights. Our aspiration to deliver clean water to developing countries with water problems aligns with our E-Vision 2030 goal of "Delivering Water to 600 million People Worldwide." Through this dialogue, we learned that water issues are tied to human rights and received many suggestions on how to create water infrastructure in developing countries. Dialogue with external parties regarding human rights will continue. <b>Achievements in external dialogue to date</b> • 2020: Dialogue with institutional investors
Understanding Human Rights Risks	EBARA Group Human Rights Committee members used human rights assessment check sheets to confirm their understanding of human rights issues under the jurisdiction of the committee. We have been doing this since 2019, and there have been no changes to the human rights issues identified by the committee.
Improving Human Rights Due Diligence (DD)	Human Rights DD for Employees The Human Rights Committee conducts human rights due diligence using the Global Engagement Survey, which the Human Resources Department has conducted since 2019 for EBARA Group employees in Japan and overseas. We monitored the entire Company throughout 2021. As a result, we were able to identify organizations that still needed improvement after three years. The identified organizations were asked by the EBARA Group Human Rights Committee to develop a Human Rights Action Plan for their organizational representatives. The committee will monitor the progress and results of the Action Plan.
	Human Rights DD for Suppliers The Procurement Department has embarked on a CSR procurement survey of domestic and overseas suppliers in 2022. The results of the human rights survey will be shared with the EBARA Group Human Rights Committee.

#### Human Rights Relief

At domestic Group companies, the Compliance Consultation Hotline accepts and responds to complaints, including human rights complaints. Hotlines have also been set up at overseas Group companies to receive and respond to these complaints. For inquiries, including those involving human rights, from outside the Company, please contact us at the inquiry form on the Company's website. In accordance with the enforcement of the Whistleblower Protection Act revised in June 2022, the Compliance Consultation Hotline will respond to any complaints or consultations regarding human rights in accordance with the Act.

#### Future Challenges

We will strengthen the foundation for promoting working environments that encourage challenge, one of the material issues in E-Vision 2030. We will also strengthen our supply chain management and encourage our suppliers and business partners so that we can continue to grow together.

## Conversation with the Chairman of the Board of Directors



**Hiroshi Oeda**  
Independent Director  
Chairman of the Board of Directors  
Member of the Nomination Committee

**We will make utmost efforts to enhance our corporate value and further strengthen our corporate governance system.**

Q1

### First, please tell us about your appointment as Chairman of the Board of Directors.

My involvement with EBARA CORPORATION began with my appointment as an Independent Director on its Nomination Committee in 2018. In 2019, I became Nomination Committee chairperson, then Lead Independent Director in 2020. Finally, in March 2022, I was appointed Chairman of the Board of Directors.

In 2019, for the first time, an Independent Director, Mr. Sakon Uda, was appointed Chairman of the Board of Directors. I believe that my succession as Chairman, as Independent Director, will be able to continue setting the agenda of the Board of Directors from an objective viewpoint and to invigorate the discussions during meetings. As Chairman of the Board of Directors, I will make maximum efforts to enhance EBARA's corporate value and further strengthen its corporate governance system by utilizing my knowledge and experience as a corporate manager.

When I became a Nomination Committee member in 2018 I was deeply involved in the final year or so of the selection process for President Asami's appointment. I believe that the Nomination Committee's method of first determining a general concept of the type of leader needed for EBARA and then selecting the most suitable candidate facilitated a succession plan with appropriate independence and transparency.

One thing that left an impression on me was that consistently, only the three Nomination Committee members were involved in the selection process, conducting interviews, etc. At one point I asked if we had to report or consult with the president on any of this and the other two committee members were clear. I was told, "There is absolutely no reason to consult with the president. If we were to do so, we would run the risk of choosing someone the president favors and who can remain under his influence even after he retires."

Looking at our current situation, where G-to-V (governance-to-value) is being realized three years after President Asami's appointment, I am once again assured that the process of our presidential succession plan, which resulted in the appointment of President Asami, was correct.

Q2

### How would you evaluate EBARA's efforts to reform corporate governance to date?

EBARA experienced difficulties in the 2000s, when it faced several crises threatening corporate survival due to governance failures caused by significant profit deterioration, compliance issues, and other factors. When Mr. Natsunosuke Yago became president in 2007, the management team shared an urgent need to apply the lesson learned from the crises, "If corporate governance does not work, our company will perish," and implemented a series of corporate governance reforms.

Starting with the appointment of the first two Independent Directors in 2008, the number of Independent Directors has gradually increased, and currently seven of the ten Board members are Independent Directors. In addition, in order to clearly separate supervision and execution, the Company was transformed into a Company with Three Committees in 2015, and, as of 2019, there is only one director who also serves in an executive capacity, the president.

In addition, an Independent Director was appointed Chairman of the Board of Directors in 2019 to ensure fairness and transparency, set the agenda from the shareholders' perspective, and revitalize the Board of Directors. As of 2021, the Nomination, Compensation, and Audit Committees are all chaired by Independent Directors.

With pride and confidence that our corporate governance system, including our Board of Directors, is one of the most advanced in Japan, we will continue on the path of corporate governance reform with a sense of speed. We will continue to make further changes and evolve to achieve a more effective Board of Directors and corporate governance structure.

Q3

### It has been four years since you were appointed as an Independent Director. What is your honest impression of the Company?

Two things surprised me when I became an Independent Director in 2018.

The first thing was, when I attended my first meeting of the Independent Directors, which is held a few days before the Board of Directors meeting, I was surprised at how freely and openly the Independent Directors expressed their opinions and engaged in healthy and intense discussions. The good habits of preparing well to improve the Company and then asking questions from an objective, outside perspective and discussing the issues until satisfied are alive and well. The quality of the Board of Directors' discussions is improved and deepened by the Independent Directors' understanding of the agenda at their meetings, and the effectiveness of the Board of Directors is steadily increasing. In addition, the Executive Officer in charge of explaining the agenda at Independent Directors' meetings is stimulated by the opinions of the Independent Directors and is learning through these dialogues, which is having the side effect of helping him grow as a corporate manager.

Second, the Company decided early on to sell all of its listed cross-shareholdings and, as a result, has reduced its holdings to zero. A company with a history and tradition like EBARA's tends to be slow in selling its shareholdings due to a variety of factors, including its past history of shareholdings. It is wonderful that the Company has sold all of its listed cross-shareholdings in a transparent and systematic manner, and I feel that the Company is well equipped to reform itself.

Q4

### What initiatives do you have in mind as Chairman?

The year 2022 is an important one for us as we formulate the E-Plan 2025 medium-term management plan for the next three years. It is vital that the Board of Directors consider medium- to long-term management issues, and we will be proactively involved in the formulation of E-Plan 2025 and discussions thereof, as well as supporting the implementation of the plan during its active phase.

As implementing refined ESG management is one of the management strategies contained in E-Vision 2030, the Sustainability Committee has been taking the lead in studying and implementing necessary measures and, from this year, the Board of Directors has also decided to regularly discuss ESG and sustainability issues. Specifically, regarding Society (the "S" in ESG), we would like to discuss human rights due diligence in the supply chain as well as diversity and inclusion, and, regarding the Environment (the "E"), we wish to discuss carbon neutral projects and information disclosure based on TCFD recommendations.

As another corporate governance reform initiative, we began evaluating the effectiveness of our Board of Directors in 2015 while transitioning to a Company with Three Committees and have been carrying out such evaluations annually since then. The responses to the questionnaire for each director and the results of individual interviews are compiled and reported to the Board of Directors for discussion.

In 2021, EBARA revised its Corporate Governance Basic Policy, which specifies the roles and qualifications the Company requires of its directors by attribute (e.g., independence) and position (e.g., Chairman of the Board of Directors, committee chairperson). We will continue to use the policy as an important guideline for the activities of the Board of Directors, its committees, and individual directors. As Chairman of the Board of Directors, I will lead the evaluation of the effectiveness of the Board of Directors, and will provide leadership in the Board of Directors' plan-do-check-act (PDCA) cycle.

## Composition of the Board of Directors

To ensure the Board of Directors effectively fulfills its roles and responsibilities, the Company shall make up the Board with directors of sufficient knowledge and experience inside and outside the Company in areas related to business management. To this end, the Company first clearly defines in its basic policy the roles and qualifications required of directors by attribute and position, and then defines the following areas as considered important to the Company from the perspective of corporate management, and requires individual directors to have sufficient knowledge and experience in these multiple areas: “legal affairs and risk management,” “personnel and human resource development,” “finance, accounting, and capital policy,” “auditing,” “corporate management and management strategy,” “technology R&D and innovation,” “the environment,” “social,” and “internal control and governance”. The Nominating Committee selects candidates for the Board of Directors after confirming that they have met the Company’s qualification requirements, and have knowledge and experiences in several of the areas mentioned above. The composition of the Board of Directors elected for fiscal 2022, remains highly independent and diverse, with seven of the ten directors being Independent Directors, three of whom are women.

**REFERENCE** Reasons for the selection of individual Directors can be found in the proposal for the election of Directors contained in the Notice of the 157th Ordinary General Meeting of Shareholders

[https://www.ebara.co.jp/en/ir/stock/shareholdersmeeting/\\_icsFiles/afiedfile/2022/03/10/6361\\_157en\\_1.pdf](https://www.ebara.co.jp/en/ir/stock/shareholdersmeeting/_icsFiles/afiedfile/2022/03/10/6361_157en_1.pdf)

### Basic Policies

- The majority of Directors shall be Independent Directors, and the number of Executive Inside Directors shall be minimized.
- The members of the Nomination Committee, Compensation Committee, and Audit Committee shall consist solely of Non-Executive Directors, the majority of whom shall be Independent Directors, and the chairperson of each committee shall be an Independent Director.
- The Chairman of the Board of Directors shall be an Independent Director.
- The Board of Directors shall be composed in a manner that takes diversity into account in terms of gender, length of service, and other factors.
- Define the roles and qualifications required of Directors by attribute and position (i.e., Independent Directors, Chairman of the Board, Lead Independent Director, etc.)

**REFERENCE** EBARA Corporate Governance Basic Policy

[https://www.ebara.co.jp/en/ir/governance/information/\\_icsFiles/afiedfile/2021/10/04/CorporateGovernanceBasicPolicy20210914.pdf](https://www.ebara.co.jp/en/ir/governance/information/_icsFiles/afiedfile/2021/10/04/CorporateGovernanceBasicPolicy20210914.pdf)

### Corporate Governance System at a Glance

(As of March 29, 2022)

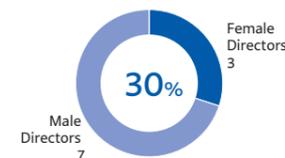
Format	Company with Three Committees
Chairman of Board of Directors	Independent Director
Number of Directors	10
Of whom are Independent Directors	7
Number of Independent Directors*1	7
Term of Directors	1 year

\*1. Independent Directors as designated under the Tokyo Stock Exchange (TSE) listing rules.

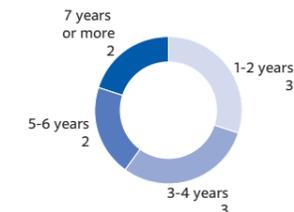
Ratio of Independent Directors Ratio of Non-Executive Directors



Ratio of Female Directors



Ratio of Directors' Length of Service



Composition of Three Committees

	Nomination Committee	Compensation Committee	Audit Committee
Number of members	3	3	3
Of whom are Independent Directors	2	3	2
Of whom are Inside Directors	1	0	1

Overview of the Board of Directors (As of March 29, 2022)

Name	Classification	Committee positions	Length of service	Attendance at Board of Directors* and committee meetings in FY2021 (Meetings attended / Total meetings)				Areas in which Directors (Non-Executive Directors) are expected to contribute*2								
				Board of Directors	Nomination Committee	Compensation Committee	Audit Committee	Legal affairs and risk management	Personnel and human resource development	Finance, accounting, and capital policy	Auditing	Corporate management and management strategy	Technology R&D and innovation	The environment	Social	Internal controls and corporate governance
Toichi Maeda	Non-Executive	Nomination Committee	10 years 9 months	15/15	14/14											
Masao Asami			3 years	15/15												
Hajime Sawabe	Independent	Nomination Committee	6 years 9 months	15/15	March 2022 Assumed Office	9/9										
Hiroshi Oeda	Independent	Nomination Committee	4 years	15/15	14/14											
Masahiro Hashimoto	Independent	Audit Committee	4 years	15/15		2/2*3	20/20									
Junko Nishiyama	Independent	Compensation Committee	3 years	15/15		7/7*4	4/4*4									
Mie Fujimoto	Independent	Compensation Committee	2 years	14/15		9/9										
Hisae Kitayama	Independent	Audit Committee	1 year	11/11*5			16/16*5									
Akihiko Nagamine	Non-Executive	Audit Committee	1 year	11/11*5			16/16*5									
<b>NEW</b> Takuya Shimamura	Independent	Compensation Committee	—	March 2022 Assumed Office		March 2022 Assumed Office										

Non-Executive	Non-Executive Inside Director
Independent	Independent Director with notification submitted to Tokyo Stock Exchange
Nomination Committee	Member of the Nomination Committee
Compensation Committee	Member of the Compensation Committee
Audit Committee	Member of the Audit Committee

\*2. The above table does not represent all of the areas in which Directors possess expertise.

\*3. Masahiro Hashimoto retired from the Compensation Committee at the Board of Directors meeting held on March 26, 2021, thus the above table shows his attendance at Compensation Committee meetings held prior to that date.

\*4. Junko Nishiyama retired from the Audit Committee at the Board of Directors meeting held on March 26, 2021, thus the above table shows her attendance at Audit Committee meetings held prior to that date. In addition, she was newly appointed as a member of the Compensation Committee at the meeting of the Board of Directors held on the same day, and her attendance at the Compensation Committee meetings held after the date of the election is shown.

\*5. Hisae Kitayama and Akihiko Nagamine were newly elected as a Director at the 156th Ordinary General Meeting of Shareholders held on March 26, 2021 and appointed as an Audit Committee member at the meeting of the Board of Directors held on the same day, therefore their attendance at the Audit Committee meetings and the Board of Directors meetings held after the date of the election is shown.

