EBARA IR Day 2025

- Session 1 -

Precision Machinery Company
Medium- and Long-term Business Strategies

November 18, 2025

Isao Nambu
Executive Officer,
President, Precision Machinery Company

Looking ahead,
going beyond expectations
Ahead Beyond

株式会社 荏原製作所

AGENDA

01 Precision Machinery Company Overview

02 Overview of Each Business

03 Semiconductor Manufacturing Technology Roadmap and our Strategies

01 **Precision Machinery Company Overview**

02 Overview of Each Business

03 Semiconductor Manufacturing Technology Roadmap and our Strategies

Precision Machinery Company Overview

Basic Policy of our Company

Contribute to customer quality and efficiency improvements, drive evolution in semiconductors, and support a decarbonized society.

CMP Business

CMP* systems

*CMP: Chemical Mechanical Polishing

Other Equipment Business

Plating systems

Bevel polishing systems

Revenue 278.3 billion yen (2024)

56%

40%

4%

Component Business

Dry vacuum pumps

Gas abatement systems for EUV Lithography systems

Gas abatement systems

Ozonized water generator

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EBARA Products Widely used in Semiconductor Plants

The world's only manufacturer providing a wide range of products that contribute to the manufacturing and evolution of semiconductors

Semiconductor plant

Roof
Roof floor
Building Service & Industrial

Devices that use temperature management to support semiconductor quality
- Cooling towers

2nd floor
Clean room
Precision Machinery

Semiconductor manufacturing equipment
- **CMP** — Model: F-REX
- **Plating systems** — Model: ZP
- **Bevel polishing systems** — Model: EAC

1st floor
Sub-fabrication
Precision Machinery
Building Service & Industrial

Auxiliary devices for semiconductor manufacturing equipment
- **Dry vacuum pumps** — Model: EV-X
- **Gas abatement systems** — Model: LPCMN and others
- **Ozonized water generator** — Model: OZW
- **Gas abatement systems for EUV Lithography systems** — Model: EV-E-PV
- Industrial chillers

Basement floor
Machine room
Building Service & Industrial

Devices that use temperature management to support semiconductor quality
- Feed pumps
- Chillers

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Trends in Precision Machinery Company Results (Consolidated)

Trends in revenue (Unit: billion yen)

Revenue growth Approx. **2.3** x
CAGR **17.9** %

	2020	2021	2022	2023	2024	2025 Plan
Total	140.3	192.7	222.2	246.9	278.3	320.0
CMP Business	74.0	103.6	115.7	144.7	157.3	195.0
Other Equipment Business	6.3	6.6	5.0	4.7	10.9	14.0
Component Business	60.0	82.4	101.4	97.4	110.0	111.0
Operating profit ratio	8.3%	14.5%	16.3%	15.5%	18.0%	17.0%

O—O : Operating profit ratio

CMP Business

- We hold **the world's No. 2 share for CMP systems**
- Business growth thanks to semiconductor market expansion driven by generative AI, the advancement of high-density integration, and the rapid growth of the Chinese market

Other Equipment Business

- Providing plating systems and bevel polishing systems.
  Target markets are expected to see growth driven by the increasing complexity and high integration of semiconductor manufacturing processes.
  Aim for business growth through unique solutions

Component Business

- Driven by **our worldwide No. 2 share for our mainstay dry vacuum pumps**, we have expanded business to include gas abatement systems, ozonized water generators, gas abatement systems for EUV lithography systems , and more
- Centered on dry vacuum pumps, which feature world-class energy-saving performance, we are steadily achieving business growth through increasing our product competitiveness
- We will aim for further business growth by developing and providing unique solutions to address the semiconductor industry's major challenge of achieving both evolution in semiconductor manufacturing processes and decarbonization

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Precision Machinery Company Global Network

Europe

Ebara Precision Machinery Europe GmbH

China

Hefei Ebara Precision Machinery Co., Ltd.

Xian Ebara Precision Machinery Co., Ltd.

Shanghai Ebara Precision Machinery Co., Ltd.

USA

Ebara Technologies, Inc.

Japan

Fujisawa Plant

Kumamoto Plant

Ebara Field Tech Tohoku Plant

Ebara Field Tech Suzuka Plant

Southeast Asia

Ebara Precision Machinery Malaysia SDN. BHD

Ebara Engineering Singapore Pte. Ltd

East Asia region (excluding Japan and China)

EBARA Precision Machinery Taiwan Inc.

