FY2024/12 3Q

Financial Results

RS Technologies

Prime Market 3445

RS Technologies

November 11, 2024

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Company Profile

01

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Company Profile

- **Top company** in the reclaimed wafer business with a global market share of 33% * 1
- Entered the prime wafer business through a joint venture with a Chinese central company * 2
- Expand business into areas where business synergies can be expected through M & A

Company name	RS Technologies, Co.,Ltd.
Establishment	December 10, 2010
Management Philosophy	“Respect the global environment, earn the trust of people, be creative and challenge ourselves”
Business Profile	• Reclaiming silicon wafers • Manufacturing and sales of prime slicon wafers • Manufacturing and sales of consumable materials for semiconductor manufacturing equipment • Sales of scanning acoustic tomograph (SAT) • Sales of electronic components
Head office	NT Building 1-47-1 Ohi, Shinagawa-ku, Tokyo, JAPAN
Manufacturing Facilities	Miyagi, Ibaraki, Taiwan (Tainan), China (Dezhou),Fukushima
Capital	5,643 million yen (as of the end of December 2023)
President and CEO	Nagayoshi Ho

Major Consolidated subsidiaries

GRINM Semiconductor Material Co., Ltd.
GRITEK
(Beijing)

Registered Capital	RMB 1 billion
Investment ratio	40.09%※3
Listed	Shanghai Stock Exchange STAR market

RSTEC Semiconductor Taiwan Co., Ltd.
(Taiwan)

Capital	NT $300 million
Investment ratio	100%

DG Technologies Co., Ltd.
(Japan)

Capital	100 million yen
Investment ratio	100%

Union Electronics Solutions Co., Ltd.
(Japan)

Capital	27 million yen
Investment ratio	100%

*1 Estimated by our company based on SEMI data
*2 State-owned enterprises subject to management and supervision by the central government
*3 As of the end of December 2023

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History

- **Since its establishment, RST has firmly established itself as the world's leading company in the reclaimed wafer business. In 2018, RST became a comprehensive wafer manufacturer by making a major Chinese prime wafer manufacturer a consolidated subsidiary.**

2010	Dec.	RS Technologies Co., Ltd. was established with the main business of reclaimed wafer.	Reclaimed
2014	Feb.	Established RSTEC Semiconductor Taiwan Co., Ltd. (consolidated subsidiary) in Taiwan	Reclaimed
2015	Mar.	Listed on Tokyo Stock Exchange “Mothers Market”	
2016	Sep.	RST transferred to “the First Section” of the Tokyo Stock Exchange	
2018	Jan.	Chinese prime wafer manufacturer, GRINM Semiconductor Material Co., Ltd. (GRITEK) became a consolidated subsidiary of RST	Prime
2018	May	Acquired 100% shares of Union Electronics Solution Co., Ltd.	Semi
2018	Aug.	Established Shandong GRIMN Semiconductor Materials Co., Ltd. (Shandong GRITEK), A consolidated subsidiary of GRITEK.	Prime
2019	Jan.	Acquired 100% shares of DG Technologies Co., Ltd.	Semi
2020	Feb.	Established Shanghai Union Semiconductor Co., Ltd. (Shanghai Union)	Semi
2022	Apr.	Transferred from the First Section of the Tokyo Stock Exchange to the “Prime Market” Establishment of Nomination and Compensation Committee	
2022	Nov.	GRITEK listed on Shanghai Stock Exchange (STAR market)	Prime
2023	Dec.	Established LE System Co.,Ltd, manufacturer of electrolyte for vanadium redox flow batteries (VRFB)	Energy

Reclaimed Reclaimed Wafer Business

Prime Prime Wafer Business

Semi Semiconductor-related Equipment and Materials Business

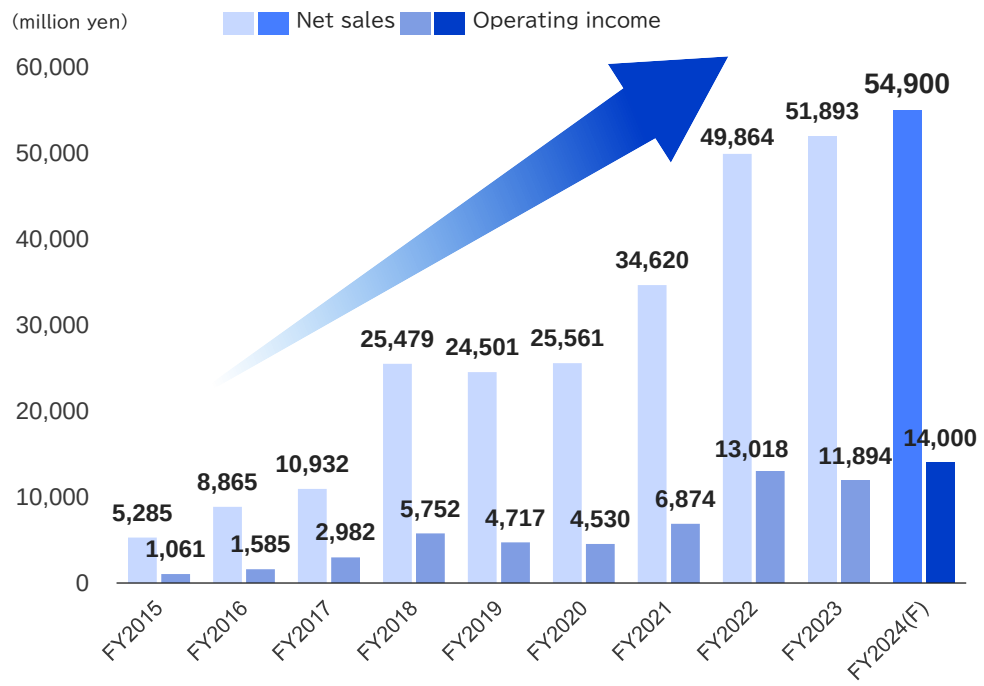
Energy Renewable energy related

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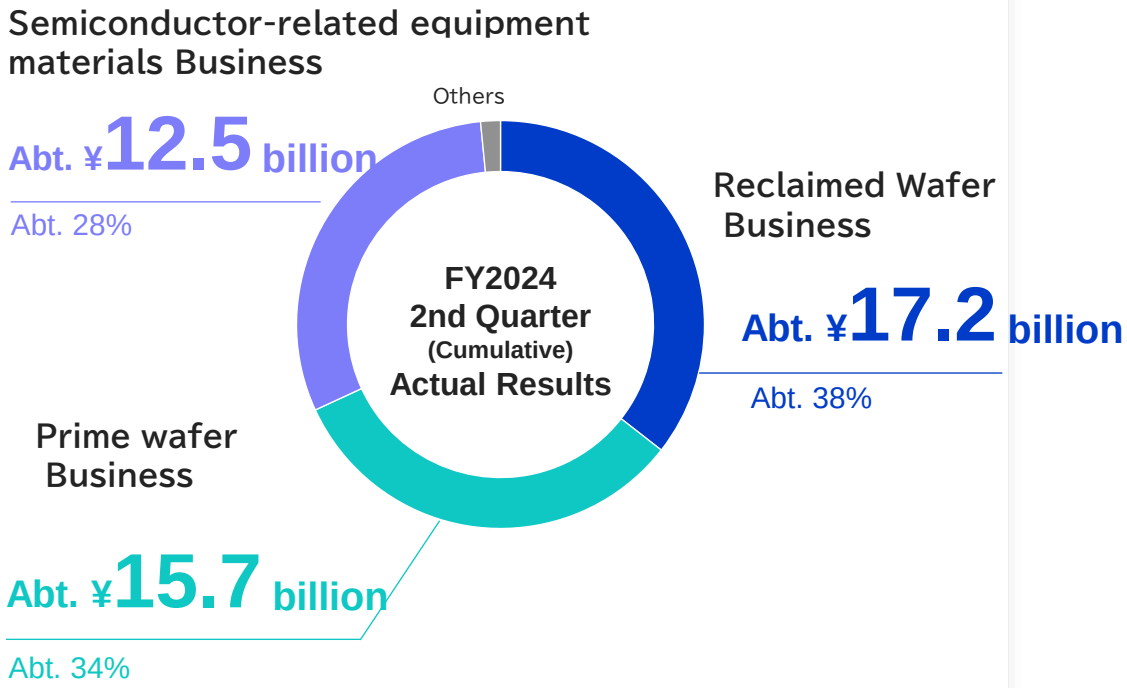
Current RS Technologies

- RST became comprehensive wafer manufacturers with the Reclaimed Wafer Business and Prime Wafer Business
- Expansion of business areas as Semiconductor-related equipment and materials Business
- No1 in global market share in reclaimed wafer business, and development of prime wafer business mainly in China

Consolidated net sales and operating income



Net sales by segment



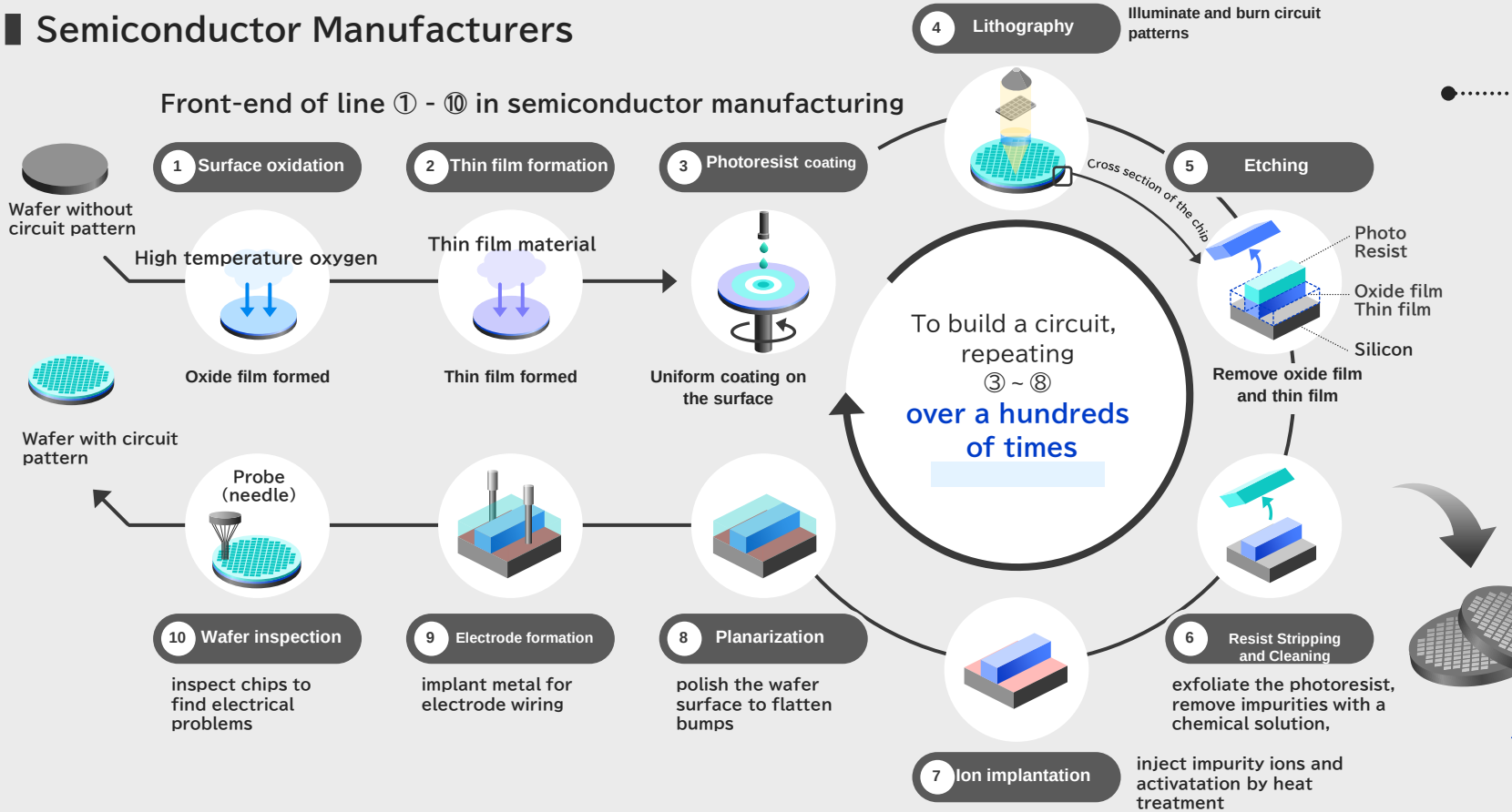
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Business Profile (1/5 What Reclaimed Wafers is)

- Reclaimed wafers are wafers that have been reclaimed from test wafers used in the process of semiconductor manufacturing.
- Reclaimed wafers are used repeatedly by our customer. With our technology, RST can reclaim test wafers more than 10 times, helping to reduce costs for our customers, semiconductor manufacturers and executing eco-friendtly business model.

