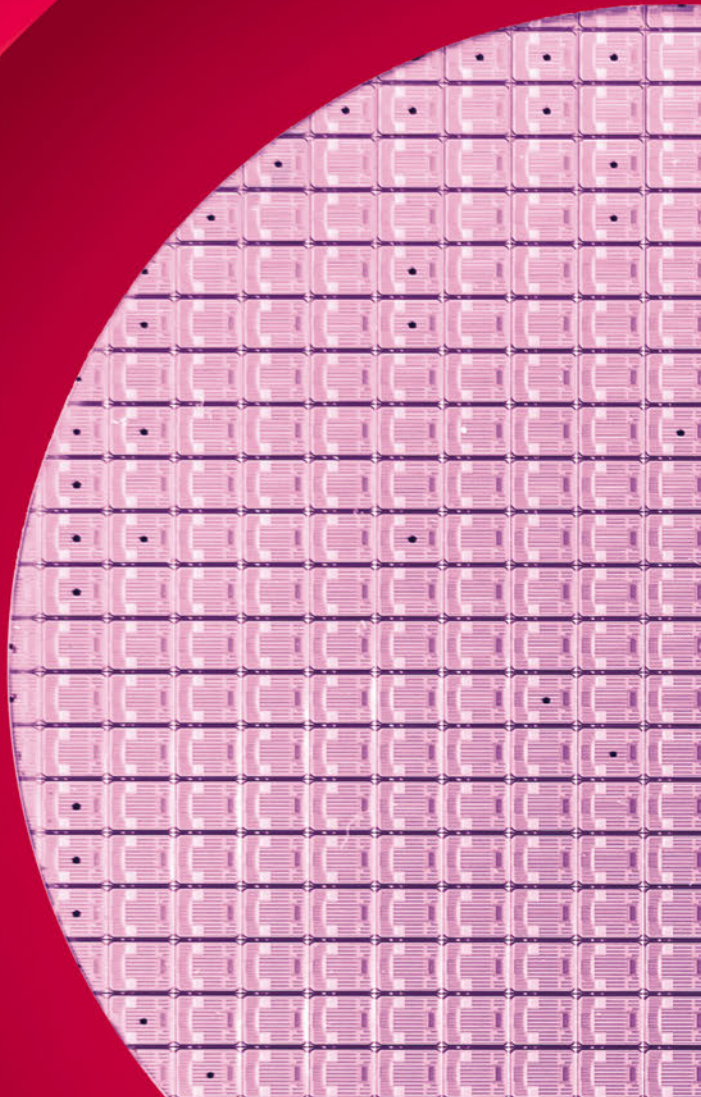


CENTRAL GLASS

Be a Specialty Materials Company

2024
INTEGRATED REPORT



Welcome Message



Representative Director and Chairman
Tadashi Shimizu

Aiming to create truly affluent societies through our businesses.

The Central Glass Group Corporate Philosophy is summed up in one phrase: *Creating a better future through monozukuri*. We strive to create a truly prosperous society through *monozukuri*. Central Glass *monozukuri* encompasses the activities of all divisions, from marketing, research and development, business development, manufacturing, and sales, to the corporate divisions necessary for overall business operations. The group is united behind the challenge of achieving this corporate philosophy. The truly affluent society for which we strive is a sustainable society capable of coping with and solving social issues, including environmental issues.

We cannot afford to put off dealing with critical environmental issues, including global warming and ocean plastics. Through creative materials and technologies, the Central Glass Group aims to solve problems and create a sustainable society. We see these problems as business opportunities that lead toward our future. Our sustainable enhancement of corporate value will come by taking on business challenges that address the issues society faces.

At the same time, we work on social issues internally, including diversity, equity, and inclusion, aiming to create comfortable work environments and good work-life balance. Even though Japan deals with a notable issue in the slow advancement of women in the workforce, our group is making steady progress in addressing the problem.

We also endeavor for efficient and rational management, while building a strong compliance system and enhancing corporate governance. Through these and other efforts, the Central Glass Group aims to increase corporate value sustainably into the future.

Report Period

April 1, 2023 to March 31, 2024

(including certain activities before and after the period in question)

Scope of the Report

Central Glass Co., Ltd. and consolidated subsidiaries

Referenced Guidelines

- *Integrated Reporting Framework*, The International Financial Reporting Standards Foundation (IFRS)
- *Guidance for Integrated Corporate Disclosure and Company-Investor Dialogue for Collaborative Value Creation*, Ministry of Economy, Trade and Industry
- *GRI Standards*, Global Reporting Initiative (GRI)



Importance and Completeness

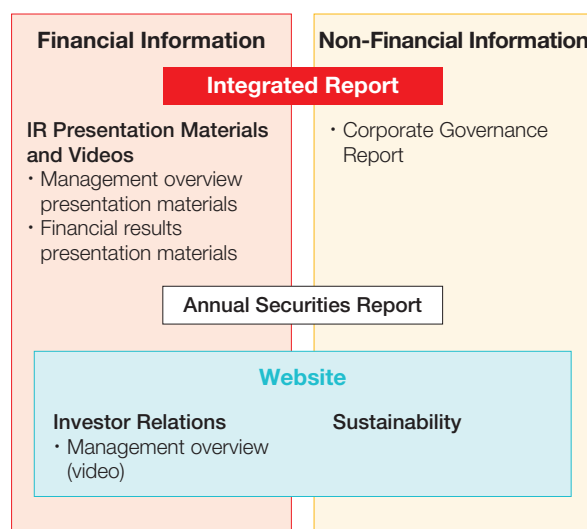
We edited this report to focus on information of particular importance, for ease of reading, and for understandability. Our corporate website includes detailed information disclosures in response to requests from stakeholders.

Notes Concerning Forward-Looking Statements

This report includes statements on projections and forecasts regarding strategies, results, and plans for the future.

Actual results may vary from these projections and forecasts due to various factors.

Disclosure Structure



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Basic Philosophy

Creating a Better Future Through *Monozukuri*

The Central Glass Group contributes to the establishment of a truly affluent society through the spirit of *Monozukuri*.

**Monozukuri* refers to all the business activities in which the Central Glass Group engages with a basic stance of integrity and sincerity, including R&D, quality-oriented manufacturing, and sales.

Our Values and Responsibilities

- Proactivity** We approach our work proactively, with a heightened sense of awareness and a broad perspective.
- Challenge** We openly share ideas and embrace challenges without fear of change.
- Respect for Individuals** We create a positive workplace by respecting each other's human rights and individuality.
- Integrity** We act with integrity, adhering to laws, regulations, and rules and taking responsibility for our actions.
- Safety** We place top priority on safety in our work and strive to improve our own health.
- Quality** We continuously seek to enhance quality and uphold our promises to society and our customers.
- Environment** We contribute to the protection of the global environment by actively addressing environmental issues.

PURPOSE

(Reason for Existence)

Contribute to the realization of a sustainable society through innovative materials and technologies

VISION 2030

The Central Glass Group revised our Basic Policies, which constitute our Corporate Philosophy as a guideline for sustainable growth, into what we now call our Purpose. This Purpose redefines our role and significance in society. We also formulated our long-term vision, VISION 2030, which will guide us through the year 2030. We reformulated Our Values and Responsibilities in place of our Code of Conduct to achieve our Purpose by ensuring that every member of the Group acts in unison from a common set of values.



**Become a Specialty Materials Company
Contributing to the Realization of a
Sustainable Society**

About Central Glass

Growth History

The history of Central Glass is a history of business and market creation. We began in 1938 as a producer of industrial soda. Since that time, we developed our business across a wide range of fields, including fertilizers, glass, and fluorine compounds, and we continue to endeavor every day to meet the needs of society.

Net sales: (billion yen)

250

200

150

100

50

0

1936

1950

1955

1960

1965

1970

1975

1980

1985



Ube Soda Industry, factory (ca. 1937)



NPK compound fertilizer plant under construction

Oil crisis

1936-

1950-

1970-

1980-

Ube Soda Industry Co., Ltd., our predecessor, was founded in October 1936 by inaugural president Nobuyoshi Kuniyoshi, after which the company constructed the Ube Plant.

The company began producing caustic soda in 1938 and soda ash in 1940. Although operations were suspended at the end of the war due to war damage, the company was listed on the Tokyo Stock Exchange in 1949 in the wake of postwar reconstruction.

In 1953, the company entered the fertilizer business. Through the integrated production of everything from soda ash to sheet glass, the company continued to add value and expand. The former Central Glass Co., Ltd. was established in 1958, and the company entered the sheet glass business.

In 1959, Central Glass constructed the Sakai Plant, and in 1963, Ube Soda Industry merged with the former Central Glass, changing the corporate name to Central Glass Co., Ltd. The company also constructed the Matsusaka Plant.