Ebara Precision Machinery Korea Incorporated

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E-Plan 2025 Business Strategy Overview and Progress

Business Goals

Operating profit ratio	17% or higher	FY25 Forecast 17.0%
Revenue CAGR	15% or higher	FY22-25 Forecast 12.9%

Basic Policy

- **Beyond providing products and services, we will provide unique value by solving problems in customer processes and utilities**
- **We will shift from a regional strategy to a global account strategy as we aim to expand market share by developing strategies tailored to customer global expansion efforts and optimizing our overall global operations**

Basic Strategies

1 Strengthen product and solution development capabilities

- **Commenced sales of new gas abatement systems**
- **Started sales of electroplating system for advanced packaging applications**
- **Constructed a new building (Building V8) to develop new semiconductor manufacturing equipment** (completed in June 2025)

2 Increase production capacity

- **Operations began at the new Kumamoto production building (Building K3) in May 2025**
- Construction of the second Taiwan plant started
- **Began operations at Ebara Field Tech Tohoku Plant, a new overhaul plant for dry vacuum pumps**

3 Reconstruct global business infrastructure to accommodate expansion of business scale

- Strengthen account strategy planning and execution functions
- Strengthen our global supply chain
- Promote ERP implementation at bases in Japan and overseas

New products

New gas abatement system Model LPCMN

Electroplating system Model ZP

New facilities

Fujisawa Plant New building for the development of semiconductor manufacturing equipment

Kumamoto Plant New production building (K3)

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E-Plan 2025 Business Strategy Overview and Progress

Non-financial goals and results

Material Issues	2025 Outcome Goals	Key Performance Indicators	December 2025 Targets	Measures & Future Initiatives
For people and society 1. Contribute to the creation of a sustainable society For industry 2. Elevate standards of living and support abundant lifestyles for all	Reduce GHG emissions	Amount of GHG emissions that can be reduced by gas abatement systems in semiconductor manufacturing processes that use GHGs	20% increase from FY2022	Development of gas abatement systems that do not use fossil fuels
		Reduction of GHG emissions from dry vacuum pump manufacturing	10% reduction from FY2022	Reducing environmental impact through lighter weight
	Reduce water usage and discharge	Reduction of Ultra Pure Water use by CMP systems	30% reduction from FY2022	Continuing to develop cleaning methods that consume less pure water
	Develop foundational technologies for semiconductor miniaturization	Rate of the development of foundational technology for 14Å semiconductor manufacturing	100%	Promoting the development of constituent technologies for CMP to support technology for the manufacture of the 14Å generation of semiconductors

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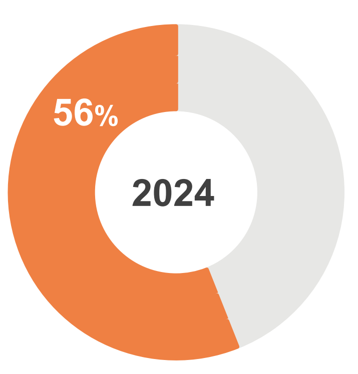
01 Precision Machinery Company Overview

02 **Overview of Each Business**

03 Semiconductor Manufacturing Technology Roadmap and our Strategies

Overview of the CMP System Business

Revenue ratio

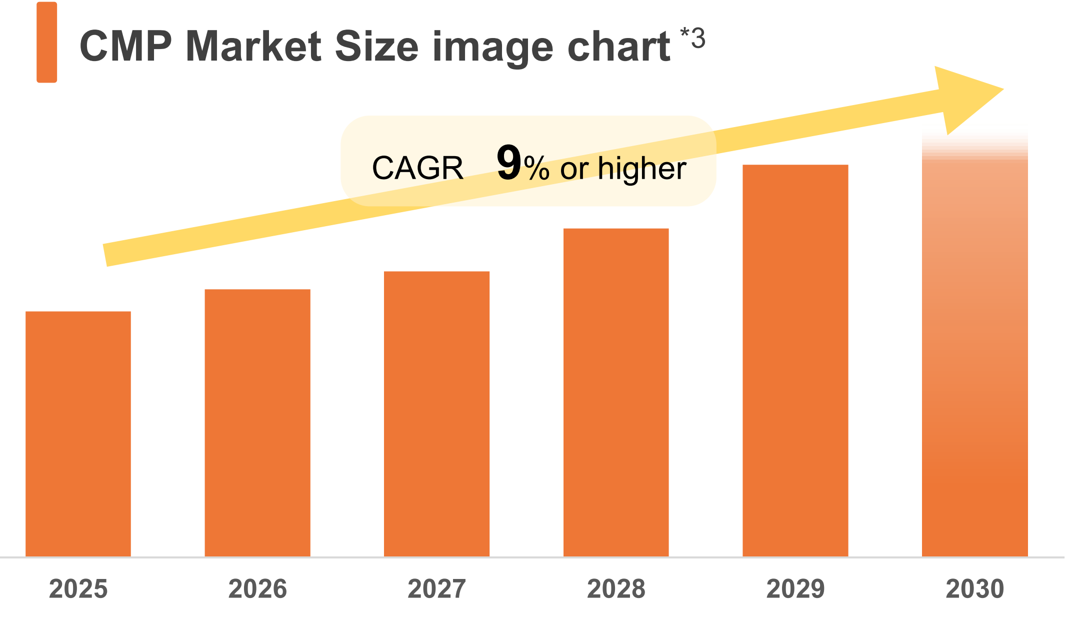


About Chemical Mechanical Polishing (CMP)

- A process for chemically and mechanically polishing wafers (semiconductor substrates) to achieve the nanometer-level[*1] flatness required in the semiconductor manufacturing process
- In the semiconductor manufacturing process, where microscopic particles can affect performance, a CMP device is a unique entity that rubs a foreign substance, an abrasive liquid, onto the device surface to polish the device
- As the industry's first platform for conducting polishing and cleaning on the same device, this system has since become an indispensable part of the semiconductor manufacturing process
- The application of CMP to the semiconductor manufacturing process was praised by Dr. Moore, the father of semiconductors, as the biggest surprise.