Semiconductor Manufacturers

Front-end of line ① - ⑩ in semiconductor manufacturing



RS Technologies (RST)

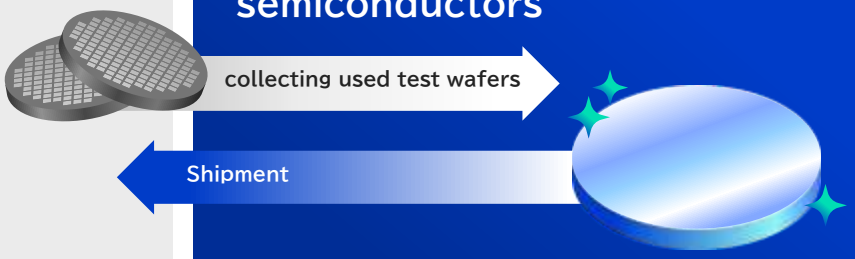
Used in **almost all processes**

- Monitor Wafer
  - (application: process and processing accuracy evaluation)
- Dummy Wafer
  - (application: precision processing stability improvement)

RST **reclaims** the used test wafers for and returns to semiconductor manufacturers

Wafer Reclamation

Wafer reclaimation is essential for manufacturing semiconductors



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Business Profile (2/5 Reclaimed Wafer Business)

- **Achieve continued growth as a global supplier in the reclaimed wafer industry**

Market Characteristics

Continued growth in the semiconductor industry

The global semiconductor market size was 2023 to 2030 and grew at a CAGR of about 10% in 2030.
It is projected to reach **US $1 trillion** *1

*1 Source: "Semiconductor Market Forecast" by SEMI Japan

Resilient to economic fluctuations

- Used by various applications such as the start-up of semiconductor manufacturing equipment
- When customers become more cost-conscious during a recession,
the amount of Reclaimed wafers' input increases

⇒ **Less susceptible to the silicon cycle**

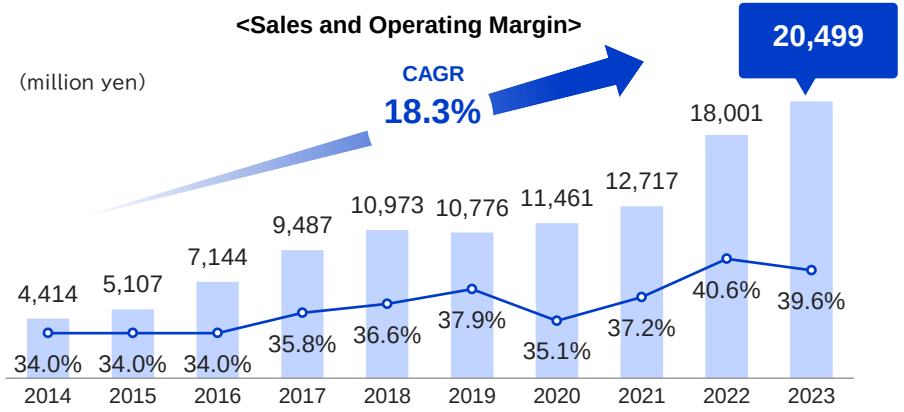
The reclaimed wafer business is expcted to grow more in the future

Results

Performance Trends (Reclaimed Wafer Business)

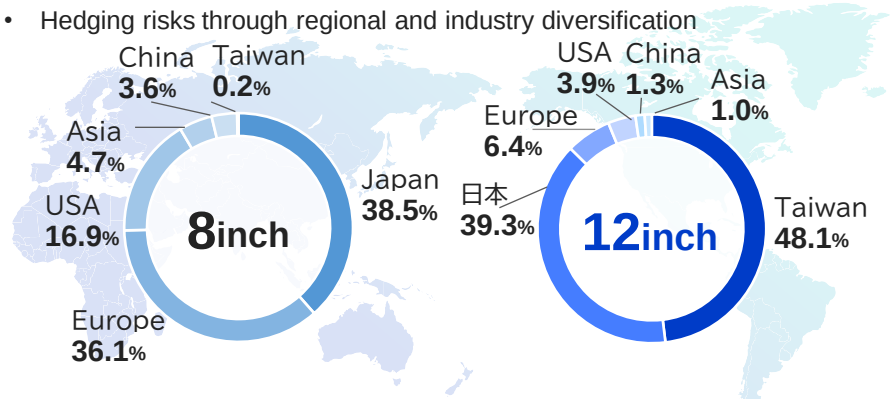
- Achieve significant growth by expanding production capacity and increasing the manufacturing sites

<Sales and Operating Margin>



Shipping Countries

- Securing a wide range of countries including Japan, Taiwan, Europe and North America
- Hedging risks through regional and industry diversification



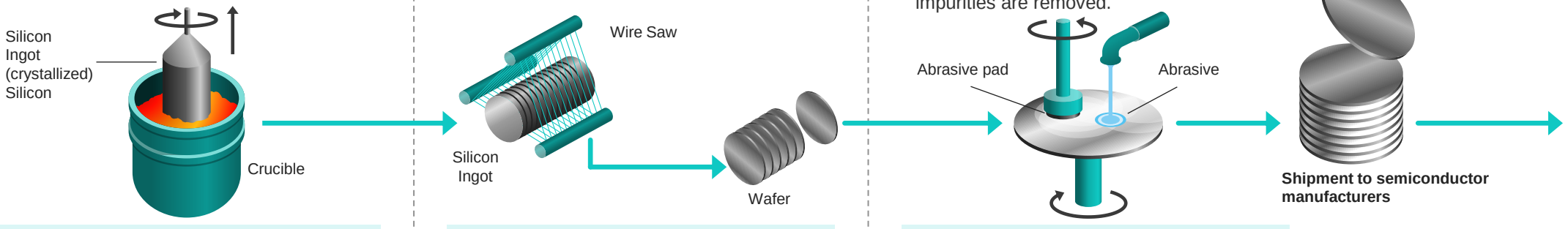
FY2024/12 3Q Actual Results

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Business Profile (3/5 Prime Wafer)

- **A prime wafer is a silicon wafer that is a substrate material for semiconductors and used for semiconductor chips.**
- **Made from 99.999999999% silicon, it has the highest flatness of any material currently on Earth.**

	① Silicon ingot raising	② Silicon ingot cutting	③ Wafer polishing
Manufacturing process	Crystallized in crucible Silicon is pulled up while rotating	Sliced, using a wire saw and cut into disk-shaped wafers	By polishing the surface of the wafer, distortion and scratches are corrected and impurities are removed.
Point	By controlling mixture, temperature, pulling speed, etc., **high purity and defect-free single crystals can be formed**	From a single crystal, how many **high-quality wafers is sliced**	To go through advanced processing steps, **ultra-flat, ultra-clean wafers** can be manufactured



All processes require very high crystal and polishing techniques

Market

The silicon wafer market is more than 1 trillion JPY and will expand further in the future.

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Business (4/5 Prime Wafer Business in RST)

- **In 2018, the company entered the industry through a joint venture with China's largest state-owned research institute in the field of nonferrous metals, GRINM as a consolidated subsidiary, GRINM Semiconductor Material Co., Ltd.(GRITEK)** * 1.
- **Construction of a flagship plant for prime wafers in Shandong Province, China**

Strengths of GRITEK

High Technological Capability

Poroviding high quality products in China through collaboration with GRINM

Business synergies with our core business

In polishing, cleaning and inspection,our know-how from the reclaimed wafer business is applied

Market advantage

By taking advantage of the GRINM group's sales channels,we gain an advantage in Chinese market

Strategic market selection

Focusing on investment in volume zones with a large number of shipments (low to middle end)

Progress

Establish a global quality mass-production line

8 Inch → Production capacity reaches to 130,000 wafers per month → **12 Inch**

- Completion of flagship plant
- Joint venture with Dezhou Municipal Government Fund
- Production capacity of 60,000 wafers per month

Action Plan



Expand production capacity through capital investment



Strengthen sales promotion activities by taking advantage of customer network in the reclaimed wafer business



Aim for a global market through the use of mergers and acquisitions

*(1) Current: Aiken Semiconductor Silicone Materials Co., Ltd.

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Business (5/5 Semiconductor-related equipment and materials Business)

- **Manufacture of silicon and quartz consumables for semiconductor manufacturing equipment and sales of scanning acoustic tomograph (SAT), laser diode and electronic components**

	Manufacturing and sales functions	Trading company functions
Business Entity	**DG Technologies Co., Ltd.** (subsidiary)	• **RS Technologies Co., Ltd.** • **Union Electronics Solutions Co., Ltd.** (subsidiary)
Overview	Utilizing precision processing technologies for silicon and quartz **Manufacture and sale of consumable materials for semiconductor manufacturing equipment**  Focuses on quartz glass and monocrystalline and polycrystalline silicon products	**Sales of the latest products on behalf of overseas markets**  Laser Diode (Sharp)  Ultrasonic Imaging System (Hitachi)
Action Plan	Purchase materials from RST's subsidiary, GRITEK Cross-selling to Customers for reclaimed wafers **Sell products globally with competitive edge**	Expand product lineup Expand sales area **Expanding sales and customer segment**

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Summary of Financial Results for FY2024/12 3Q

02

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Financial Results for the Third Quarter of FY 2024 (Cumulative)

- **Net sales increased by 12.8% year on year to 44,554 million yen**
- **Operating income increased by 4.8% year on year to 9,669 million yen**

(million yen)

	FY 2023 3Q	FY 2024 3Q	Year-on-Year	Difference
Net Sales	39,470	44,554	+12.8%	+5,084
Operating Income	9,576	9,669	+0.9%	+93
Operating Margin	24.3%	21.7%		△2.6pt
Ordinary Income	12,017	11,075	+7.8%	+942
Ordinary Margin	30.4%	24.8%		△5.6pt
Net income attributable to owners of parent	5,965	5,593	△6.2%	+372
EPS (JPY)	¥226.82	¥212.16	△6.4%	△¥14.66

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Financial Results for the Third Quarter of FY2024 Segment Trends (Cumulative)

- The reclaimed wafer business shows that sales and profits increased YoY due to increased production capacity
- The prime wafer business increased profit margin due to measures to improve production efficiency
- Sales in the semiconductor-related equipment &materials business increased sales YoY, partly due to the impact of large projects in the first quarter.

(million yen)

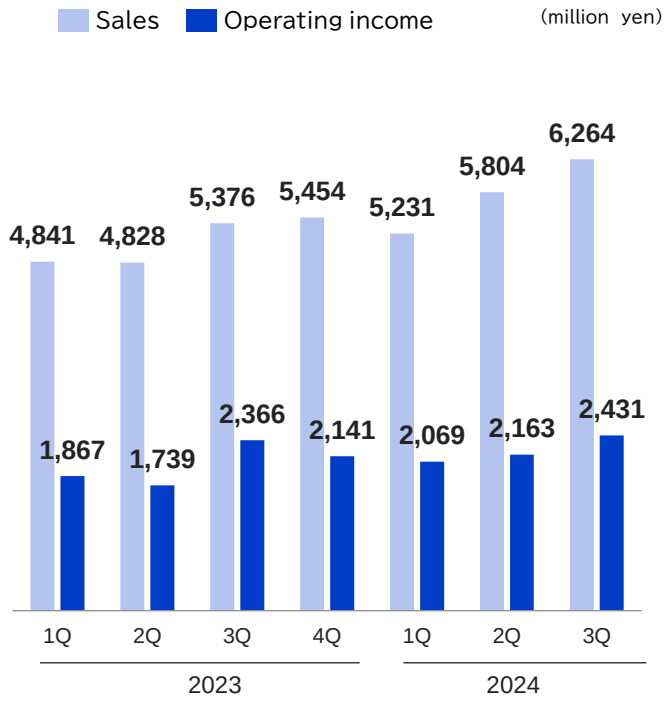
	Reclaimed Wafer Business	YoY	Prime Wafer Business	YoY	Semiconductor-related Equipment & Materials Business	YoY	Other adjustments	YoY	Consolidated total	YoY
Sales	17,299	+14.9%	15,752	+3.4%	12,534	+22.2%	△1,031	–	**44,554**	**+12.8%**
Operating Income	6,663	+11.5%	3,767	△10.1%	484	△42.1%	△1,246	–	**9,669**	**△0.9%**
Operating Margin	38.5%	△1.2pt	23.9%	+1.4pt	4.8%	△3.4pt	–	–	**21.7%**	**△2.6pt**

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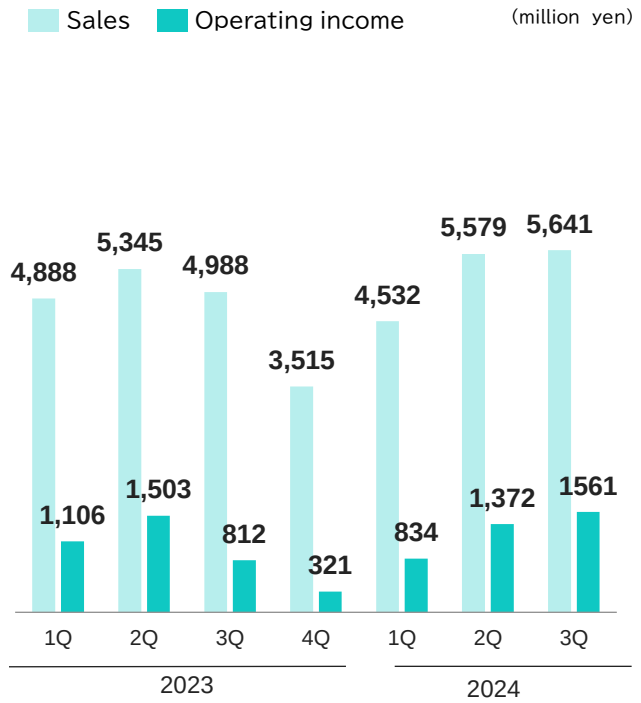
Quarterly Results for the FY2024