## Board of Directors

(As of March 29, 2022)



Masahiro Hashimoto ●  
Chairperson of  
the Audit Committee

Akihiko Nagamine  
Member of  
the Audit Committee

Hiroshi Oeda ●  
Chairman of the Board  
of Directors  
Member of the  
Nomination Committee

Mie Fujimoto ●  
Chairperson of  
the Compensation  
Committee

Toichi Maeda  
Member of  
the Nomination  
Committee

Masao Asami  
President and  
Representative  
Executive Officer

Hajime Sawabe ●  
Lead Independent  
Director  
Chairperson of the  
Nomination Committee

Hisae Kitayama ●  
Member of  
the Audit Committee

Junko Nishiyama ●  
Member of  
the Compensation  
Committee

Takuya Shimamura ●  
Member of  
the Compensation  
Committee

● Independent Director

## Brief Personal Histories of Directors

(As of March 29, 2022)

### Toichi Maeda

Director,  
Member of  
the Nomination Committee



Number of shares held  
30,604

Apr. 1981 Joined the Company  
Apr. 2007 Executive Officer  
Apr. 2010 Managing Executive Officer  
Apr. 2011 Head of Business Unit, Custom Pump Business Unit, Fluid Machinery & Systems Company  
Jun. 2011 Director  
Apr. 2012 President, Fluid Machinery & Systems Company  
Apr. 2013 President and Representative Director  
Jun. 2015 President and Representative Executive Officer\*  
Mar. 2019 Director, Chairman of the Company (to present)  
Member of the Nomination Committee (to present)

### Masao Asami

Director,  
President and Representative  
Executive Officer



Number of shares held  
26,440

Apr. 1986 Joined the Company  
Apr. 2010 Executive Officer  
Apr. 2011 Division Executive, Sales and Marketing Division, Precision Machinery Company  
Apr. 2014 Managing Executive Officer  
Jun. 2015 Managing Executive Officer\*  
Apr. 2016 President, Precision Machinery Company  
Mar. 2019 Director (to present)  
President and Representative Executive Officer (to present)

### Masahiro Hashimoto

Independent Director,  
Chairperson of  
the Audit Committee



Number of shares held  
1,820

Apr. 1972 Joined The Daiwa Bank, Limited (currently Resona Bank, Limited)  
Nov. 1998 President, Bank Daiwa Perdania (Indonesia)  
Jul. 1999 General Manager of International Division, The Daiwa Bank, Ltd.  
Jun. 2001 Managing Director and General Manager of Financial Department, Dainippon Screen Mfg. Co., Ltd. (currently SCREEN Holdings Co., Ltd.)  
Jun. 2004 Senior Managing Director, Dainippon Screen Mfg. Co., Ltd.  
Jun. 2005 Representative Director, President and Chief Operating Officer, Dainippon Screen Mfg Co., Ltd.  
Apr. 2014 Vice Chairman, Dainippon Screen Mfg. Co., Ltd.  
Jun. 2015 Senior Advisor (part-time), Dainippon Screen Mfg. Co., Ltd.  
Apr. 2016 Industrial promotion advisor, Kumamoto Prefecture (to present)  
Mar. 2018 Director of EBARA CORPORATION (to present)  
Member of the Audit Committee of EBARA CORPORATION  
Mar. 2019 Member of the Compensation Committee of EBARA CORPORATION  
Mar. 2021 Chairperson of the Audit Committee of EBARA CORPORATION (to present)

### Junko Nishiyama

Independent Director,  
Member of  
the Compensation Committee



Number of shares held  
1,520

Apr. 1979 Joined Lion Fat & Oil Co., Ltd. (currently Lion Corporation)  
Mar. 2006 Director, Finished Product Department, Purchasing Headquarters, Lion Corporation  
Mar. 2007 Director, Finished Product Purchasing, Production Coordinating Department No. 2, Production Headquarters, Lion Corporation  
Jan. 2009 Director, Packaging Engineering Research Laboratories, Research & Development, Headquarters, Lion Corporation  
Jan. 2014 Director, CSR Promotion Department, Lion Corporation  
Mar. 2015 Audit & Supervisory Board Member, Lion Corporation  
Mar. 2019 Advisor, Lion Corporation Director  
Director of EBARA CORPORATION (to present)  
Member of the Audit Committee of EBARA CORPORATION  
Jun. 2019 Outside Director, JACCS CO., LTD. (to present)  
Jun. 2020 Outside Auditor, TODA CORPORATION (to present)  
Mar. 2021 Member of the Compensation Committee of EBARA CORPORATION (to present)

### Hajime Sawabe

Independent Director,  
Lead Independent Director,  
Chairperson of  
the Nomination Committee



Number of shares held  
1,820

Apr. 1964 Joined Tokyo Denki Kagaku Kogyo K.K. (currently TDK Corporation)  
Jun. 1996 Director, Executive Vice President of Recording Device Business, TDK Corporation  
Jun. 1998 President & Representative Director, TDK Corporation  
Jun. 2006 Chairman & Representative Director, TDK Corporation  
Mar. 2008 Outside Director, Asahi Glass Co., Ltd. (currently AGC Inc.)  
Jun. 2008 Outside Director, TEIJIN LIMITED  
Outside Director, Nomura Securities Co., Ltd.  
Jun. 2009 Outside Director, Nomura Holdings, Inc.  
Mar. 2011 Outside Audit & Supervisory Board Member, Nikkei Inc.  
Jun. 2011 Director, Chairman of the Board & Directors, TDK Corporation  
Oct. 2011 Councilor, Waseda University  
Apr. 2012 Executive Advisor, Japan Management Association  
Jun. 2012 Executive Advisor, TDK Corporation  
Jul. 2014 Vice President, Board of Trustees, Waseda University  
Jun. 2015 Outside Director, Japan Display Inc.  
Director of EBARA CORPORATION (to present)  
Member of the Compensation Committee of EBARA CORPORATION  
Jul. 2018 President, Board of Trustees, Waseda University (to present)  
Apr. 2019 Adviser of the Executive Board, Value Creation 21 (to present)  
Mar. 2020 Chairperson of the Compensation Committee of EBARA CORPORATION  
Jun. 2021 Outside Director, Tokyo Broadcasting System Holdings, Inc. (to present)  
Mar. 2022 Chairperson of the Nomination Committee of EBARA CORPORATION (to present)

### Hiroshi Oeda

Independent Director,  
Chairman of  
the Board of Directors,  
Member of  
the Nomination Committee



Number of shares held  
1,820

Apr. 1980 Joined Nisshin Flour Milling Inc. (currently Nisshin Seifun Group Inc.)  
Jun. 2009 Director, Nisshin Seifun Group Inc.  
Apr. 2011 Director and President, Nisshin Seifun Group Inc.  
Apr. 2015 Member of Management Council, Hitotsubashi University  
Apr. 2017 Director and Executive Advisor, Nisshin Seifun Group Inc.  
Jun. 2017 Corporate Special Advisor, Nisshin Seifun Group Inc. (to present)  
President, Seifun Kaikan Inc. (to present)  
Dec. 2017 Member, the Japanese National Commission for UNESCO  
Mar. 2018 Director of EBARA CORPORATION (to present)  
Member of the Nomination Committee of EBARA CORPORATION  
Jun. 2018 Outside Director, SEKISUI CHEMICAL CO., LTD. (to present)  
Mar. 2019 Chairperson of the Nomination Committee of EBARA CORPORATION  
Jun. 2019 President, Hitotsubashi University Koenkai (to present)  
Mar. 2020 Lead Independent Director of EBARA CORPORATION  
Mar. 2022 Chairman of the Board of Directors of EBARA CORPORATION (to present)  
Member of the Nomination Committee of EBARA CORPORATION (to present)

### Mie Fujimoto

Independent Director,  
Chairperson of  
the Compensation Committee



Number of shares held  
1,220

Apr. 1993 Registered as an attorney (to present)  
Joined New Tokyo Sogoh Law Office  
Jun. 2009 Outside Corporate Auditor, Kuraray Co., Ltd.  
Apr. 2015 Joined TMI Associates (to present)  
Jun. 2015 Outside Audit & Supervisory Board Member, SEIKAGAKU CORPORATION (to present)  
Jun. 2016 Outside Audit & Supervisory Board Member, Tokyo Broadcasting System Holdings, Inc. (Outside Audit & Supervisory Board Member, Tokyo Broadcasting System Television, Inc.) (to present)  
Mar. 2019 Outside Director, Kuraray Co., Ltd.  
Mar. 2020 Director of EBARA CORPORATION (to present)  
Member of the Compensation Committee of EBARA CORPORATION  
Mar. 2022 Chairperson of the Compensation Committee of EBARA CORPORATION (to present)

### Hisae Kitayama

Independent Director,  
Member of  
the Audit Committee



Number of shares held  
720

Oct. 1982 Joined Asahi Accounting Company (Currently KPMG AZSA LLC)  
Mar. 1986 Registered as Certified Public Accountant  
May 1999 Partner, Asahi Accounting Company (Currently KPMG AZSA LLC)  
Jul. 2013 Managing Executive Director, KPMG AZSA LLC  
Jun. 2019 Chairman, Kinki Chapter of Japanese Institute of Certified Public Accountants (to present)  
Jul. 2019 Deputy Chairman, Japanese Institute of Certified Public Accountants (to present)  
Senior Executive Director, KPMG AZSA LLC  
Jun. 2020 Outside Director, Tsubakimoto Chain Co. (to present)  
Jul. 2020 Representative, Kitayama Public Accounting Office (to present)  
Mar. 2021 Director of EBARA CORPORATION (to present)  
Member of the Audit Committee of EBARA CORPORATION (to present)

### Akihiko Nagamine

Director,  
Member of  
the Audit Committee



Number of shares held  
13,335

Apr. 1982 Joined EBARA DENSAN LTD.  
Jun. 2006 Director, EBARA DENSAN LTD.  
Jul. 2010 Joined the Company as General Manager, Investment and Affiliates Supervision Department, Finance & Corporate Accounting Division  
Apr. 2014 Division Executive, Finance & Accounting Division  
Apr. 2015 Executive Officer  
Jun. 2015 Executive Officer  
Responsible for Finance & Accounting, Group Management, and Internal Control  
Mar. 2021 Director (to present)  
Member of the Audit Committee (to present)

### Takuya Shimamura

Independent Director,  
Member of  
the Compensation Committee



Number of shares held  
0

Apr. 1980 Joined Asahi Glass Co., Ltd. (currently AGC Inc.)  
Jan. 2009 Executive Officer and GM of Planning & Coordination Office, Chemicals Company, AGC Inc.  
Jan. 2010 Executive Officer and President of Chemicals Company, AGC Inc.  
Jan. 2013 Senior Executive Officer and President of Electronics Company, AGC Inc.  
Jan. 2015 President & CEO, AGC Inc.  
Mar. 2015 Representative Director and President & CEO, AGC Inc.  
Jan. 2021 Chairman & Representative Director, AGC Inc.  
Mar. 2021 Director and Chairman, AGC Inc. (to present)  
Mar. 2022 Director of EBARA CORPORATION (to present)  
Member of the Compensation Committee of EBARA CORPORATION (to present)

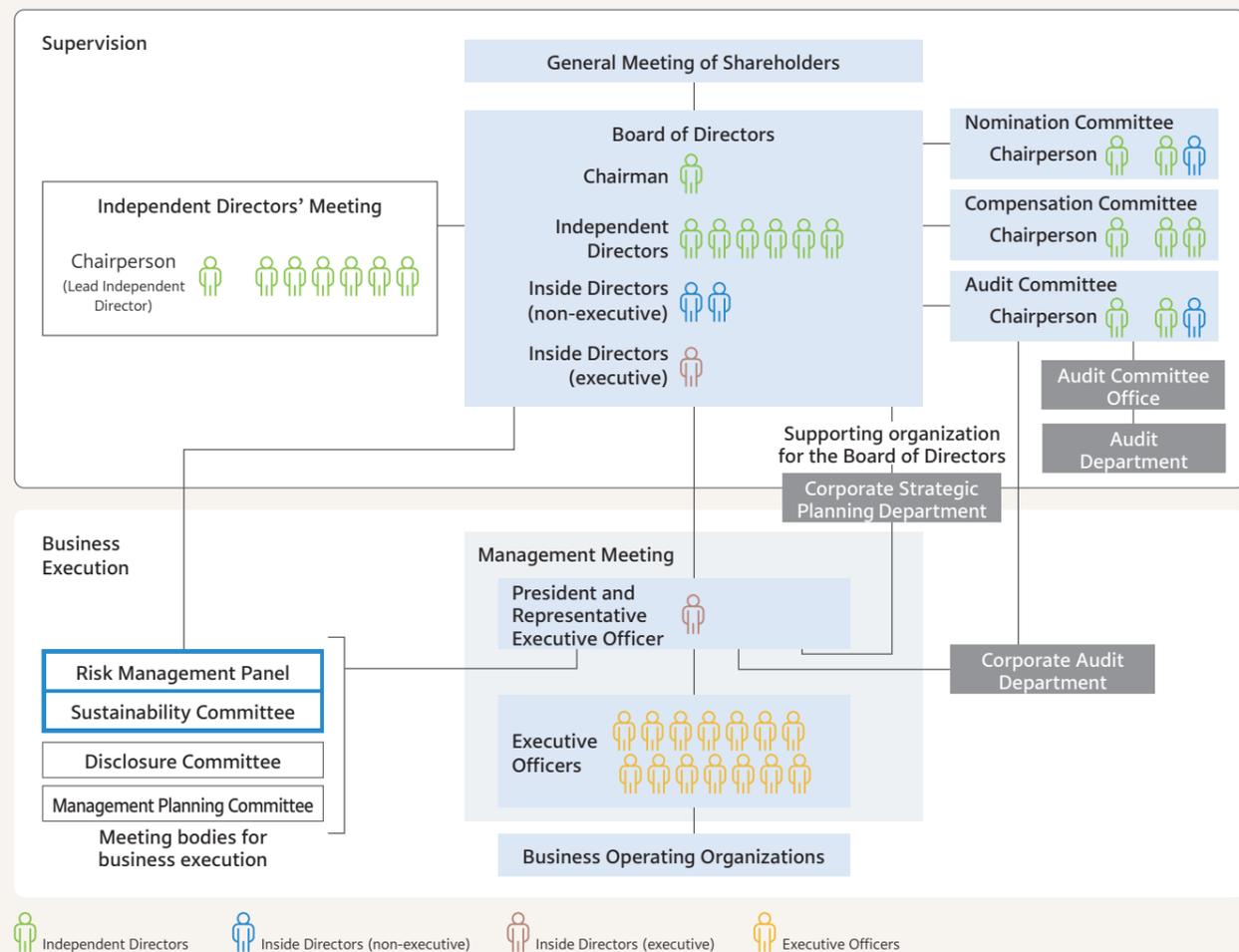
\* Indicates *shikkou-yaku*, a Japanese legal term which refers to executive officers who are appointed by the Board of Directors to execute company policy and strategy. The role and legal title of such executive officers are described in the Companies Act of Japan, and as such they bear fiduciary duties to the Company.

# Corporate Governance

The EBARA Group has established the “EBARA Way,” composed of its Founding Spirit, Corporate Philosophy, and CSR Policy, as the EBARA Group’s identity and set of values to be shared across the Group. Under the “EBARA Way,” the enhancement of corporate value through sustainable business development and sharing the results with our various stakeholders, including shareholders, are EBARA’s most important management objectives. To achieve such objectives, we constantly seek the best possible corporate governance systems and strive toward further enhancement.

With this in mind, EBARA has adopted the Company with Three Committees structure. We will minimize the number of directors who concurrently serve as Executive Officers and establish a system centered on Non-Executive Inside Directors (independent directors and directors who do not concurrently serve as Executive Officers). This will ensure clear separation of supervision and business execution.

## Corporate Governance Systems (As of March 29, 2022)



## Major Initiatives Taken in the Fiscal Year Ended December 31, 2021

Amid the uncertainty of the COVID-19 pandemic, the Board of Directors kept a close watch on changes in the business environment in the fiscal year ended December 31, 2021. In 2021, the second year of the long-term vision and medium-term management plan, the Board of Directors

firmly monitored the progress of the measures set forth in the plan. The Board of Directors was able to further enhance its awareness of the Company’s important medium- and long-term management issues and hold more effective discussions.

### Major Items Discussed by the Board of Directors in the Fiscal Year Ended December 31, 2021

- Progress monitoring and follow-up on the long-term vision and medium-term management plan
- Set annual management plans and non-financial and financial KPIs for each business unit
- Monitoring of and follow-up on management plan progress of individual businesses
- Medium- to long-term financial strategies
- Cross-shareholdings policies (Discussion of roles and required qualification and competencies of each Director and clarification in the basic policy)
- Compliance with revised Corporate Governance Code (Discussion of medium- and long-term governance issues such as sustainability, etc.)

## Initiatives for Strengthening Corporate Governance

Around the turn of the century, the Company reacknowledged the importance and necessity of corporate governance systems. Since then, we have been introducing improvements to our governance systems in phases to facilitate the Company’s sustainable growth and fulfill its social responsibilities. We will continue to improve our governance systems as necessary to achieve further improvements and move them toward the ideal state in which the Board of Directors can fully exercise its functions.