In 1971, the company entered the glass fiber business, establishing Central Glass Fiber Co., Ltd.

In 1974, the company completed a hydrofluoric acid plant on the grounds of the Ube Plant, and the company focused on the business of manufacturing organic fluorine compounds.



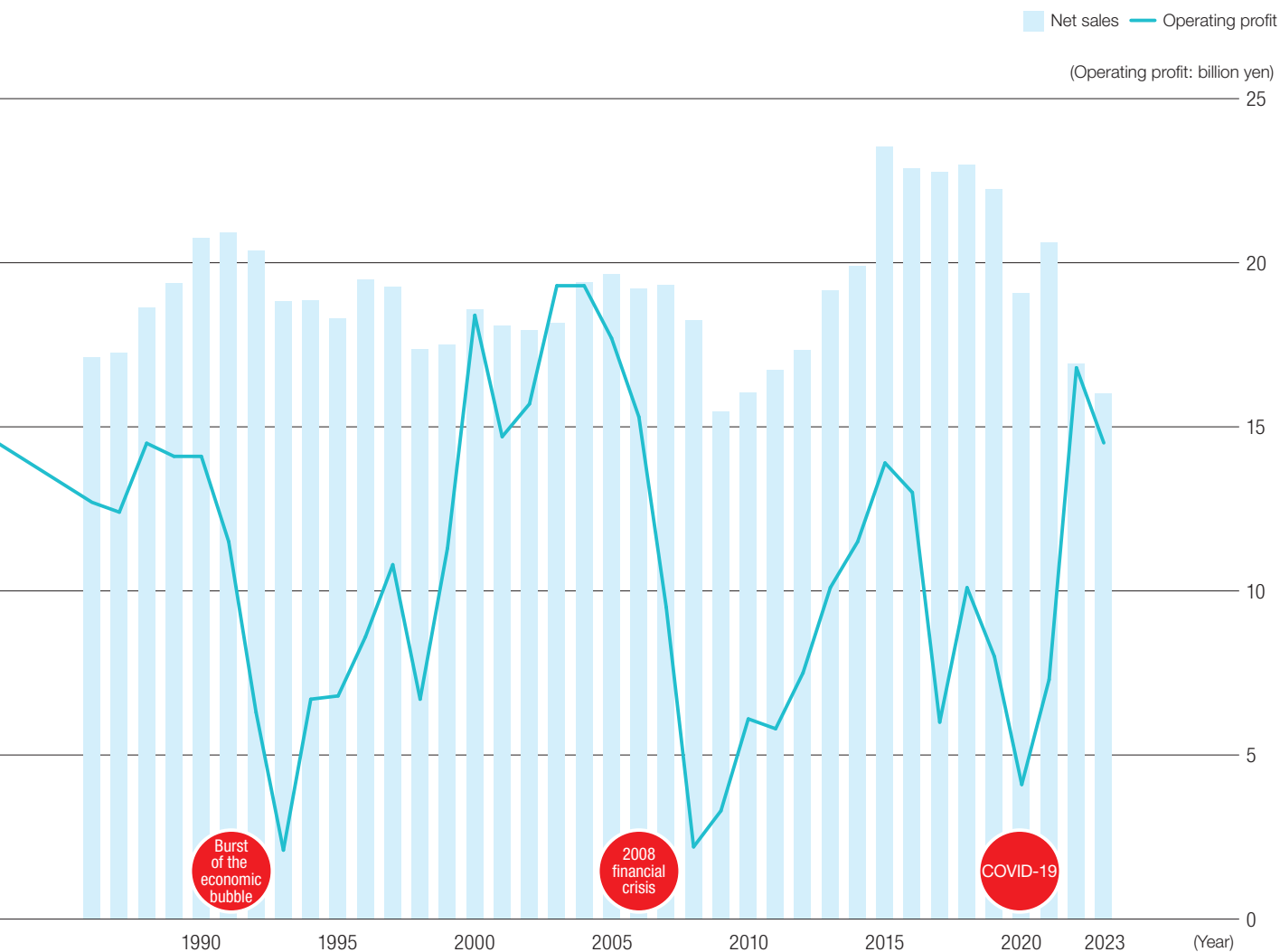
Central Glass Fiber Co., Ltd. (Central Glass Fiber Matsusaka Plant, 1973)

With growing worldwide interest in the functionality of fluorine compounds, the company decided to develop and commercialize added-value hydrofluoric acid products.

Over time, the company completed multi-purpose plants for the production of organic fluorine and other facilities at the Ube Plant, completing the foundation of the fine chemicals business.



Multipurpose production facility for organic fluorine (1984)



*Non-consolidated results through 1982; consolidated results beginning in 1983.

1990-

Started selling inhalation anesthesia using active pharmaceutical ingredients made by the company, contributing significantly to business performance growth.

2000-

With the globalization of the automotive industry, the company entered into a business alliance with the Saint-Gobain Group of France, establishing a joint automotive glass sales company, Central Saint-Gobain Co., Ltd.

We subsequently absorbed Central Chemical Co., Ltd., a joint venture, and reorganized the entity into the Kawasaki Plant.



Central Glass Czech s.r.o.
(Czech Republic)

2010-

We concentrated management resources in promising business fields, such as electronic materials for semiconductors and electrolytes for lithium-ion batteries.

In 2017, we established Central Glass Czech s.r.o. in the Czech Republic to manufacture and sell electrolytes for lithium-ion batteries.

In 2015, we ceased production of soda ash, our original business.

2020-

We continued to improve the structure of the glass business, which faces an ongoing difficult business environment. We streamlined production systems by consolidating and eliminating domestic production bases.

In 2022, we withdrew from an overseas glass business in which we had a controlling interest.

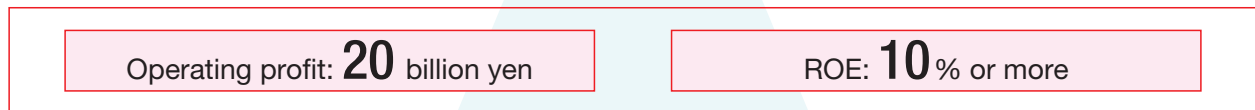
In 2023, we transferred the domestic glass business to Central Glass Products Co., Ltd., and the company conducted a fundamental structural review to focus on improving profitability.

VISION 2030 Overview

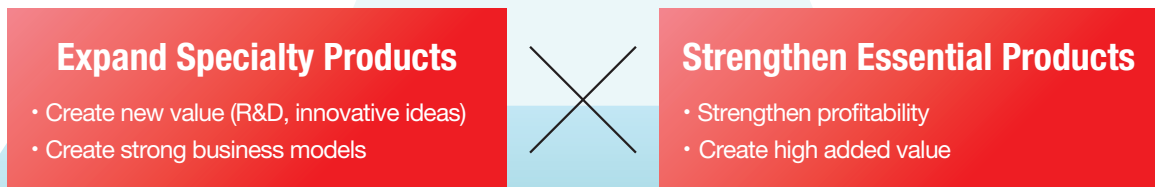
VISION 2030

Become a Specialty Materials Company
Contributing to the Realization of a Sustainable Society

Numerical Targets



Business Strategies

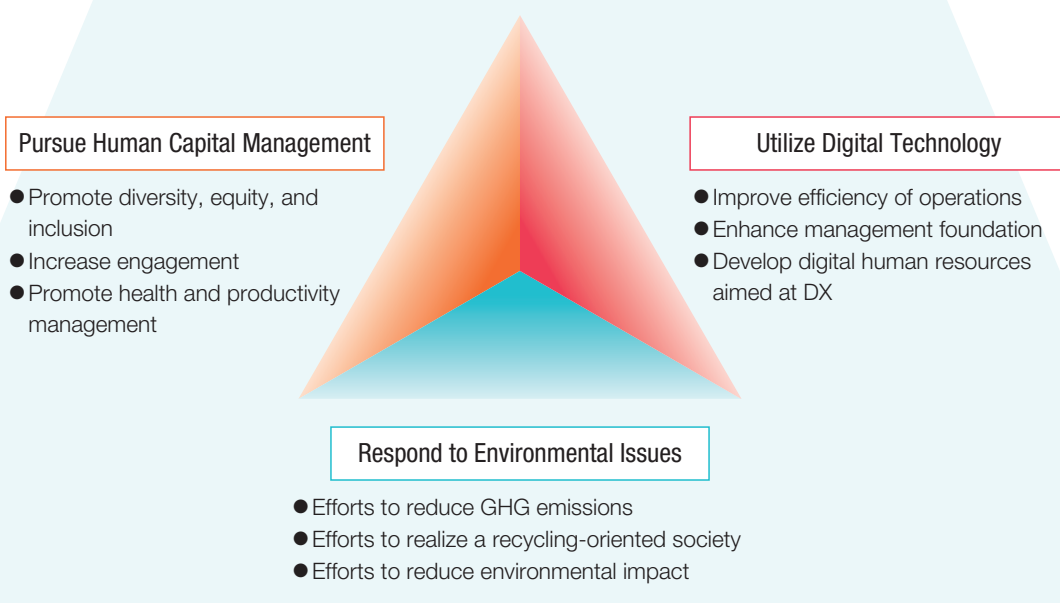


Optimize Business Portfolio

New Value Creation Targets

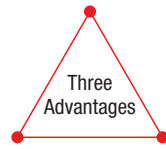
- Semiconductors and power semiconductors
- Batteries
- Life sciences
- Lifestyle, environment, and food