[*1.] 1 nanometer is one millionth of a millimeter

CMP Market Size image chart [*3]



[*3.] Market size estimate based on EBARA research

CMP Business product line

Model F-REX300XA[*2]

Model F-REX300X[*2]

[*2.] Model indicates our company model number.

- CMP demand growing significantly with the trend of high-density integration in semiconductors
- Projecting market **growth at a CAGR of 9% or higher** through 2030
- We hold the **No. 2** share of the global market, recording total shipments of **over 4,000 units**
- We possess vast know-how rooted in 30 years of experience and a patent portfolio comprised of distinctive technology
- We have strengths in metal layer CMP technology

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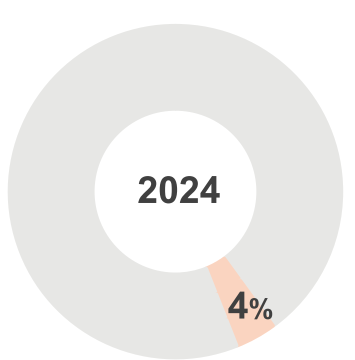
Overview of Other Equipment Businesses

Revenue ratio



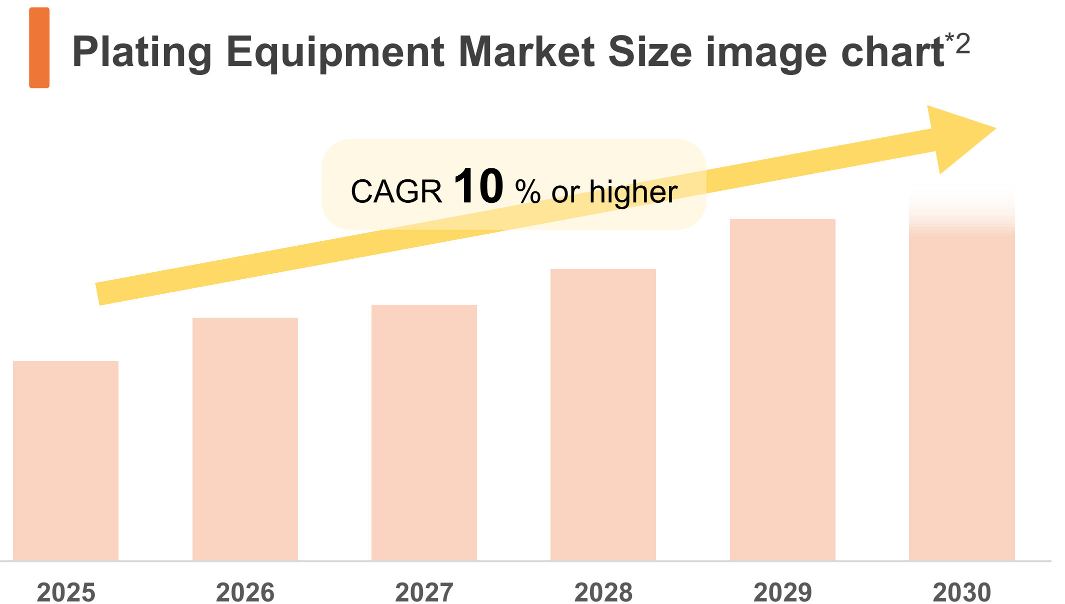
About plating systems

- Machines that use an electroplating process to deposit the metal film essential for semiconductors. Our products are designed for the wiring used in advanced packaging applications
- As multi-chip integration expands to support applications like generative AI, demand for electroplating processes for chip interconnects continues to grow

About bevel polishing systems

- This machine polishes the edges of wafers (semiconductor substrates) to remove unwanted film and scratches, and to conduct shaping for the next process. Smoothing the edges prevents problems in downstream processes. While there are various possible applications, the importance of this device in the bonding process has recently increased

Plating Equipment Market Size image chart[*2]



[*2.] Market size estimate based on EBARA research

Product lines for other equipment

Plating systems Model UFP600AS[*1]

Plating systems Model ZP300A[*1]

Bevel polishing systems Model EAC300bi-hv[*1]

[*1.] Model indicates our company model number.