- In the reclaimed wafer Business, shipment volume increased YoY due to the effect of investment in increased production. OP margin: 38.8%
- In the prime Wafer Business, unit price of 8-inch prime wafer increased. OP margin: 27.6%
- In the semiconductor-related equipment and materials business, sales and profit decreased YoY due to the impact of the deterioration in sales of certain products in the trading business. OP margin: 0.9%

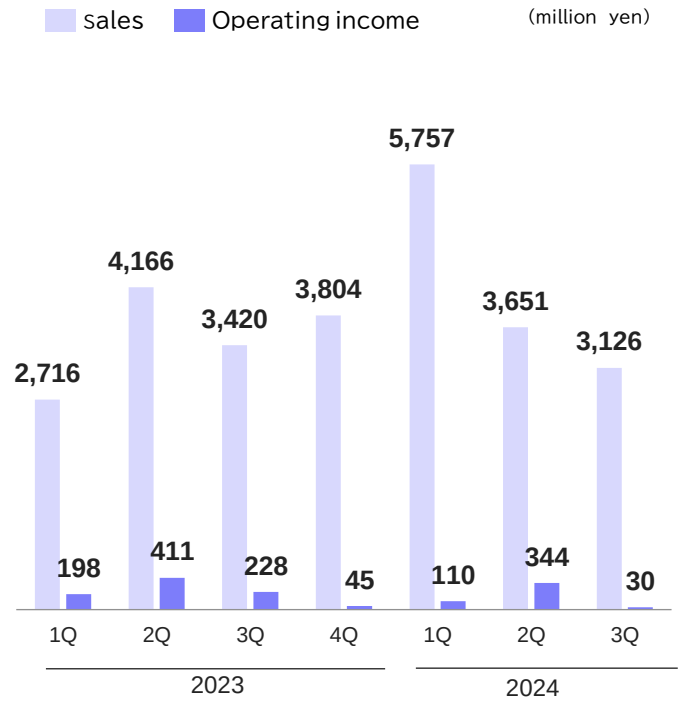
Reclaimed Wafer Business



Prime Wafer Business



Semiconductor-related equipment and materials business



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Balance Sheet

Net assets increased by ¥8.6 billion from the end of the previous year to ¥124 billion (¥115.4billion in the previous year)

(million yen)	FY 2023/12	FY 2024/12 2Q
Current Assets	96,409	**98,336**
Cash and Deposits	70,758	**71,682**
Notes and accounts receivable-trade	12,673	**16,472**
Merchandise and finished goods	6,507	**3,608**
Fixed assets	44,256	**48,391**
tangible fixed assets	35,326	**39,392**
intangible fixed assets	266	**259**
Investments and other assets	8,663	**8,739**
Total assets	140,666	**146,728**
Current liabilities	18,265	**16,001**
Notes and accounts payable	5,174	**5,583**
Short-term debt	3,355	**3,538**
non-current debt	6,973	**6,711**
Long-term debt	2,092	**1,285**
Total liabilities	25,238	**22,713**
Net assets	115,428	**124,015**
Total liabilities and net assets	140,666	**146,728**

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Medium-Term Management Plan

03

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Overview of the Medium-Term Management Plan (2024-2026) (Base Plan)

➢ **While a strong sense of stagnation in the semiconductor market will be still remained in the first half of 2024, sales are expected to exceed 2023 as the recovery trend is expected from the second half of the year.**

- **In the reclaimed wafer business, capital investments at 3 sites in Japan, Taiwan, and China to increase production capacity will be carried out.**
- **In the prime wafer business, capital investments to increase our market share at 8 inches and 12 inches in China will be executed.**
- **In the semiconductor equipment and materials business, entering into new markets and acquiring new customers.**

Base Plan*1

*1: Medium-term management plan for three existing businesses (Reclaimed Wafer Business, Prime Wafer Business, and Semiconductor Equipment and Materials Business)

(Million Yen)	FY2023 (Actual)	FY2024	FY2025	FY 2026
Net Sales	51,893	54,900	59,300	64,100
growth rate		*106%*	*108%*	*108%*
Operating Income	11,894	14,000	15,330	16,830
%	22.9%	25.5%	25.9%	26.3%
Ordinary Income	14,921	15,400	16,730	18,230
%	28.8%	28.1%	28.2%	28.4%
Net Income	7,703	7,600	8,200	8,800

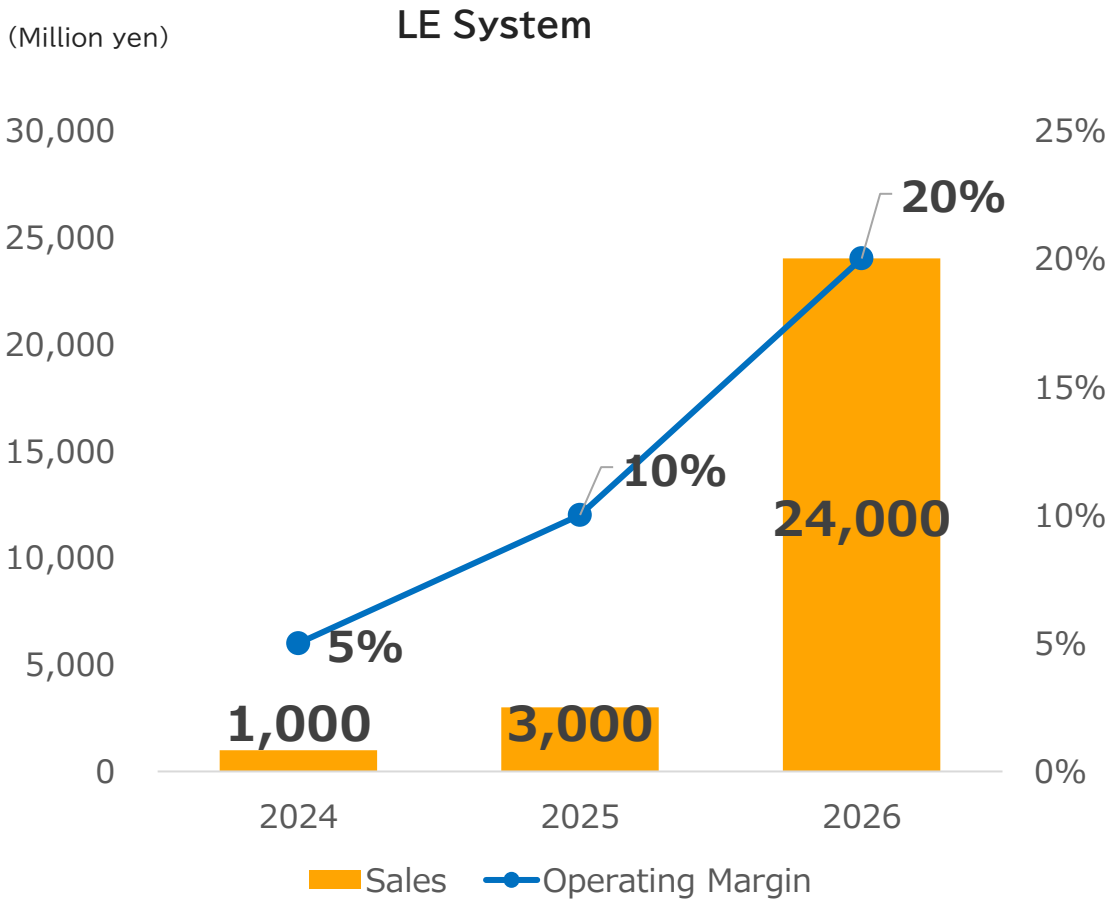
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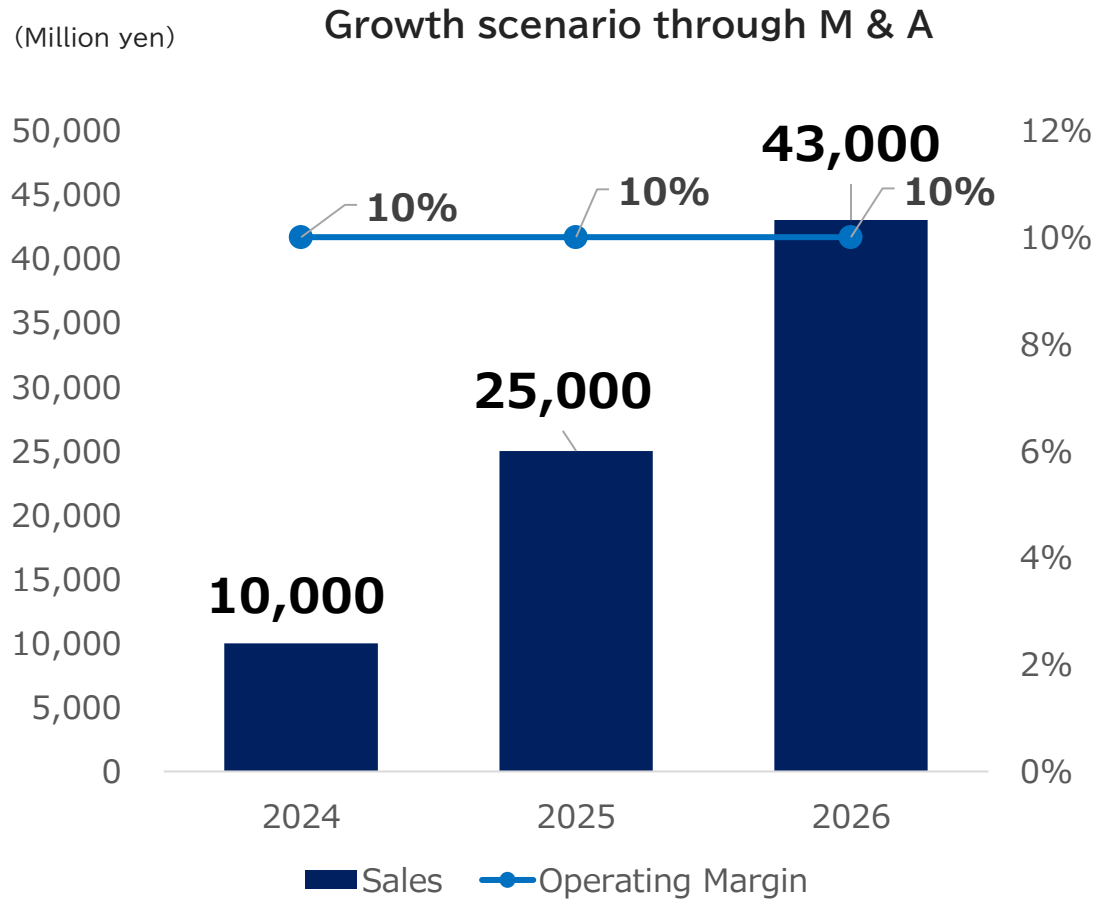
Overview of the Medium-Term Management Plan (2024-2026)
(Upside Plan - Target Value) 1/2

◆In addition to the Base Plan, the Upside Plan, which anticipates growth through the LE system and M & A, is also set as a target value

・The LE system will expand into China, the largest market for vanadium redox flow batteries. Target sales of 24 billion yen and operating margin of 20%

・Accelerate business expansion by achieving sales of approximately 43 billion yen in 3 years through M & A