Strengthen Business Foundation Through ESG Management



Technological Advantage

Intellectual property and other products based on unique technologies



Sustainability

Products that contribute solutions to social and environmental issues

Originality

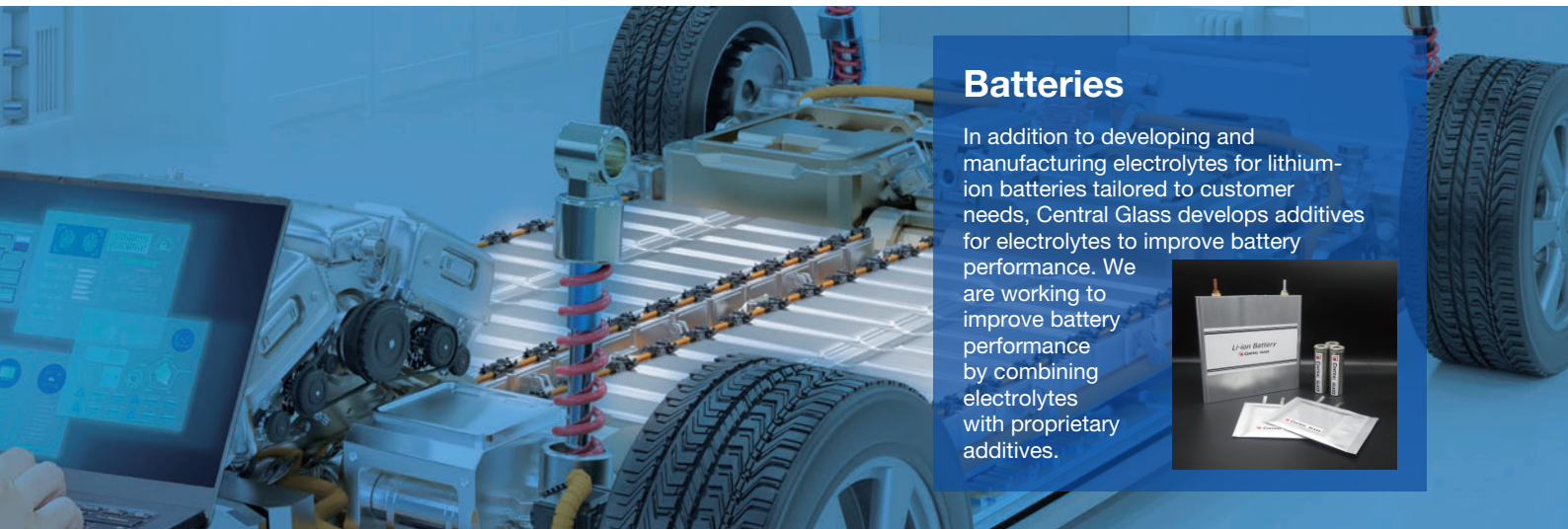
Products that have established a unique and powerful business model

Specialty Products



Semiconductor and Power Semiconductors

In addition to silicon semiconductors, we develop SiC wafers for power semiconductors, which are essential for the future of EVs. We also develop unique bonding sintering materials for power semiconductors that exhibit high electrical and thermal conductivity at low curing temperatures.



Batteries

In addition to developing and manufacturing electrolytes for lithium-ion batteries tailored to customer needs, Central Glass develops additives for electrolytes to improve battery performance. We are working to improve battery performance by combining electrolytes with proprietary additives.



Lifestyle, Environment, and Food

We research and develop anti-fouling and anti-fogging mirrors and PFAS-free blowing agents and solvents that comply with regulations on the use of fluorine compounds. We also pursue research and development in non-plastic coated fertilizers and next-generation heads-up displays (HUD) for automotive glass.



Life Sciences

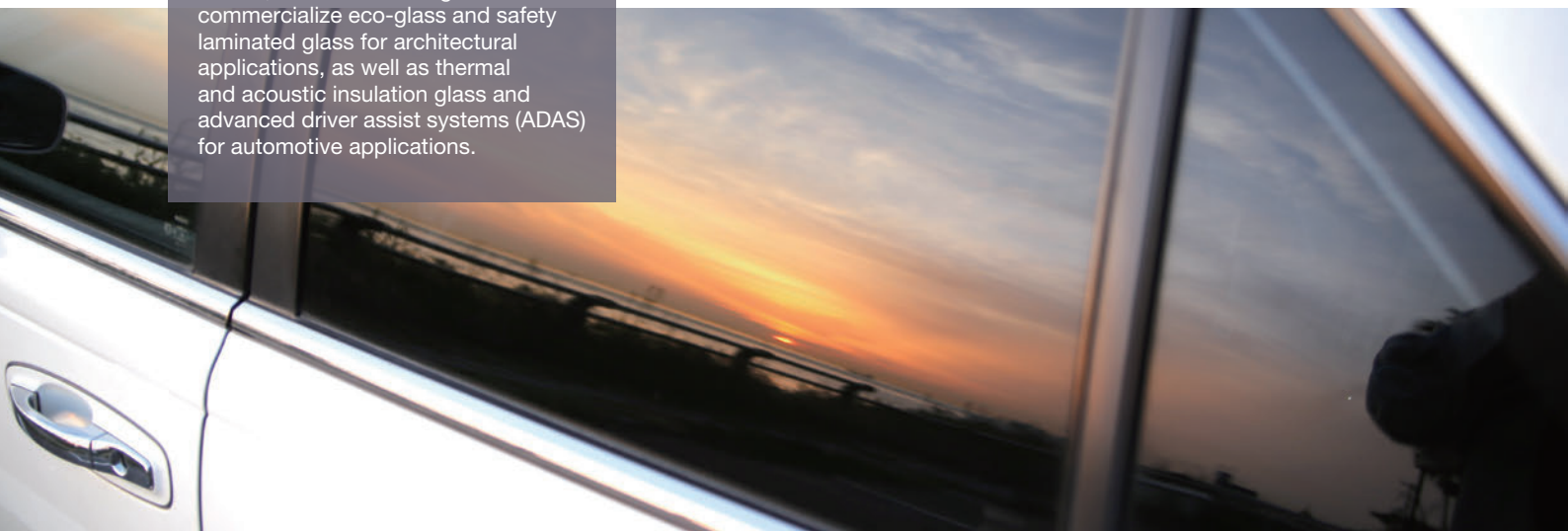
We produce sevoflurane, which owns the largest share of the global market for inhalation anesthetics. Sevoflurane works very quickly to anesthetize with minimal irritation to the airways and no discomfort upon awakening.

Essential Products



Glass

The Glass business manufactures and sells architectural glass for buildings, homes, and automotive glass. We commercialize eco-glass and safety laminated glass for architectural applications, as well as thermal and acoustic insulation glass and advanced driver assist systems (ADAS) for automotive applications.



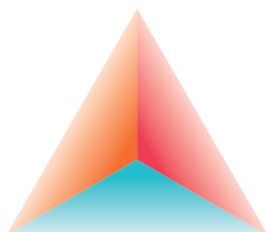
Glass Fiber

Our Glass Fiber business handles glass fiber used as a composite reinforcement material and glass wool used mainly in soundproofing and thermal insulation for vehicles. We provide glass fiber products with superior properties for a wide range of applications, including automotive, IT, housing, and the environment.



Fertilizers

We manufacture and sell chemical fertilizers, made mainly from ammonium chloride, ammonium phosphate, and potassium chloride. We also manufacture and sell coated fertilizers tailored to crop growth, such as coated urea fertilizer. We focus on developing non-plastic coated fertilizer to contribute to sustainable agriculture and food security.