## Evolution of EBARA’s Corporate Governance System

	April 2002–March 2007	April 2007–March 2015	April 2015–December 2018	January 2019–
<b>Governance</b>				
<b>Organizational format</b>	Company with Board of Company Auditors	Company with Board of Company Auditors	06/15: Company with Three Committees	
<b>Committees</b>		08/08: Voluntary establishment of Nomination / Compensation Advisory Committee 02/09: Membership of: • Nomination Advisory Committee: 2 Inside, 2 Independent • Compensation Advisory Committee: 2 Inside, 2 Independent	06/15: Establishment of Nomination / Compensation / Audit Committee as statutory committees under the Board of Directors 06/17: Membership of: • Nomination Committee: 2 Independent, 1 Inside • Compensation Committee: 3 Independent • Audit Committee: 3 Independent, 2 Inside	03/21: Membership of: • Nomination Committee: 2 Independent, 1 Inside • Compensation Committee: 3 Independent • Audit Committee: 2 Independent, 1 Inside * Each committee is chaired by an independent director.
<b>Chairman of the Board of Directors</b>	President of the Company	06/13: Director, Chairman (Non-Executive Inside Director)		03/19: Independent Director
<b>Separation of supervision and business execution</b>	05/02: Introduction of Executive Officer System 06/02: Reduction of the number of Directors stipulated in the Articles of Incorporation (35 → 20) 06/05: Reduction of the number of Directors stipulated in the Articles of Incorporation (20 → 12)		06/15: Revision of rules of the Board of Directors to delegate greater authority to the business executive team	03/19: Reduction of the number of Executive Inside Directors (3 → 1)
<b>Number of Members of the Board of Directors</b>				
<b>Directors</b>	06/02: 20 → 06/05: 12	06/08: 12 → 06/11: 12	06/15: 14 → 06/17: 13	03/19: 11 → 03/20: 10
<b>Independent Directors (of which, female)</b>		06/08: 2 → 06/11: 4	06/15: 7 (2) → 06/17: 7 (1)	03/20: 7 (2) → 03/21: 7 (3)
<b>Outside Audit &amp; Supervisory Board members</b>	06/01: 2	06/07: 3		
<b>Directors' and Executive Officers' nomination</b>	06/02: Shortening of term of directors from two years to one year	03/08: • Establishment of standards for evaluating independence of Independent Directors • Establishment of basic policies for Directors' and Executive Officers' nominations • Establishment of tenure limit for Directors and Executive Officers		10/19: Establishment of standards for average Board meeting attendance and number of concurrent positions at other companies held by Directors
<b>Directors' and Executive Officers' compensation</b>		05/09: • Establishment of Basic Policy on Directors' and Executive Officers' Compensation • Abolition of officer retirement benefit system • Introduction of share-based payment stock options	03/18: • Abolition of stock option system • Introduction of restricted stock compensation plan and performance-linked stock compensation plan	04/22: Introduction of ESG indicators
<b>Advisors</b>			06/15: Abolition of the provision regarding advisors in Articles of Incorporation	
<b>Evaluation of Board of Directors' effectiveness</b>			06/16: Start of evaluations of the effectiveness of the Board of Directors 06/17: Addition of individual interviews into procedures for evaluating the effectiveness of the Board of Directors	
<b>EBARA Corporate Governance Basic Policy</b>			11/15: Establishment 11/18: Revision (addition of regulations regarding non-reappointment of President, etc.)	01/21: Revision (The majority of directors shall be Independent Directors, and the chairpersons of the three committees shall be Independent Directors.) 09/21: Clarification of the role and qualification requirements for directors by attribute and position

Corporate Governance

Evaluation of the Effectiveness of the Board of Directors

Since the shift to the Company with Three Committees structure in the fiscal year ended March 31, 2016, the Board of Directors has been conducting annual evaluations of its effectiveness (including that of the Nomination, Compensation, and Audit Committees) and disclosing the results. The purpose of these evaluations is to verify how the Board of Directors contributes to effective corporate governance as well as to identify issues and make improvements. The improvement status of issues identified in the previous year is verified through the annual evaluation. Based on this verification, the next issues are identified, and the PDCA cycle is implemented to ensure continuous governance reform.

Assessment of Effectiveness in the Fiscal Year Ended December 31, 2021

For the effectiveness evaluations for the fiscal year ended December 31, 2021, new items have been added from the perspective of responding to changes in social conditions and issues surrounding the Company. We have also added items on supervision of important matters for sustainability by the Board and items for evaluation of the EBARA Corporate Governance Basic Policy revised in September. In addition to our annual benchmarking analysis,\* for fiscal 2021, four companies were chosen from among those evaluated to be companies that conduct management with emphasis on sustainability, companies with good disclosure related to the board of directors, and companies related to the Company's business, to perform benchmarking based on the disclosure materials on the board in each company, and use them as a reference for measures aimed at the improvement of handing of sustainability by the Company's Board.

\* To self-evaluate the Company's corporate governance system, it is compared annually with both Japanese and international governance standards and guidelines.

Analysis and Evaluation Process

With the assistance of an independent third-party, the Company had each Director complete a questionnaire and then held individual interviews with all of the Directors based on their responses to the questionnaire. These results and the benchmarking analysis results were shared with the Directors and intensively discussed at the Board meeting. In addition, based on the results of the evaluation of effectiveness, all Directors (excluding the Chairman of the Board) evaluated\* the Chairman of the Board and deliberated on whether he should continue serving as Chairman in the next fiscal year.

\* Since an Independent Director has been serving as Chairman of the Board of Directors since March 2019 onward, the Chairman of the Board is evaluated annually in light of the role's importance.

Questionnaires and Individual Interviews

Questionnaires are used to identify overarching trends pertaining to important matters concerning the effectiveness of the Board of Directors and the committees, while more in-depth evaluations of particularly important matters are performed through individual interviews.

Major Questionnaire Items

- Roles and functions of the Board of Directors
- Size and composition of the Board of Directors
- Status of operation of the Board of Directors
- Composition and roles of the three committees
- Status of operation of the three committees
- Support systems for Independent Directors
- Relationships with investors and shareholders
- Self-evaluations

Main Content of Individual Interviews

- Evaluation of business and management (transformation of business structure and improvement of profitability, new businesses and R&D)
- Strengthening of corporate functions
- Human resource development and promotion of diversity
- Evaluation of the Board of Directors and committees (EBARA Corporate Governance Basic Policy, composition and succession plan for Independent Directors, discussion on sustainability, materials and presentation by execution)

Summary of the Results of Analysis and Evaluation

In consideration of the survey results, it was confirmed that the Board of Directors and its committees are conducting adequate discussions on important issues and are operating appropriately. The evaluation confirmed that the effectiveness of the Board of Directors is sufficiently ensured, given that the results of execution aimed at reforms of business and internal systems and the efforts of the management and the Board are leading to improvement of corporate value, and efforts to address the matters brought up as issues last year have progressed. In particular, it was confirmed that the EBARA Corporate Governance Basic Policy is highly regarded as an important policy for the future for the Board and Directors to constantly increase their capabilities and exhibit effectiveness by being revised based on sufficient discussion by the Board.

Action to Be Taken

The Board of Directors identified the following items to be discussed on an ongoing basis at Board and committee meetings to further enhance the effectiveness of the Board of Directors, in addition to continuing reforms that have already been implemented.

- The Board will continue to select important medium- and long-term material issues, provide opportunities for in-depth discussion, and encourage execution of operations to quickly address issues based on appropriate decision-making. The Board will continue to periodically verify, evaluate, and follow up on the results.
- The EBARA Corporate Governance Basic Policy will play a central role in the confirmation and verification of the condition of self-evaluation, peer evaluation and training by individual Directors, and also be utilized as a standard when nominating candidates for Directors.
- The state of assignment of personnel, human resource development and internal systems will be checked and verified as needed from a medium- to long-term perspective with respect to maintaining diversity among executives. Based on discussion in the Nominating Committee, the Board will share the details on the composition of the Board and the succession plan for Independent Directors.
- Important matters related to sustainability to be discussed in the Board based on benchmarking analysis will be organized, and discussions will be carried out to more specifically implement and promote these actions.

Nomination Committee



Members	3 (2 Independent Directors   1 Non-Executive Inside Director )
Reason for appointment of chairperson	Mr. Sawabe possesses an abundance of experience pertaining to general corporate management, is well versed in corporate planning, and has a rich background of serving as an outside director at other listed companies. Mr. Sawabe has been appointed as chairperson of the Nomination Committee so that he can utilize his wide-ranging insight into various industries as he exercises leadership in the development of candidates and selection of management personnel.
Meetings in FY2021	14

Hajime Sawabe

Lead Independent Director, Chairperson of the Nomination Committee

The Nomination Committee decides on the proposals to be submitted to the General Meeting of Shareholders concerning the appointment and dismissal of Directors, appointment and dismissal of the Chairman of the Board of Directors and committee members, recommendations to the Board of Directors concerning the appointment and dismissal of Executive Officers, and recommendations to the Board of Directors concerning the appointment and dismissal of Directors with special titles and Executive Officers with special titles (the President and the Chairman of the Company), in addition to succession planning for the President and Representative Executive Officer.

Succession Plan for the President and Representative Executive Officer

The establishment and implementation of the succession plan for the President and Representative Executive Officer is one of the most important tasks for the Nomination Committee. The Company's succession plan has two major characteristics. The first characteristic is that this plan is formulated by the Nomination Committee, of which the current President is not a member. The second characteristic is that, when selecting the next President, the Nomination Committee coordinates with the executive team to systematically cultivate candidates and select the successor over an extended period of time. The Nomination Committee is composed of three Non-Executive Directors, including two Independent Directors and the Chairman of the Company. This membership ensures the objective selection of ideal candidates. The Company has a policy stating that excessively long terms should be avoided for members of senior management (the President and the Chairman of the Company) and that individuals in these positions should be changed periodically. The upper limit for the term of the President is six years. The current President, who was appointed in March 2019, was selected through a process of

cultivating, evaluating, and narrowing down candidates that began three years prior.

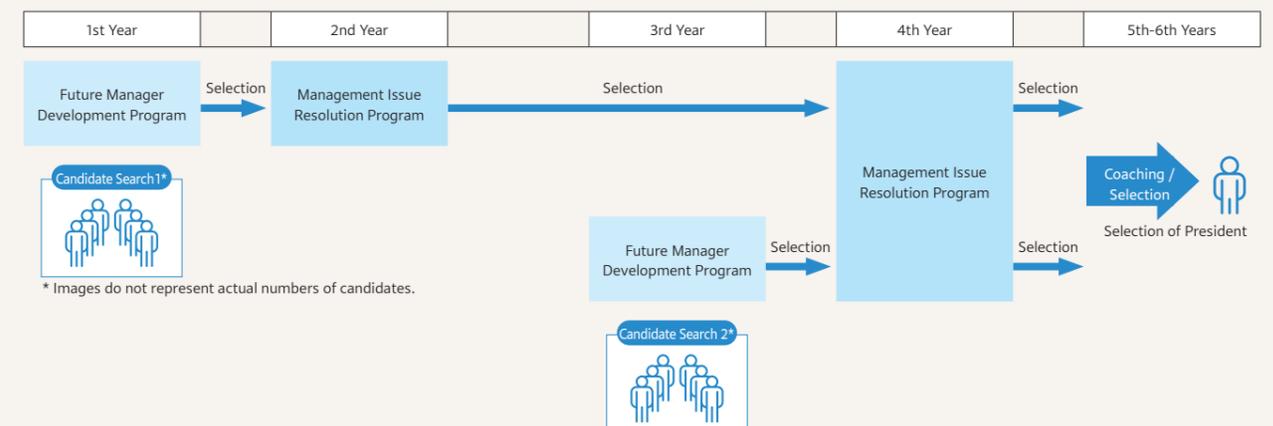
Cultivation and Selection Process

The Nomination Committee has formulated a six-year succession plan for selecting the next President. Training on the cultivation and selection process for this plan commenced in 2019.

EBARA's succession plan begins with searching for candidates with the potential to fill the position of President in the future. A development program is then conducted to instill in candidates the basic skills expected of executives. This future manager development program includes discussions with managers from Japan and from overseas, coaching from external specialists on introspective thinking, and other provisions designed to cultivate the sense of commitment required of an executive while improving the viability of candidates.

During this process, the individuals that will be advanced to the next step are chosen. The next step of the plan is to have candidates address specific business issues via the management issue resolution program. Candidates who proceed to this stage are placed in positions that take them out of the area in which they have experience or have previously been responsible for through means such as transfer to another division. They are then expected to work to address actual management issues while experiencing various new aspects of business. The candidates to be submitted for final consideration are selected from among the individuals that have excelled at this step. Candidates for final consideration receive coaching on the mindset and thought processes necessary of the President from a professional executive coach and are expected to apply what they learn accordingly. Candidates are evaluated during the coaching process, and the results of these evaluations are reported to the Nomination Committee.

Six-Year Cultivation and Selection Process



Corporate Governance

The qualities required in the President include perseverance and passion in addition to other qualities expected of executives. Additional requirements are also defined based on the management circumstances at a given time. The final decision of who will become the next President is made by the Nomination Committee based on the degree to which the required qualities are possessed as well as on qualities such as flexibility and growth potential as decided based on the extent to which the candidate grew before and after receiving coaching.

In 2021, the third year of the President's six-year succession plan, we conducted the future manager development program for the second time and again selected potential candidates. This program will help us to continuously nurture the personnel who will be responsible for the next management team and raise the level of management.

Revision of Corporate Governance Basic Policy and Clarification of Roles

In 2021, EBARA revised its Corporate Governance Basic Policy to clarify the roles and qualification requirements for Directors, including those by classification and position. This is an extremely important guideline for the future activities of the Board of Directors, committees, and individual Directors. The Nomination Committee will select candidates who meet the requirements and will contribute to improving the effectiveness of the Board of Directors. The recommendations the Nomination Committee makes to the Board of Directors will draw on the results of the evaluation of the Board as a whole, each committee, and the effectiveness of each Director, as well as the evaluation of the Chairman of the Board of Directors, with the aim of further improving the effectiveness of the Board of Directors as a whole.

- at the conclusion of the 156th Ordinary General Meeting of Shareholders held on March 26, 2021, and the Executive Officer, who retired at the conclusion of the meeting of the Board of Directors held on the same day, according to their term of office, which began January 2021 and ended upon resignation.
- 2. Compensation paid to President and Representative Executive Officer, who concurrently serves as a Director, is included in the Executive Officers compensation column.
- 3. The amount of compensation paid to Executive Officers includes ¥223 million (basic compensation ¥91 million, short-term performance-linked compensation ¥55 million, performance-linked stock compensation of ¥35 million, and other compensation of ¥40 million) in compensation paid by subsidiaries to Executive Officers that serve concurrently as officers at subsidiaries.
- 4. Executive Officers' short-term performance-linked compensation is determined based on Companywide or business performance, as well as individual goals, and the degree of achievement of these goals is evaluated and discussed by the Compensation Committee.
- 5. Short-term performance-linked compensation depicts the total amount of short-term performance linked compensation paid in March 2022 to Executive Officers in office as of December 31, 2021, for the fiscal year ended December 31, 2022.
- 6. Restricted stock compensation shown combines the amount of restricted stock compensation paid in the fiscal year ended December 31, 2021, and the amount recorded as expenses during the fiscal year ended December 31, 2020, in association with restricted stock compensation paid in previous fiscal years.
- 7. Performance-linked stock compensation depicts the total amount of performance-linked stock compensation to be paid in May 2023 that is expected to be expensed in the current fiscal year. The calculation for the fiscal year under review is based on the most recent share price of the Company and the Group's forecast ROIC for the year ending December 31, 2022, which is the final year of the E-Plan 2022 medium-term management plan, as well as the difference from the amount recorded in the previous fiscal year.
- 8. "Other" represents the total amount of compensation to be paid to Michael T. Lordi by a subsidiary in 2023, including ¥34 million of performance-linked cash compensation and pension contributions of ¥5 million attributable to the fiscal year ended December 31, 2021.