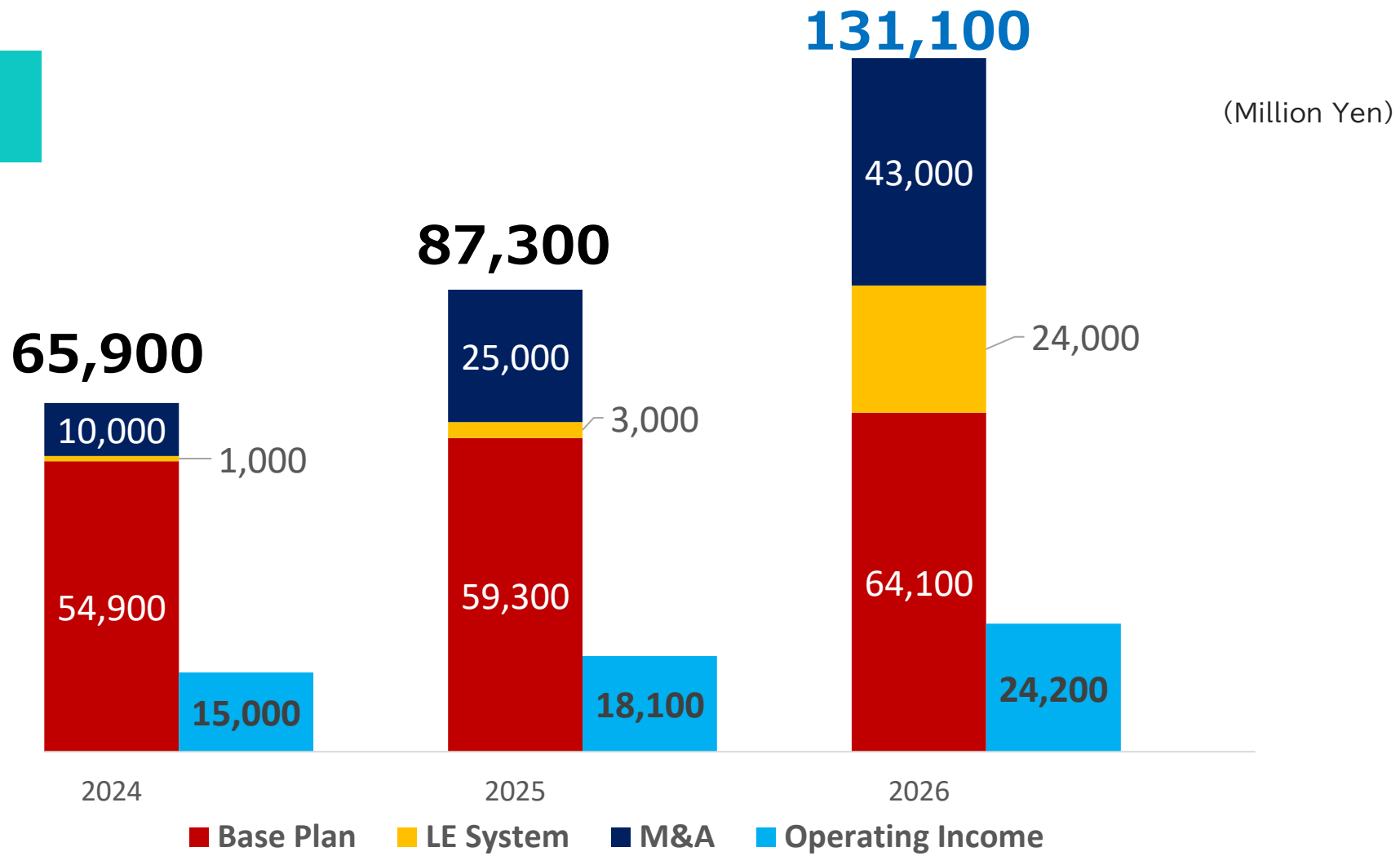


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Overview of the Medium-Term Management Plan (2024-2026)
(Upside Plan - Target Value) 2/2

- Set a target of approximately 130 billion yen in net sales by 2026 as the Upside Plan (Target Value)
- Promote scale expansion through LE system and M & A in 3 years of 2024-2026

Upside Plan
(Target value)



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Notice of Establishment of Subsidiary (Investment Company) in China

- RST determined to establish a subsidiary called ”RS Technologies Group Xiamen Co., Ltd. ” (tentative name) in Xiamen City, China

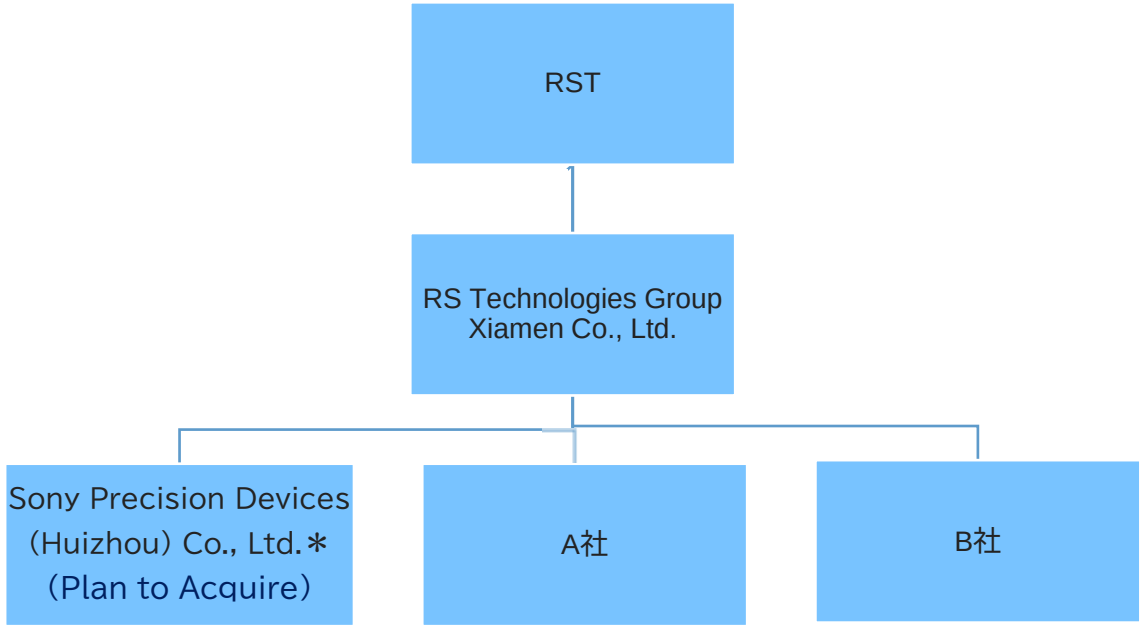
(Disclosed on October 24, 2024)

- After the establishment of the Investment Company, we plan to increase our market share in China through the establishment of a new company and investment business.

<Overview of RS Technologies Group Xiamen Co., Ltd. (tentative name)>

Location	Haicang District, Xiamen City, Fujian Province, China
Representative	Nagayoshi Ho
Business	• Investment in Chinese companies and our group companies, • Management and guidance, etc., for invested companies
Capital	40,000,000USD (284,800,000RMB 1 USD=7.12 RMB (6,029,600,000JPY 1 USD=150.74JPY
Established	November, 2024(Plan)

< Planned Scheme of RS Technologies Group Xiamen Co., Ltd.>



*Next page for more details

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Notice of Acquisition of Sony Precision Devices (Huizhou) Co., Ltd.

- The plan to make Sony Precision Devices (Huizhou) Co., Ltd. a subsidiary on December 30, 2024 was disclosed on September 19, 2024)
- In addition to the existing optical pickup module business, a automotive camera module business will be launched to further expand the business
- Expect to expand sales channels by leveraging our company's strength in the Chinese market

<Overview of Sony Precision Devices (Huizhou) Co., Ltd.>

Name	Sony Precision Devices (Huizhou) Co., Ltd.
Established	November 20, 1995
Capital	CNY 555 million
Business	Manufacturing and sales of optical pickup and automotive camera modules
Location	No. 9 and No.11 Huifeng East 1st Road, Huihuan Street, Zhongkai High-tech Zone, Huizhou, Guangdong, 516006 P.R.C.



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Capital Investment Plan: Reclaimed Wafer Business

- Increasing production capacity in Japan and Taiwan and mass production in Shandong Province, China, to meet strong demand
- Planning production capacity of 890,000 wafers per month by 2026 to meet its demand

Japan

Total investment **3 billion JPY**

FY 2024	FY 2025	FY 2026
200 million yen	1.3 billion yen	1.5 billion yen

Expansion of production capacity for 12 inch reclaimed wafers and response to miniaturization

2024 – 2026:

Monthly production: increasing + 40,000 wafers/month

Monthly production capacity of 12 inch reclaimed wafers

2023	2024	2025	2026
310,000	320,000	340,000	360,000

Taiwan

Total investment **6 billion JPY**

FY 2024	FY 2025	FY 2026
1 billion yen	1.5 billion yen	3.5 billion yen

Expansion of production capacity for 12 inch reclaimed wafers and response to miniaturization

2024 – 2026:

Monthly production: increasing +70,000 wafers/month

Monthly production capacity of 12 inch reclaimed wafers

2023	2024	2025	2026
230,000	260,000	280,000	330,000

China

Total investment **6.1 billion JPY**

FY 2024	FY 2025	FY 2026
100 million yen	3 billion yen	3 billion yen

Expansion of production capacity for 12 inch Reclaimed wafers

2024 – 2026:

Monthly production: increasing + 150,000 wafers/month

Monthly production capacity of 12 inch reclaimed wafers

2023	2024	2025	2026
50,000	50,000	150,000	200,000

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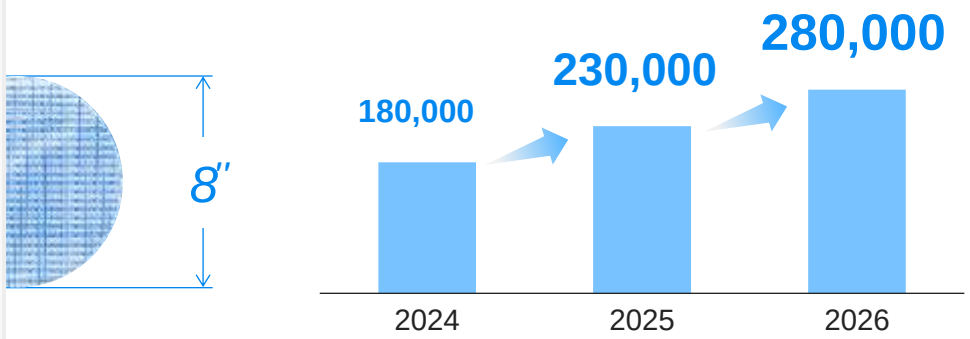
Capital Investment Plan: Prime Wafer Business

- **Production of 8 inch prime wafers is expected to increase from 180,000 to 280,000 per month between 2024 and 2026.**
- **Production of 12 inch prime wafers is expected to increase from 60,000 to 210,000 per month between 2024 and 2026.**