- Demand for plating systems and bevel polishing systems is expected to grow with the projected rise of advanced packaging technologies enabling high-density integration and intermediate processes such as wafer bonding being driven by future demand for HPC, including generative AI
- Projecting plating systems market **growth at a CAGR of 10% or higher** through 2030

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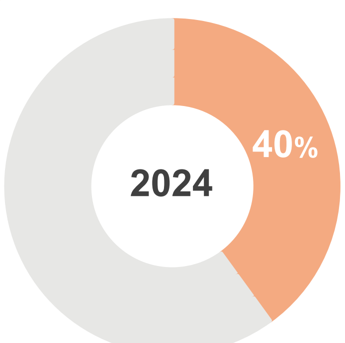
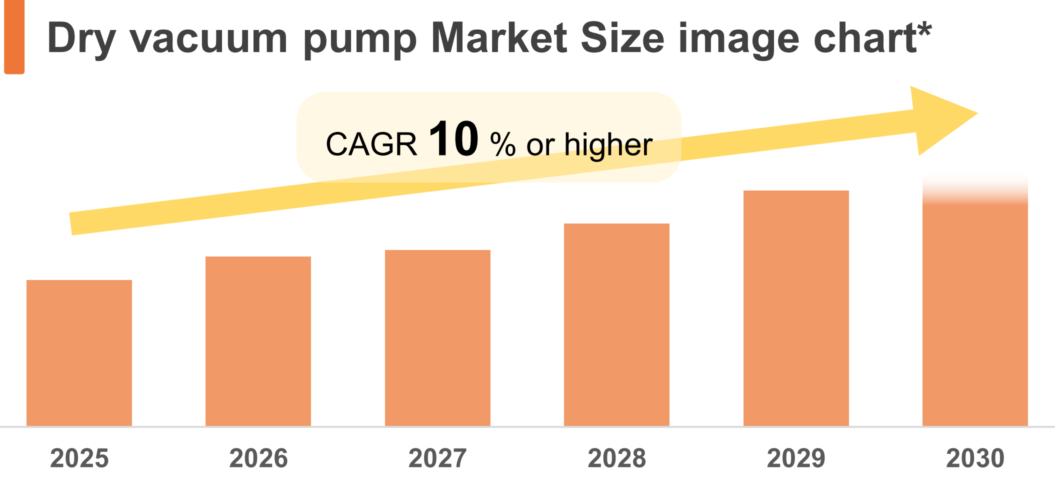
Overview of the Components Business

Revenue ratio



- We provide high-performance products, including dry vacuum pumps, to the "Sub-fab" area below clean rooms in semiconductor plants
- We boast the world's **No. 2** market share for dry vacuum pumps, with cumulative shipments of over **250,000 units**
- We offer unparalleled environmental value, from energy savings for individual equipment to the comprehensive integration of Gas abatement systems

Dry vacuum pump Market Size image chart*



*Market size estimate based on EBARA research

Components Business product line

Dry vacuum pumps

Model EV-X, and others

A non-contact vacuum pump that does not use oil or liquid for sealing. Achieves a clean vacuum without backflow or the diffusion of water or oil. Featuring world-class energy savings and footprint-saving performance.

Gas abatement systems

Model LPCMN

Equipment that detoxifies and safely abates gases used in manufacturing processes. Last year, we released a new model that is approximately half the height of the previous model. We aim to provide innovative solutions for overcrowded sub-fabs.

Ozonized water generator

Model OZW

Equipment that manufactures ozonized water used for wafer cleaning and etching. In recent years, the use of ozonized water is expected to increase as a means of reducing the burden caused by waste chemical treatment.

Gas abatement systems for EUV Lithography systems

Model EV-E-PV

Vacuum abatement system attached to EUV Lithography device.
Achieves energy savings and a smaller footprint while maintaining the ability to exhaust the large flow of hydrogen required for the EUV Lithography process.

Industrial chillers

***Building Service & Industrial Company product**

Device for controlling process temperatures in semiconductor manufacturing equipment. Achieves market-leading energy conservation performance. This system uses environmentally friendly refrigerants to help move toward carbon-neutral operations.

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01 Precision Machinery Company Overview

02 Overview of Each Business

03 **Semiconductor Manufacturing Technology Roadmap and our Strategies**

Semiconductor Market Technology Roadmap and Growth Opportunities in the Precision Machinery Segment

- Opportunities to use our products will increase as semiconductors become more miniaturized and stacked, and as the need for environmental performance increases, which will lead to revenue growth that exceeds market growth.

2023 — 2025 — 2030

Technology Roadmap

Logic			3nm → 2nm → 14Å → 10Å
Memory	DRAM		HBM3/3E → HBM4 → HBM4E → HBM5
			2D → 3D
	NAND		3xxL → 4xxL → 5xxL → 7xxL → 1xxxL

Technology trends and opportunities

CMP **Components**
- Development and mass production of 2nm semiconductors

CMP **Components** **Bevel polishing systems** **Plating systems**
- Growing demand for semiconductors for AI applications
  GPU, HBM, and Advanced Packaging

CMP **Components**
- Development and mass production of 14Å semiconductors
- Development and application of BS-PDN in logic semiconductors
- Application of hybrid bonding in memory semiconductors
- Evolution of transistors (FinFET to GAA)

CMP **Components**
- Development and mass production of 10Å semiconductors
- Shift to 3D DRAM
- Increase in NAND stacking