Strengthen Business Foundation Through ESG Management

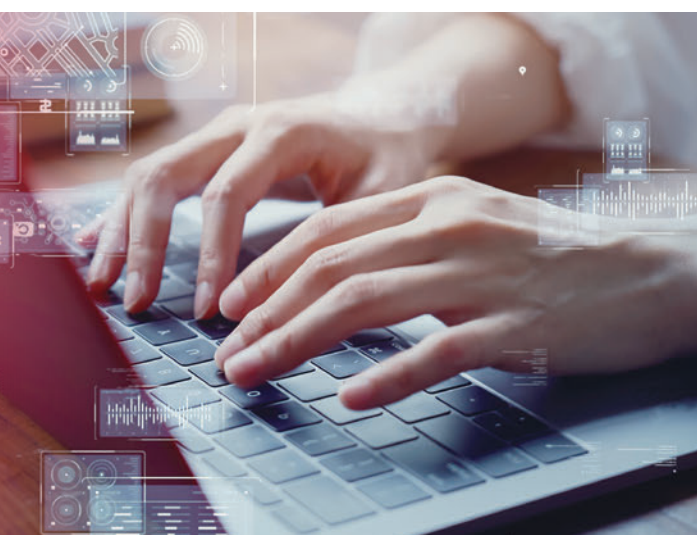
Pursue Human Capital Management

Our corporate philosophy is creating a better future through *monozukuri*. True to this philosophy, we recognize that Central Glass Group employees are who support our *monozukuri*, and we are committed to increasing engagement, promoting diversity, equity, and inclusion, and promoting health management. From these three perspectives, we aim to maximize the value of our employees and increase our corporate value over the medium to long term. In parallel, we seek to ensure the psychological safety of our employees in pursuing group human resources strategy under the four ideals of securing acceptability, securing a place to belong, securing equity, and securing fairness. We also create systems to support employee well-being and encourage Group employees whose jobs support *monozukuri* to perform at high levels of motivation and enjoy job satisfaction.



Utilize Digital Technology

To compete successfully in an ever-accelerating market of change, we continue to advance our management base and improve the efficiency of our operations through data and digital technology. We embrace digital technology to strengthen the use of data in manufacturing and R&D. To move these efforts forward, we must develop digital human resources as quickly as possible, and we pursue efforts and systems to this end, fostering a mindset oriented toward digitalization.



Respond to Environmental Issues

In FY2023, the Central Glass Group responded to environmental issues by upgrading mechanisms and detailed measures to reduce GHG emissions, water consumption, etc. In recognition of these efforts, CDP, a non-profit organization that evaluates environmental initiatives, gave the Group a score of B-, significantly higher than our previous score. In terms of initiatives aimed at achieving carbon neutrality, in FY2022, we achieved our target of reducing 2030 GHG emissions (total of Scope 1 and Scope 2 emissions) by 40% to 449,000 t-CO₂ (compared with the 2013 result of 748,000 t-CO₂) ahead of schedule. Accordingly, we are currently developing new emission reduction targets leading to 2035. The Central Glass Group continues to focus on reducing our environmental impact to prevent global warming through efforts to reduce GHG emissions, including the emissions of our domestic and overseas affiliates.



Our Value Creation Story

Top Message

We aim to become a Specialty Materials Company that contributes to the realization of a sustainable society through unique research and development.



Central Glass defined our path forward under a new long-term vision and purpose as a company that contributes to truly affluent societies through *monozukuri*.

Toward becoming a Specialty Materials Company that contributes to the realization of a sustainable society, we aim to enhance our corporate value and create a sustainable future.

Representative Director, President & CEO

Kazuhiko Maeda

As an R&D-Oriented Company, We Are Committed to Creating Products That Solve Global Issues

Since our founding in 1936 as a chemical manufacturer engaged in the production and sales of soda products, Central Glass has expanded business to meet the needs of society and industry through fertilizer, glass, and glass fiber businesses. We also expanded into the fine chemicals field, which is now our core business. More recently, we engaged in the structural reform of our underperforming glass business. In April 2023, we established a new company to integrate our domestic Architectural Glass and Automotive Glass businesses to launch a new growth phase.

Our philosophy is to solve social issues and create a better future through *monozukuri*. This philosophy has remained constant throughout our nearly century-long history, and in line with this philosophy, we offer materials and products that contribute answers to global environmental problems based on proprietary research and development. One of our most important materialities is developing and providing products that solve social issues. We also recognize that reducing greenhouse gases (GHG^{*1}) is one of the most pressing environmental issues on a global scale.

Central Glass develops and provides many environmentally friendly products. These products (chemicals), which amount to nearly 80 billion yen

and account for half of total sales, include low global warming potential (GWP^{*2}) products with less GHG emissions and energy-saving products. We estimate that our main low-GWP products contribute to GHG reductions of 6 million tons of CO₂, and we recognize that these products contribute significantly to solving environmental issues.

A look at the business environment reveals that the need for environmentally friendly products is greater than ever. We see the response to climate change and other global environmental issues, as well as the need to reduce GHG emissions, as business opportunities for our company, and we will endeavor further to improve the environment through our businesses.

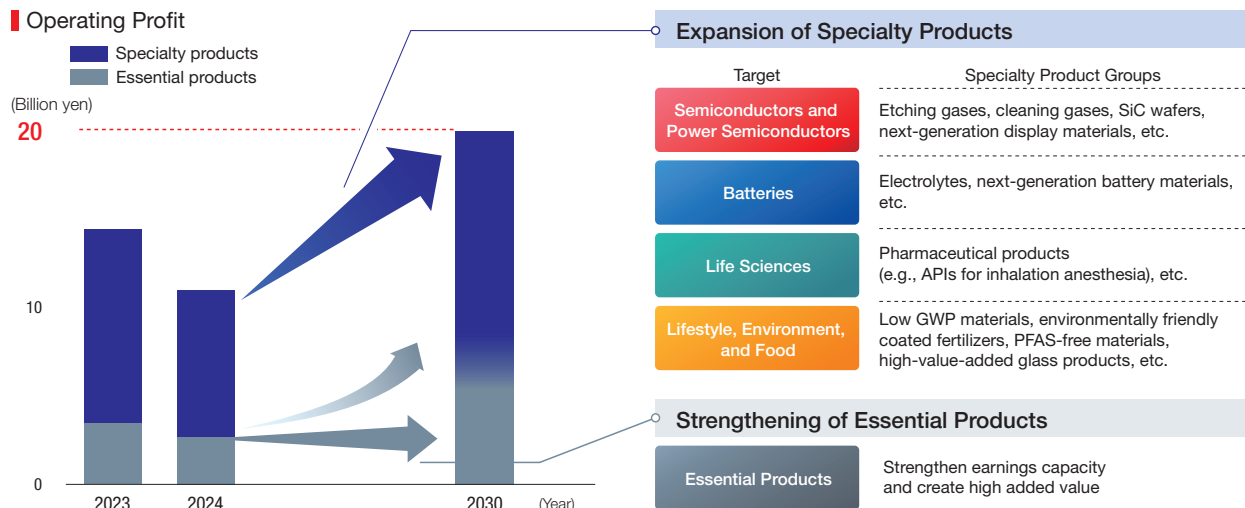
Our most notable product that contributes to GHG reduction is electrolytes for lithium-ion batteries, used mainly in electric vehicles (EVs). This sector has grown significantly over the past few years. However, the business environment has weakened more recently due to a slowdown in the growth of EV demand and other factors. While we expect demand and social needs to recover, we are preparing to specialize in growth regions, including signing an OEM agreement with a Korean company, to solidify a supply structure for North America, where growth in demand is expected to rise again. In semiconductor materials, which is our core business, we focus on materials and products that meet the demand for environmentally conscious products.

^{*1} Greenhouse gases (GHG)

^{*2} Global warming potential (GWP): A greenhouse effect coefficient

Roadmap to the Operating Profit Target of 20 Billion Yen

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



Our Value Creation Story

Top Message

A Long-Term Vision and Purpose That Contribute to the Creation of a Sustainable Society

We formulated our VISION 2030 long-term vision in May 2024 to strengthen our management in this area and to define the clear goal of contributing to the environment through our corporate activities. We are united in the goal of becoming a Specialty Materials Company that contributes to the realization of a sustainable society by the year 2030.

We expect that sharing this vision of 2030 inside and outside the group and showing the direction of our organization will increase group member motivation and a sense of unity. We also believe that communicating our goals clearly to external stakeholders will foster a deeper understanding of our business, and we hope to share our goals and direction through increased opportunities for dialogue.

Under VISION 2030, we aim to achieve a record-high operating profit of 20 billion yen and an ROE of 10% or more. We will endeavor to achieve these goals through a business strategy based on the two pillars of expanding specialty products and strengthening essential products.

Specialty products are products offering one or more of three advantages: (1) Technological advantage; (2) Originality; and (3) Sustainability. For example, our electronic materials offer a technological advantage, while our sevoflurane, an API for inhalation anesthesia, offers originality and our electrolytes offer sustainability.