China 8 inch

- Aim to build a stable mass production and improve production efficiency

Monthly production capacity for 8 inch prime wafers

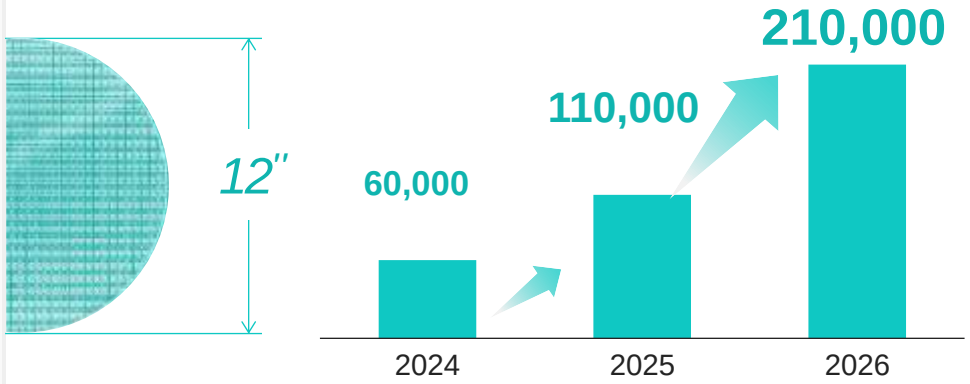


FY 2024	FY 2025	FY 2026
4 billion JPY	2 billion JPY	2 billion JPY

China 12 inch

- Increase production capacity for 12 inch prime wafers

Monthly production capacity for 12 inch prime wafers



FY 2024	FY 2025	FY 2026
6 billion JPY *1	4 billion JPY *1	10 billion JPY *1

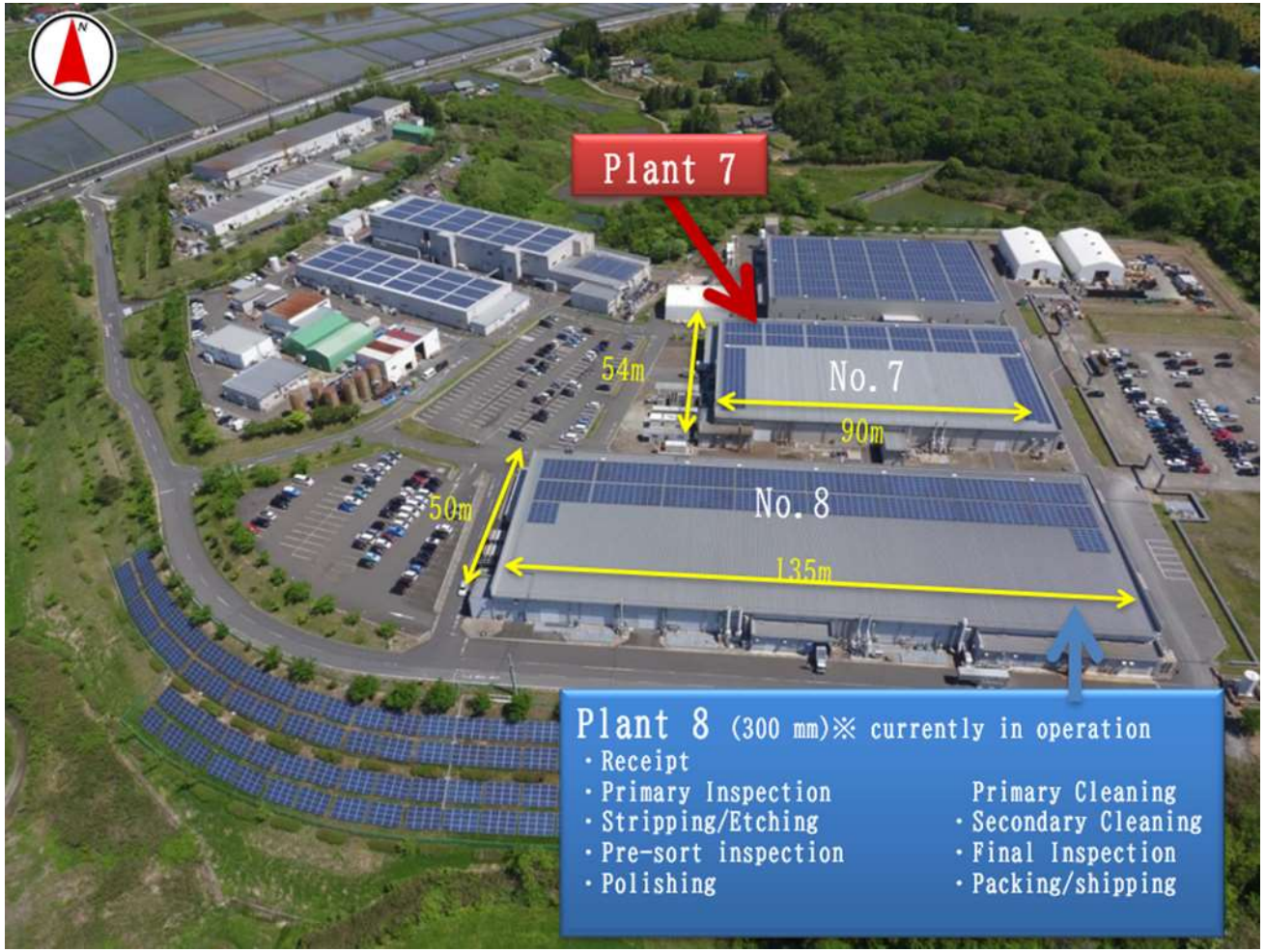
*1 The 12 inch business is an investment from an equity method affiliate.

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Capital Investment Plan: Sanbongi Plant (2027-2029)

- With the acceleration of growth in semiconductor market, Plant 7 will re-start operations to meet the growing demand.
- Mass production at Plant 7 is scheduled to begin in fiscal 2027.

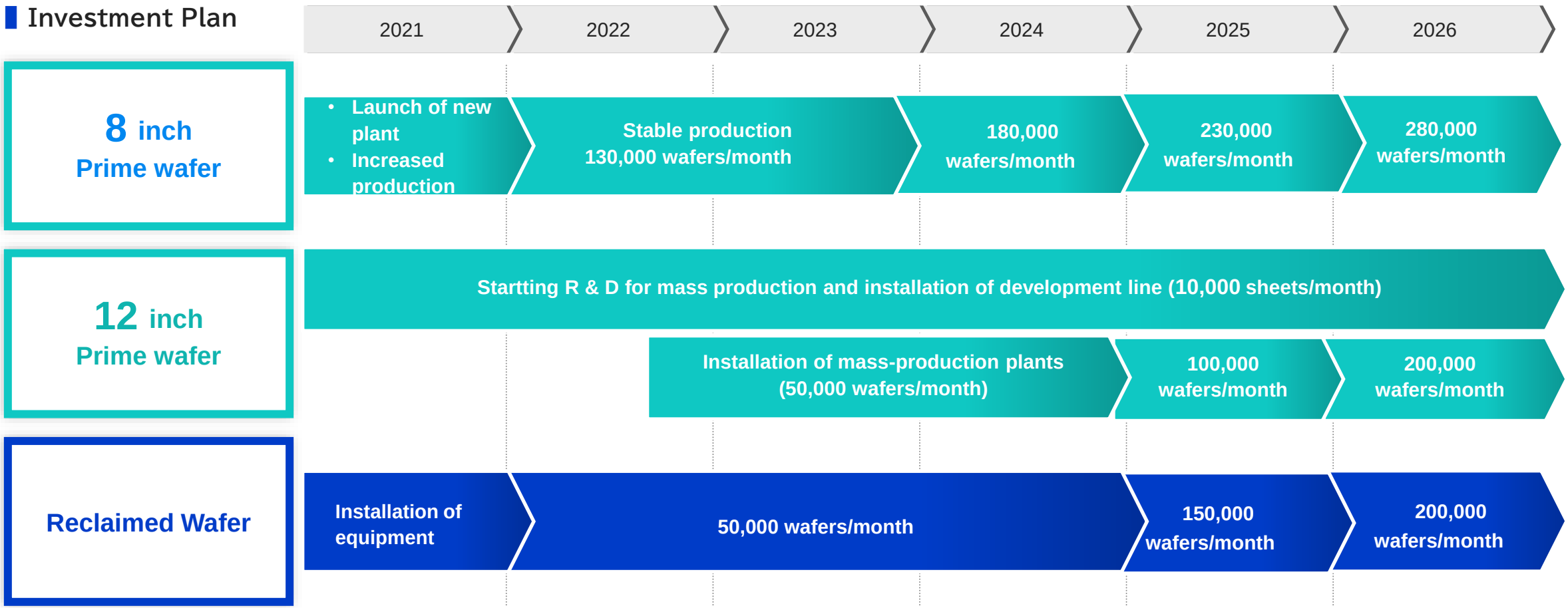
Address	The Plant 7, 26-2 Otonashi Azayamazaki, Osaki, Miyagi Prefecture
Production	FY 2027 Monthly production: **+100,000 wafers** FY 2028 Monthly production: **+40,000 wafers** FY 2029 Monthly production: **+30,000 wafers**
Schedule of mass production	The first quarter of FY 2027
Expected amount of investment	**¥15,142 Million** (total amount for FY27, FY28, FY29)
Method of financing	Equity and borrowings



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China Investment Plan (Schedule)

- Increase production of 8 inch prime wafers from 130,000 to 180,000 per month
- Set up a mass production line of 12 inch prime wafers, producing 50,000 wafers per month
- Continue mass production of 50,000 reclaimed wafers per month



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Demand for Reclaimed Wafers: New 12 inch semiconductor Plants

- In the global market, new 12 inch semiconductor plants are under construction in China, Europe, the United States and Japan.
- RST meets new demand for reclaimed wafers through capital investment in Japan, Taiwan and China.



Note:RST Survey

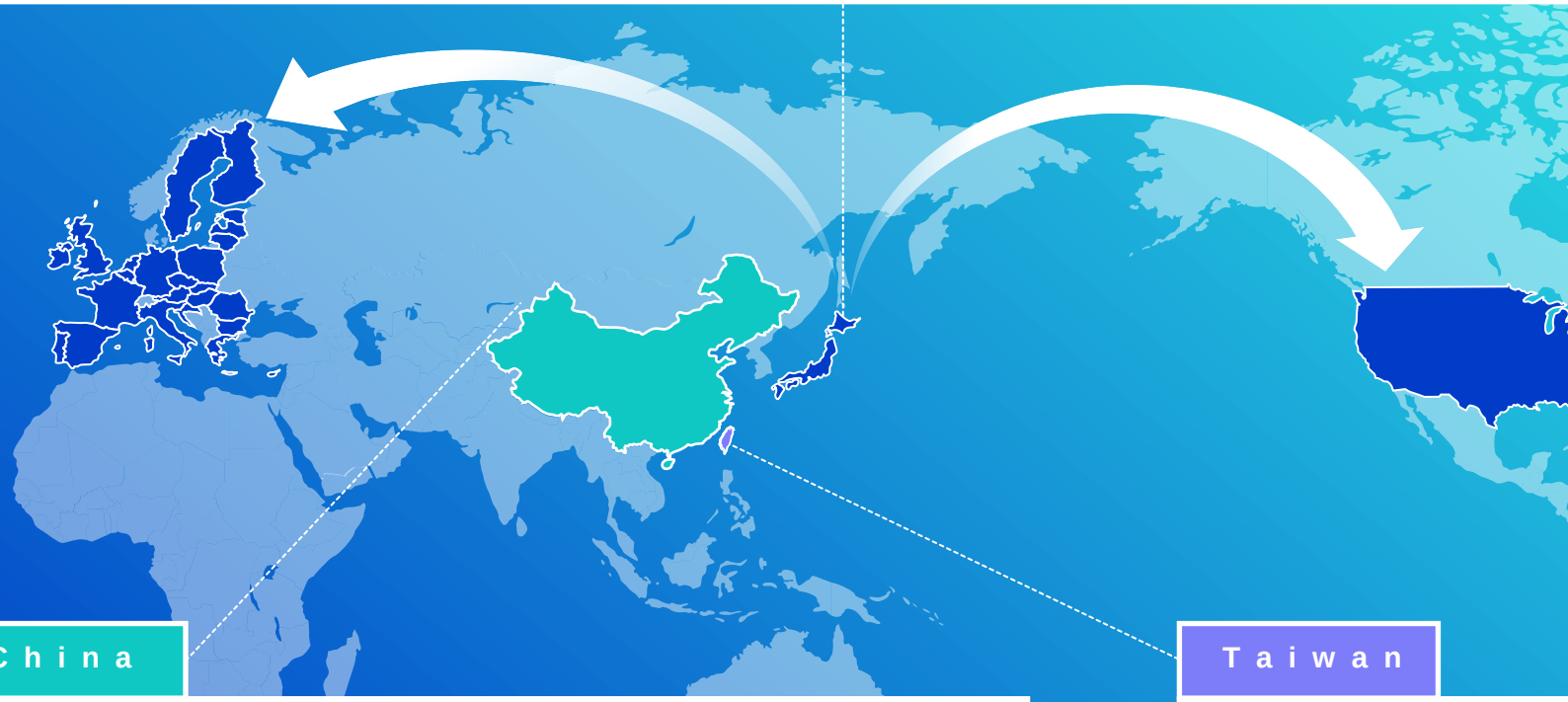
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Regional strategies not to be affected by “Decoupling”

Japan, North America and Europe

Sanbongi Factory (Japan's flagship factory) **covers mainly North America, Europe and Japan**





China

Prime wafers at present
is sold mainly in China



Taiwan

Taiwan plant covers
Semiconductor foundry companies
based in in Taiwan



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New Business

LE System

04

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New entry into the renewable energy business

- **In December 2023, LE System Co., Ltd. (100% subsidiary of RST) inherited the electrolyte business for vanadium redox flow batteries (VRFB) from the former LE System**

Overview of the New Company

株式会社LEシステム

Company Name	LE System Co., Ltd.
Establishment	October 13, 2023 (Succession date: December 2023)
Business	Electrolyte production of vanadium redox flow battery
Address	NT Building, 1-47-1 Ohi, Shinagawa-ku, Tokyo, Japan (The same office with RS Technologies, Inc.)
Manufacturing Base	Namie-machi, Fukushima, Japan
Capital	30 million yen
President and CEO	Nagayoshi Ho

- From December 2023, the former LE System business was completely succeeded.
- The key technology of the former LE System is technology originated in Japan, and it has received a lot of support including investment by INCJ, Ltd. (Public and Private Sector Fund in Japan).

Strengths of LE Systems

01 **Established mass production process of high-quality electrolytes**

02 **Business collaboration with global battery manufacturers**

03 **Production of electrolyte with low cost through proprietary technology** (more than 10 patents hold)

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What is Vanadium Redox Flow Battery (VRFB)?

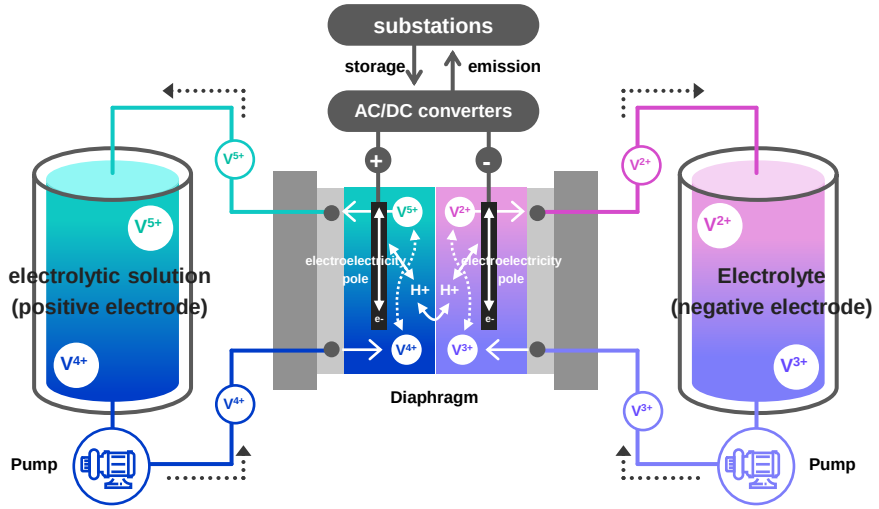
- VRFB is a battery that charges and discharges by circulating and chemically reacting vanadium electrolyte.
- LE system manufactures vanadium electrolyte for VRFB

Primary Use

Use as large-scale, large-capacity stationary storage batteries for wind and solar power generation

Mechanism

VRFB realizes charge and discharge by chemical change (redox) of electrolytic solution, while other batteries charge and discharge by chemical change of electrode.



