



Management Overview Briefing

AGENDA

01

VISION 2030

02

Overview of Business (FY2023 Results by Segment)

03

2030 Vision for Each Business

- (1) Medi-Chemicals
- (2) Electronic Materials
- (3) Energy Materials
- (4) Applied Chemicals
- (5) Fertilizers
- (6) Glass
- (7) Glass Fiber

04

Research and Development Initiatives

- (1) Major Research & Development Products
- (2) Research & Development Topics
 - (i) Etching Gas (ii) SiC Wafers (iii) Circuit Pattern Collapse Prevention Agent

05

Promotion of Human Capital Management

06

Response to Environmental Issues

07

Shareholder Returns

AGENDA

01

VISION 2030

02

Overview of Business (FY2023 Results by Segment)

03

2030 Vision for Each Business

04

Research and Development Initiatives

05

Promotion of Human Capital Management

06

Response to Environmental Issues

07

Shareholder Returns

VISION 2030

**Become a Specialty Materials Company
contributing to the realization of a sustainable society**

Operating profit

ROE

Numerical targets

20 billion yen \times **At least 10%**
(Highest earnings on record)

Business strategies

Expansion of specialty products

- Creation of new value
- Creation of a strong business model

Strengthening of essential products

- Strengthening of earning capacity
- Creation of high added value

Optimization of business portfolio

Promotion of human capital management

- Promotion of diversity, equity and inclusion
- Increasing engagement
- Promotion of health and productivity management

Response to environmental issues

- Initiatives for the reduction of GHG emissions
- Initiatives for the realization of a recycling-oriented society
- Initiatives for the reduction of environmental impact

Promotion of utilization of digital technology

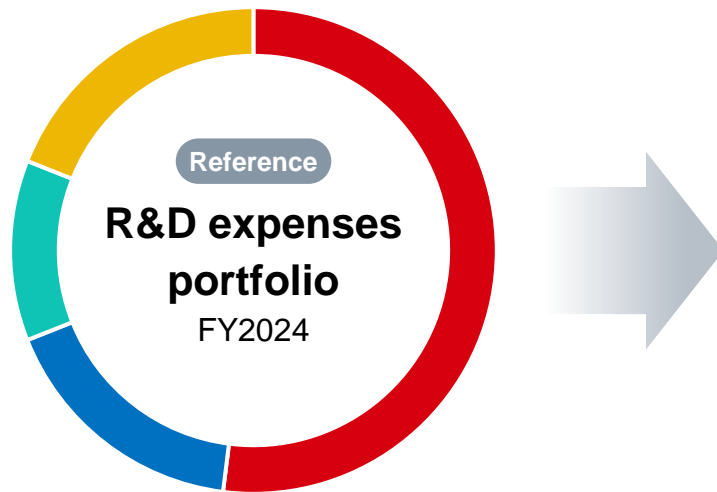
- Improvement of efficiency of operations
- Enhancement of management foundations
- Digital human resource development aimed at DX

Strengthening of business foundations through ESG management

Business Strategies

Expansion of specialty products

- Creation of new value (R&D, innovative ideas)
- Creation of a strong business model



New value creation targets

Semiconductors and power semiconductors

Batteries

Life sciences

Lifestyle, environment and food

Essential products

Strengthening of essential products

- Strengthening of earning capacity
- Creation of high added value

Specialty products

3 advantages

Technological advantage

Products using unique technology such as intellectual property

Originality

Products that have established a unique and powerful business model

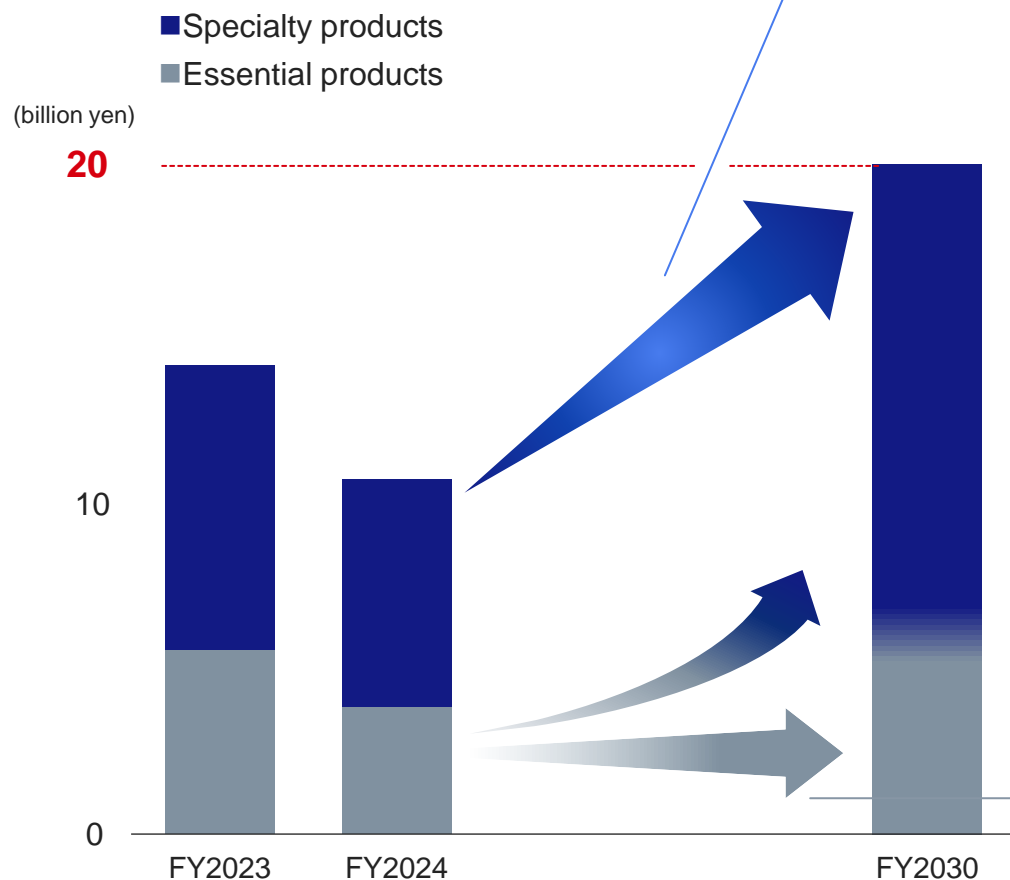
Sustainability

Products contributing to social and environmental issues

Roadmap to the Operating Profit Target of 20 Billion Yen

We aim to reach 20 billion yen by doubling the operating profit of specialty products

Operating Profit



Expansion of specialty products

Target	Specialty product groups
Semiconductors and power semiconductors	Etching gases, cleaning gases, SiC wafers, next-generation display materials, etc.
Batteries	Electrolytes, next-generation battery materials, etc.
Life sciences	Pharmaceutical products (inhalation anesthetics, etc.)
Lifestyle, environment and food	Low GWP materials, environmentally friendly coated fertilizers, PFAS-free materials, high value-added glass products, etc.

Strengthening of essential products

Essential products	Strengthening of earning capacity and creation of high added value
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AGENDA

01

VISION 2030

02

Overview of Business (FY2023 Results by Segment)

03

2030 Vision for Each Business

04

Research and Development Initiatives

05

Promotion of Human Capital Management

06

Response to Environmental Issues

07

Shareholder Returns

2 Overview of Business (FY2023 Results by Segment)

After expanding into the glass business from the original soda business, the Company further expanded its business domain and is currently expanding earnings from the chemicals business, including semiconductor-related products.