Essential products are a group of products that do not necessarily offer an outstanding competitive advantage, but represent products for which society has constant needs. These products include glass, glass fiber, fertilizer, and certain chemical products.

To enhance our corporate value further as an R&D-oriented company, we must become highly profitable. To this end, we pursue the expansion of specialty products as a key strategy. Our specialty products already occupy a significant profit position and have a proven track record—all originating from proprietary research and development. Among new initiatives under development are several products poised to bloom in their respective fields. We will continue to focus on R&D, increase our specialty product offerings, and strive

toward an operating profit of 20 billion yen by 2030.

At the same time, strengthening essential products is a key strategy in parallel. We pursue higher profitability in this area through appropriate pricing policies, business model reform, supply chain enhancements, and productivity improvements.

In formulating our long-term vision, we held internal discussions of how to create value for our stakeholders and how to contribute to solutions to social issues amid a growing focus on ESG management and sustainability.

As a result, we felt it necessary to redefine our company's significance to society, or what we call Purpose. The Central Glass Purpose is to contribute to the realization of a sustainable society through innovative materials and technologies. To build a sustainable society as a Specialty Materials Company.

Achieving Our Medium-Term Operating Profit Target Ahead of Schedule

We support the achievement of VISION 2030 through a medium-term management plan (plan) formulated every three years. Our current plan (FY2022 to FY2024) focuses on strengthening R&D and defining the role of businesses in our business portfolio. Specifically, our R&D has pursued the development of functional materials through our core technologies and the acquisition of technologies in new areas through open innovation. In the meantime, we pursue business measures that include fundamental structural



improvements in the Glass business and development of a global supply chain in the Energy Materials business.

Under these initiatives, as of FY2022, we already achieved the operating profit target of the final year of our current plan. In FY2023, we posted net sales of 160.3 billion yen, an operating profit of 14.5 billion yen, and an operating profit margin of 9.1%. For a second consecutive year, we exceeded the final year targets of our current plan.

The early achievement of these targets was largely due to the sale of overseas operations in our glass business that were difficult to monetize, the significant reduction of production capacity in Japan in line with demand, and the subsequent pricing policy.

In addition, the semiconductor materials business has grown significantly amid increased demand. We experienced a period of falling demand in a negative reaction to strong special demand in the wake of the COVID-19 pandemic. However, demand has recovered more recently, and we expect demand to grow further, due in part to future demand for semiconductors for generative AI applications.

At the same time, we expect operating profit for FY2024, the last year of the plan, to vary from the final target due to a weakening market environment in the Energy Materials business and an increased cost burden for raw materials and fuel materials. However, we will continue active business enhancement activities, particularly in the semiconductor-related business and Chemicals business at large.

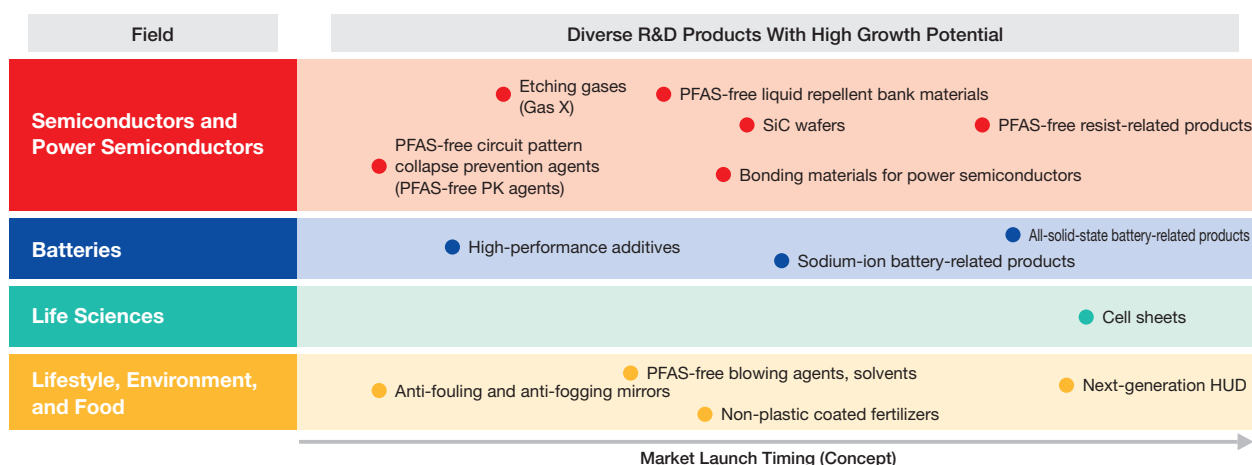
Strengthening R&D Capabilities to Answer Market Needs as a Source of Competitiveness

We want to be a company that responds agilely to the changing times and delivers useful products to society through flexible and creative technological capabilities. We respond to the needs of our customers and the market head-on, active in expanding our offerings of specialty products in line with the key strategies of VISION 2030 and evolving as an R&D-oriented company.

Under VISION 2030, we intend to expand our lineup of R&D categories that promise high-growth potential and specialty products in four areas: (1) Semiconductors and power semiconductors, (2) batteries, (3) life sciences, and (4) lifestyle, environment, and food.

In our semiconductor and power semiconductor business, we are developing materials for SiC and power semiconductors, including Gas X as a new etching gas, PFAS-free circuit pattern collapse prevention agents, and liquid-repellent bank materials. In batteries, we focus research and development on future products related to sodium-ion batteries, all-solid-state battery-related products, and our high-performance additives for lithium-ion batteries. In life sciences, we research and develop cell sheets for regenerative medicine.

In the life, environment, and food field, we focus on research and development for anti-fouling and



Our Value Creation Story

Top Message

anti-fogging mirrors, PFAS-free blowing agents and solvents, non-plastic coated fertilizers, and next-generation HUD for automotive glass. Fertilizers in the food sector are an essential and significant business that supports the Japanese diet. Unfortunately, our business here is still in the red. However, we are developing new products and working to reduce costs.

Among these fields, we are most excited about the semiconductor sector. Our customers—the semiconductor manufacturers—are signaling clear demand for low GWP, PFAS-free, etc. We believe we are making progress in solutions proposals and gaining customer acceptance.

I joined Central Glass as a chemical products researcher. I then went on to work in sales and planning. During my time as a researcher, I focused on fluorine coatings and electronic materials. For example, a paint we developed was used on the Akashi Kaikyo Bridge to prevent the bridge's surface from deteriorating due to weather. In the planning department, I led the expansion of the electronic materials for semiconductors and the electrolytes business for EV batteries. We are about to enter a new period of growth, pursuing a long-term vision and a long-term perspective that will contribute to the realization of a sustainable society. This time is an opportunity for researchers to make progress that will have an impact far into the future. I hope every researcher approaches their work enthusiastically with this in mind.

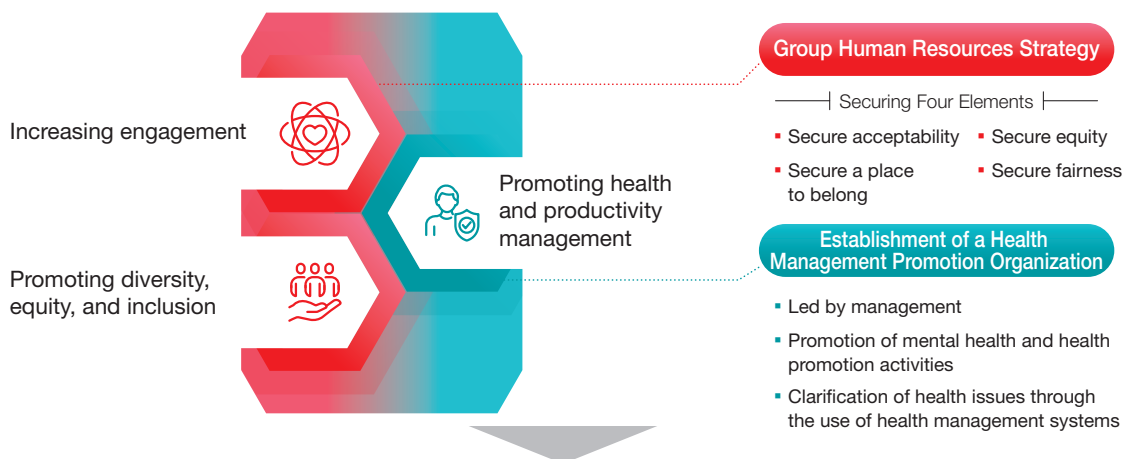
Human Resources Are the Key Driver of Growth

Human resources will be the key driver for Central Glass to achieve the vision and strategies outlined above. We understand that the spirit of *monozukuri* in our corporate philosophy is the foundation of our business activities and that our group members are who support *monozukuri*. We pursue human capital management to maximize the value of our group members as human assets from three perspectives: (1) Increasing engagement; (2) Promoting diversity, equity, and inclusion; and (3) Promoting health and productivity management.