Features

Since the number of charge and discharge is unlimited and there is no deterioration, it is possible to conduct stable operation over a long period Moreover, it has high safety and it is well-matched with renewable energy.



High Safety

nonflammable electrolytes



Easy for Expansion

charge/discharge time can be designed freely



Long Life

There is no limit to charge/discharge cycle



Cost Reduction

Long-term operation provides cost advantage



Asynchronous Linkage

renewable energy well-matched with VRFB

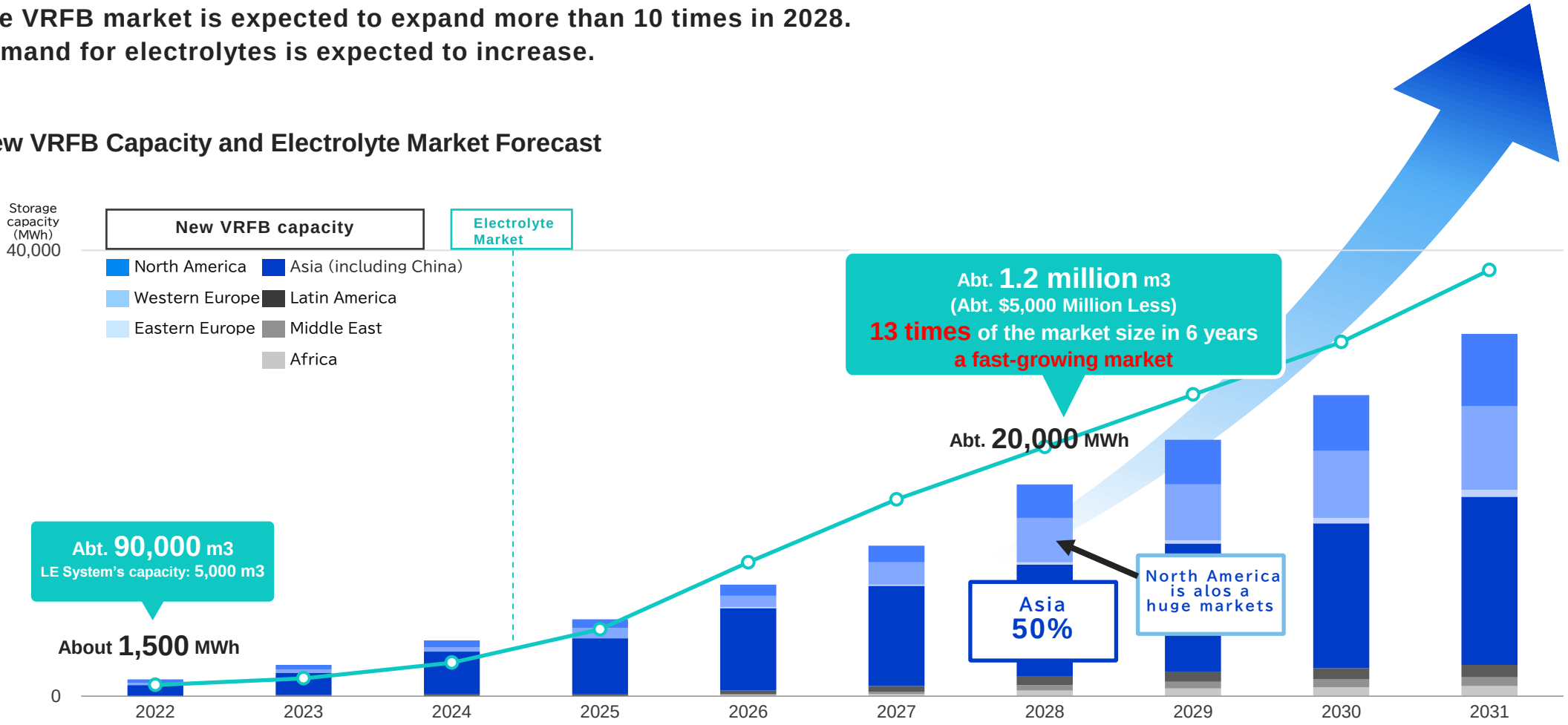
VRFB is a high-capacity stationary storage battery with high safety and stable supply suitable for wind and solar power generation, etc.

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Market Size of Vanadium Redox Flow Battery (VRFB)

- **The VRFB market is expected to expand more than 10 times in 2028. Demand for electrolytes is expected to increase.**

New VRFB Capacity and Electrolyte Market Forecast



- **LE System will take advantage of** RST's overseas network (especially its strengths in Asia, including China).
- **Aiming to achieve top global market share by 2028**

Source: Guidehouse Insights

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RST’s Intent to incorporate LE system and LE System’s growth strategy

- **LE system, established in October 2023, manufactures electrolytes for vanadium redox flow batteries (VRFB).**
- **In 2024, LE Sytem began sales activities globally to expand their business .**

Intent to incorporate LE System

- “Revitalization” has been a key word for RST’s business growth since the establishement of RST
- LE System owns the business model which conforms to RST’s "Revitalization" and is expected to grow in the future.

  1) Expect rapid growth in the renewable energy sector

  2) Possess technology to produce vanadium electrolyte by recycling residues generated at oil plnats

  3) Electrolyte itself can be recycled

Future Growth Strategy

- China has adopted VRFB as its national policy next to lithium-ion batteries, and China will become its largest market.
- Leverage the cost competitiveness of the LE system's proprietary technology and RST's business base in China to achieve the top share of the VRFB market in China.
- Continue to invest in Japan as a research and development base
- Establish a system capable of mass production in Japan when the need for large-capacity stationary storage batteries grows in Japan

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Appendix

05

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Strengths of Nagayoshi Ho

- President and CEO, Nagayoshi Ho has used the knowledge accumulated in Japan for more than 20 years. His strength includes **ability to sell, network, partner and fund globally**
- He has assembled a team of professionals from a broad range of fields, including advanced technology and finance.



Nagayoshi Ho

- Born in 1970 in Fujian Province, China
- Josai International University : Ph.D in Business Administration
- 1998: He established Eiki Shoji Co.,Ltd
- 2010: He established RS Technologies Co.,Ltd
- Naturalized in Japan in 2014

Specialty

M & A, Business Alliance

Favorite Maxim

Where there is a will, there is a way

Note

- He came to Japan after graduating from high school. He has invested in various industries such as fund, trade, hotel, IT, and agriculture in addition to semiconductor business.
- Based on his belief that "Japan's manufacturing is the best in the world," he has been traveling around the world to spread his belief.

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Sanbongi Plant (RS Technologies, Reclaimed Wafer Business)

- **Jan. 2011: Started operations of Sanbongi Factory Plant**
- **Jun. 2015: Started production at Plant 8 with state-of-the-art facilities**





Company name	RS Technologies, Co.,Ltd.
Establishment	December 2010
Product	5, 6, 8, 12 inch Reclaimed Wafer
Production capacity	8 inch : 150,000 wafers per month 12 inch : 310,000 wafers per month
Address	Osaki City, Miyagi Prefecture, Japan
Certification	ISO9001, ISO14001

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Taiwan Plant (RSTW, Reclaimed Wafer Business)

- **Dec. 2015: Production commenced at RSTEC Semiconductor Taiwan Co., Ltd. (RSTW).**





Company name	RSTEC Semiconductor Taiwan Co., Ltd
Establishment	December 2015
Product	12 inch Reclaimed Wafer
Production capacity	12 inch: 230,000 wafers per month
Address	Tainan, Taiwan
Certification	ISO9001, ISO14001

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Dezhou Plant (Shandong GRITEK, 8-inch Prime Wafer Business)

- **Aug. 2018: Shandong GRITEK Co.,LtdShandong GRITEK, a consolidated subsidiary of GRITEK) was established.**
- **Oct. 2020: The Dezhou plant started prime wafer production.**





Company name	Shandong GRITEK Co., Ltd.
Establishment	October 2020
Product	5,6,8 inch Prime Wafer
Production capacity	5 inch: 50,000 wafers per month 6 inch: 200,000 wafers per month 8 inch: 130,000 wafers per month
Address	Dezhou city, Shandong, China
Certification	ISO9001, ISO14001

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SGRS Research and Development Center (SGRS, 12 inch Prime Wafer Business)

- **Mar. 2020, GRINM RS Semiconductor Materials Co., Ltd. (SGRS) was established.**
- **In 2021, R&D line for 12 inch prime wafer (10,000 wafers per month) was established.**





Company name	GRINM RS Semiconductor Materials Co., Ltd.
Establishment	March 2020
Products	① 12 inch Prime Wafer ② 12 inch Reclaimed Wafer
Production capacity	① 50,000 wafers per month 10,000 wafers per month (R&D line) ② 50,000 wafers per month
Address	-Dezhou, Shandong, China -Beijing, China

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Namie Plant (LE System, Renewable Energy Business)

- **In December 2023, RST completely succeeded the electrolyte manufacturing business [*1] of the former LE System.**

*(1) The key technology of the former LE System is technology that originated in Japan, and has received a lot of support including investment by INCJ Co., Ltd. (Public and Private Sector Fund in Japan).



Namie Plant in Namie, Fukushima, Japan (Constructed in 2021)



Office in Tsukuba City, Ibaraki Prefecture
(Constructed in 2013. Technical research/pilot plant)

Company name	LE System Co., Ltd.
Establishment	October 13, 2023 (Business Succession Date: December 2023)
Business Profile	Electrolyte for vanadium redox flow batteries
Production capacity	5,000m3 per year
Location	Namie-machi, Fukushima Prefecture (Plant) Tsukuba City, Ibaraki Prefecture (office)

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Kamisu Plant (DG Technologies, Semiconductor-related equipment and materials Business)

- In January 2019, DG Technologies became a consolidated subsidiary of RS Technologies.
- To meet growing demand, DG Technologies increases production through capital investment and the improvement of productivity.





Company Name	DG Technologies Co., Ltd.
Establishment	October 1981
Product	For dry etching equipment Consumable member made of quartz and silicon
Address	Kamisu City, Ibaraki Prefecture
Certification	ISO9001

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Kurihara Plant (DG Technologies, Semiconductor-related equipment and materials business)

- **In May 2021, the Kurihara Plant was set up in Miyagi Prefecture.**
- **The Kamisu Plant and the Kurihara Plant were established as two production bases to meet increasing orders.**







Company Name	DG Technologies Co., Ltd.
Commencement of operation	May 2021
Product	For dry etching equipment Consumable member made of quartz and silicon
Address	Kurihara City, Miyagi Prefecture
Building area	5,000m2

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Reclaimed Wafer Business (1)

Customer follow-up
Reciept
Primary Inspection
Stripping/Etching
Pre-sort Inspection
Polishing
Primary Cleaning
(Primary Inspection)
Secondary Cleaning
Final Inspection/Packing
Shipping

clean room

RST's Strengths

01

Identify exact needs through direct sales system

Communicate directly with all customers
Make it possible to reduce SGA cost by handling only from Tokyo headquarters

02

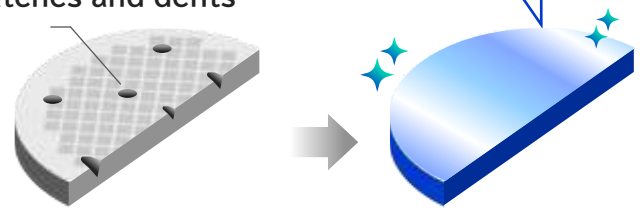
Strip off all filims

Due to chemical treatment, surface damage is minimized

Increase the number of reclamation

More cost reduction possible

Inherited original technology from Lasa Industries



Smooth scratches and irregularities on the surface by polishing (polishing).

03

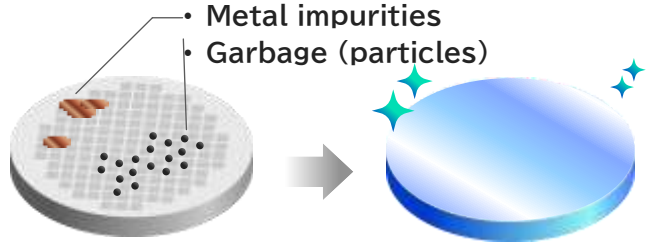
Remove metal impurities

Remove fine dust and dirt from wafer surface by cleaning

＋

Removal of metal impurities

Especially, strong in decontamination and removal of copper (Cu)

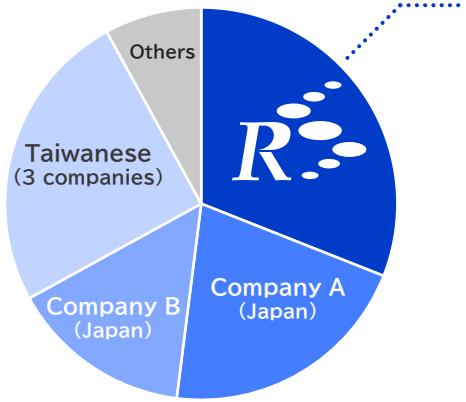


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Reclaimed Wafer Business (2)

Increasing market share in the reclaimed wafer

Market share in the 12 inch regeneration market



RS Technologies

Due to the new construction and expansion of Sanbongi in Taiwan, production capacity increased, and the current market share rose to about 33%.