Chemicals Business (5 businesses)

Net sales **100.9 billion yen** (62.9%)

Operating profit **10.6 billion yen** (72.9%)

Medi-Chemicals

- Inhalation anesthetic APIs

Electronic Materials

- High-purity gases for semiconductor processes (Film deposition gases, cleaning gases, etching gases)
- Circuit pattern collapse prevention agent
- Photoresist materials

Energy Materials

- Electrolytes for lithium-ion batteries

Applied Chemicals

- Hydrofluoroolefin (HFO) products, functional material products

Fertilizers

- Chemical fertilizers, coated fertilizers

Glass Business (2 businesses)

Net sales **59.4 billion yen** (37.1%)

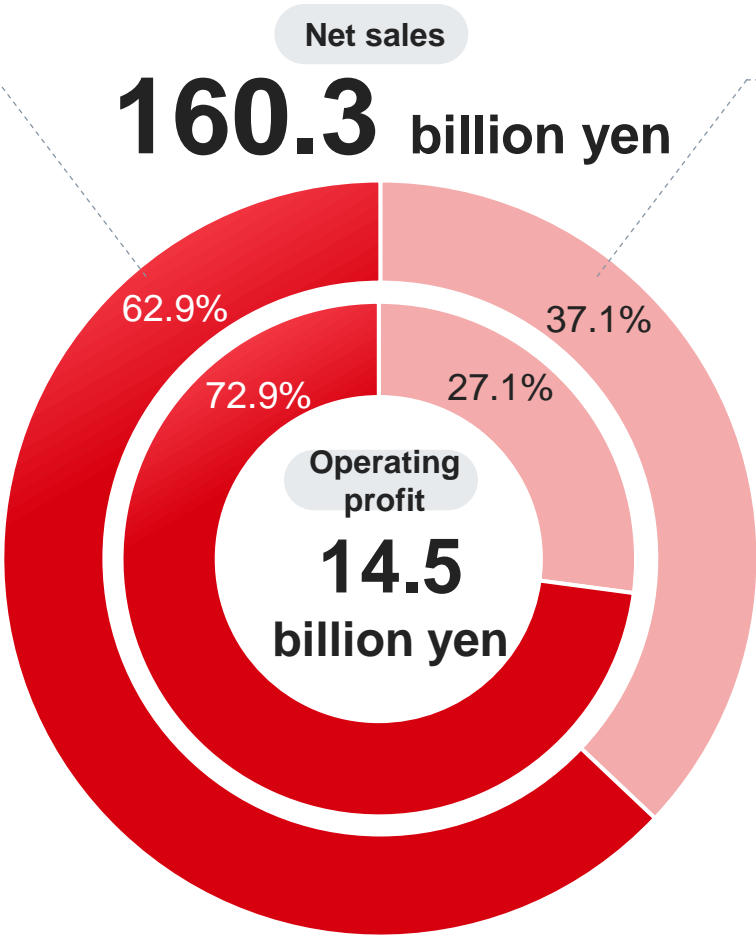
Operating profit **3.9 billion yen** (27.1%)

Glass

- Architectural glass
- Automotive glass

Glass Fiber

- Glass wool
- Glass fiber



* FY2023 results

AGENDA

01

VISION 2030

02

Overview of Business (FY2023 Results by Segment)

03

2030 Vision for Each Business

04

Research and Development Initiatives

05

Promotion of Human Capital Management

06

Response to Environmental Issues

07

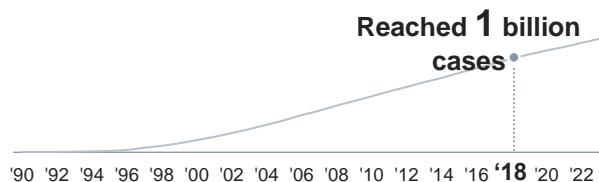
Shareholder Returns

“ Contributing to people’s health through inhalation anesthetic APIs ”

As of 2024

- **Manufacture and sale of inhalation anesthetic Sevoflurane**
 - Marketed as an inhalation anesthetic for over 30 years
 - More than 1 billion cases of usage in more than 113 countries

Cumulative shipments of Sevoflurane



Trophy received from a customer

- Maintain a position as a leading company in the supply of APIs
- Reinforcing stable supply system by building a robust supply chain

2030 Vision

- **Maintain a position as a leading company in the supply of inhalation anesthetic APIs**
- **Maintain sustainable profitability**
- **Evolve R&D into the field of regenerative medicine**



Initiatives for 2030

- **Continuing stable supply**
- **Compliance with the latest GMP***
- **Compliance with GMP of ICH **, WHO, EU, and each country**

Three principles of GMP

1. Minimize human error
2. Prevent contamination and quality deterioration of pharmaceuticals
3. Design a system that guarantees high quality

* GMP (Good Manufacturing Practice)

** ICH (International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use)

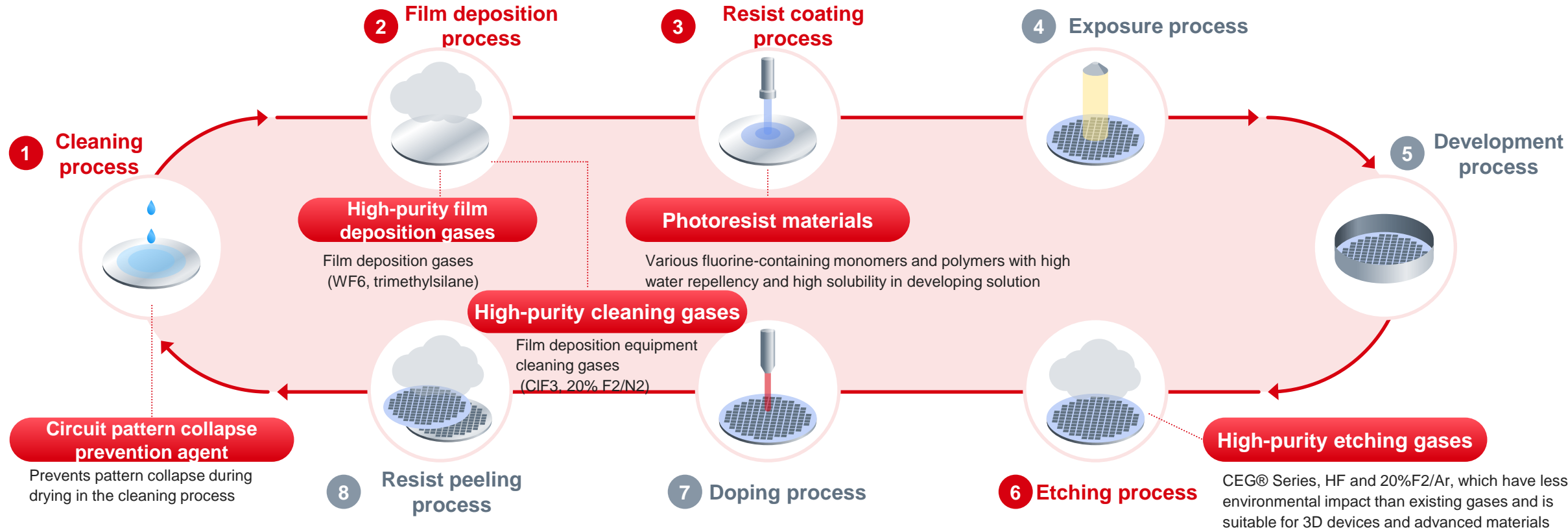
3 2030 Vision for Each Business (2) Electronic Materials (1/2)

Semiconductors and power semiconductors

In the Electronic Materials business, manufacture and sell high-purity gases for semiconductor processes, resist materials, and circuit pattern collapse prevention agents.