In other words, we strive to improve and homogenize the level of our human resources by enhancing our system of education and training to communicate this spirit. We recruit mid-career professionals to enhance our resources in highly specialized areas. Last year, we established the Health Promotion Section to provide physical and mental health support to group members for higher performance and productivity.

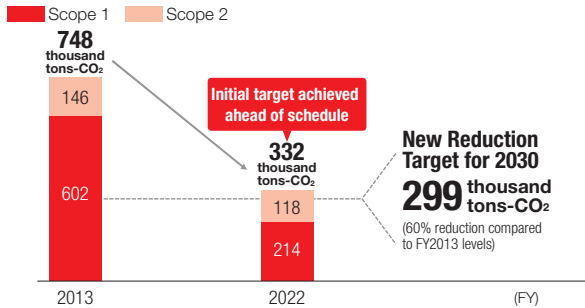
In addition, we hold about 50 town hall meetings between the president and group members to ensure the company is aligned in the same direction. The meetings began as a forum for between 20 and 40 group members and management to meet and learn about what the other side is thinking. Direct dialogue with group members is important to develop an

Supporting Human Resources From Three Perspectives to Enhance Corporate Value Over the Medium to Long Term



Pursuing human capital management that supports the activities of Group members who support *monozukuri* and continues to enhance value

GHG Emissions



*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.)

understanding and gain a wider appreciation of our long-term vision and perspective. We use unfiltered feedback from group members in future corporate activities and management decisions.

Sustainability Initiatives Are an Integral Part of Corporate Activities

We conduct ESG management to strengthen our management foundation. As we state in our Purpose, sustainability initiatives represent our significance to society, and one pillar of ESG management is to address environmental issues through our corporate activities.

Through our efforts toward carbon neutrality, we achieved our GHG reduction target for 2030 (sum of Scope 1 and Scope 2) ahead of schedule in FY2022. This success was due in part to the impact of structural improvements in our glass business. Accordingly, we changed our target from a 40% reduction to a 60% reduction compared to fiscal 2013, and we are now working hard to achieve this outcome.

In FY2023, we received a score of B- from CDP, a non-profit organization that evaluates efforts to address environmental issues. This score recognized our efforts to reduce GHG emissions and water consumption—areas we have been addressing for some time.

After discussions in the internal Sustainability Committee and the Board of Directors, Central Glass formulated our first materiality in 2023. This materiality includes our response to environmental conservation. This fiscal year, we will formulate a new medium-term

management plan, pursuing efforts to reduce our environmental impact in accordance with the new plan.

Building Trust With Stakeholders Through Information-Sharing and Dialogue

Traditionally, our company has been lacking in communicating our corporate stance and management policies to our stakeholders. Due to this lack, recognition and empathy for Central Glass have been low.

When I took over as president in 2023, we published our first-ever integrated report, signaling our shift to a policy to communicate our Purpose and management targets more actively. As part of these efforts, we announced our long-term vision and Purpose, discussed actions to achieve management conscious of the cost of capital, held a management overview meeting, and revised the content and design of our disclosure materials. We redesigned our website and expanded content significantly to provide useful and timely information to stakeholders, including our group members.

We feel these activities have increased our dialogue with stakeholders and provided more opportunities to foster a deeper understanding of our company. Many group members have welcomed this approach, reminding us once again of the need to strengthen our ability to communicate.

We continue to build relationships of trust with our stakeholders by providing more opportunities to gain a deeper understanding of our business and philosophy and to hear their opinions.

Next year, we plan to formulate and announce a new medium-term management plan, created by backcasting from our ideal vision of Central Glass in 2030. Although predicting the future in these times is difficult, we will continue to monitor social conditions, the business environment, and the latest technological trends, aiming to become a specialty materials company, maximize corporate value, and continue our growth to benefit the future of society, our customers, business partners, group members, and investors. I sincerely appreciate the continued support of you, our stakeholders.

Our Value Creation Story

Message From the Director in Charge of Finance & Accounting

Seeking to reach 20 billion yen in operating profit and 10% ROE or more by 2030, and to enhance corporate value further through five measures.



Aiming to achieve our long-term VISION 2030 by 2030, Central Glass is executing on various measures to further enhance corporate value.

The following is my discussion of a presentation I made on during our financial results presentation on May 10, 2024, called “Actions to Achieve Management Conscious of Cost of Capital and Stock Price.”

Director, Executive Managing Officer

Tetsuo Kanai

Gaining Momentum With the Transition to NEDO-Subsidized Project

To achieve VISION 2030, Central Glass works as a Specialty Materials Company that contributes to the realization of a sustainable society, aiming to reach 20 billion yen in operating profit and an ROE of at least 10%.

On February 25, 2022, the New Energy and Industrial Technology Development Organization (NEDO) launched a project to develop wafer technology for use in next-generation power semiconductors as a next-generation digital infrastructure project. We were selected to participate in this project and conduct manufacturing technology development for high-quality 8-inch SiC single crystals and wafers, and we began research and development under contract in April of the same year. In April 2024, this project transitioned to a NEDO-subsidized venture.

We are accelerating research and development in this technology toward mass production of high-quality 8-inch SiC wafers capable of competing on the world stage. Our work will also contribute to building carbon-neutral societies once implemented.

Many of our products are comparatively niche in the

semiconductor field. I think there has been only vague recognition in the stock market that ours is a company linked to the semiconductor industry. We believe the NEDO announcements and other activities have helped raise our recognition as a company that contributes to the semiconductor sector, which serves as the backbone of today's industry.

Approach to an Optimal Capital Structure

In terms of capital structure, we intend to maintain our current credit rating, which allows us to raise funds directly from the capital markets. At the same time, we will focus on keeping our debt-to-equity ratio below 0.5, unless strategic investments happen to accumulate. On the other hand, we plan to control capital adequacy appropriately by holding the minimum required capital in consideration of contingency plans, balanced by considerations of book value per share increases.

Our approach to allocating investments to areas of growth potential and ensuring stable funding remains unchanged. At the same time, we intend to maintain an appropriate capital structure allocation with an eye to exceeding PBR of 1.

Achieving Medium-Term Targets Ahead of Schedule; Entering an Adjustment Phase

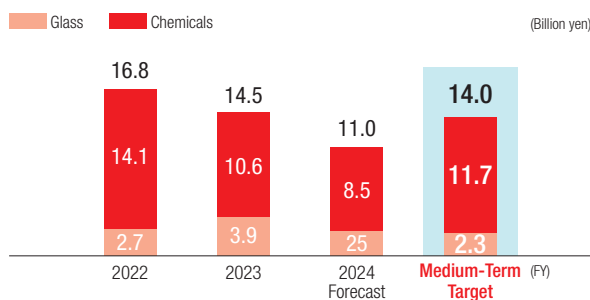
Fiscal 2023 net sales amounted to 160.3 billion yen, while operating profit amounted to 14.5 billion yen and operating profit margin was 9.1%. As with fiscal 2022, fiscal 2023 results exceeded the targets of 14.0 billion yen in operating profit and operating profit margin of 8% under our current medium-term management plan. We view this as a good result for the final year of the current medium-term plan.

Chemicals business sales were 100.9 billion yen, down 13.7 billion yen year on year due to weak sales of hydrofluoroolefin-based blowing agents, electrolytes for lithium-ion batteries, and fertilizers. Operating profit was 10.6 billion yen, down 3.5 billion due to the lower-of-cost-or-market method for valuing inventories. The Glass business reported sales of 59.4 billion yen and operating profit of 3.9 billion yen, mainly due to higher sales in the Automotive Glass business.

As a result, ordinary profit amounted to 16.3 billion yen and profit was 12.5 billion yen, a decrease of 30 billion yen year on year. We secured an ROE of 11.4%, although this result was a significant decrease from the previous year, which included large entries for extraordinary income. Meanwhile, net assets per share increased 10% to 4,637 yen, demonstrating an increase in financial soundness.

The Chemicals business outlook for FY2024 calls for higher sales in the electronic materials and fertilizer businesses. In contrast, we expect a significant decline in the energy materials business, leading us to forecast net sales of 93.5 billion yen, which will be a decrease of 7.4 billion yen year on year. We expect the Glass business to see higher demand in the Architectural

Operating Profit



glass and Glass Fiber businesses, projecting net sales of 62.5 billion yen, or an increase of 3.1 billion yen.