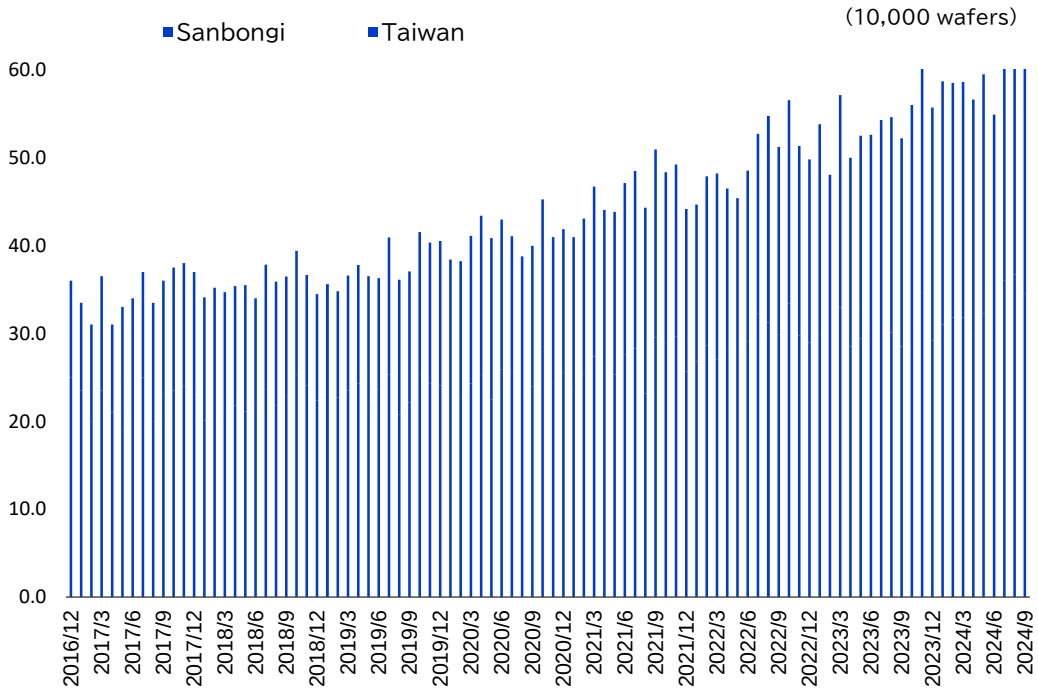
By further increasing production capacity through existing facilities at both factories, using an empty factory in Sanbongi, and using business tie-ups and M & As, etc.
RST aims to increase market share.

Year	Second half of 2015	2016	2017	2018	2019	2020	2021	2022	2023
RST capacity	240k	280k	300k	340k	400k	420k	460k	550k	590k
Market Share	24%	29%	30%	31%	33%	33%	33%	33%	33%

Estimated in our company based on SEMI data

Shipments at the Sanbongi Plant and Taiwan Plant

Trends in the number of 12 inch wafers shipped at the Sanbongi Plant and Taiwan Plant



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Expansion into the Prime Wafer business

- **With a Chinese central company [*1] ,GRINM, GRINM Semiconductor Material Co., Ltd (GRITEK) was established.**

Ingot Pulling
Slicing
Wrapping
Etching
Polishing
Primary Cleaning (Primary Inspection)
Secondary Cleaning
Final Inspection/Packing
Shipment

Clean Room

Synergistic between RST and GRITEK

Strengths

01 GRITEK's technological capabilities



02 Benefit from China's semiconductor policy

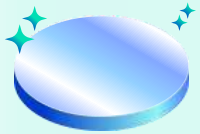


03 RST's global sales network to sell to global customers



04 Utilizing RST reclaimed technology

With more than 30 years of knowledge and insight from RST



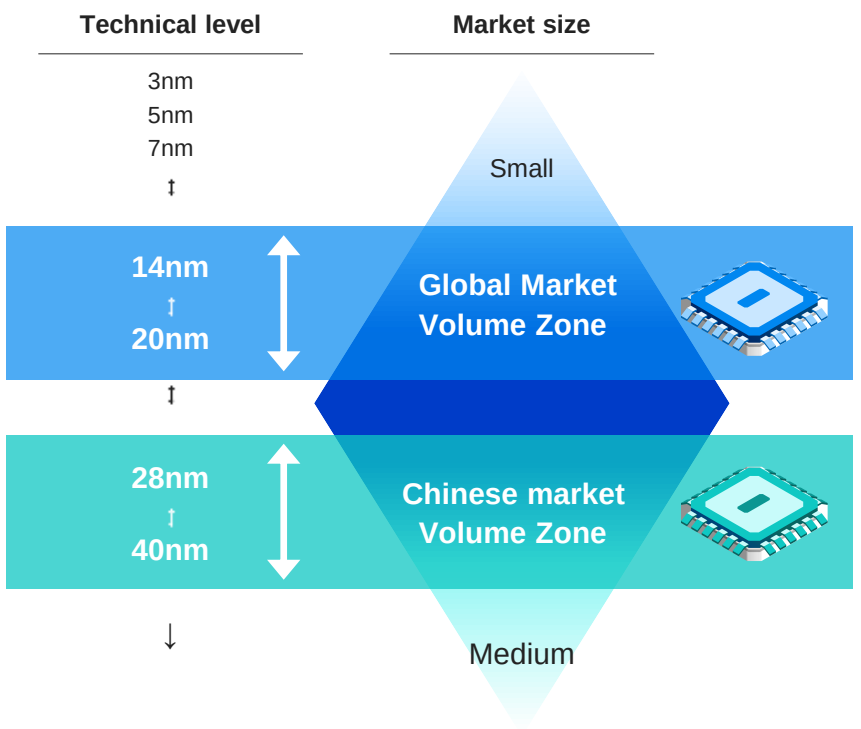
*(i) State-owned enterprises subject to management and supervision by the central government
*(ii) Current status: Riken Semiconductor Silicone Material Co., Ltd.

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China 12 inch prime wafer market strategy

- Targeting No.1 share in Chinese market by securing volume zone quality in Chinese market
- After achieving No.1 share in Chinese market, next step will be to become a prime wafer manufacturer who is able to provide products with global standard quality to global semiconductor manufacturers

Technology level and market size of semiconductor



Market strategy of China's prime wafer business

Aiming to Ensure Global Quality

- Quality: Achieve Quality of Global Standard
- Price: Achieve Attaractive price by production in China
- Sales: Utilizing the customer for reclaimed wafer to sell prime wafers

▶ **Sell GRITEK's wafers globally**

Target Quality of 12 inch Prime Wafers

- Quality: **Ensuring volume zone quality** in the Chinese market
- Price: Low-cost acquisition of equipment through M & A
  Realization of low prices through

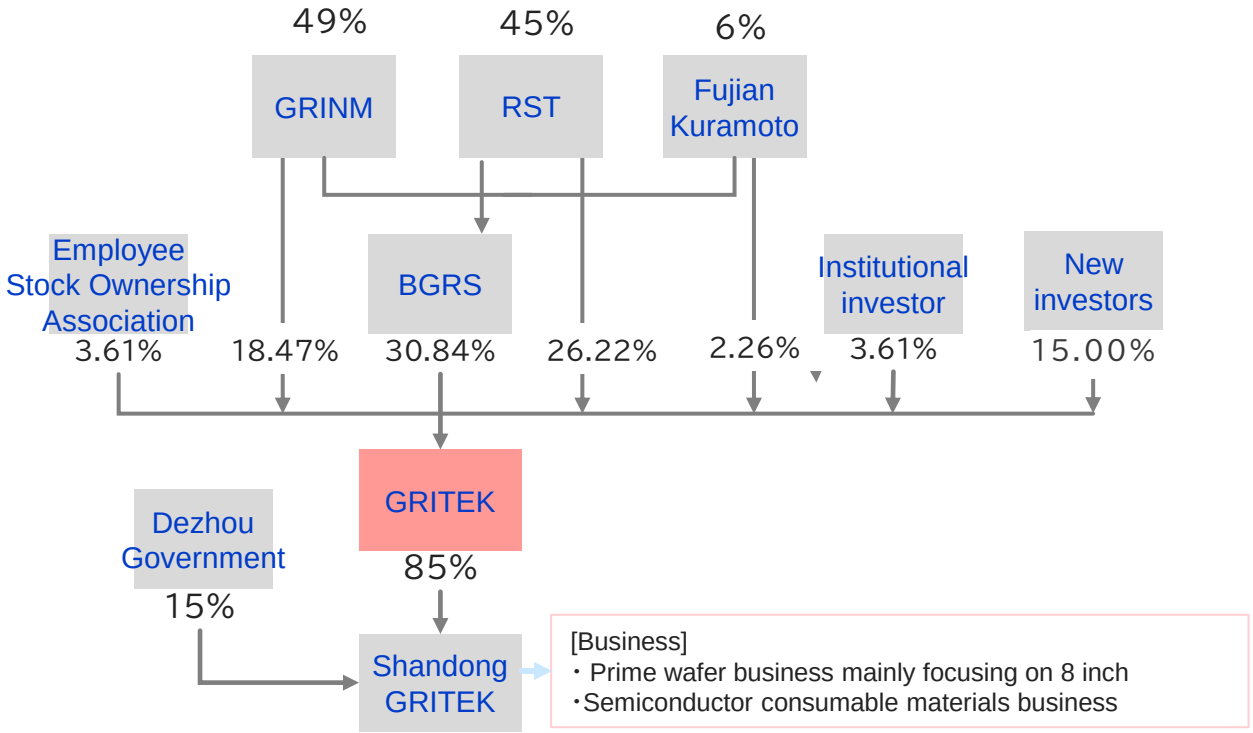
▶ **Gain No.1 market share in China**

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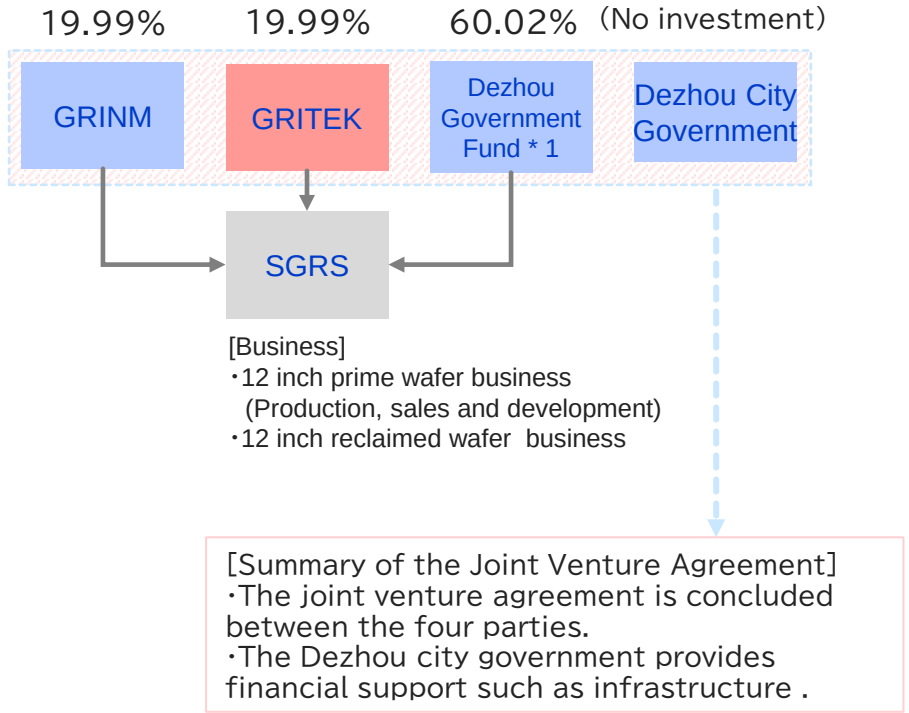
Business scheme to invest in the prime wafer business

- **GRITEK is listed on the Shanghai Stock Exchange, STAR Market (SHA: 688432).**
- **The below risk-controlled model involving a Chinese sovereign wealth funds**