Compensation Committee



Members	3 (3 Independent Directors)
Reasons for appointment of chairperson	As an attorney, she is well versed in corporate legal affairs with a focus on labor-related laws and regulations, and brings experience as an outside director at a listed company. As chairperson of the Compensation Committee, she will provide leadership in reviewing the compensation system and the level of compensation for the Company's Directors and Executive Officers based on her abundant experience, deep insight, and expertise.
Meetings in FY2021	9

Mie Fujimoto

Independent Director, Chairperson of the Compensation Committee

The Compensation Committee decides on policies and amounts of compensation for individual Directors and Executive Officers, in addition to making recommendations to the Board of Directors concerning officer compensation systems at affiliates and other companies.

items will determine 10% of the short-term performance-linked compensation evaluation index. Specific evaluation indicators will be reviewed on an ongoing basis.

- \*1. CDP is an international NGO in which institutional investors collaborate to require companies to disclose their climate change strategies and specific greenhouse gas emissions. CDP participants (approximately 9,600 companies including the Company) account for more than 50% of total global market capitalization.
- \*2. The GES is an EBARA survey, involving employees of both domestic and overseas Group companies, conducted since 2019 to assess the status of employee engagement in the workplace to achieve the medium- to long-term vision.

Introduction of ESG Indicators as Short-Term Performance-Linked Compensation

In order to practice advanced ESG management and realize a sustainable society through business activities, the Compensation Committee believes that its decisions on compensation should appropriately incentivize executives by reflecting the achievement of ESG-related goals. After repeated discussions with reference to the opinions of external experts on global executive compensation, the Committee has decided to introduce ESG indicators from the fiscal year ending December 31, 2022.

The "E" (Environment) is based on the Carbon Disclosure Project (CDP)\*<sup>1</sup> and the "S" (Society) is based on the Global Engagement Survey (GES)\*<sup>2</sup>. Together, these evaluation

Evaluation Indicators for Short-Term Performance-Linked Compensation

		Indicator	Weight
Performance indicators		Consolidated ROIC	45%
		Consolidated operating income	
		S&S revenue	
MBO*		Set based on KPIs for the relevant business	45%
ESG indicators		"E" (Environment): CDP (Carbon Disclosure Project)	10%
		"S" (Society): GES (Global Engagement Survey)	

\*Management by Objective

Total Amounts of Compensation for Directors and Executive Officers for the Fiscal Year Ended December 31, 2021

Position	Total compensation (Millions of yen)	Total compensation by type (Millions of yen)									
		Basic compensation		Short-term performance-linked compensation		RS		PLS		Other	
		Recipients	Amount	Recipients	Amount	Recipients	Amount	Recipients	Amount	Recipients	Amount
Directors of the Board (excluding Independent Directors)	140	3	98	—	—	3	31	2	9	—	—
Independent Directors	123	8	104	—	—	8	19	—	—	—	—
Executive Officers	1,310	15	415	14	332	14	80	15	442	1	40
<b>Total</b>	<b>1,574</b>	<b>26</b>	<b>618</b>	<b>14</b>	<b>332</b>	<b>25</b>	<b>131</b>	<b>17</b>	<b>451</b>	<b>1</b>	<b>40</b>

Notes: 1. Compensation shown is the amount of compensation paid to Directors and Executive Officers in office as of December 31, 2021, for the term of office of each Director and Executive Officer for the fiscal year ended December 31, 2021, and compensation paid to the two Non-Executive Directors who retired

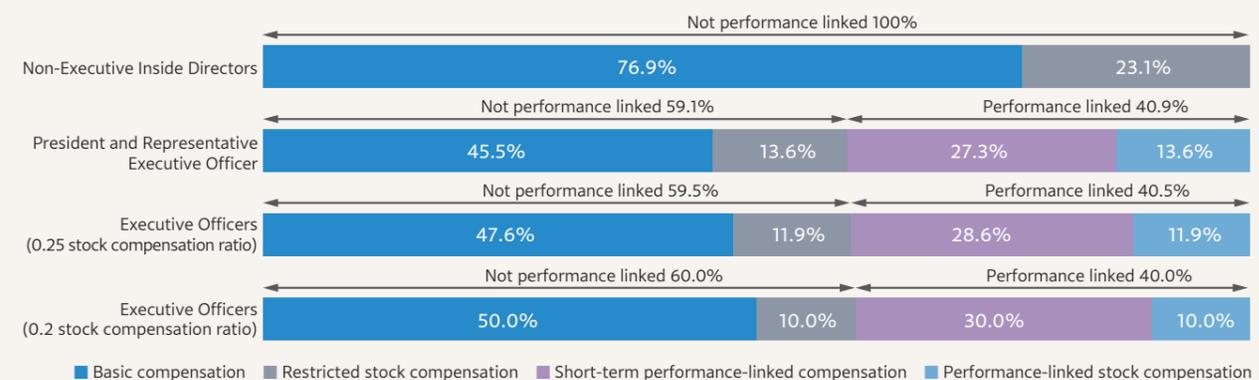
Amounts of Compensation for Directors and Executive Officers Receiving Compensation Exceeding ¥100 Million for the Fiscal Year Ended December 31, 2021

Name	Company	Total compensation (Millions of yen)	Total compensation by type (Millions of yen)				
			Basic compensation	Short-term performance-linked compensation	RS	PLS	Other
President and Representative Executive Officer Masao Asami	EBARA CORPORATION	200	54	46	16	84	—
Executive Officer Nobuharu Noji	EBARA CORPORATION	101	31	21	7	40	—
Executive Officer Tetsuji Togawa	EBARA CORPORATION	106	31	27	7	40	—
Executive Officer Michael T. Lordi	EBARA CORPORATION	31	—	21	—	10	—
	Elliott Group Holdings, Inc.	155	62	37	—	15	40

- Notes:
1. Short-term performance-linked compensation depicts the total amount of short-term performance-linked compensation paid in March 2022 for the fiscal year ended December 31, 2021.
  2. RS shown combines the amount of restricted stock compensation paid in the fiscal year ended December 31, 2021, and the amount recorded as expenses during the fiscal year ended December 31, 2021, in association with restricted stock compensation paid in previous fiscal years.
  3. Performance-linked stock compensation depicts the total amount of performance-linked stock compensation to be paid in May 2023 that is expected to be expensed in the current fiscal year. The calculation for the fiscal year under review is based on the most recent share price of the Company and the Group's forecast ROIC for the year ending December 31, 2022, which is the final year of the E-Plan 2022 medium-term management plan, as well as the difference from the amount recorded in the previous fiscal year.
  4. "Other" represents the total amount of compensation to be paid to Michael T. Lordi in 2023, including ¥34 million of performance-linked cash compensation and pension contributions of ¥5 million attributable to the current fiscal year.

Composition of Compensation Paid to Directors and Executive Officers

(If 100% of the target for performance-linked compensation is achieved)



### Audit Committee



Members	3 (2 Independent Directors   1 Non-Executive Inside Director )
Reason for appointment of chairperson	He has a deep knowledge in the field of international finance and a wealth of knowledge about finance. He is expected to reflect his experience as the chairperson of the Audit Committee in the supervision of the Company's management and to exercise leadership in the activities of the Audit Committee, taking advantage of his long years of experience in management as a top executive of a listed company and his deep insight on corporate management in general.
Meetings in FY2021	20

**Masahiro Hashimoto**  
Independent Director, Chairperson of the Audit Committee

The Audit Committee is responsible for conducting audits to assess whether or not Directors, Executive Officers, and employees of the Company and its subsidiaries are in compliance with legal obligations and internal regulations.

In addition, the Audit Committee endeavors to monitor Executive Officers and verify whether they execute their duties in a sound, fair, appropriate, and efficient manner in accordance with basic policies for management and medium- and long-term management plans established by the Board of Directors, such as the E-Vision 2030 long-term vision and the E-Plan 2022 medium-term management plan.

#### Systems that Support the Audit Committee

The Audit Committee aims to enhance independence from business execution and to create a monitoring-centered audit system to ensure audit effectiveness throughout the entire Group. The chairperson of the Audit Committee is an Independent Director, and the committee is composed of two external members and one full-time internal member to ensure independence. In addition, as part of establishing an audit system to ensure audit effectiveness, the actual audit organization under the control of the Audit Committee has

been strengthened from the fiscal year ended December 31, 2021, to enhance cooperation between the Internal Audit Division and the auditors of subsidiaries.

- (1) A new audit department was established under the Audit Committee in order to strengthen on-site inspection organizations under the Audit Committee and to strengthen collaboration with the Internal Audit Division. The head of the Internal Audit Division and its members are concurrently serving in the new audit department (8 members).
- (2) To ensure closer cooperation between the Audit Committee and the auditors of Group companies, three full-time auditors of major subsidiaries and affiliates (Elliott Ebara Turbomachinery Corporation, Ebara Environmental Plant Co. Ltd., and Swing Corporation) are concurrently serving under the control of the Company's Audit Committee.
- (3) Due to the importance of monitoring and supervising the internal control of the Ebara Group, comprising the Company and its subsidiaries, decisions on candidates for auditors of affiliated companies are made only after obtaining the consent of the Audit Committee.

#### Collaborative Audits by Different Auditing Bodies

##### Coordination with and Evaluation of the Independent Auditor

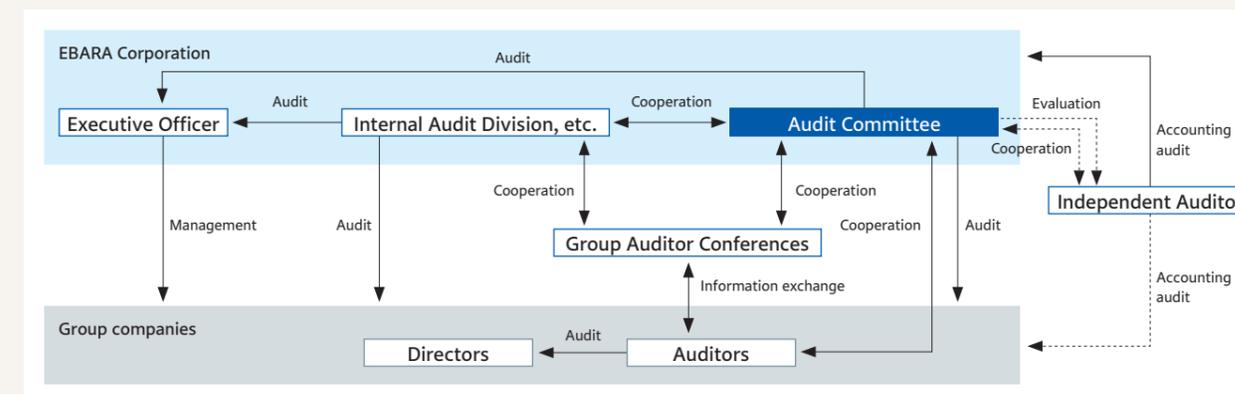
- Throughout the course of collaboration with the Independent Auditor, the Audit Committee confirms that the Independent Auditor maintains independence and conducts appropriate audits, and receives reports as needed from the Independent Auditor on the execution of duties and the results. Furthermore, the Audit Committee conducts efficient audits by holding meetings with the Independent Auditor regularly and as needed for the mutual exchange of information and opinions.
- Based on the judgment of the eligibility, independence, and overall capabilities of the Independent Auditor founded on the results of annual assessments of whether or not to reappoint the Independent Auditor, the Audit Committee proposed the reappointment of Ernst & Young ShinNihon LLC as the Independent Auditor for the fiscal year ending December 31, 2022, and examined the appropriate level of compensation.

#### Coordination with Internal Audit Division

The Audit Committee coordinates with the Internal Audit Division and divisions responsible for internal control, risk management, and compliance as well as with the auditors of Group companies.

- Information is exchanged on a regular and as-needed basis, including the exchange of opinions on the internal audit plan formulated by the Internal Audit Division, and advice is provided to the executive departments as necessary.
- Information is exchanged with the internal control, risk management and compliance division on a regular and as-needed basis, and advice is provided to the executive departments as necessary.
- Group Auditor Conferences are held twice a year and attended by the auditors of subsidiaries. Other attendees include Audit Committee members, the heads of the Internal Audit Division, as well as the heads of the internal control, risk management, compliance, and finance and accounting divisions who meet to share necessary information and receive business reports from the auditors of subsidiaries.

#### EBARA Group Auditing Organizational Diagram



#### Status of Activities of the Audit Committee

Discussions with Members of Executive Management	Members of the Audit Committee hold regular and as-necessary meetings with the President and Representative Executive Officer, company managers, other Executive Officers, and general managers to exchange information and opinions on the progress of management plans, risk management, and other matters.
Attendance at Important Meetings	Members of the Audit Committee attend meetings of the Management Meeting, the Sustainability Committee, the Risk Management Panel, and other important meetings to improve the effectiveness and efficiency of audits and maintain an accurate and up-to-date understanding of relevant information. Advice is also provided to the executive team as necessary.
On-Site Audits	On-site audits are performed at domestic and overseas offices, operating sites, and subsidiaries, and members of the Audit Committee observe audits by the Independent Auditor and internal audit divisions as necessary to confirm that internal control systems are functioning effectively at the Company and across the Group. For the fiscal year ended December 31, 2021, due to the COVID-19 pandemic, remote audits were conducted utilizing IT tools such as web conferencing and joint audits with local external experts.
Major Areas Assessed by the Audit Committee in the Fiscal Year Ended December 31, 2021	<ul style="list-style-type: none"> <li>• Audit of the execution of duties and legal compliance system of Executive Officers and others</li> <li>• Evaluation of the Independent Auditor and selection/dismissal proposals and Key Audit Matters (KAMs)</li> <li>• Audits of the design and operation of the Group's internal controls in relation to the Companies Act and the Financial Instruments and Exchange Act</li> <li>• Confirmation of the appropriateness of accounting treatment for voluntary adoption of International Financial Reporting Standards (IFRS) and other material accounting matters</li> <li>• Confirmation of the progress of E-Plan 2022 medium-term management plan, post-M&amp;A integration process, status of Companywide ERP implementation plan, etc.</li> </ul>

#### Sustainability Promotion Systems

The Board of Directors will establish management policies based on a long-term view of the operating environment so that the Group can implement advanced ESG management, make sustainable contributions to solving social issues including the SDGs through its business, and increase its corporate value by simultaneously improving its social, environmental, and economic value, and oversee the implementation of the relevant measures. To fulfill this supervisory function, the Sustainability Committee was established as an executive committee that deliberates on action policies, strategies, targets, and KPIs for activities that contribute to the sustainability of society, the environment, and the Group, and confirms and reviews the results. In addition to

encouraging Independent Directors and Non-executive Directors to attend meetings of the Sustainability Committee, the deliberations of the Sustainability Committee are reported to the Board of Directors, where discussions are held on the specifics and promotion of measures on the executive side, and the results are fed back to the Sustainability Committee.

As the Board of Directors, we are aware of the need to further enhance our oversight of the environment and society aspects of ESG in particular, and we will accelerate our sustainability management by discussing the ESG agenda regularly (once every six months) starting in 2022.

#### Operational Execution System

Executive Officers are appointed through resolutions by the Board of Directors. Executives are responsible for decisions and duties in the operational execution area assigned to them by the Board of Directors in accordance with the management policies established by the Board of Directors, such as the E-Vision 2030 long-term vision and the E-Plan 2022

medium-term management plan. In the fiscal year ended December 31, 2021, the Company had 15 Executive Officers, all of which were male. However, the Company is examining the possibility of appointing a female Executive Officer in the future from the perspective of diversity.