Components
- Evolution of EUV lithography technology

Our Market Outlook

- Semiconductor market CAGR of approx. 7% (2022-2025)
- Semiconductor market CAGR of approx. 7% (2025-2030, market scale to approach $1 trillion)
- WFE CAGR of approx. 3% (2022-2025)
  Driven by the expansion of the Chinese market and growing demand for generative AI

Revenue growth for the Precision Machinery segment

E-Plan 2025 (FY23～FY25)

FY22 222.2 billion yen → **CAGR 12.9%** → FY25 (plan) 320.0 billion yen

～E-Vision 2030

Aim to expand market share with a focus on advanced semiconductors and packaging

Capital expenditures

FY23: 12.2 billion yen, FY24: 19.9 billion yen, FY25: 50 billion yen
Kumamoto new production building: Completed December 2024, operations launched in May 2025
Fujisawa new development building: Completed June 2025, operations launched in September 2025

Investing with a focus on demand from 2030 and beyond

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*Source: EBARA research (as of August 2025)

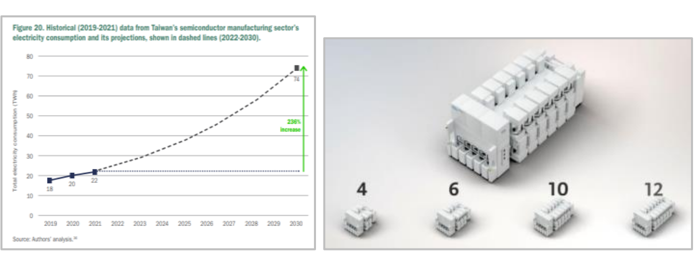
Growth Strategy Leveraging the Strengths of our Components Business

Providing overwhelming environmental value through energy savings, a small footprint, and integration

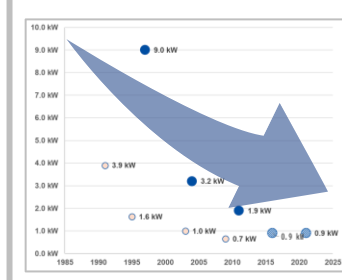
Business environment

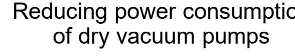
- Increased miniaturization of semiconductor devices
- Increased process steps and multi-chamber technology due to miniaturization and high-density integration

Power consumption CR space are increasing trends



Power consumption in semiconductor fabs





Number of chambers in semiconductor manufacturing equipment

X

EBARA's Strengths

- Developing energy-saving and space-saving products through optimized shapes and controls

Comprehensive capabilities as a rotating machinery manufacturer

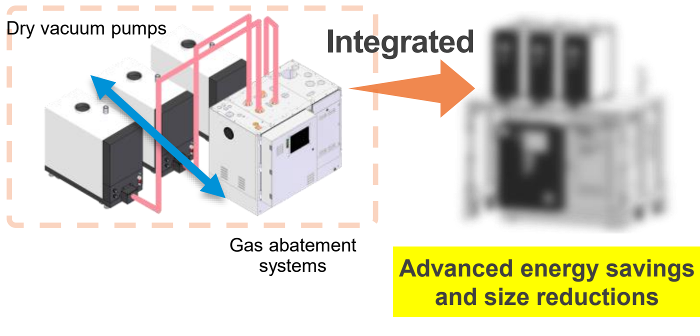
Reducing power consumption of dry vacuum pumps

Reducing the footprint of dry vacuum pumps

Leveraging the environment to evolve our strengths

- **Responding to increasing demand for energy and space savings**
- **Proposing energy savings for individual equipment as well as exhaust abatement system integration**

Integrated solutions for abatement systems



Advanced energy savings and size reductions

Source:
OurWorldinData.org, Greenpeace energy consumption report, Tokyo Electron, etc.

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Growth Strategies for Major Processes in the Equipment Business

Increased use of middle-of-line processes such as wafer bonding and advanced packaging that integrates multiple chips in the semiconductor manufacturing process will capture further demand for CMP, plating, and bevel polishing systems

Main Device・Major Process

(1) Front-end process → (2) Middle-of-line process → (3) Back-end process

Equipment Line-up: CMP | Bevel Polisher | Plating

・Hybrid Cu Bonding (HCB): Technology required for 3D stacking to connect device wafers
・Backside Power Delivery Network (BS-PDN): A structure with wiring supplying power to transistors located on the backside

・GAA : Gate All Around
・WoW : Wafer on Wafer
・CoW : Chip on Wafer

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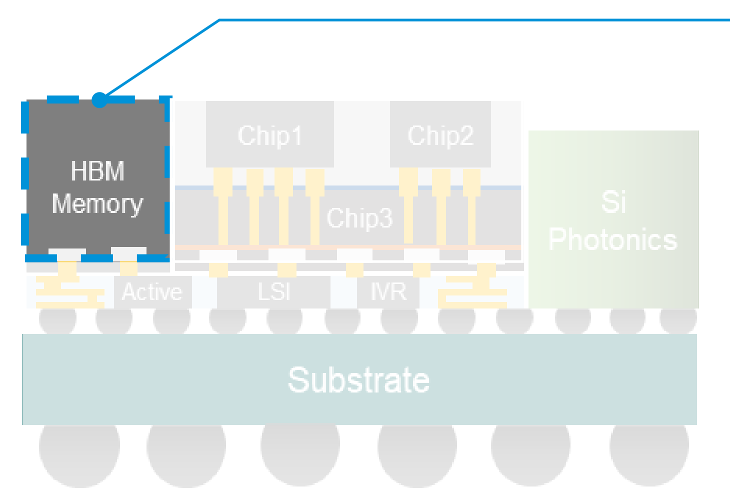
Growth Strategies for Major Processes in the Equipment Business