8 inch prime wafer business scheme



12 inch prime wafer business scheme * 1

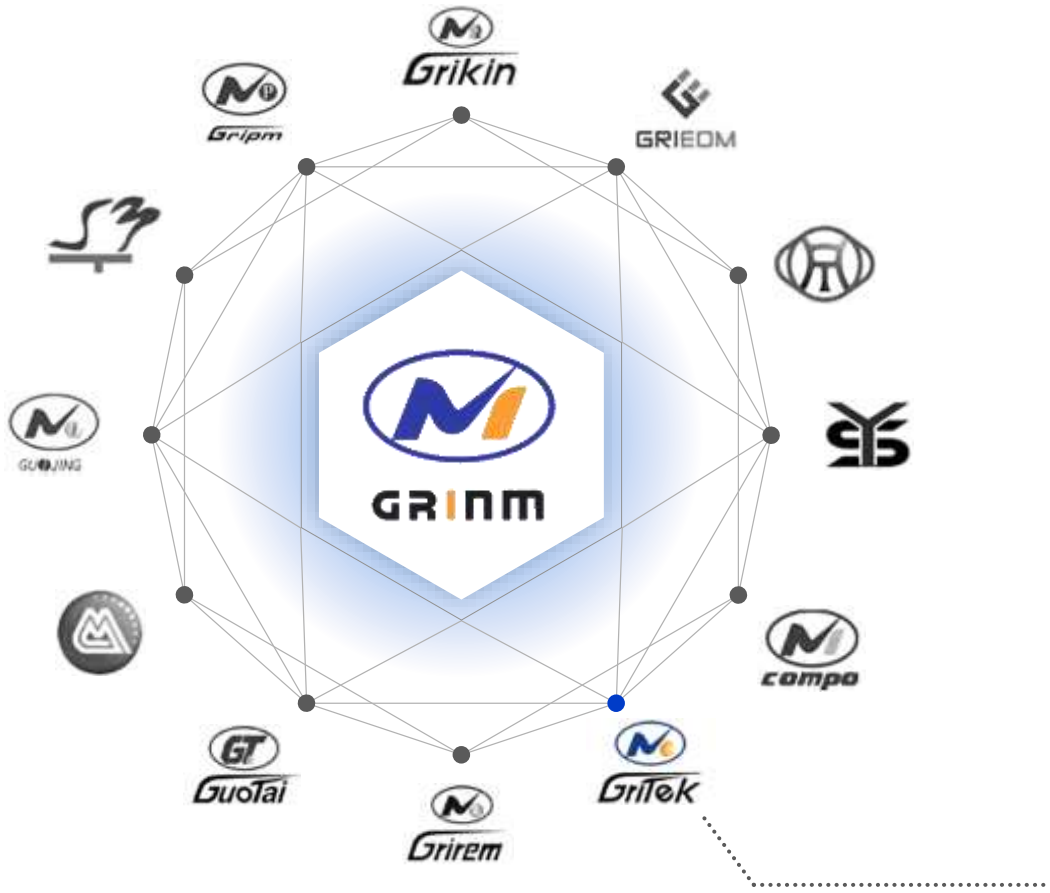


※1 Dezhou Huida Semiconductor Equity Investment Fund Partnership

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About Joint Venture Partner (GRINM)



Established in 1952

largest state-owned research institute in the field of nonferrous metals in China

About 2,000 researchers out of about 4,100 employees

460,000 state-owned companies out of about 45 million companies in China and out of 460,000 companies, 98 central companies exist and GRINM is one of them

a research institute integrating government, industry, and academia. Policies in the metal field are communicated through GRINM

GRINM established operating companies that serve as evidence of its successful research.Currently, 4 research institutes and 30 operating companies exist

GRITEK, a consolidated subsidiary of RST, was established as GRINM's first operating company and listed on the Shanghai Stock Exchange.

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RS Technologies's Targeting Business Portofolio

Business

Growth Expansion

Expanding RST's business and its sales areas

			Japan	China	Asia (other than China)	Europe and America
Manufacturing	Reclaimed wafer		●	●	●	●
	Prime wafer	12inch	○	●	○	○
		8inch, etc.	◉	●	◉	◉
	Consumables related to semiconductor manufacturing		●	●	●	●
	semiconductor manufacturing		○	○	○	○
"renewable /recycled/ revititalized" business	New Business		○	○	○	○
	Vanadium Redox Flow Battery		●	◉	◉	◉
Function of Trading Company	Manufacturing Equipment		●	●	●	●
	Semiconductors, Electronic Components, Consumables		●	●	●	◉
	Others (solar, etc.)		●	○	●	○

Region

● current business area ◉ Planned Regional expansion ○ Possibility of future expansion

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Year by Year Results

(millions yen)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Sales	3,475	4,566	5,285	8,864	10,932	25,478	24,501	25,561	34,620	49,864	51,893
Gross profit	1,173	1,820	1,852	2,544	4,252	8,366	7,940	8,681	11,870	18,432	17,413
SG & A expenses	471	654	791	958	1,269	2,615	3,223	4,151	4,995	5,413	5,519
Operating income	703	1,166	1,061	1,585	2,982	5,751	4,717	4,530	6,874	13,018	11,894
Ordinary income	819	1,247	770	1,444	3,159	6,141	5,416	5,252	8,832	15,500	14,921
Net income (＊1)	525	664	143	861	2,113	3,620	3,035	2,824	3,303	7,739	7,703
Dividends (yen) (＊2)	-	-	-	10	5	10	15	20	25	35	30
Capital investment	338	3,503	4,665	209	95	1,328	4,809	12,409	7,827	5,379	5,999
Depreciation	87	103	326	682	714	1,298	1,814	1,674	2,942	3,498	3,774
R&D expenses	1	6	11	85	183	501	449	929	1,308	1,657	1,764
Number of employees	152	191	265	373	434	1,159	1,277	1,187	1,333	1,533	1,534

(＊1) Net income attributable to owners of the parent (＊2) Dividends for FY2023 are shown after the split (1/2) on January 1, 2023.

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Principal financial statements

(million yen)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Assets											
Current Assets	1,811	2,759	3,732	5,348	7,388	26,074	32,760	32,626	45,804	90,470	96,409
Cash and deposits	397	1,190	1,842	1,952	3,243	14,879	22,156	19,082	25,438	67,939	70,758
Notes and accounts receivable-trade	681	696	795	2,531	2,916	6,958	6,047	6,321	9,517	11,651	12,673
Goods and products	396	376	361	348	446	1,343	1,713	2,116	2,783	3,833	6,507
Non-current Assets	508	4,064	5,845	5,333	4,843	10,516	15,873	26,124	33,206	37,084	44,256
Property,factory, and equipment assets	461	3,918	5,667	5,152	4,674	8,963	14,635	24,146	29,023	31,285	35,326
Intangible fixed assets	19	15	29	23	19	1,099	732	527	417	270	266
Investments and other assets	27	130	148	158	149	453	506	1,451	3,766	5,529	8,663
Total assets	**2,320**	**6,823**	**9,577**	**10,682**	**12,231**	**36,591**	**48,634**	**58,750**	**79,010**	**127,554**	**140,666**
Liabilities											
Current Liabilities	960	2,292	2,295	2,993	3,370	4,979	7,252	12,631	14,171	17,622	18,265
Notes and accounts payable	138	151	186	283	398	1,554	1,614	2,871	4,317	6,466	5,174
interest-bearing debt	136	827	1,216	1,538	1,276	976	1,730	1,522	3,020	4,694	3,355
Non-current Liabilities	709	2,934	4,798	4,317	3,335	2,474	5,400	5,754	9,827	8,458	6,973
Long-term loans payable	615	2,925	4,079	3,620	2,767	1,848	2,232	1,613	5,097	3,514	2,092
Total Liabilities	**1,670**	**5,227**	**7,093**	**7,310**	**6,705**	**7,453**	**12,652**	**18,385**	**23,999**	**26,081**	**25,238**
Net assets											
Net assets	649	1,596	2,483	3,371	5,526	29,137	35,981	40,365	55,011	101,473	115,428
Total liabilities and net assets	**2,320**	**6,823**	**9,577**	**10,682**	**12,231**	**36,591**	**48,634**	**58,750**	**79,010**	**127,554**	**140,666**

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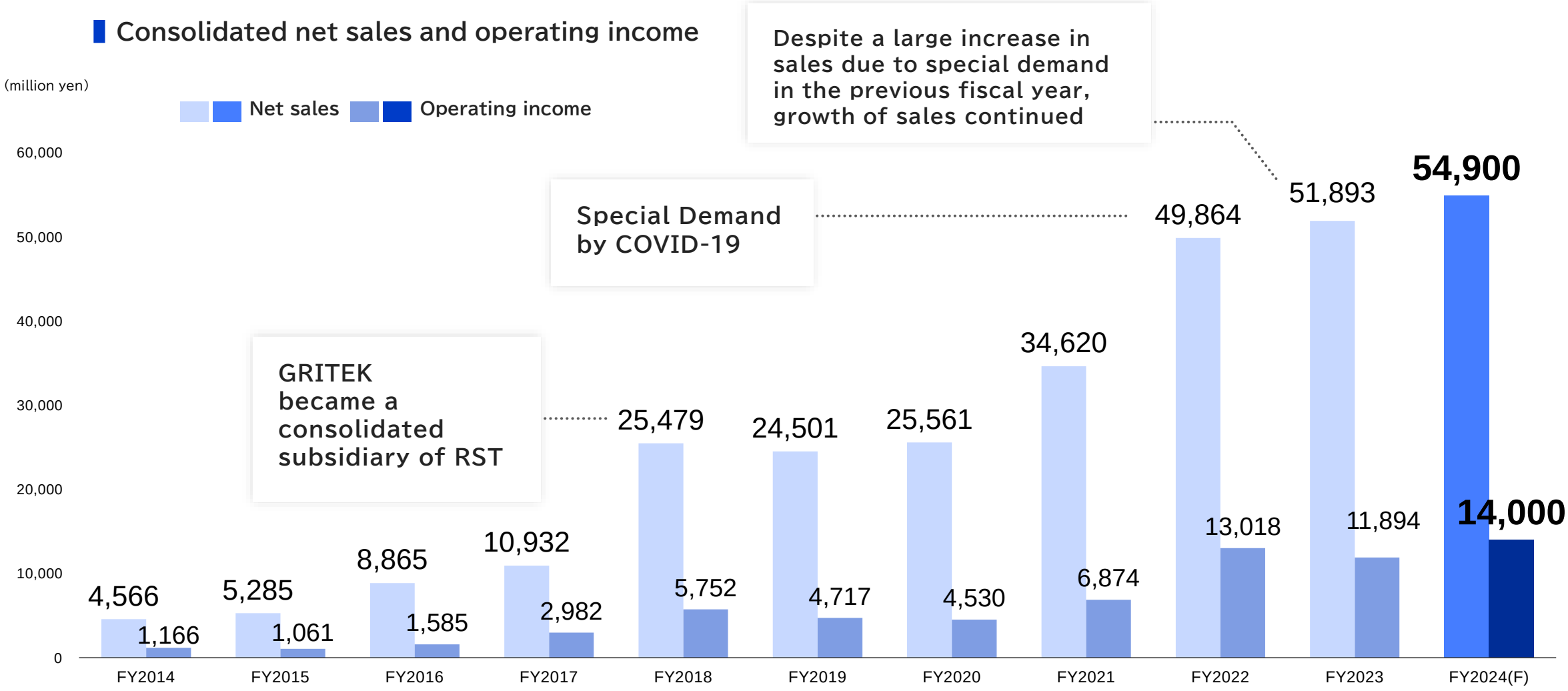
Performance by Segment

(million yen)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Sales											
Reclaimed Wafer Business	3,347	4,414	5,107	7,144	9,487	10,973	10,776	11,461	12,717	18,001	20,499
Prime Wafer Business	-	-	-	-	-	11,918	10,058	8,755	14,780	22,752	18,736
Semiconductor-related equipment and material Business	-	-	-	1,654	1,393	2,918	4,047	6,272	8,450	11,265	14,057
Other adjustments	127	151	178	66	52	△331	△380	△927	△1,327	△2,154	△1,399
Segment profit											
Reclaimed Wafer Business	916	1,444	1,377	1,765	3,396	4,011	4,081	4,027	4,731	7,312	8,114
Prime Wafer Business	-	-	-	-	-	2,048	1,503	1,041	2,539	5,995	3,742
Semiconductor-related equipment and material Business	-	-	-	230	130	366	171	211	382	914	882
Other adjustments	△214	△278	△316	△409	△543	△675	△1,038	△749	△778	△1,203	△844
segment assets											
Reclaimed Wafer Business	1,337	5,040	6,987	5,657	8,120	9,150	10,336	11,698	14,302	18,530	21,833
Prime Wafer Business	-	-	-	-	-	21,313	29,311	35,697	53,202	95,788	100,768
Semiconductor-related equipment and material Business	-	-	-	1,137	1,305	1,939	3,179	5,387	7,310	6,801	8,775
Other adjustments	982	1,783	2,589	3,887	2,805	4,315	5,806	5,968	4,243	6,435	9,290

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Consolidated Financial Results

Consolidated net sales and operating income



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Notes

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Materials and information provided for this announcement contain forward-looking statements. This information is based on assumptions pertaining to the current outlook, forecasts and risks, and contains uncertainties that could result in different outcomes.

Even in the case of new information, future events, or other relevant matters, the Company is under no obligation to update or revise the forward-looking statements contained in this material.

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