# Risk Management

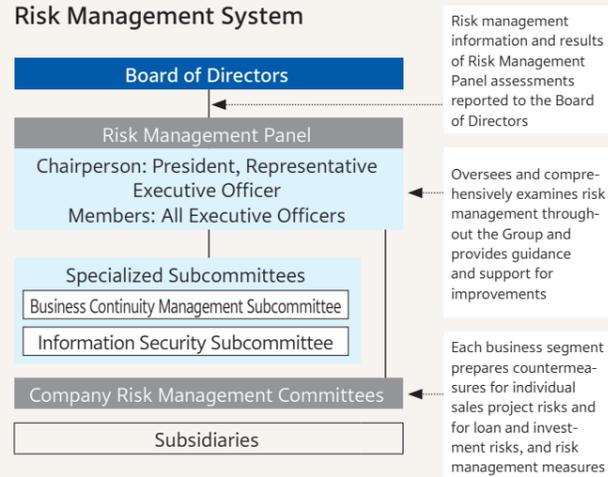
## Basic Approach

The EBARA Group systematically identifies and assesses risks that may arise from its business operations and implements measures to minimize negative impacts that may impact the ongoing survival and development of the Group. We are shifting from a system that focused on responding ad hoc to individual risks that emerge in the course of business to a more systematic approach that emphasizes continuous implementation of improvements to the system parallel to enacting risk control measures.

**REFERENCE** Basic Policy on Risk Management

<https://www.ebara.co.jp/en/sustainability/governance/information/risk-management.html>

## Risk Management System



## Major Risks and Countermeasures

When establishing the E-Vision 2030 long-term vision and the E-Plan 2022 medium-term management plan, the EBARA Group performed analyses of the risks that may occur during the course of its business through a scenario planning approach accounting for medium- to long term changes in social trends and operating environment conditions. In addition, regular risk assessments are carried out Groupwide with regard to changes in the Group's current risk profile.

Risk assessments, which span all Group companies, examine the possibility of identified risks materializing within the Group, also analyzing their potential degree of impact and the residual risk following countermeasures. The projected risks compiled through assessments are clearly reflected into the operations of the divisions with which these risks are associated after reevaluating risk response systems through surveys and interviews with the individuals responsible for relevant businesses.

In addition, as part of our risk response system, we have set up a task force headed by the Representative Executive Officer for matters deemed to require a Groupwide response, so that the entire Group can promptly report, communicate, and make decisions.

The major risks for the EBARA Group and the countermeasures being implemented are shown on page 78 organized by short-term and long-term risks and by market.

## Strengthening Cyber Security

In February 2021, an overseas Group company experienced a ransomware\* attack. However, we immediately conducted an investigation with experts and implemented recovery measures as well as measures to prevent the spread of damage, and were able to restore operations without any damage to our customers or people outside the company. Information leaks that were recognized after the initial investigation were dealt with on a case-by-case basis, and we have determined that the impact on our customers and people outside the Company is limited. In order to prevent the recurrence of such an incident, the Group is urgently revising its global security levels, strengthening the global security response team, and implementing various measures such as expanding the application of security tools. As the number and sophistication of cyber-attacks is expected to increase in the future, we will strive to establish a system that will enable us to provide ongoing value to our customers by continuously strengthening our cyber security.

\* Ransomware is a malicious program that renders an infected PC unusable by disabling it or encrypting its files, and then demands a "ransom" in exchange for restoration.

## COVID-19 Preventive Measures

To prevent the spread of COVID-19 and ensure the Group's business continuity, we have established the COVID-19 Infection Control Headquarters, headed by the President. We are continuously implementing preventive measures and, on a weekly basis, monitoring the status of infections within the Group. We are also practicing new workstyles during the pandemic, including working remotely whenever possible. Each of our operating sites is working to prevent the spread of COVID-19 in accordance with the policies of the relevant government and region in addition to participating in workplace vaccination schemes where possible. As a provider of products and services to society and industry, we are continuing our business activities to minimize any impact on our customers' businesses and daily lives.

## Impact of the Ukraine Situation and Countermeasures

In response to the situation in Ukraine, we established a task force headed by the president to share information and study issues. The Group is taking steps to minimize the impact on our business in compliance with the action policy of the Japanese government and with attention to the sanctions imposed by the U.S. and the EU. We do not expect the impact to be material, as the sales ratio of our business to this region is relatively small, but we will promptly disclose any significant impact on our business performance.

## Personal Information Protection

As global regulations for the protection of personal information are tightening, the EBARA Group is staying current with changes in the laws of various countries and responding appropriately.

## Long-Term Fluctuating Risks

Trends	Risks	Countermeasures
Global environmental and climate change	Operating environment changes due to phenomena such as the following: • Changes in economic conditions due to global warming • Intensification of typhoons, forest fires, and other natural disasters	• Projection of risks and opportunities and formulation of countermeasures based on diverse, long-term scenario analyses • Preparation of BCPs and implementation of drills for responding to natural disasters
Accelerated globalization	• Unexpected losses and reputation damages stemming from a lack of management insight and expertise pertaining to overseas transactions and bases	• Exhaustive Group governance and internal control measures • Global human resource development programs
Shrinking workforce in Japan	• Lack of human resources for continuing manufacturing operations and other supply chain risks • Product defect risks resulting from an inability to effectively transmit techniques and expertise to new employees	• Global human resource recruitment and supply chain optimization • Translation of expertise into explicit knowledge stored within organizations rather than solely in the minds of people
Information security	• Possible suspension of important operations or services, leakage of confidential or personal information, and destruction or falsification of important data due to such unforeseen circumstances as external cyber-attacks, human negligence at the Company or its contractors, natural disasters, or infrastructure failures	• Establishment of an information security management system within the Group • Establishment and application of information security regulations, and implementation of employee education and training • Creation of security measures for software and devices

## Short-Term Volatile Risks

Trends	Risks	Countermeasures
Political factors	• Unexpected restrictions and expenses in business activities due to impacts on economic and trade conditions stemming from political factors such as intensification of trade friction between the United States and China, conflict in the Middle East, and the situation in Ukraine	• Development of global supply chains and value chains accounting for risks
Sudden natural disasters and pandemics	Risks of adverse impacts to lives of employees and others, business continuity, or profit due to the following: • Earthquakes, volcanic eruptions, and other natural disasters • Fast-spreading pandemics	• Pre-assessment and preparation of BCPs by utilizing global network • Promotion of efficient and flexible workstyles • Implementation measures to combat pandemics and prevent infection through coordination with industrial physicians
Foreign exchange rate fluctuations	• Effects of foreign exchange rate fluctuations on business performance	• Appropriate foreign exchange risk hedging measures, including exchange contracts

## Risks by Major Markets and Businesses

Trends	Risks	Countermeasures
Oil and gas markets: Fluid Machinery & Systems Business (pumps business, compressors and turbines business)	• Changes in the demand trends of customers due to the transition to a decarbonized society	• Promotion of businesses related to next-generation energy such as hydrogen energy
	• Occurrence of drastic changes in demand due to oil price fluctuations	• Pressure on earnings arising from surplus production capacity or other factors attributable to drops in order volumes or sales prices amid recessions • Risk of diminished market share due to lack of production capacity at EBARA and across the supply chain in times of strong economic conditions
Semiconductor market: Precision Machinery Business	• Major changes in the investments and operations of customers due to the trends in semiconductor demand	• Highly accurate resource management made possible through confirmation of leading indicators • Reduction of break-even point through lead time shortening, design and manufacturing automation, and other streamlining measures • Ensuring stable profits through a higher proportion of S&S business
Domestic construction equipment market: Fluid Machinery & Systems Business (pumps business, chillers business)	• Reduced orders attributable to consolidation of public facilities among domestic population decline	• Competitive edge maintenance through differentiation of product development, focus on S&S operations, and cost reductions by means of operational streamlining
Domestic public infrastructure market: Environmental Plants Business	• Deterioration of earnings following market contraction caused by reduced demand for construction equipment due to domestic population decline • Lack of plant operation staff due to workforce contraction • Compliance issues, including involvement in government-initiated bid collusion	• Shifting of resources toward global markets • Ongoing compliance education and internal audits

Note: These are some of the risks associated with our business activities. The relevant organization in the risk management system responds depending on the nature of the risk.

# Compliance

## Basic Approach

The EBARA Group strives to act as a good corporate citizen that earns the trust of stakeholders. For this reason, the EBARA Way and the EBARA Group Code of Conduct are shared among all employees to form a common identity and set of values. With this as the foundation, it is our basic policy to practice legal compliance along with faithful adherence to internal rules, social norms, and common sense and to act with good intentions and integrity. Our company policies, rules, and regulations relating to risk management, which are based on the principle of spreading compliance awareness, guide us in creating systems for detecting risks and preventing their realization and in establishing comfortable and open workplace environments.

**REFERENCE** EBARA Group Code of Conduct  
<https://www.ebara.co.jp/en/sustainability/think/information/ebara-identity.html>

**REFERENCE** Compliance System  
<https://www.ebara.co.jp/en/sustainability/governance/information/compliance.html>

## Key Strategic Items and Progress

To ensure thorough compliance, the Company has established an external reporting hotline for the overseas Group, is strengthening the compliance liaison committee system

for the domestic Group, and has expanded the EBARA Group compliance liaison meetings, both in Japan and overseas.

Priority Strategies	Principal Measures	FY2021 Progress
Establish frameworks and implement measures for ensuring compliance	Implement Anti-Corruption Program across the Group	<ul style="list-style-type: none"> <li>Continuous implementation of anti-corruption e-learning for 38 companies selected based on corruption risk indicators, etc.</li> <li>Reviewing the regulations and updating the latest status of legislation in each country</li> </ul>
	Establish overseas EBARA Group hotlines	<ul style="list-style-type: none"> <li>Expanded application of whistleblowing hotlines to overseas Group companies lacking external consultation venues (Total: 20 companies (1 new))                             <ul style="list-style-type: none"> <li>China: 10 companies</li> <li>Vietnam: 1 company</li> <li>Indonesia: 2 companies</li> <li>Thailand: 2 companies</li> <li>Philippines: 1 company</li> <li>Brazil: 1 company</li> <li>Colombia: 1 company</li> <li>Singapore: 1 company</li> <li>Mexico: 1 company (new)</li> </ul> </li> <li>Processed 0 reports</li> </ul>
	Entrench compliance awareness throughout the Group	<ul style="list-style-type: none"> <li>EBARA Group Compliance Liaison Meetings (domestic Group companies and Chinese Group companies) are held twice a year to strengthen information transmission and sharing among Group companies</li> <li>Conducted training sessions for all employees on the EBARA Way (participation rates of 98.9% at domestic Group companies and 95.4% at overseas Group companies)</li> </ul>
Implement ongoing initiatives for improving the capability of Group companies to independently manage and improve compliance and risk mitigation activities	Prevent and quickly detect and address improper activities through swift response to consultations	<ul style="list-style-type: none"> <li>Processed 38 reports</li> <li>Provided training and education to divisions and in-house companies deemed high-risk due to an increasing number of consultation issues</li> </ul>
	Enhance compliance liaison member system to provide familiar workplace consultation venues	<ul style="list-style-type: none"> <li>Trained 102 compliance liaison members (48 at EBARA CORPORATION, 54 at domestic Group companies)</li> <li>Strengthen collaboration with liaison committee members                             <ol style="list-style-type: none"> <li>Collaboration in handling consultation cases received through the consultation hotline (Cases in fiscal 2021: 4)</li> <li>Provide various types of support such as consultation services to promote the resolution of consultation cases mainly by liaison committee members</li> </ol> </li> </ul>
Foster comfortable workplace environments founded on respect for human rights and diversity	Promote respect for human rights and diversity in workplaces through activities of specialized divisions and compliance liaison members	<ul style="list-style-type: none"> <li>Unveiled EBARA Group Human Rights Policy and established EBARA Group Human Rights Committee</li> <li>Posted human rights-related educational content on Company intranet (regarding Human Rights Week, requests for human rights slogans, educational materials, etc.)</li> <li>Continued to participate in Global Compact Network Japan, the Industrial Federation for Human Rights, Tokyo, and other external organizations</li> </ul>

## Priority Strategies and Progress

### Strengthening the Compliance Consultation System Across the Domestic and Overseas Group

In Japan, compliance consultation hotlines have been installed at Group companies, and consultations are addressed by the site at which the consultation is received (the Company, Group company). The Company and its Group companies with more than 300 employees have established a whistleblower reporting system in compliance with the revised Whistleblower Protection Act, and have provided education and awareness, including training by outside attorneys, to the Company's directors and Executive Officers. Other Group companies will also develop whistleblower reporting systems in compliance with the revised Whistleblower Protection Act, taking into consideration relevant circumstances.

At overseas Group companies, we continue to reinforce overseas EBARA Group hotlines, which are designed to contribute to increasing transparency across Group companies, to bolster the internal whistleblowing hotlines of these companies, and to support healthy and autonomous operations.

#### Compliance Consultation Hotline Policies

1. Prevent improper activity from occurring
2. Quickly detect improper activity that may have occurred
3. Create comfortable workplace environments
4. Foster internal capabilities for resolving issues
5. Maintain the confidentiality of and protect those who consult

Consultations are accepted widely, from directors, employees and their families, temporary employees working in our group, and business partners. After consultations are received, investigations are performed by internal compliance divisions, and the appropriate response is taken based on these investigations. Matters pertaining to the operation of consultation hotlines are reported to the Sustainability Committee, which sees participation by Directors, on an annual basis to facilitate appropriate oversight. In the fiscal year ended December 31, 2021, consultations processed through overseas EBARA Group hotlines accounted for 0 out of 38 overall consultations, and 1 out of 44 in the fiscal year ended December 31, 2020.

40 investigations were completed during the fiscal year ended December 31, 2021. Of these, there were 9 consultations regarding workplace environment or other issues, 9 consultations regarding inappropriate behavior, 4 consultations regarding fraud and violations, 6 consultations regarding harassment claims, and 12 miscellaneous consultations.

### Reports Processed through Domestic Compliance Consultation Hotlines in the Fiscal Year Ended December 31, 2021

	Reports processed in FY2021
New consultations	38
Consultations continuing from the previous fiscal year	14
Issues with investigations continuing to next fiscal year	12
Issues closed in FY2021	40

Going forward, the Group will continue its efforts to track risk information as promptly as possible and to prevent the occurrence or spread of damages. Particularly, we will focus on internally correcting potential legal violations.

### Expansion of Overseas EBARA Group Hotlines

The number of companies with access to overseas EBARA Group hotlines increased to 20 in the fiscal year ended December 31, 2021, and we intend to expand the scope of applicable areas and enhance the operational status of these hotlines going forward.

### Number of Overseas EBARA Group Hotlines

	2017/12	2018/12	2019/12	2020/12	2021/12
Total number of Group companies with hotline access	10	15	17	19	20

## Preventing Corruption

### Overseas Anti-Corruption Training

To firmly deploy and establish the Anti-Corruption Program across the Group, anti-corruption e-learning is provided at all overseas subsidiaries to individuals who should be aware of corruption risks, including those who have contact with overseas public officials. In 2021, this extended to management and sales departments at 38 companies and 1,940 employees. The training has been conducted for more than three years and has now run its course as a basic training. We will review the global anti-corruption program, referring to corruption risk indicators and other issues, in order to make updates that keep the training fresh and relevant. At the same time, we will review our Code of Conduct and update it with the latest anti-corruption laws and regulations in each country.

**REFERENCE** Basic Anti-Corruption Policy, Anti-Corruption Program  
<https://www.ebara.co.jp/en/sustainability/governance/information/anti-corruption.html>

## Tax Compliance

The EBARA Group's basic approach to maximizing shareholder value and contributing to each country and jurisdiction through legal compliance and appropriate tax payment is set forth in the EBARA Group Tax Policy, and we are striving to improve tax compliance.