Business Profile

The Company's products in the front-end process of semiconductor manufacturing



“Focus on advanced semiconductor materials and power semiconductors”

As of 2024

Market environment

- Semiconductor market entering a recovery phase
- Localization of customers
- Needs are for low GWP^{*1} and PFAS-free^{*2}

Business conditions

- Proactive activities to strengthen business
 - Start of new etching gas (GAS X) supply for logic applications at 2 nm and beyond
 - Construction of 20% F2/N2 plant in Taiwan
 - Customer-oriented R&D by Electronic Materials Research Center Taiwan
 - Planning to co-operate with Foosung of Korea
 - NEDO GI Fund subsidized project moving to consider mass production of SiC wafers
 - Start of customer sample work of bonding materials for power semiconductors

*1 GWP: Global Warming Potential. The lower the value, the better the indicator of global warming prevention.

*2 PFAS-free: Environmentally friendly products and manufacturing methods that do not use PFAS (specific organic fluorine compounds)

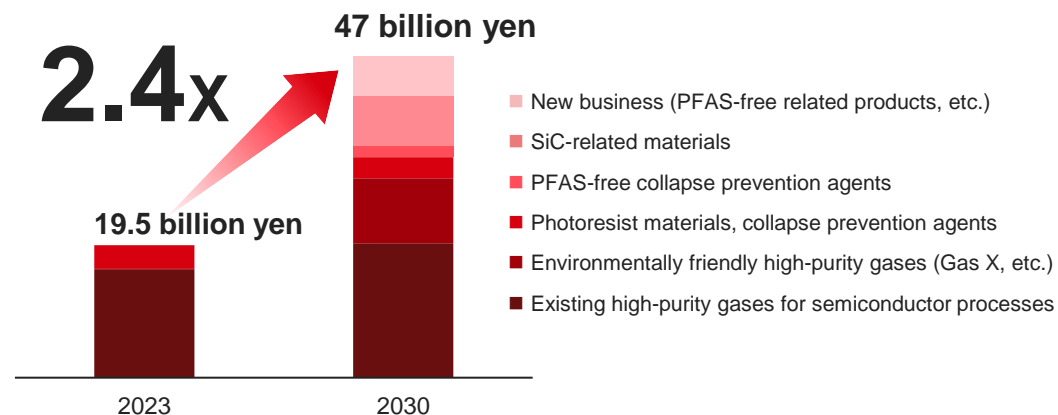
*3 GHG: Greenhouse gases

2030 Vision

- Provide solutions for PFAS-free and GHG^{*3} reduction
- Start mass production of SiC wafers
- Increase net sales to 2.4 times current level



Net sales



In the Energy Materials business, manufacture and sell electrolytes and other lithium-ion battery materials for EVs and ESS. Build an optimal global supply chain.

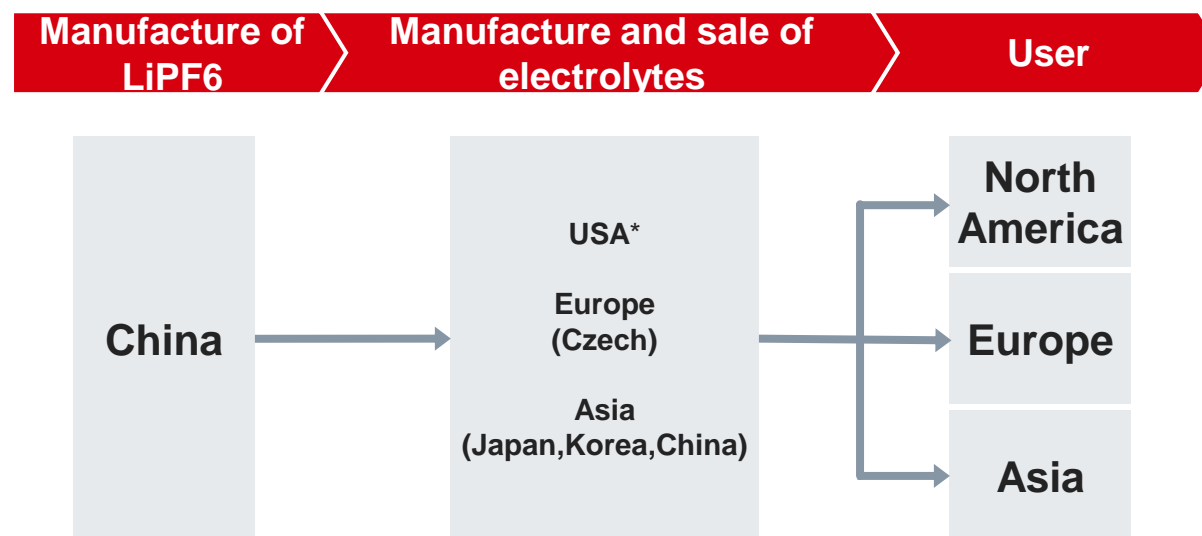
Business Profile

- Production of electrolytes using cost-competitive “LiPF6 electrolyte” and a proprietary manufacturing process
- Manufacture of proprietary high-performance additives that improve battery performance when added to electrolytes

■ Business Locations



■ Supply Chain



*Planning to establishment of supply chane in US.

“ Environmental contribution through electrolyte business for EVs ”

As of 2024

■ Market environment

- EV market steadily expanding
- IRA bill and EU Battery Regulation
- Localization of battery manufacturers

■ Business conditions

- Establishment of supply chain in the United States based on IRA



2030 Vision

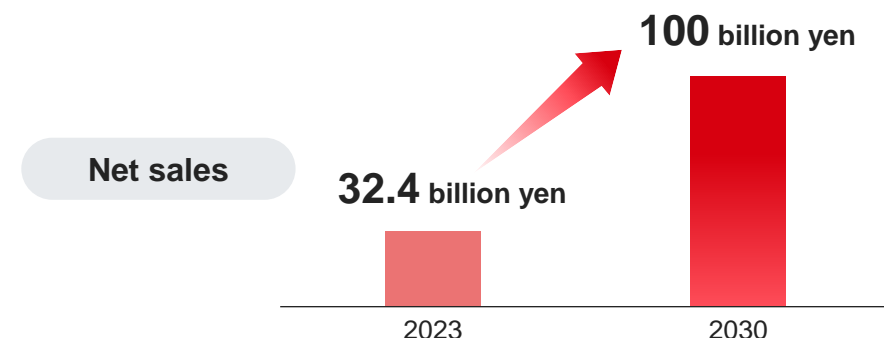
■ Triple sales volume (100,000 metric tons)

- Sales expansion in the United States
- Expansion into India and ASEAN

■ Commercialize next-generation battery materials

- Sodium-ion battery-related products
- High-performance additives
- All-solid-state battery-related products

■ Target net sales of 100 billion yen



In the Applied Chemicals business, manufacture and sell HFO products, functional material products, etc.