We forecast an operating profit of 8.5 billion yen for the Chemicals business, a decrease of 2.1 billion yen, and 2.5 billion yen for the Glass business, a decrease of 1.4 billion yen. We project an ordinary profit of 12.5 billion yen and a profit of 10.0 billion yen, a decrease of 2.5 billion yen year on year.

Ongoing R&D Investments to Create New Businesses

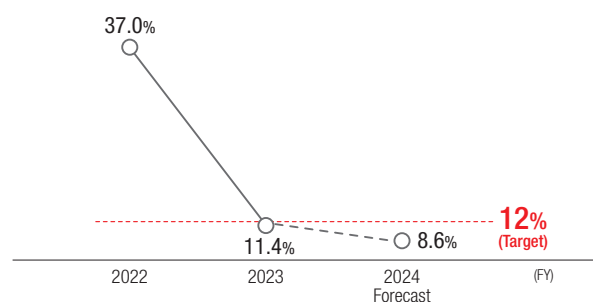
We advocate ourselves as an R&D-oriented company, and we recognize that the ratio of R&D expenses to net sales among chemical manufacturers is never a small figure. Our policy is to utilize the technologies and materials created through research and development to build a competitive business model. Naturally, we continue to upgrade our laboratories and equipment. We are investing significant sums of money in research and development, including that for related human resources.

We are also considering investing heavily in semiconductor-related products, particularly the aforementioned SiC wafers for power semiconductors, as we have a unique competitive edge in the manufacturing process. In addition, we hope to make a strategic investment in the field of regenerative medicine, although commercialization may be some time away.

ROE Improves, While PBR Struggles Analyzing Factors, Implementing Response Measures

We had assumed a cost of equity around 7% to 8%; however, ROE failed to reach this level until FY2021. As a result of structural reforms in the Glass business

ROE



Our Value Creation Story

Message from the Director in Charge of Finance & Accounting

and growth in the Chemical business in the previous and current fiscal years, profitability rose to a point exceeding our projections.

PBR has remained between 0.6 and 0.7 for a quite a long time. The main reason for the sluggish performance in PBR is the low level of PER in recent years. At the same time, ROE, one factor comprising PBR, has improved comparatively for the following reasons.

First, in terms of profitability, our inability to secure stable equity spreads has been an issue. On the financial side, we repaid interest-bearing debt after the TOB of treasury stock through operating cash flow and asset sales. Financial soundness has improved significantly, but we recognize the need to continue improving capital efficiency.

In the context of the cost of capital, we began disclosing ESG information in integrated reports and other channels last year. However, we believe we must enhance disclosures related to the status of our efforts and communicate these efforts more effectively to stakeholders.

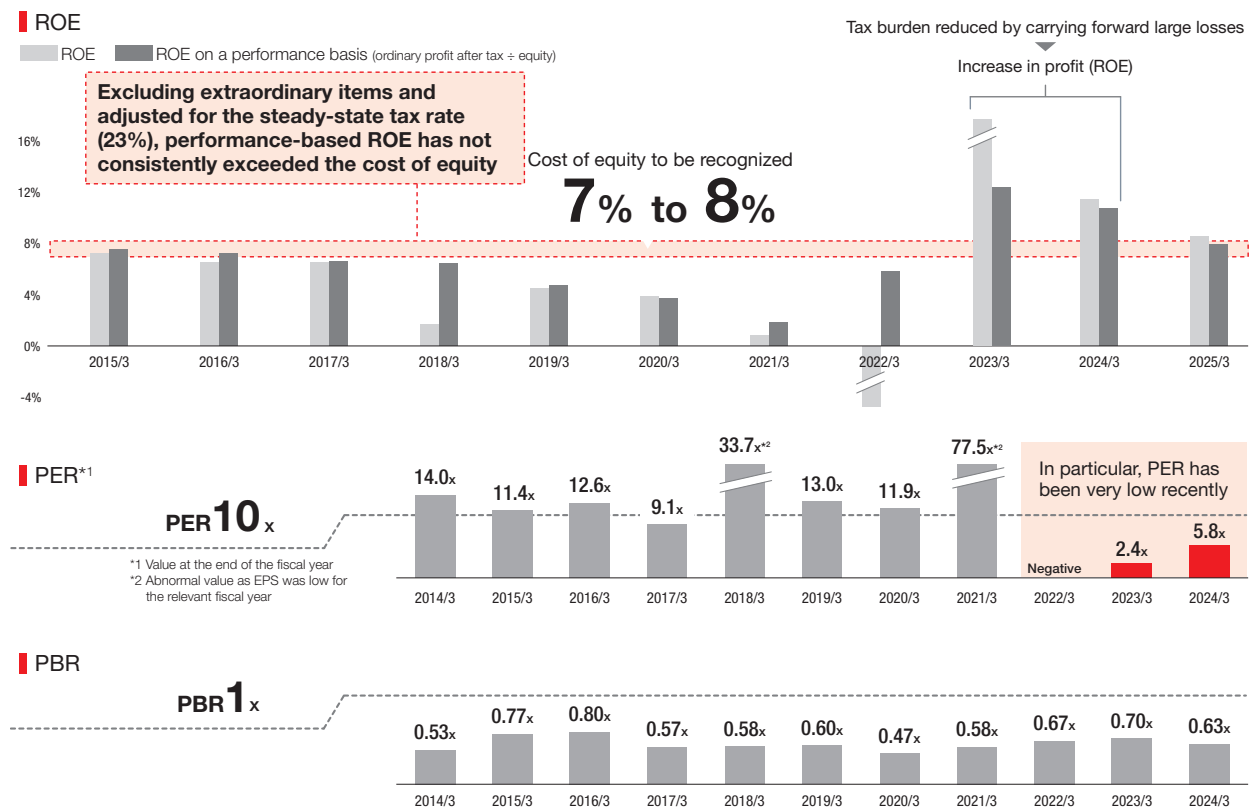
Five Measures to Improve Return on Equity

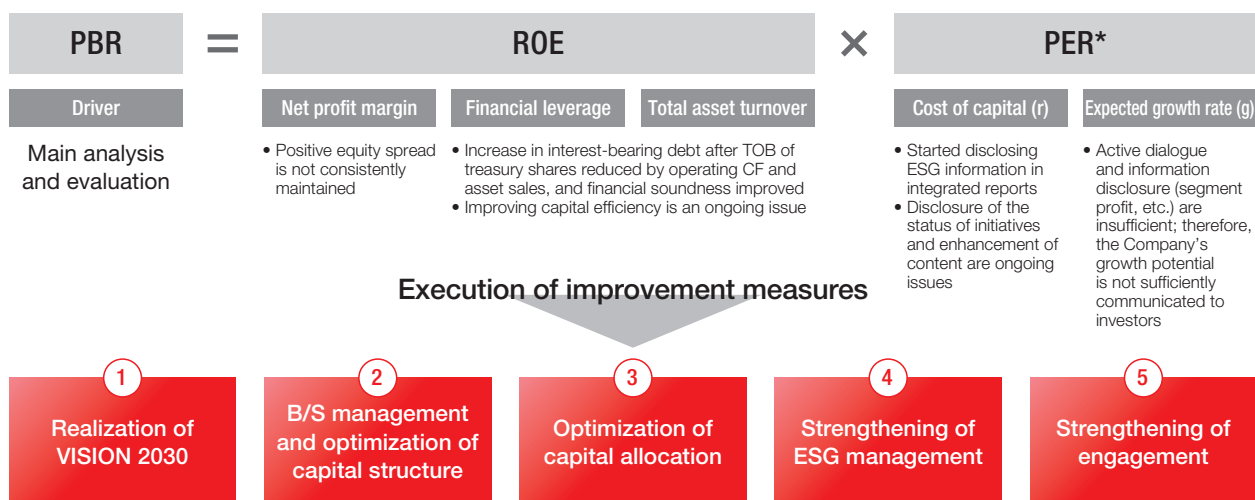
Based on an analysis of these factors, we proposed five measures to enhance corporate value, earning the consensus of the Board of Directors.

(1) Realization of VISION 2030: Numerical targets for operating profit (indicator of growth potential) and ROE (indicator of return on capital). Achieving this vision will in itself improve our return on capital.

(2) B/S Management and Optimization of Capital Structure: The ratio of non-operating assets has been shrinking as we sell off shares and real estate under operating leases. We expect that we will have to reduce inventories while diversifying procurement sources further. We intend to control equity appropriately within our capital structure, assuming that our current rating is based on a financial structure we can maintain at a minimum.