**REFERENCE** EBARA Group Tax Policy  
<https://www.ebara.co.jp/en/sustainability/governance/information/tax.html>

## Executive Officers

(As of March 29, 2022)

\* Indicates *shikkou-yaku*, a Japanese legal term which refers to executive officers who are appointed by the Board of Directors to execute company policy and strategy. The role and legal title of such executive officers are described in the Companies Act of Japan, and as such they bear fiduciary duties to the Company.



### Masao Asami

President and Representative Executive Officer

- Apr. 1986 Joined the Company
- Apr. 2010 Executive Officer
- Apr. 2011 Division Executive, Sales and Marketing Division, Precision Machinery Company
- Apr. 2014 Managing Executive Officer
- Jun. 2015 Managing Executive Officer\*
- Apr. 2016 President, Precision Machinery Company
- Mar. 2019 Director (to present)  
President and Representative Executive Officer (to present)



### Shu Nagata

Executive Officer,  
President, Fluid Machinery & Systems Company, Responsible for Chillers Business,  
Fluid Machinery & Systems Company

- Apr. 1990 Joined the Company
- Oct. 2008 Managing Director of Ebara Pumps Europe S.p.A
- Apr. 2017 General Manager, Global Sales and Marketing Department, Standard Pump Business Division, Fluid Machinery & Systems Company
- Mar. 2018 Executive Officer\* (to present)  
Division Executive, Corporate Strategic Planning Division
- Mar. 2019 Division Executive, Human Resources Division
- Jan. 2020 Division Executive, Corporate Strategic Planning and Human Resources Division
- Mar. 2022 President, Fluid Machinery & Systems Company (to present)  
Responsible for Chillers Business, Fluid Machinery & Systems Company (to present)



### Atsuo Ohi

Executive Officer,  
President, Environmental Engineering Company,  
Chairman and Representative Director of EBARA  
Environmental Plant Co., Ltd.

- Apr. 1981 Joined the Company
- Apr. 2008 Executive Officer
- Oct. 2008 Division Executive, Corporate Strategy Planning Division
- Apr. 2010 Managing Executive Officer
- Apr. 2011 Head of Business Unit, Global Marketing & Sales Business Unit, Fluid Machinery & Systems Company
- Apr. 2012 Vice President, Fluid Machinery & Systems Company, Head of Business Unit, Global Pump Business Unit, Fluid Machinery & Systems Company
- Jun. 2012 Director
- Apr. 2013 President, Fluid Machinery & Systems Company
- Apr. 2014 Senior Managing Executive Officer
- Jun. 2015 Senior Managing Executive Officer
- Mar. 2018 President, Environmental Engineering Company (to present)  
President and Representative Director of Ebara Environmental Plant Co., Ltd.
- Jan. 2019 Chairman and Representative Director of Ebara Environmental Plant Co., Ltd. (to present)
- Mar. 2020 Executive Officer\* (to present)



### Tetsuji Togawa

Executive Officer,  
President, Precision Machinery Company

- Apr. 1986 Joined the Company
- Apr. 2013 New Business Development Department, Precision Machinery Company
- Apr. 2014 Executive Officer
- Mar. 2019 Senior Managing Executive Officer President, Precision Machinery Company (to present)
- Mar. 2020 Executive Officer\* (to present)



### Isao Nambu

Executive Officer,  
Division Executive, Equipment Division,  
Precision Machinery Company

- Apr. 1997 Joined the Company
- Jan. 2020 Division Executive, Marketing Division
- Jan. 2022 Division Executive, Equipment Division, Precision Machinery Company (to present)
- Mar. 2022 Executive Officer (to present)



### Yoshiaki Okiyama

Executive Officer,  
Division Executive, Standard Pump Business Division,  
Fluid Machinery & Systems Company, Chairman,  
Ebara Machinery (China) Co., Ltd.

- Apr. 1983 Joined the Company
- Apr. 2011 Executive Officer
- Apr. 2017 Division Executive, Strategy and Technology Management Division, Fluid Machinery & Systems Company
- Mar. 2018 Executive Officer  
Division Executive, Standard Pump Business Division, Fluid Machinery & Systems Company (to present)  
Chairman, Ebara Machinery (China) Co., Ltd. (to present)
- Mar. 2019 Managing Executive Officer
- Mar. 2020 Executive Officer\* (to present)



### Hideki Yamada

Executive Officer,  
Division Executive, Custom Pump Division, Fluid Machinery & Systems Company,  
Chairman, EBARA GREAT PUMPS CO., LTD.,  
Chairman, EBARA MACHINERY ZIBO CO., LTD.

- Apr. 1985 Joined the Company
- Apr. 2008 General Manager, Global Sourcing Department, Custom Pump Business Division, Fluid Machinery & Systems Company
- Apr. 2011 General Manager, Procurement Control Department, Custom Pump Business Division, Fluid Machinery & Systems Company
- Apr. 2013 Executive Officer
- Apr. 2015 Deputy Division Executive, China and East Asia Department, Strategy and Technology Management Division, Fluid Machinery & Systems Company  
Chairman, EBARA GREAT PUMPS CO., LTD. (to present)
- Apr. 2016 Division Executive, China and East Asia Department, Strategy and Technology Management Division, Fluid Machinery & Systems Company
- Jan. 2019 Division Executive, Industrial Pump Division, Fluid Machinery & Systems Company
- Oct. 2019 Managing Executive Officer  
Division Executive, Custom Pump Division, Fluid Machinery & Systems Company (to present)
- Jan. 2020 Chairman, EBARA MACHINERY ZIBO CO., LTD. (to present)
- Mar. 2020 Executive Officer\* (to present)



### Seiichi Tsuyuki

Executive Officer,  
Division Executive, Components Division,  
Precision Machinery Company

- Apr. 1992 Joined the Company
- Jan. 2022 Division Executive, Components Division, Precision Machinery Company (to present)
- Mar. 2022 Executive Officer (to present)



### Shugo Hosoda

Executive Officer,  
Division Executive, Corporate Strategic Planning,  
Finance and Accounting Division

- Oct. 1993 Joined the Company
- Apr. 2015 Division Executive, Governance Promotion Department
- Apr. 2016 Deputy Vice President, Elliott Group Holdings, Inc.  
Deputy Vice President, Elliott Company
- Jan. 2018 Vice President, Elliott Group Holdings, Inc.  
Vice President, Elliott Company
- Jan. 2019 Director, Elliott Group Holdings, Inc.
- Mar. 2021 Executive Officer\* (to present)  
Division Executive, Finance & Accounting Division (to present)
- Mar. 2022 Group Management Strategy, Division Executive, Finance & Accounting Division (to present)



### Yoji Sato

Executive Officer,  
Division Executive, Human Resources Division

- Apr. 1987 Joined the Company
- Apr. 2011 Division Executive, Planning Division, Ebara Environmental Plant Co., Ltd.
- Apr. 2012 General Manager, EBARA QINGDAO CO., LTD.
- April 2017 Division Executive, Sales Division, Ebara Environmental Plant Co., Ltd.
- Jan. 2019 Director, Environmental Engineering Company
- Mar. 2022 Executive Officer (to present)  
Division Executive, Human Resources Division (to present)



### Teruyuki Ota

Executive Officer,  
Division Executive, System Business Division,  
Fluid Machinery & Systems Company

- Apr. 1971 Joined the Company
- Apr. 2017 General Manager, Recruiting and HR Development Department, Human Resources, Legal and General Affairs Division
- Apr. 2021 General Manager, Infrastructure Sales Department, System Business Division, Fluid Machinery Systems Company of the Company
- Mar. 2022 Executive Officer (to present)  
Division Executive, System Business Division, Fluid Machinery & Systems Company (to present)



### Takanobu Miyaki

Executive Officer,  
Responsible for Compressors and Turbines Business, Fluid Machinery & Systems  
Company, CEO, Elliott Company

- Apr. 1996 Joined the Company
- Mar. 2020 Vice President, Elliott Group Holdings, Inc.  
Vice President, Elliott Company
- Mar. 2021 Director, Elliott Group Holdings, Inc.
- Mar. 2022 Director and CEO, Elliott Group Holdings, Inc. (to present)  
CEO, Elliott Company (to present)  
Executive Officer (to present)  
Responsible for Compressors and Turbines Business, Fluid Machinery & Systems Company (to present)



### Toru Nakayama

Executive Officer,  
Division Executive, Legal, Internal Control,  
Risk Management and General Affairs Division

- Apr. 1984 Joined the Ministry of International Trade and Industry (currently Ministry of Economy, Trade and Industry)
- Apr. 2012 Deputy Director General for Commerce and Information Policy Bureau, METI
- Jul. 2013 Director-General, Trade Control Department, Trade and Economic Cooperation Bureau
- Sep. 2014 Joined the Company
- Jan. 2018 Division Executive, Internal Control and Risk Management Division
- Mar. 2018 Executive Officer\* (to present)  
Division Executive, Legal, Internal Control, Risk Management and General Affairs Division (to present)



### Hiroyuki Kowase

Executive Officer,  
Division Executive,  
Information & Communication System Division

- Apr. 2014 Executive Officer and CIO General Manager, IT Promotion Headquarters, LIXIL Corporation
- Dec. 2015 Senior Managing Executive Officer and CIO General Manager, Information Systems Headquarters, LIXIL Corporation
- Jul. 2018 Deputy Chief Global Information Technology Officer,  
Department Director, ICT Strategy & Platform Department, Shiseido Company, Limited
- Dec. 2018 Joined the Company
- Apr. 2019 Division Executive, Information & Communication System Division (to present)
- Mar. 2020 Executive Officer\* (to present)



### Hiroshi Sobukawa

Executive Officer,  
Division Executive, Technologies,  
R&D & Intellectual Property Division Executive,  
Advanced Technology Division,  
Precision Machinery Company

- Apr. 1987 Joined the Company
- Apr. 2015 Executive Officer  
Division Executive, Advanced Technology Division, Precision Machinery Company (to present)
- Apr. 2017 Division Executive of Technologies, R&D Division
- Mar. 2019 Executive Officer\* (to present)  
Responsible for Technologies, R&D & Intellectual Property
- Jan. 2022 Division Executive, Technologies, R&D & Intellectual Property (to present)

## 10-Year Financial Summary

Note: Due to a change in the fiscal year end of EBARA CORPORATION and its consolidated subsidiaries, the fiscal year ended December 31, 2017 is an irregular nine-month period. In order to improve the international comparability of its financial information, the EBARA Group has adopted the International Financial Reporting Standards (IFRS) instead of Japanese GAAP from the fiscal year ended December 31, 2021.

When two names are listed, the left-hand side is the JGAAP term and the right-hand side is the IFRS term.

JGAAP IFRS

	Millions of yen											
	2013/3	2014/3	2015/3	2016/3	2017/3	2017/12*1	2018/12	2019/12	2020/12	2020/12	2021/12	
<b>Financial Results:</b>												
Orders	¥428,540	¥512,276	¥487,553	¥491,280	¥ 477,956	¥ 413,569	¥ 575,576	¥ 552,225	¥ 511,921	¥ 511,221	¥ 771,483	
Net sales/Revenue	426,302	448,657	482,699	486,235	476,104	381,993	509,175	522,424	523,727	522,478	603,213	
Operating income/Operating Profit	25,084	32,194	34,567	38,011	29,995	18,115	32,482	35,298	37,879	37,566	61,372	
Ordinary income	25,663	31,311	36,258	36,471	28,464	16,529	31,281	35,571	36,859	—	—	
Profit attributable to owners of parent	15,303	18,973	23,580	17,254	20,587	9,531	18,262	23,349	24,473	24,236	43,616	
Capital expenditures	12,302	18,152	15,846	15,729	22,675	12,386	19,364	34,369	32,295	35,047	22,758	
Depreciation and amortization	12,355	12,117	13,038	11,610	13,739	11,923	15,266	15,132	15,963	19,872	21,435	
R&D expenses	5,025	6,465	6,754	7,632	8,758	7,218	10,698	11,530	12,514	12,507	13,575	
<b>Financial Position*2:</b>												
Total assets*3	¥504,576	¥530,211	¥570,392	¥579,860	¥ 588,457	¥ 612,919	¥ 591,592	¥ 595,239	¥ 621,578	¥ 644,711	¥ 719,736	
Total net assets/Total Equity	191,788	215,048	247,553	250,444	277,509	284,788	286,778	291,827	304,470	296,877	321,655	
Shareholders' equity/Equity attributable to owners of parent*4	186,885	208,037	239,058	241,016	271,356	277,955	279,640	283,651	296,232	289,564	312,310	
Interest-bearing debt	138,914	119,672	121,500	120,126	96,531	114,592	79,137	80,986	76,143	98,350	112,046	
Retained earnings	53,886	70,629	91,815	102,446	117,883	121,321	135,715	141,675	156,486	136,629	171,720	
<b>Cash Flows:</b>												
Cash flows from operating activities	¥ 34,014	¥ 26,615	¥ 11,296	¥ 21,528	¥ 33,816	¥ 44,157	¥ 34,610	¥ 26,720	¥ 64,234	¥ 68,848	¥ 72,858	
Cash flows from investing activities	(33,130)	3,540	(15,894)	(14,344)	(18,563)	(7,906)	(15,927)	(24,077)	(29,071)	(29,200)	(31,361)	
Cash flows from financing activities	3,265	(25,336)	(7,044)	(9,655)	(15,102)	11,296	(46,412)	(20,188)	(9,628)	(14,389)	(29,489)	
Free cash flow	883	30,155	(4,597)	7,184	15,252	36,250	18,682	2,643	35,163	39,647	41,497	
Cash and cash equivalents at end of period	93,792	102,341	95,604	91,185	90,683	139,102	110,556	93,351	120,544	120,544	136,488	
<b>Share Data*5</b>												
Number of issued shares (1,000 shares)	465,118	465,187	465,644	466,044	101,736	101,783	101,957	95,129	95,391	95,391	95,513	
Cash dividends (yen)	¥ 5.00	¥ 7.50	¥ 12.00	¥ 12.00	¥ 36.00	¥ 45.00	¥ 60.00	¥ 60.00	¥ 90.00	¥ 90.00	¥ 163.00	
Total return ratio (%)*6	13.9	18.4	23.6	32.3	28.1	48.0	33.3	24.8	35.0	35.4	35.2	
Earnings per share (EPS)/Basic earnings per share (yen)*7	¥ 35.93	¥ 40.86	¥ 50.77	¥ 37.12	¥ 213.71	¥ 93.84	¥ 179.94	¥ 241.79	¥ 256.85	¥ 254.36	¥ 463.44	
Book value per share (BPS)/Equity attributable to owners of parent per share*7	402.41	448.05	514.38	518.16	2,672.19	2,735.94	2,795.72	2,981.91	3,106.10	3,036.19	3,395.50	
<b>Financial Indicators:</b>												
Return on invested capital (ROIC) (%)*8	4.9	5.8	6.9	4.8	5.6	2.5	4.9	6.5	6.6	6.4	10.7	
Return on equity (ROE) (%)*9	9.1	9.6	10.5	7.2	8.0	3.5	6.6	8.3	8.4	8.6	14.5	
Debt-to-equity ratio (times)	0.74	0.58	0.51	0.50	0.36	0.41	0.28	0.29	0.26	0.34	0.36	
Operating income to sales ratio/Operating profit to revenue ratio (%)	5.9	7.2	7.2	7.8	6.3	4.7	6.4	6.8	7.2	7.2	10.2	
Equity ratio/Equity attributable to owners of the parent (%)	37.0	39.2	41.9	41.6	46.1	45.3	47.3	47.7	47.7	44.9	43.4	
Overseas sales ratio/Overseas revenue ratio (%)	50.6	52.8	53.6	52.2	52.7	60.1	55.0	55.3	55.0	54.8	59.0	
<b>Major Non-Financial Indicators:</b>												
Number of employees (persons)	15,170	15,168	16,030	16,270	16,317	16,219	16,556	17,080	17,480		18,372	
Number of overseas employees	7,264	7,336	8,165	8,438	8,319	8,343	8,678	9,148	9,404		10,332	
Overseas employee ratio (%)	48	48	51	52	51	51	52	54	54		56	
CO <sub>2</sub> emissions (thousands of tons)*10,11	39	37	39	38	52	70	116	111	111		104	
Material recycling rate (%)*10	98.6	92.6	98.7	97.2	98.8	98.0	96.3	97.8	97.5		96.9	
Landfill disposal rate (%)	1.2	7.0	1.1	2.3	0.9	1.6	2.8	1.7	1.9		2.6	
Water consumption (thousands of m <sup>3</sup> )*10	608	628	555	631	623	852	992	1,053	1,153		1,088	

\*1. At the 152nd Ordinary General Meeting of Shareholders held on June 23, 2017, it was resolved to change the Company's settlement date from March 31 to December 31. As a result, 2017/12 represents an irregular nine-month period aggregating performance from April 1 to December 31, 2017, for EBARA CORPORATION and consolidated subsidiaries that previously had a settlement date of March 31, and from January 1 to December 31, 2017, for consolidated subsidiaries that previously had a settlement date of December 31.