Business Profile

■ Hydrofluoroolefin (HFO) products

- Material with low GWP with excellent environmental and safety performance
- Reduces GHG emissions and contributes to carbon neutrality



Aerospace equipment
(Precision cleaner)

(C)JAXA



Medical equipment
(Coating solvent)



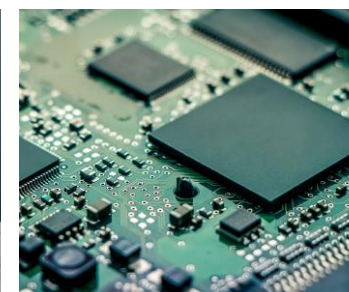
High-performance heat insulation for ZEB
(Blowing agents for heat insulation)

■ Functional material products

- Functional materials utilizing the properties of fluorine (heat resistance, chemical resistance, electrical properties, physiological activity, flame resistance, etc.)



Automotive applications
(Cross-linking agents for fuel hoses, etc.)



Electronic materials
(Raw materials for photoacid generators, etc.)



Agrochemical APIs and intermediates

Expansion of next-generation high-performance products through enhancement of fluorine technology

As of 2024

Market environment

- HFO products
 - Dependent on buildings demand (major shifts in demand)
- Functional material products
 - PFAS regulations
 - Intensifying competition with companies from emerging countries



2030 Vision

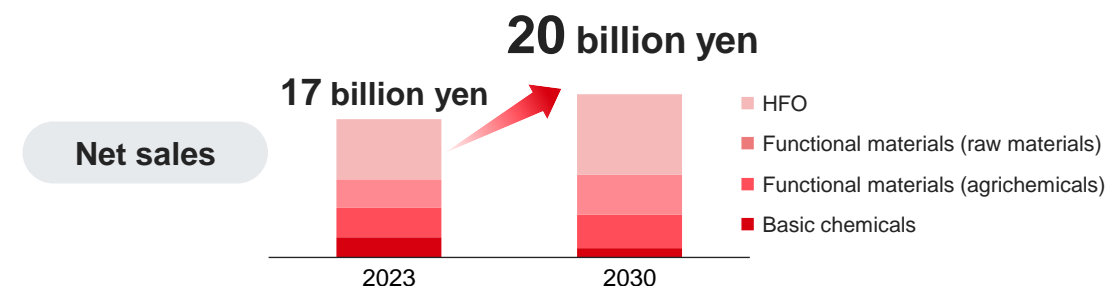
Expand sales of HFO products

- Capture needs for mandatory energy saving standards (all buildings in Japan by 2025)
- Market HFO solvents worldwide
- Launch new solvents (complement HFO solvents)

Develop functional material products and expand net sales

- Promote development of new products such as PFAS-free products
- Optimize production system

Net sales of 20 billion yen, mainly driven by growth in HFO products



3 2030 Vision for Each Business (5) Fertilizers (1/2)

Lifestyle,
environment
and food

Essential
products

In the Fertilizer business, manufacture and sell chemical fertilizers and coated fertilizers.

Business Profile

Chemical fertilizers

- Fertilizers using mainly ammonium chloride, ammonium phosphate and potassium chloride as raw materials

Advanced
chemical

Cera-coat R

Coated fertilizers

- Coated urea fertilizer
- Fertilization according to crop growth



Solving social issues in agriculture through environmentally friendly coated fertilizers

As of 2024

Market environment

- “Labor-saving” presented as a theme for solving the shortage of farm workers
- Efforts toward the SDG target of “Life below water”
 - The National Federation of Agricultural Co-operative Associations and domestic fertilizer suppliers made a statement to “make a shift to agriculture that does not rely on coated fertilizers using plastic” by 2030

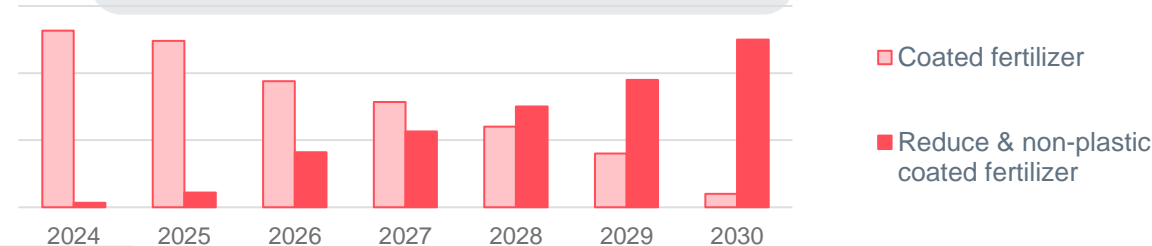
Topic

- Successfully developed coated fertilizer without plastic (announced on May 23, 2024)

2030 Vision

- Contribute to sustainable agriculture (food security) by providing non-plastic coated fertilizers that solve social issues
- Ensure stable profitability

Sales volume of coated fertilizers



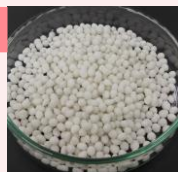
Initiatives for 2030

Switch to non-plastic coated fertilizers

Current

Coated fertilizer

Uses urethane resin derived from vegetable oil



Market launch in 2024

Reduced plastic coated fertilizer

Reduction of resin volume by approx. 10%



Market launch in 2027

Non-plastic coated fertilizer

Resin-free



In the Glass business, manufacture and sell glass materials that are safe and secure, targeting the domestic construction and automotive industries.

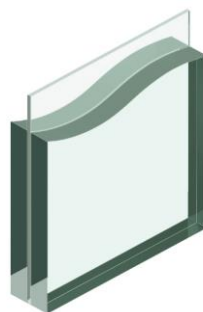
Business Profile

■ Architectural glass

- Eco-Glass, disaster-resistant safety laminated glass, tempered glass, mirror products, etc.



Eco-Glass



Disaster-resistant safety laminated glass

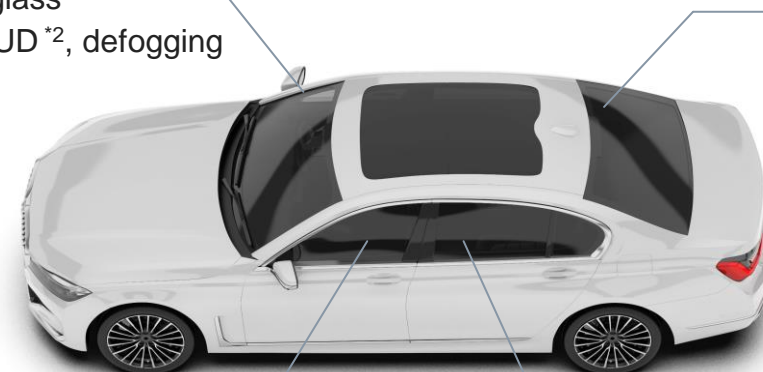


Anti-fogging mirrors

■ Automotive glass

- Windshields, door windows, rear windshields, etc.