3D stacking of memory



(1) Front-end process → (2) Middle-of-line process

3D Memory

Memory Device + Hybrid Cu Bonding

Bonding
Metal
(W/Cu)
の増加

3D NAND Memory

3D DRAM

CMP

・Cu CMP
The number of processes required to create the Cu wiring (metal line and electrode formation) required for electrical conduction is increasing

・Thick Ox CMP
A process is required for polishing thick insulating films

Issue

Meeting the demand for dramatic performance improvements requires new technologies for miniaturization, 3D technology, and bonding two or more wafers

Opportunity

Adoption of Hybrid Cu Bonding
Increased CMP processes for metal layers
Accommodate Thick Ox CMP

・Hybrid Cu Bonding (HCB): Technology required for 3D stacking to connect device wafers

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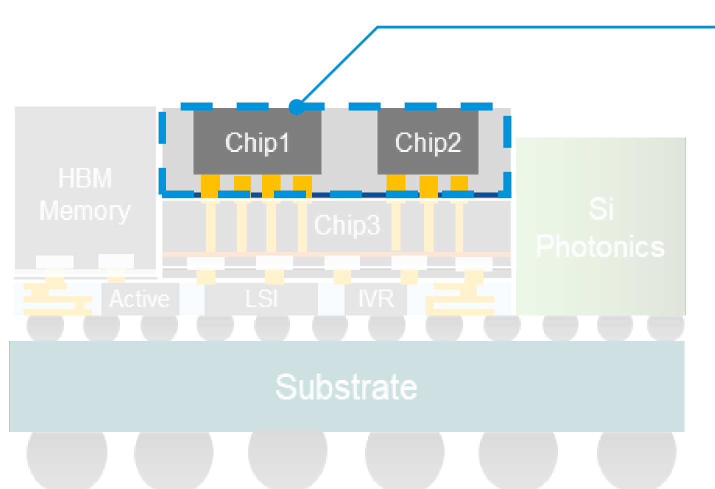
Growth Strategies for Major Processes in the Equipment Business

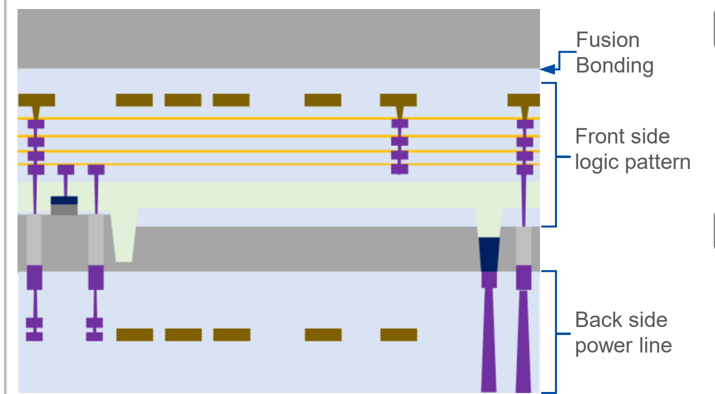
Higher logic performance

(1) Front-end process | (2) Middle-of-line process

Advanced Logic

Logic Device + Gate All Around, BS-PDN





CMP

- Increase in the number of CMP processes
  Cu / Si (insulating film layers such as SiO2 and other Si layers) / Thick Ox
  New metal materials* / HBV / TSV

*Cobalt, ruthenium, molybdenum

Bevel

- Edge Trimming
  This process polishes the wafer to a shape for the next process
- Edge de-metal contamination: A process for removing unwanted metal film and scratches

Issue

Advancements in miniaturization and high integration require the use of new metal materials and a power supply that uses the backside of the wafer

Opportunity

Increase in CMP processes for new metal materials
Increase in CMP processes for BS-PDN implementation and wafer bonding

- BS-PDN (Backside Power Delivery Network): A structure with wiring supplying power to transistors located on the backside
- HBV (Hybrid Bonding Via (Ox)): A small hole required to pass current between bonded device wafers
- TSV (Through Silicon Via): An electrode that passes through a silicon