\*2. Effective January 1, 2019, the Company adopted "Partial Amendments to Accounting Standard for Tax Effect Accounting" (Accounting Standards Board of Japan (ASBJ) Statement No. 28, revised on February 16, 2018). Accordingly, figures for the fiscal year ended December 31, 2018, have been restated to reflect the adoption of this standard.

\*3. The provisional accounting treatment concerning business combinations implemented in the fiscal year ended March 31, 2016, was finalized in the fiscal year ended March 31, 2017, and the finalized details of the provisional accounting treatment have been reflected in total assets for the fiscal year ended March 31, 2016.

\*4. Shareholders' equity: Total net assets - (Subscription rights to shares + Non-controlling interests)

\*5. EBARA CORPORATION conducted a consolidation of common shares at a rate of one share for every five shares with an effective date of October 1, 2016.

\*6. When the annual dividend of ¥36.00 for the fiscal year ended March 31, 2017 (including an interim dividend of ¥6.00), is converted after the consolidation of shares, it is equivalent to ¥60.00 per share, consisting of an interim dividend of ¥30.00 and a year-end dividend of ¥30.00. Accordingly, the total return ratio is calculated based on an annual dividend of ¥60.00 per share.

\*7. EPS is based on the average number of shares outstanding (excluding treasury stock) during the fiscal year. BPS is calculated using the number of shares outstanding (excluding treasury stock) as of the end of the fiscal year.

\*8. ROIC: Profit attributable to owners of parent or revenue attributable to owners of parent / [(Interest-bearing debt (Average between beginning and end of period) + Shareholders' equity or equity attributable to owners of parent (Average between beginning and end of period))]

\*9. ROE: Net income attributable to parent or profit attributable to owners of parent / Shareholders' equity or equity attributable to owners of parent (Average between beginning and end of period)

\*10. Figures are for EBARA and domestic Group companies from the fiscal year ended March 31, 2013 to the fiscal year ended March 31, 2017. Overseas Group company results are included starting from the fiscal year ended December 31, 2017.

\*11. The emission coefficient for the year 2000 (0.357 kg/kWh) is applied from the fiscal year ended March 31, 2013 to the fiscal year ended March 31, 2016. The emission coefficient for electricity providers (published by the Ministry of the Environment and the Ministry of Economy, Trade and Industry) was adopted from the fiscal year ended March 31, 2017.

## Consolidated Financial Statements

### Condensed Consolidated Statement of Financial Position (IFRS)

	Millions of yen	
	2020/12	2021/12
<b>Assets</b>		
<b>Current assets</b>		
Cash and cash equivalents	120,544	136,488
Trade and other receivables	122,343	130,121
Contract assets	76,533	86,887
Inventories	101,654	121,389
Income taxes receivable	292	605
Other financial assets	2,750	3,267
Other current assets	15,945	21,173
<b>Total current assets</b>	<b>440,062</b>	<b>499,934</b>
<b>Non-current assets</b>		
Property, plant and equipment	158,763	161,392
Goodwill and intangible assets	11,450	23,204
Investments accounted for using the equity method	6,964	7,153
Deferred tax assets	12,994	12,665
Other financial assets	7,703	6,241
Other non-current assets	6,832	9,144
<b>Total non-current assets</b>	<b>204,709</b>	<b>219,801</b>
<b>Total assets</b>	<b>644,771</b>	<b>719,736</b>

	Millions of yen	
	2020/12	2021/12
<b>Liabilities and equity</b>		
<b>Liabilities</b>		
<b>Current liabilities</b>		
Trade and other payables	142,701	162,558
Contract liabilities	40,056	49,771
Bonds, borrowings and lease liabilities	33,404	56,578
Income taxes payable	3,620	6,337
Provisions	14,489	14,769
Other financial liabilities	84	98
Other current liabilities	33,643	37,243
<b>Total current liabilities</b>	<b>267,998</b>	<b>327,357</b>
<b>Non-current liabilities</b>		
Bonds, borrowings and lease liabilities	64,946	55,467
Retirement benefit liability	9,494	8,413
Provisions	2,319	2,488
Deferred tax liabilities	45	402
Other financial liabilities	182	123
Other non-current liabilities	2,907	3,829
<b>Total non-current liabilities</b>	<b>79,895</b>	<b>70,723</b>
<b>Total liabilities</b>	<b>347,894</b>	<b>398,080</b>
<b>Equity</b>		
Share capital	79,451	79,643
Capital surplus	75,987	76,566
Retained earnings	136,629	171,720
Treasury shares	(178)	(20,189)
Other components of equity	(2,324)	4,569
<b>Total equity attributable to owners of parent</b>	<b>289,564</b>	<b>312,310</b>
Non-controlling interests	7,312	9,345
<b>Total equity</b>	<b>296,877</b>	<b>321,655</b>
<b>Total liabilities and equity</b>	<b>644,771</b>	<b>719,736</b>

## Consolidated Financial Statements

### Condensed Consolidated Statement of Income (IFRS)

	Millions of yen	
	2020/12	2021/12
Revenue	522,478	603,213
Cost of sales	376,032	424,571
Gross profit	146,446	178,641
Selling, general and administrative expenses	108,563	120,553
Other income	931	4,131
Other expenses	1,246	847
Operating profit	37,566	61,372
Finance income	382	416
Finance costs	3,040	2,687
Share of profit (loss) of investments accounted for using the equity method	847	1,200
Profit before tax	35,756	60,302
Income tax expense	9,805	13,873
Profit	25,950	46,428
Profit attributable to		
Owners of parent	24,236	43,616
Non-controlling interests	1,713	2,812
Earnings per share		
Basic earnings per share	254.36	463.44
Basic earnings per share, diluted	253.34	462.09

### Condensed Consolidated Statement of Comprehensive Income (IFRS)

	Millions of yen	
	2020/12	2021/12
Profit	25,950	46,428
Other comprehensive income		
Items that will not be reclassified to profit or loss		
Remeasurements of defined benefit plans	1,486	2,758
Net change in fair value of financial assets designated as measured at fair value through other comprehensive income	(159)	47
Share of other comprehensive income of investments accounted for using the equity method	18	86
Total of items that will not be reclassified to profit or loss	1,345	2,893
Items that may be reclassified to profit or loss		
Cash flow hedges	(31)	94
Exchange differences on translation of foreign operations	(1,676)	6,602
Total of items that may be reclassified to profit or loss	(1,708)	6,697
Total other comprehensive income, net of tax	(363)	9,591
Total comprehensive income	25,587	56,020
Comprehensive income attributable to		
Owners of parent	23,804	52,529
Non-controlling interests	1,782	3,490

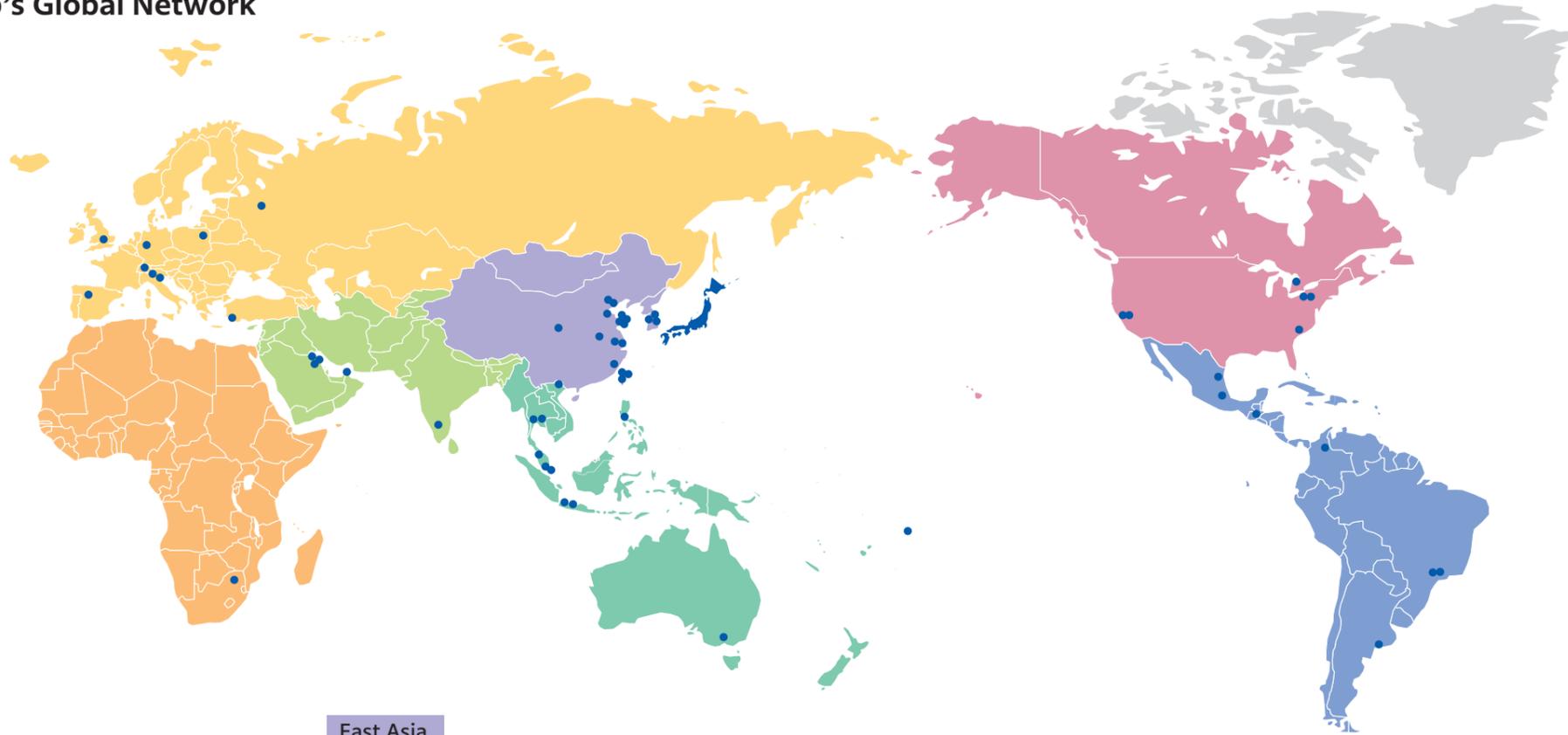
### Condensed Consolidated Statement of Cash Flows (IFRS)

	Millions of yen	
	2020/12	2021/12
Cash flows from operating activities		
Profit before tax	35,756	60,302
Depreciation and amortization	19,872	21,435
Impairment loss	248	198
Interest and dividend income	(380)	(387)
Interest expenses	1,436	1,298
Foreign exchange loss (gain)	(563)	5,148
Share of loss (profit) of investments accounted for using the equity method	(847)	(1,200)
Loss (gain) on sales of fixed assets	(15)	(2,991)
Decrease (increase) in trade and other receivables	16,896	(862)
Decrease (increase) in contract assets	(12,241)	(5,968)
Decrease (increase) in inventories	(1,299)	(14,224)
Increase (decrease) in trade and other payables	4,669	17,757
Increase (decrease) in contract liabilities	19,194	6,691
Increase (decrease) in provisions	(370)	15
Increase / decrease in retirement benefit assets and liabilities	(522)	(425)
Other	(4,958)	(2,121)
Subtotal	76,875	84,665
Interest income received	356	363
Dividend income received	321	1,122
Interest expenses paid	(1,400)	(1,369)
Income taxes paid	(7,305)	(11,923)
Net cash provided by operating activities	68,848	72,858
Cash flows from investing activities		
Payments into time deposits	(3,565)	(4,092)
Proceeds from withdrawal of time deposits	3,761	3,958
Purchase of investment securities	(582)	(20)
Proceeds from sales and redemption of investment securities	2,471	3,085
Purchase of property, plant and equipment, and intangible assets	(31,250)	(25,755)
Proceeds from sale of property, plant and equipment	91	1,575
Purchase of shares of subsidiaries resulting in change in scope of consolidation	—	(10,375)
Other	(125)	263
Net cash used in investing activities	(29,200)	(31,361)
Cash flows from financing activities		
Net increase (decrease) in short-term borrowings	2,331	8,752
Proceeds from long-term borrowings	27,750	5,191
Repayments of long-term borrowings	(41,738)	(6,362)
Repayments of lease liabilities	(5,728)	(5,058)
Redemption of bonds	10,000	—
Proceeds from issuance of common shares	0	0
Purchase of treasury shares	(3)	(20,099)
Dividends paid	(5,713)	(10,455)
Dividends paid to non-controlling interests	(1,287)	(1,458)
Other	0	0
Net cash used in financing activities	(14,389)	(29,489)
Effect of exchange rate changes on cash and cash equivalents	29	3,936
Net increase (decrease) in cash and cash equivalents	25,287	15,944
Cash and cash equivalents at beginning of period	95,256	120,544
Cash and cash equivalents at end of period	120,544	136,488

# EBARA Group's Global Network

(As of December 31, 2021)

● Overseas base



## North America

- Ebara America Corporation ○
- Ebara Technologies Incorporated □△
- EBARA PUMPS AMERICAS CORPORATION □△
- Elliott Company □◇△
- Elliott Overseas Corporation ○
- Elliott Turbomachinery Canada, Inc. △
- Ebara Pumps Canada Corporation □△

## Latin America

- Elliott Turbomachinery S.A. de C.V. △
- Elliott Turbocharger Guatemala, S.A. △
- Ebara Bombas Colombia S.A.S. □△
- EBARA BOMBAS AMÉRICA DO SUL LTDA. □◇△
- Elliott Ebara Servicios para Equipamentos Rotativos Ltda. □△
- ELLIOTT SERVICE COMPANY S.A. △
- Ebara Pumps Mexico, S.A. de C.V. □△

## Europe

- EBARA PUMPS IBERIA, S.A. □◇△
- Elliott Turbomachinery Limited □△
- Elliott Turbomachinery S.A. □△
- Ebara Precision Machinery Europe GmbH □△
- Ebara Pumps Europe S.p.A. □◇△
- Sumoto S.r.l. □◇△
- Ebara Pompy Polska sp. z o.o. □△
- EBARA Pumps RUS Limited Liability Company □△
- Çiğli Su Teknolojileri A.Ş. □◇△
- Vansan Makina Sanayi ve Ticaret A.Ş. □◇△
- Vansan Makina Montaj ve Pazarlama A.Ş. □◇△