Thermal and acoustic insulation glass
ADAS*¹ /HUD *², defogging glass



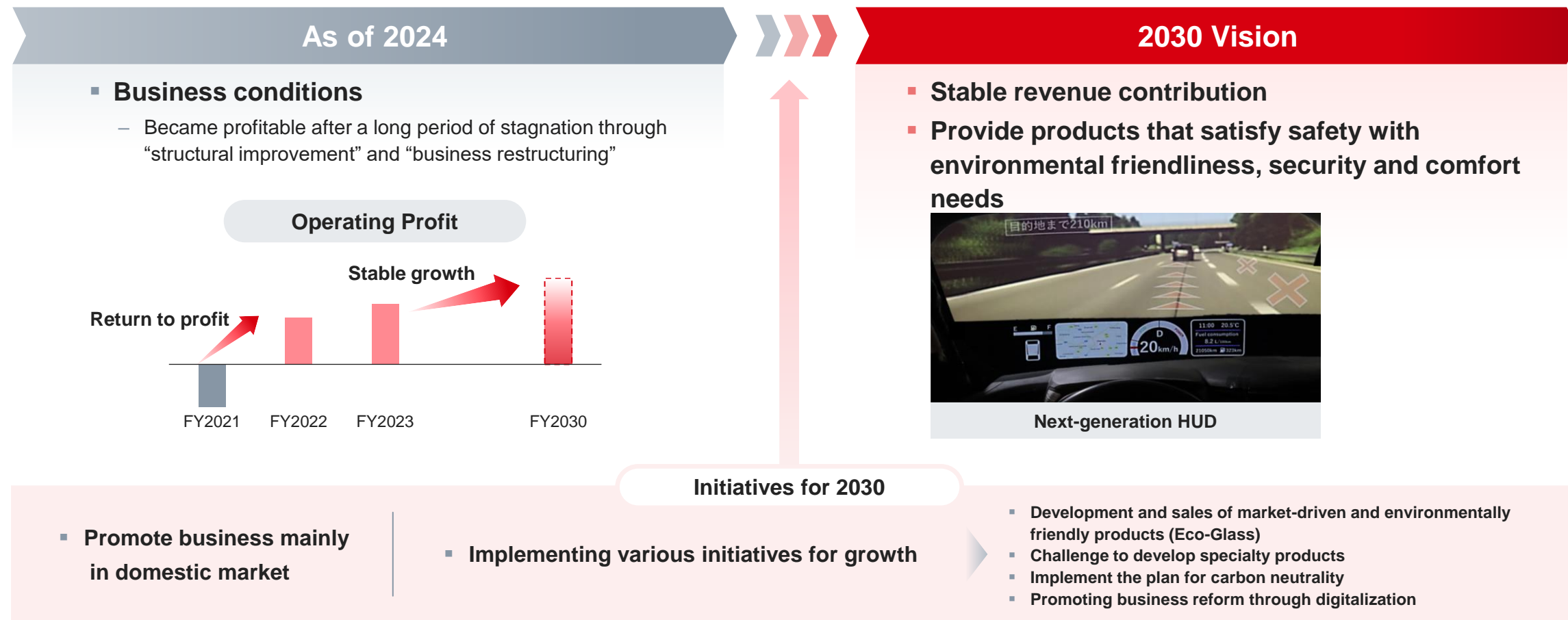
Glass antenna
Defogging glass

Water repellent glass
UV/IR cut glass

Privacy glass

*1 ADAS: Advanced Driver Assistance System
*2 HUD : Head-up Display

“ Focus on stable revenue contribution ”



In the Glass Fiber business, manufacture and sell glass fiber, a material that combines the heat resistance, nonflammability, and durability of glass with the flexibility of fiber and is used in a variety of applications.

Business Profile

■ Glass fiber

- Composite reinforcement
- Milled fiber
(electronic material applications)
- Glass cord for rubber reinforcement
(Timing belt applications)



Precision equipment
(Smartphones and PCs)



Timing belts

■ Glass wool

- Soundproofing and thermal insulation materials
(High market share in the area of sound-absorbing materials for automobiles)



Under hood soundproofing and thermal insulation materials



Increasing business value by improving profitability

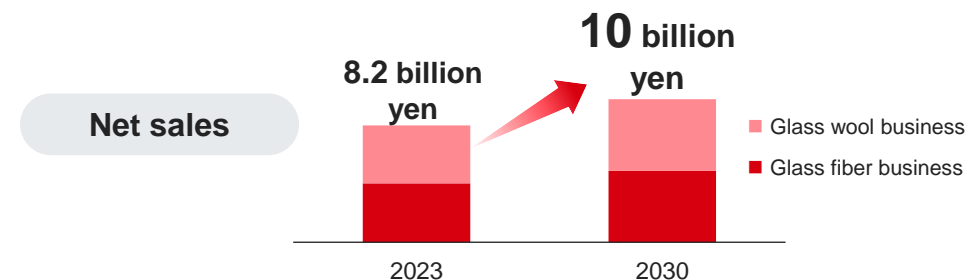


As of 2024

- **Glass fiber business**
 - Slowing and stagnation of products for resin reinforcement, infrastructure, etc.
 - Steady acquisition in demand for rubber coated glass cord for reinforcing rubber belts used in automobiles, semiconductor manufacturing equipment, etc.
- **Glass wool business**
 - Strong demand for sound-absorbing materials due to recovery of automobile production
- **Responding to rising energy costs**

2030 Vision

- **Double earnings**
 - Glass fiber: Increase the ratio of high-value-added products
 - Glass wool: Develop new applications
- **Establish an environmentally friendly system from raw materials to manufacturing in an integrated manner**
 - Reduce CO2 and other emissions through fuel conversion
 - Enhance recycling
 - Automate facilities, promote DX
- **Target net sales of 10 billion yen**



AGENDA

01

VISION 2030

02

Overview of Business (FY2023 Results by Segment)