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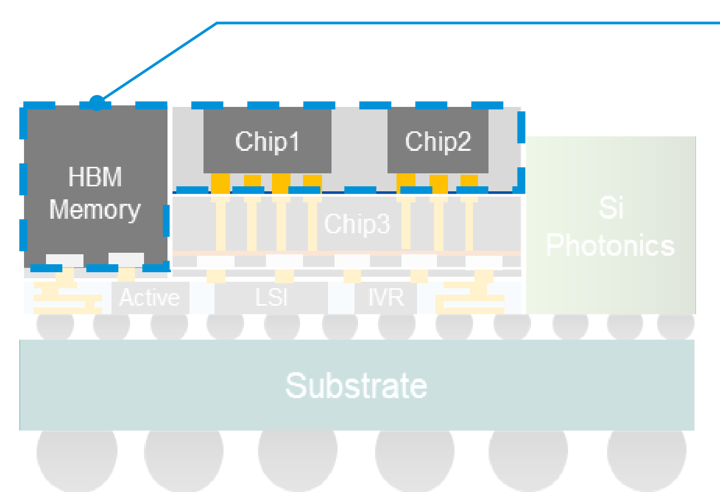
Growth Strategies for Major Processes in the Equipment Business

High performance through layering



(2) Middle-of-line process

Bonding Process

Wafer on Wafer, Chip on Wafer, Hybrid Cu Bonding
BS-PDN, 3D memory

Hybrid bonding

Bevel

DRAM HBM

CMP

- Increase in the number of CMP processes
  Cu / Si / Thick Qx
  New metal materials / HBV / TSV

*Cobalt, ruthenium, molybdenum

Bevel

- Edge Trimming
- Edge de-metal contamination

Plating

- Copper plating on through-silicon vias (TSV Cu)
- Micro bump formation for bonding

Issue

Reduction in yield due to unwanted film on the wafer bevel (edge)

Opportunity

Unwanted film removal via bevel polishers
Providing total process solutions through CMP and Bevel Polishing system

- BS-PDN (Backside Power Delivery Network): A structure with wiring supplying power to transistors located on the backside
- HBV (Hybrid Bonding Via (Ox)): A small hole required to pass current between bonded device wafers
- TSV (Through Silicon Via): An electrode that passes through a silicon

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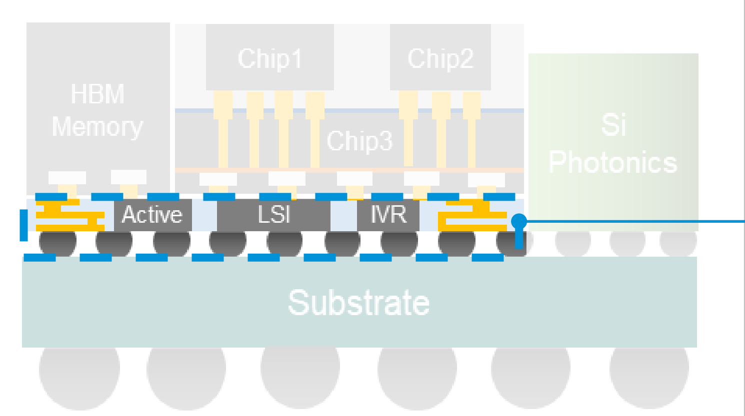
Growth Strategies for Major Processes in the Equipment Business

Higher performance through chiplet fabrication



(3) Back-end process

Advanced Packaging

Interposer

CMP

- Increase in CMP processes
  Metal layer (Cu) Through-silicon via (TSV)

Plating

- Redistribution layer (RDL)
- Copper plating on through-silicon vias (TSV Cu)
- Formation of micro bumps for electrodes during bonding (Cu)

Issue

Increasing need for chiplets to connect different chips

Opportunity

The use of interposers to make chiplets more efficient has led to an increase in the number of peripheral wiring processes, in turn leading to an increase in the number of processes using CMP and plating system

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Summary:
Growth Strategies for Major Processes in the Equipment Business

Generative AI products are moving toward higher integration and efficiency, and beyond miniaturization, bonding technologies for 3D stacking, such as BS-PDN, HBM, and HCB, continue to evolve

・BS-PDN: Backside Power Delivery Network
・HBM : High Bandwidth Memory
・HCB : Hybrid Cu Bonding

	Market Status	EBARA Status & Strategy
CMP	The **increasing use of CMP** relative to traditional integration is expected to drive unprecedented growth	In both **miniaturization and bonding**, key drivers of market growth, the metal layer represents the most significant opportunity. By leveraging **our strength in metal-layer CMP processes**, we aim **to secure additional layers and expand our market share**
Plating systems	As the generative AI and data center markets expand, **demand for advanced packaging is increasing, leading to an increase in interposer peripheral plating processes**	With AI driving the trend towards **large-scale packages** and the **expansion of the advanced packaging market**, there are increased expectations for plating systems. **We will aim to expand market share by releasing new Electroplating systems** with excellent process performance, productivity, and maintainability
Bevel polishing systems	Process solutions **supporting the evolution of bonding technology** are needed	We will aim to expand market share by providing process solutions tailored to market needs for **edge formation** and **pre-removal of defect-causing areas** in the growing field of bonding technology

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Precision Machinery Business | Three Growth Drivers