## Africa

- EBARA PUMPS SOUTH AFRICA (PTY) LTD □△

## Middle East & South Asia

- ELLIOTT GAS Services Saudi Arabia Limited □△
- EBARA PUMPS SAUDI ARABIA LLC □△
- Elliott Ebara Middle East Maintenance S.P.C △
- Ebara Pumps Middle East FZE □△
- Elliott Ebara Turbomachinery India Pvt. Ltd. □△

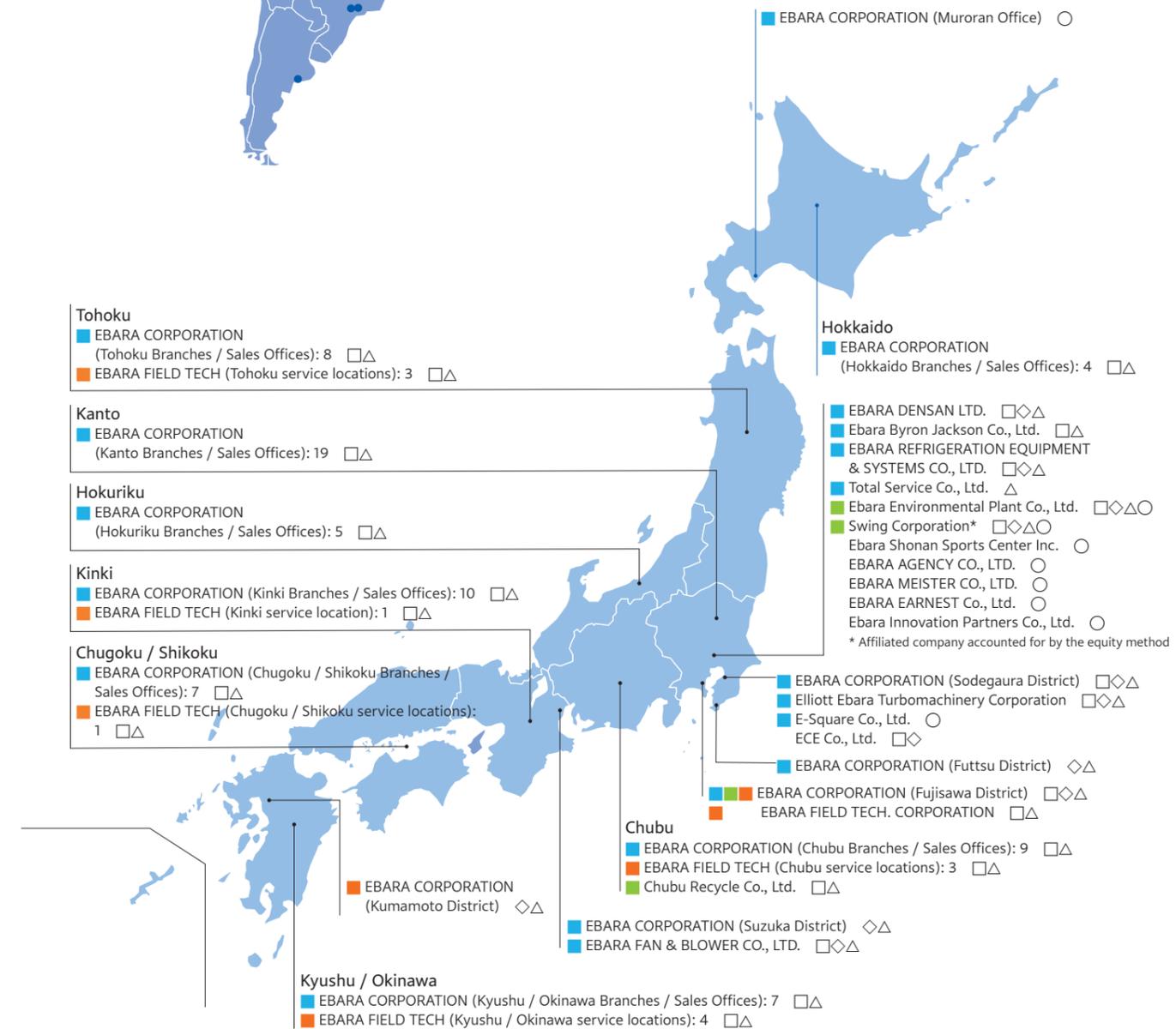
## Southeast Asia & Oceania

- Ebara (Thailand) Limited □△
- Ebara Thermal Systems (Thailand) Co., Ltd. □△
- Ebara Pumps Malaysia Sdn. Bhd. □△
- Ebara Engineering Singapore Pte. Ltd. □△
- Elliott Ebara Singapore Pte. Ltd. □△
- PT. Ebara Indonesia □◇△
- PT. Ebara Turbomachinery Services Indonesia △
- Ebara Vietnam Pump Company Limited □◇△
- Ebara Pumps Philippines, Inc. □◇△
- Ebara Pumps Australia Pty. Ltd. □△
- Ebara Densan (Taiwan) Samoa Mfg. Co., Ltd. ○

## East Asia

- Xian Ebara Precision Machinery Co., Ltd. □△
- Ebara Machinery (China) Co., Ltd. □◇△
- Elliott Turbomachinery Services (Tianjin) Co., Ltd. △
- HEFEI EBARA PRECISION MACHINERY CO., LTD. □△
- EBARA MACHINERY ZIBO CO., LTD. □◇△
- Ebara Densan (Qingdao) Technology Co., Ltd. □◇△
- Ebara Densan (Kunshan) Co., Ltd. ◇△
- Ebara Great Pumps Co., Ltd. □◇△
- Ebara Qingdao Co., Ltd. □◇△
- EBARA REFRIGERATION EQUIPMENT & SYSTEMS (CHINA) Co., Ltd. □◇△
- Yantai Ebara Fan Co., Ltd. ◇
- Shanghai Ebara Precision Machinery Co., Ltd. □△
- Ebara Precision Machinery Taiwan Incorporated □◇△
- Ebara-Elliott Service (Taiwan) Co., Ltd. △
- Ebara-Densan Taiwan Manufacturing Co., Ltd. □◇△
- Ebara Fluid Machinery Korea Co., Ltd. □△
- Elliott Korea Co., Ltd. □△
- Ebara Precision Machinery Korea Incorporated □△

- Fluid Machinery & Systems Business
- Environmental Plants Business
- Precision Machinery Business
- Sales
- ◇ Manufacturing and engineering
- △ S&S
- Other



## Corporate Profile / Stock Information

(As of December 31, 2021)

### Corporate Profile

Company Name: EBARA CORPORATION  
 Foundation: November 1912  
 Head Office: 11-1, Haneda Asahi-cho, Ota-ku,  
 Tokyo 144-8510, Japan  
 Phone: + 81-3-3743-6111  
 URL: <https://www.ebara.co.jp/en/>  
 Paid-in Capital: ¥79,643 million  
 Number of Employees  
 (Consolidated): 18,372

### External Recognition Based on ESG Factors

EBARA CORPORATION has been selected for inclusion in several ESG indexes by various domestic and overseas ESG ratings institutions.



2022 CONSTITUENT MSCI JAPAN  
EMPOWERING WOMEN INDEX (WIN)

2022 CONSTITUENT MSCI JAPAN  
ESG SELECT LEADERS INDEX

Note: THE INCLUSION OF EBARA CORPORATION IN ANY MSCI INDEX, AND THE USE OF MSCI LOGOS, TRADEMARKS, SERVICE MARKS OR INDEX NAMES HEREIN, DO NOT CONSTITUTE A SPONSORSHIP, ENDORSEMENT OR PROMOTION OF EBARA CORPORATION BY MSCI OR ANY OF ITS AFFILIATES. THE MSCI INDEXES ARE THE EXCLUSIVE PROPERTY OF MSCI. MSCI AND THE MSCI INDEX NAMES AND LOGOS ARE TRADEMARKS OR SERVICE MARKS OF MSCI OR ITS AFFILIATES.



### United Nations Global Compact

The EBARA Group joined the United Nations Global Compact (UNGC) on June 30, 2009, and we have continued to exercise and pursue improvement based on the spirit of the UNGC's Ten Principles thereafter. In this report, we provide information on our initiatives pertaining to the areas of human rights, labor, environment, and anti-corruption.

COMMUNICATION  
ON PROGRESS



This is our **Communication on Progress** in implementing the Ten Principles of the **United Nations Global Compact** and supporting broader UN goals.

We welcome feedback on its contents.

### Stock Information

Stock Information  
 Securities Code: 6361 (Japan)  
 Number of Shares Issued: 95,513,633 (Common shares)  
 Number of Shareholders: 24,867  
 Stock Listing: Tokyo Stock Exchange  
 Number of Shares Constituting One Unit: 100  
 Transfer Agent and Registrar: Sumitomo Mitsui Trust Bank, Limited,  
 1-4-1, Marunouchi, Chiyoda-ku,  
 Tokyo 100-8233, Japan  
 Accounting Auditor: Ernst & Young ShinNihon LLC  
 Major Indices: Nikkei Stock Average (Nikkei 225),  
 JPX-Nikkei400

### Credit Rating

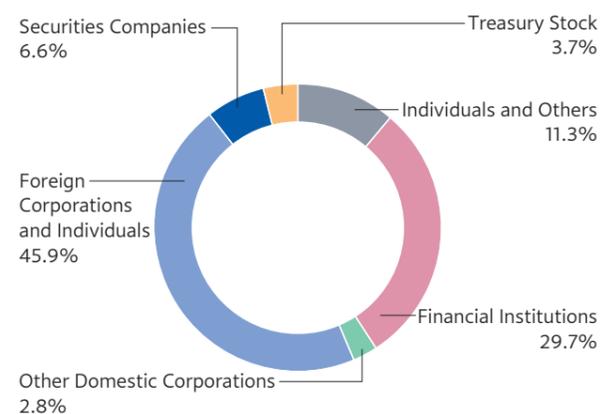
R&I Issuer Rating: A (as of July 2022)

### Major Shareholders

Shareholders' name	Shareholding ratio (%)
The Master Trust Bank of Japan, Ltd. (Trust Account)	17.8
ICHIGO TRUST PTE. LTD.	10.4
Custody Bank of Japan, Ltd. (Trust Account)	4.8
SMBC Nikko Securities Inc.	2.5
BBH (LUX) FOR FIDELITY FUNDS – SUSTAINABLE WATER AND WASTE POOL	2.2
JAPAN SECURITIES FINANCE CO., LTD.	1.8
BNYM AS AGT/CLTS 10 PERCENT	1.8
STATE STREET BANK AND TRUST COMPANY 505225	1.6
JPMorgan Chase & Co.	1.5
STATE STREET BANK AND TRUST COMPANY 505103	1.4

Note: Treasury stock has been eliminated from the total number of shares issued in calculating the shareholding ratio.

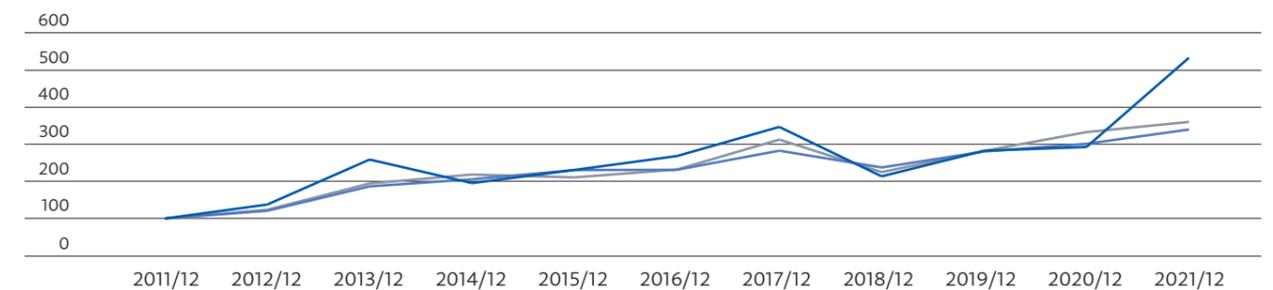
### Composition of Shareholders



### 10-Year Total Shareholder Return Data

Stock / Index	1 year	3 years		5 years		10 years	
		Cumulative total	Annual	Cumulative total	Annual	Cumulative total	Annual
EBARA CORPORATION	+94.5%	+171.3%	+39.5%	+105.3%	+15.5%	+433.1%	+18.2%
TOPIX	+12.7%	+43.0%	+12.7%	+46.9%	+8.0%	+239.8%	+13.0%
TOPIX (Machinery)	+8.2%	+60.1%	+17.0%	+55.3%	+9.2%	+260.3%	+13.7%

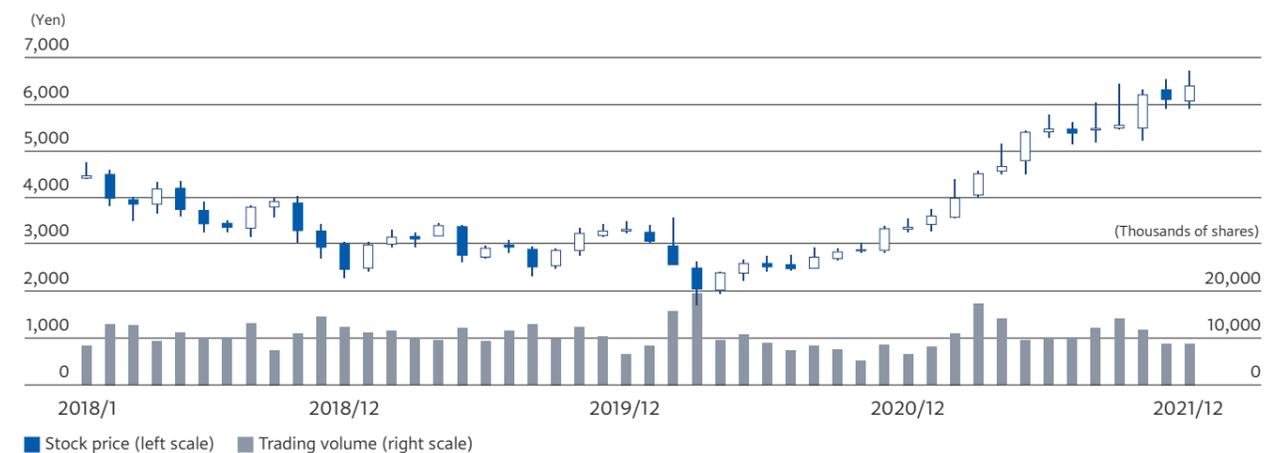
### Stock Price Including Dividends and Stock Price Indexes (Closing price on December 30, 2011, indexed to 100)



Note: The above graph displays total shareholder return reflecting dividends and stock price gains for investments commenced on December 30, 2011, over the period ending with December 30, 2021. For investment performance accounting for dividends and stock price gains from EBARA CORPORATION, investment amount on December 30, 2011, is indexed to 100. For indexes displayed for comparison (TOPIX dividends and TOPIX (Machinery)), projected dividend data is used and the same indexing method is employed.

\* Figures have been restated to reflect a consolidation of common shares at a rate of one share for every five shares conducted with an effective date of October 1, 2016.

### Stock Price and Trading Volume



	2018/12	2019/12	2020/12	2021/12
Stock price at end of fiscal year	2,471	3,325	3,370	6,390
High	4,745	3,500	3,570	6,710
Low	2,293	2,321	1,715	3,295
Trading volume (millions of shares)	133	127	117	136

### Stock-Related Data

	2018/12 JGAAP	2019/12 JGAAP	2020/12 IFRS	2021/12 IFRS
Price-earnings ratio (times)	13.73	13.75	13.75	13.79
Price-to-book ratio (times)	0.88	1.12	1.11	1.88
Number of issued shares (thousands of shares)	101,957	95,129	95,391	95,513
Market capitalization at end of fiscal year (millions of yen)	251,937	316,306	321,469	610,332