03

2030 Vision for Each Business

04

Research and Development Initiatives

05

Promotion of Human Capital Management

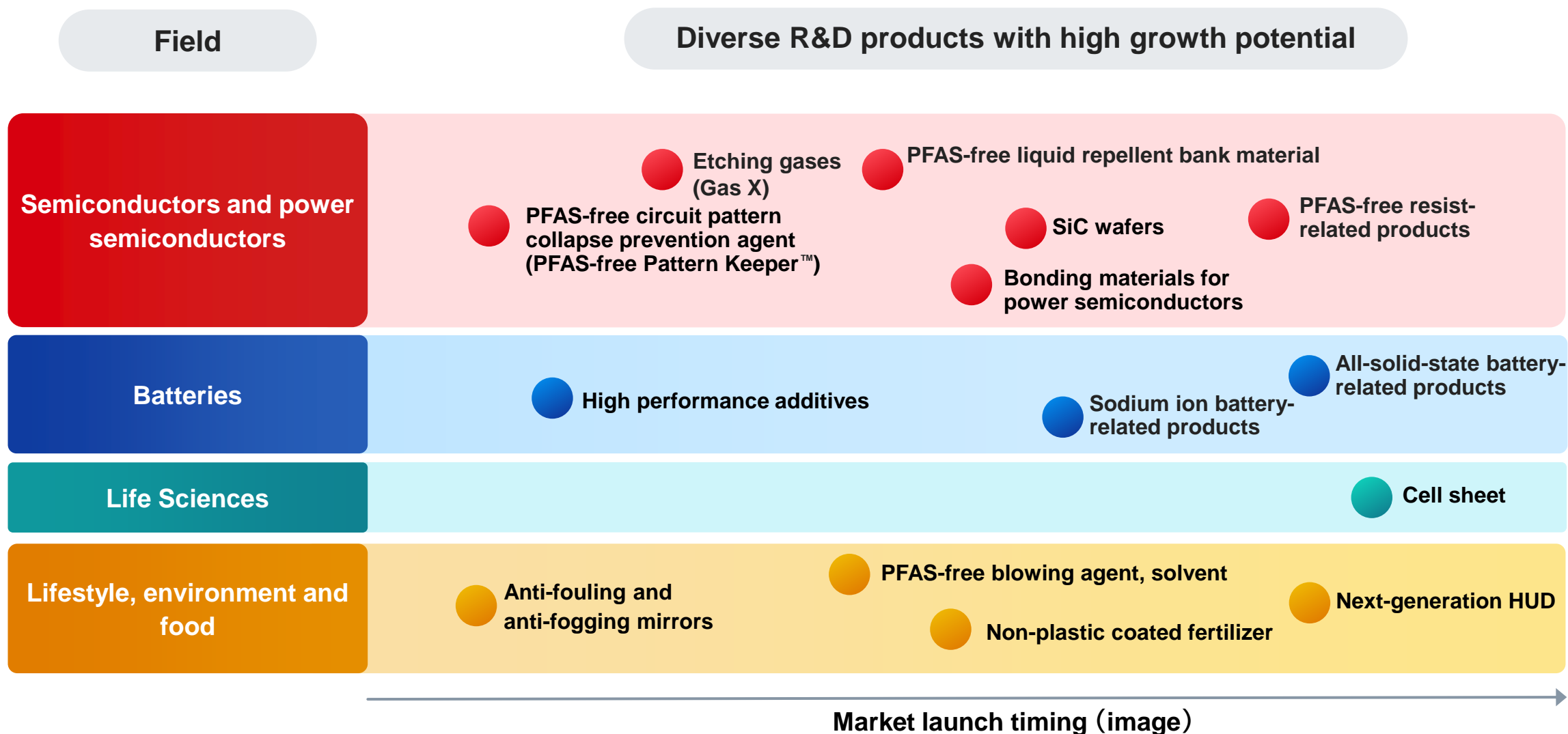
06

Response to Environmental Issues

07

Shareholder Returns

4 Research and Development Initiatives (1) Main R&D Products



4 Research and Development Initiatives (2) R&D Topics (i) Etching Gas

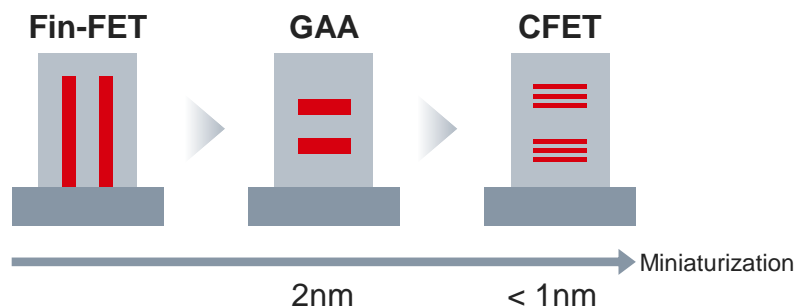
Semiconductors and power semiconductors

Developed etching gases (2nm node and beyond) that can be used in cutting-edge semiconductor manufacturing.

Necessary Elements for Next-Generation Etching Materials

- Improvement of etching accuracy (selectively removing only the material to be processed)
- Improvement of etching process throughput (processing speed)
- Low GWP and PFAS-free materials
- Materials targeting transistors (GAA, CFET) for miniaturization and integration of semiconductors

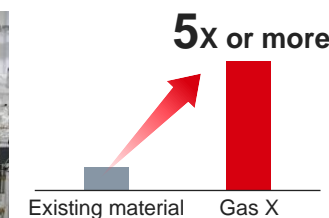
Changes in the transistor structure of advanced semiconductors



Development of Next-Generation Etching Material (Gas X)

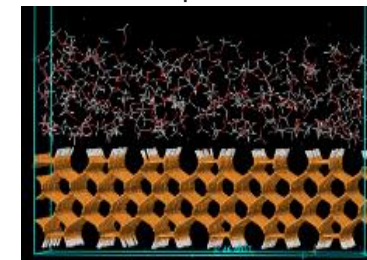
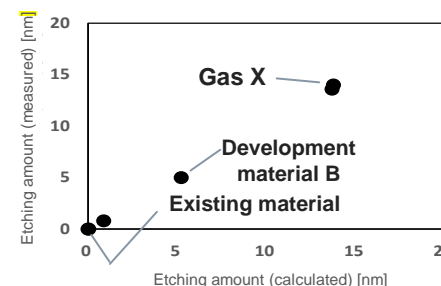
Development system

- Rapid evaluation system established to evaluate developed materials with in-house equipment
- Etching accuracy is **improved more than 5 times** compared to existing materials



Advanced simulation technology

- Predicts material performance and improves development efficiency
- Inferring reaction models and verifying mechanisms of functional expression



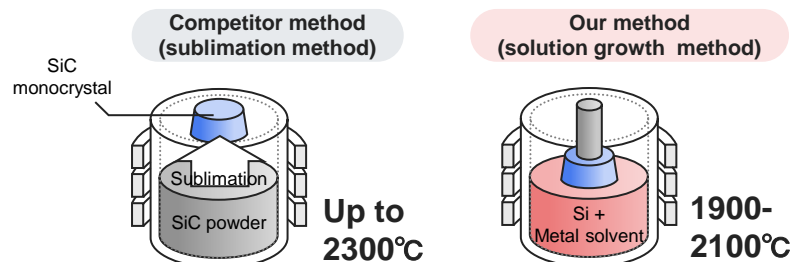
4 Research and Development Initiatives (2) R&D Topics (ii) SiC Wafer

Semiconductors and power semiconductors

Established “solution growth method,” which is a new manufacturing technology, and entered the SiC wafer business for power semiconductors.

Features of Our Manufacturing Technology (Solution Growth Method)

Low defects and low cost compared to other companies' manufacturing methods



Technological development	Leading development	Later development
Number of defects (quality)	Difficult to reduce	Easy to reduce
Manufacturing cost	High	Low (low temperature, fast growth)

6-inch prototype crystal using the solution growth method



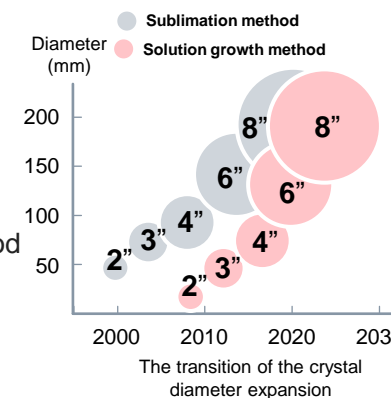
Research and Development Policy and Progress

R&D policy

Enhancement of the original solution growth method technology	<ul style="list-style-type: none">Achieving both high quality and low costLarge diameter technology (8 inches)
Development of mass production technology using computational science	<ul style="list-style-type: none">Determination of optimal conditions using machine learningProcess automation
Demonstration of devices using SiC wafers based on the solution growth method	<ul style="list-style-type: none">Standardization of SiC wafers based on the solution methodUtilization of NEDO Green Innovation Fund

Progress

- Made rapid progress in crystal diameter expansion
- Demonstrated low defects (high quality)
- Moving to demonstration of devices using wafers based on the solution growth method
- Manufacturing process optimization using machine learning
- Adopted by NEDO Green Innovation Fund



Developed a revolutionary circuit pattern collapse prevention agent (PK agent) for semiconductor-wafer cleaning processes, and adopted by many logic and memory manufacturers.