1 The WFE market is expanding in line with the growth of the semiconductor market

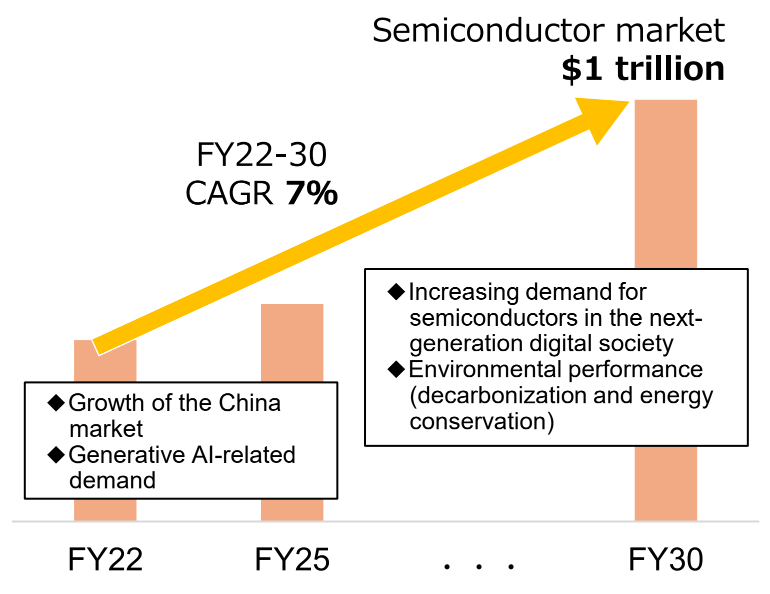
2 Applications (domains of use) for CMP and our products expanding

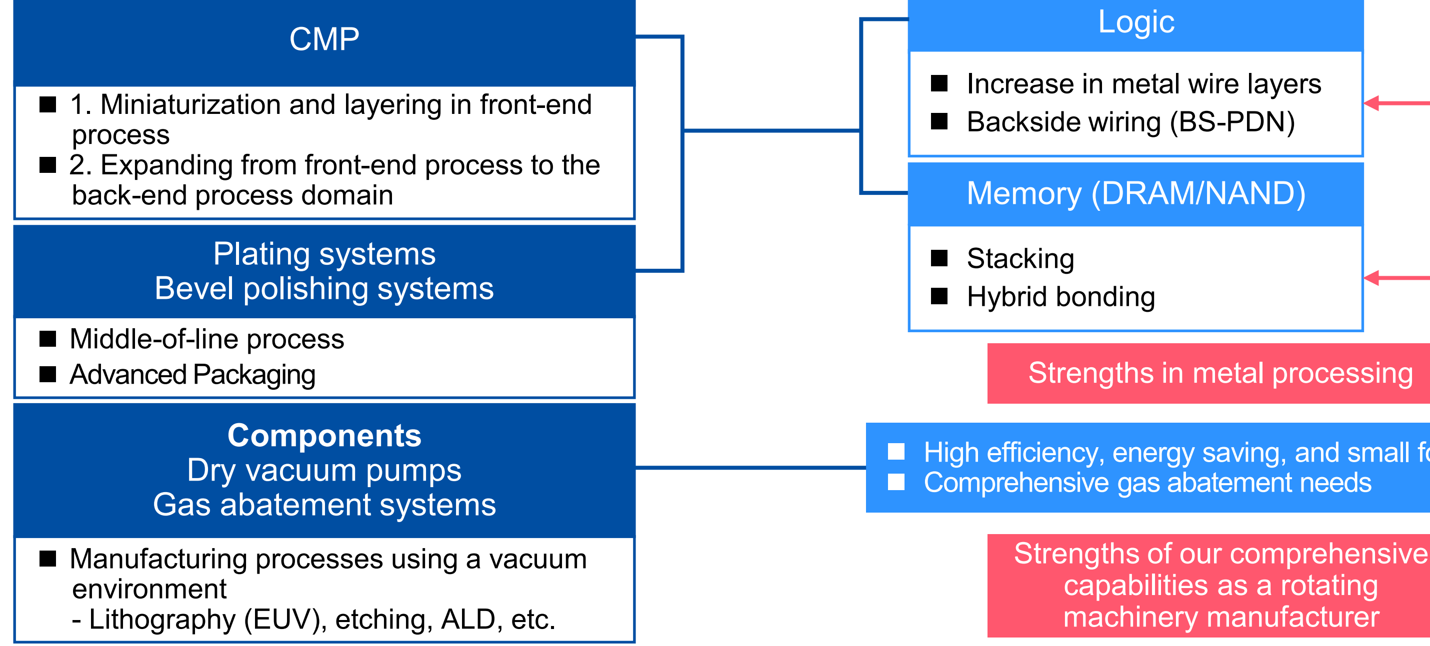
3 Expanding market share due to the increasing importance of our areas of technical expertise (metal processing, environmental performance, etc.)

Semiconductor
WFE
EBARA
Domains of application for CMP and our products

Front-end process
Middle-of-line process
Back-end process
FEOL
BEOL
Advanced Packaging
EBARA
Domains of application for CMP and our products

Competition
EBARA





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