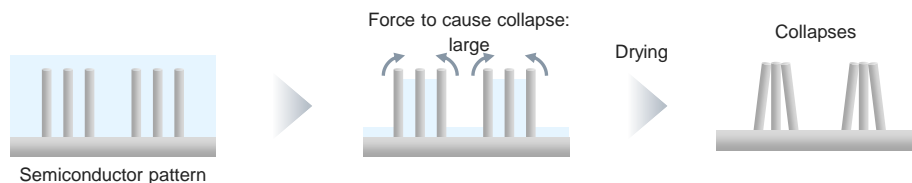
Promoting development of PFAS-free Pattern Keeper™ for cutting-edge semiconductors.

Features of the Circuit Pattern Collapse Prevention Agent

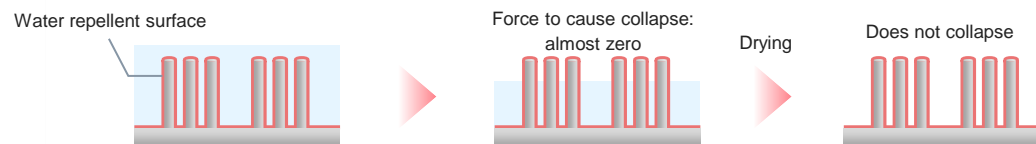
■ Developed through a fusion of the chemical and glass technologies we have accumulated

- Combining the ultra-high purification technology (chemistry) required for semiconductor materials with surface treatment technology to make the circuit pattern surface water-repellent, aim to prevent circuit pattern collapse during the drying process

Normal semiconductor cleaning process



When using the circuit pattern collapse prevention agent

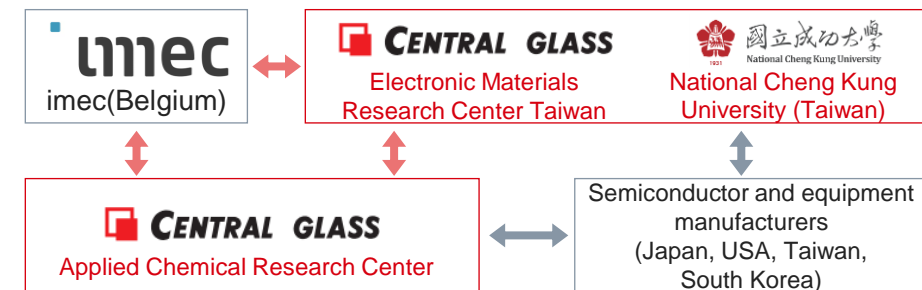


Research and Development Policy and Progress

■ R&D policy

- Finding new Pattern Keepers™ through collaboration with cutting-edge research institutions and customers
 - Higher performance: Ultrafine structure, 3D structure
 - Versatile: Different substrate materials

■ Cooperation system



■ Progress

- Develop PFAS-free products with the same performance as current products

AGENDA

01

VISION 2030

02

Overview of Business (FY2023 Results by Segment)

03

2030 Vision for Each Business

04

Research and Development Initiatives

05

Promotion of Human Capital Management

06

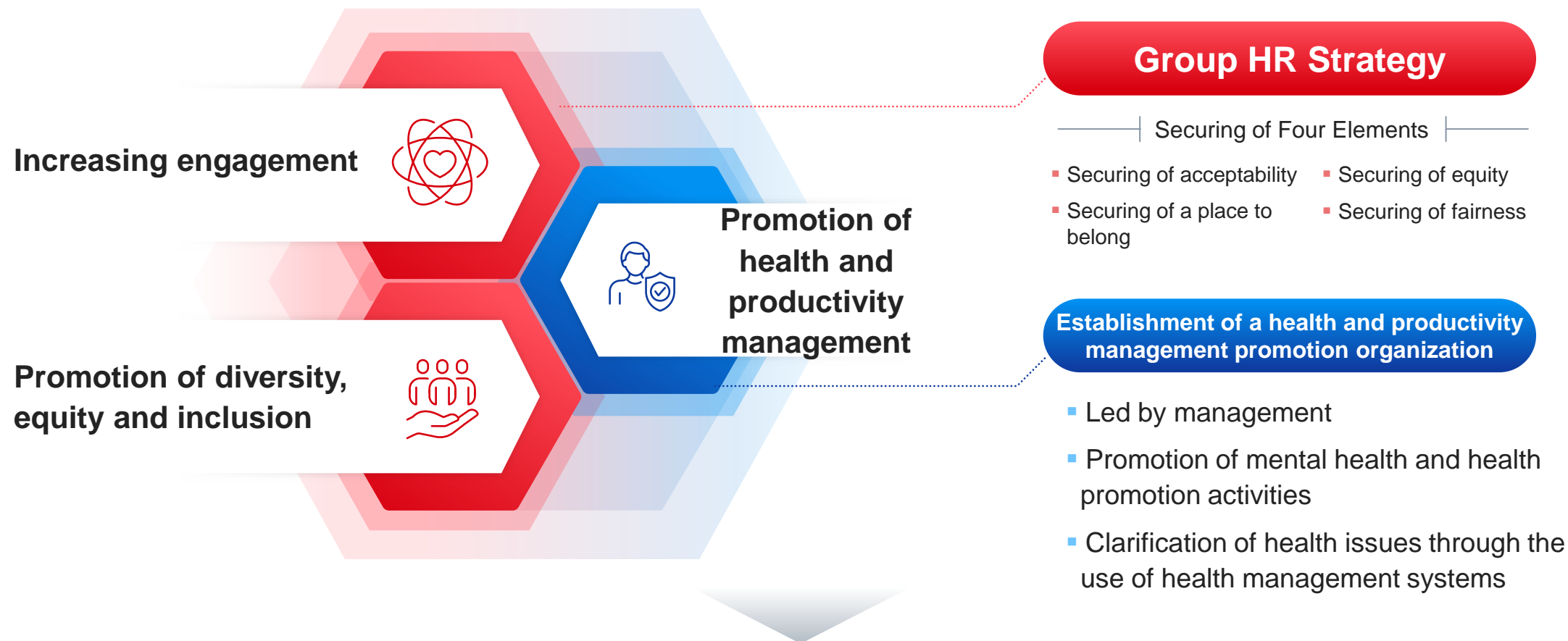
Response to Environmental Issues

07

Shareholder Returns

5 Promotion of Human Capital Management

Supporting our human resources from three perspectives to enhance our corporate value over the medium to long term



Promotion of human capital management that supports the activities of the Group Members who support manufacturing and continues to enhance value

AGENDA

01

VISION 2030

02

Overview of Business (FY2023 Results by Segment)

03

2030 Vision for Each Business

04

Research and Development Initiatives

05

Promotion of Human Capital Management

06

Response to Environmental Issues

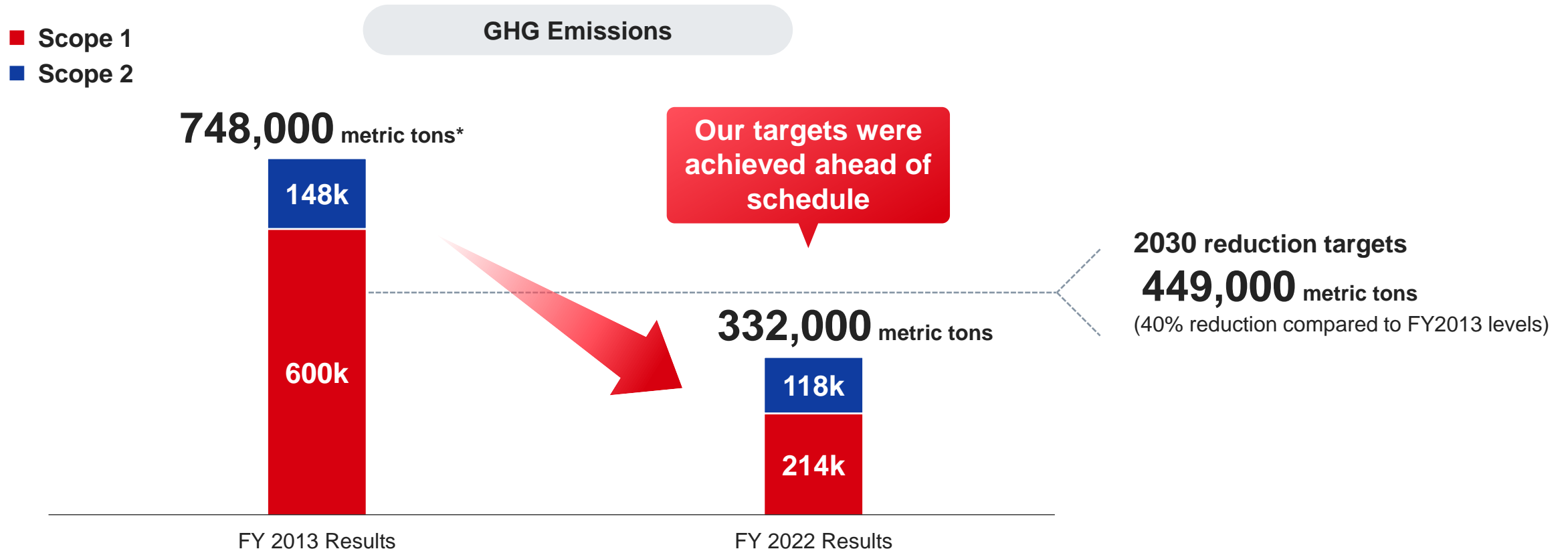
07

Shareholder Returns

6 Response to Environmental Issues (1) Initiatives Aimed at Carbon Neutrality

Achieved GHG emissions milestone reduction targets for FY2030 ahead of schedule through structural improvements in the domestic glass business.

Reduction targets for FY2035 are being formulated.



*Structure-adjusted base year emissions (GHG emissions minus GHG emissions in the base year of the transferred European and U.S. automotive glass operations, etc.)

6 Response to Environmental Issues (2) CDP Score

Obtained a “B-” rating in the areas of “Climate Change” and “Water Security” from CDP, an international non-profit organization that evaluates environmental initiatives

About CDP

Overview

- Established in the UK in 2000
- An international non-profit organization that evaluates environmental initiatives

Evaluation methods

- Working with more than 740 investors holding over USD136 trillion in assets
- Questions are presented to companies and local governments regarding business strategies, GHG emissions, and management of water intake and wastewater discharge, etc.
- 8 levels (A, A-, B, B-, C, C-, D, D-) of scores are assigned using proprietary scoring criteria

Evaluation of Central Glass

Factors in the FY2023 rating

- Due to setting specific targets for environmental initiatives and establishing a system to reduce GHG emissions, water usage, etc.

Future initiatives

- Promote efforts to reduce environmental impact in the environmental field by responding to the requests of diverse stakeholders in a consistent and transparent manner



AGENDA

01

VISION 2030

02

Overview of Business (FY2023 Results by Segment)

03

2030 Vision for Each Business

04

Research and Development Initiatives

05

Promotion of Human Capital Management

06

Response to Environmental Issues

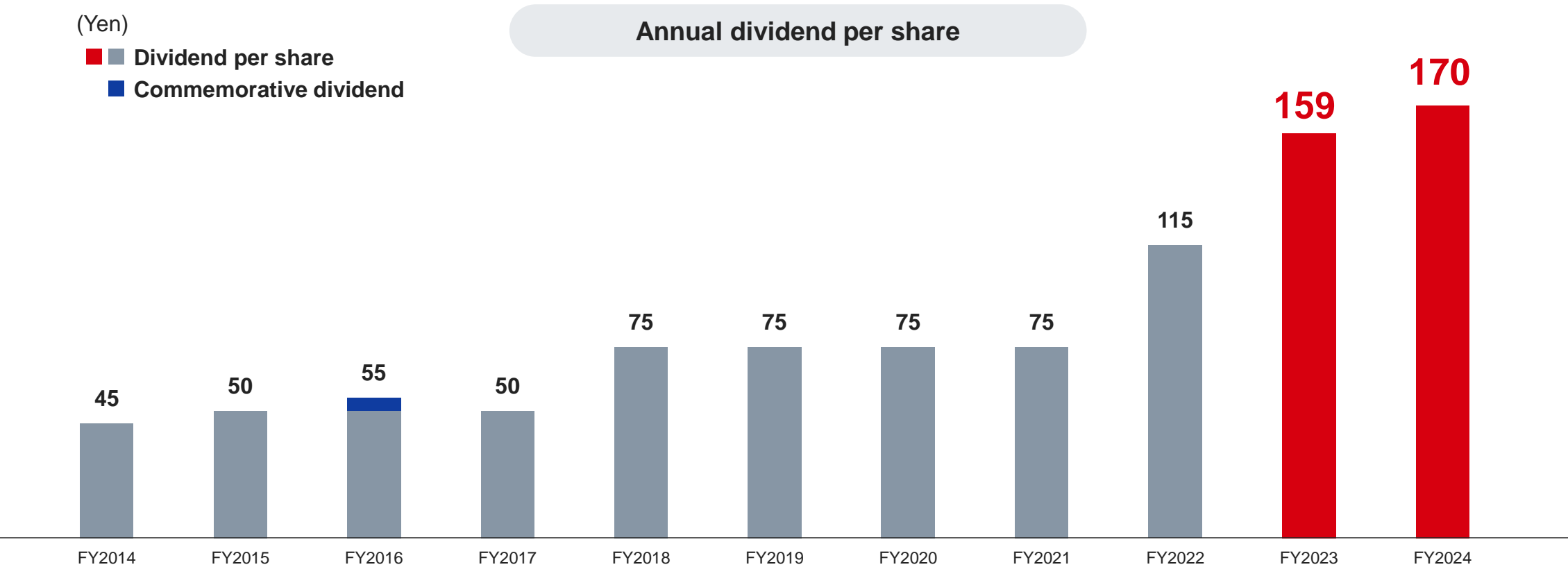
07

Shareholder Returns

7 Shareholder Returns

Maintain a total payout ratio of 30% or more and DOE of 3.6% during the current Medium-Term Management Plan (until FY2024).

Consider expansion during the next Medium-Term Management Plan.



* Due to the reverse stock split of 5 shares into 1 share performed on October 1, 2017, dividend amounts prior to that date have been adjusted to reflect the reverse stock split.

* A commemorative dividend of 5 yen per share was paid in FY2016.