(3) Optimization of Capital Allocation: We expect to secure more stable operating cash flow over the next six years than in the six years prior. Leveraging this





* If a clean surplus relationship (a state in which *profit for the period* (profit) on the income statement and *change in equity* on the balance sheet are equal) is assumed, PER converges to the inverse of the difference between the cost of capital and the expected growth rate (r-g). Therefore, the cost of capital and expected growth rate are used as the drivers of PER.

cash flow, we will consider a balanced allocation of capital to investments in R&D, the environment, digital, and existing essential products. We will emphasize investments to bring specialty products to market to strengthen the foundation for growth.

(4) Strengthening of ESG Management: We have identified materiality and disclosed related initiatives. We will continue to strengthen our business foundation by stepping up and assessing the results of these initiatives. We expect to disclose the results of these efforts in various media to improve our reputation with external rating agencies (currently not very high) and improve PER.

(5) Strengthening of Engagement: In March 2024, we established a new Corporate Communications Department to improve information sharing and enhance stakeholder communications. We plan to step up our financial results presentation materials and hold our first business overview meeting to create more opportunities to share information and engage more actively with investors.

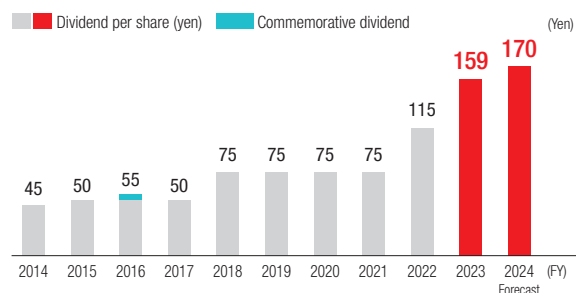
By disclosing our business and research through broader IR activities and engagement, we expect to raise our reputation in society to levels higher than present. By improving the performance of our businesses further, we hope to increase corporate value and enhancing confidence in our company in the marketplace.

Stable Shareholder Returns Balanced With Profits

We declared a dividend for FY2023 of 159 yen, taking into account our dividend on equity (DOE) ratio target of 3.6%, as described in the current medium-term management plan. This dividend translates into a payout ratio of 31.6%, a level that meets our 30% target. For FY2024, we forecast a dividend of 170 yen to meet this target, which will result in a dividend payout ratio of 42.1%.

As we balance total return ratio with profits, we are looking for DOE at around 3.6% for stable dividends. We are increasing dividends gradually in light of business performance. We hope shareholders and investors recognize our efforts to maintain a constant DOE.

Annual Dividend Per Share



*We conducted a 5-for-1 reverse stock split on October 1, 2017; therefore, dividends prior to that date have been adjusted to reflect this reverse stock split.
*We paid a commemorative dividend of 5 yen per share for FY2016.

Our Value Creation Story

Our Value Creation Process

Input

Operating Capital

Financial Capital

- Financial base supporting value creation

Total assets, consolidated 214.4 billion yen
 Equity ratio 53.6 %
 Rating (as of March 2024) A-(JCR)

Manufacturing Capital

- Capital investment 6.1 billion yen

Human Capital

- Diverse workforce

Employees, consolidated (as of FY2023) 3,314

Intellectual Capital

- Open innovation

R&D expenses 6.6 billion yen
 Patents held by the Company: 2,195

Social Capital

- Focus on dialogue with stakeholders

Total individual meetings 59

Natural Capital

- Reducing environmental impact

Total energy use 5,208 TJ
 Water use 10,009,000 m³

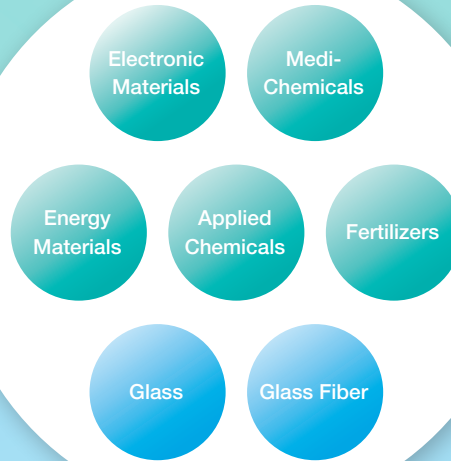
Business Activities

Business Activities

VISION 2030

**Become a Specialty Materials Company
 Contributing to the Realization of a
 Sustainable Society**

Chemicals Business



Glass Business

R&D Supporting Our Growth

Materiality

Solve Social Issues Through Business Activities
 Adopt Measures for Environmental Protection
 Enhance Our Business Foundation

Governance

Basic Philosophy Creating a Better Future Through *Monozukuri*

Output

Products and Services

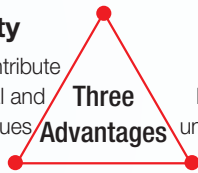
Specialty Products (Including Developed Products)

Technological Advantage

Intellectual property and other products based on unique technology

Sustainability

Products that contribute solutions to social and environmental issues

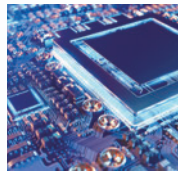


Originality

Products that have established a unique and powerful business model

● 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, etc.
(e.g., inhalation anesthetics)



● Lifestyle, Environment, and Food

Low-GWP materials
Environmentally friendly coated fertilizers
PFAS-free materials
High-value-added glass products, etc.



Essential Products

● Architectural glass, automotive glass



● Glass fiber



Outcome

Our Value to Society

Purpose

Contribute to the realization of a sustainable society through innovative materials and technologies

● Expand offerings of environmentally friendly products

Provision and expansion of environmental contribution products (Chemicals business (total sales of low-GWP, energy-saving products)) **72.0 billion yen**

GHG emissions avoided in environmental contribution products **5,150,000 t-CO₂**

GHG emissions (vs. FY2013) **52.3 % reduction**

● Stabilize shareholder returns by optimizing capital allocation

Operating profit (Operating profit ratio) **14.5 billion yen (9.1%)**

ROE **11.4 %**

Dividends **159 yen**

Dividend on equity ratio **3.6 %**

● Create value through DE&I and human resources development

● Foster peace of mind by strengthening quality management

● Enhance compliance system

Our Value Creation Story

Materiality

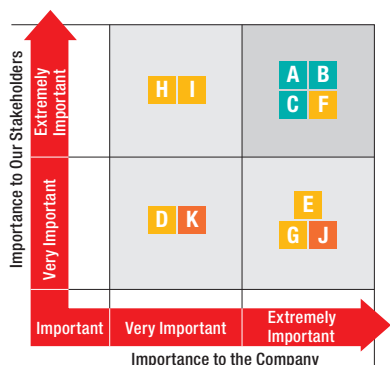
Central Glass identified issues from diverse perspectives, organizing and evaluating such issues from two perspectives: importance to various stakeholders and importance to our Group vision. We then determined materiality through discussions at the Board of Directors meetings. The Company set KPIs and related initiatives for 11 material issues in three areas. Of these, we consider the *Solution of Social Issues Through Business Activities: Provision and Development of Products That Solve Social Issues* to be a top-priority issue, considering relationships with the business.

Materiality-Identifying Process



Fields	Materiality (ESG)	Initiatives and Key Performance Indicators (KPIs)
I Solution of Social Issues Through Business Activities	[Environment] A Provision and Development of Products That Solve Social Issues	Offer and expand environmentally friendly products [Chemicals business] (total sales of low-GWP energy-saving products)
		Offer and expand environmentally friendly products [Glass business] (Sales volume ratio of eco-glass and thermal insulation automotive glass compared with FY2021)
		Provide and develop coated fertilizers that help solve food issues [Fertilizer business] (Contribute to increased yield and labor saving)
		Strengthen R&D capabilities (focus areas: energy conservation, low GWP, SiC, CO ₂ collection and utilization, PFAS compliance)
II Measures for Environmental Protection	B Measures for Climate Change	Reduce GHG emissions (Scope 1 and 2)
		GHG emissions avoided emissions by providing environmentally friendly products* ¹
	C Improvement of Energy Use Efficiency	Improve GHG emissions intensity (GHG emissions/Net sales)
		Reduce water use (Improve water intake intensity per sales unit: Total water intake/Net sales)
III Enhancement of Business Foundations	[Society] D Diversity, Equity, and Inclusion* ²	Reduce the final disposed amount of industrial waste
		Increase the ratio of female employees in career-track positions
		Increase the ratio of male employees utilizing parental leave
	E Enhancement of Human Resource Development	Increase the employment rate of persons with disabilities
		Implement Diversity and Inclusion management education (encourage managers to attend lectures)
		Encourage employees to take annual leave
III Enhancement of Business Foundations	F Improvement of Quality Management	Increase employee training opportunities (training hours per employee)* ² * ³
		Improve and enhance employee education, including for Group companies
	G Pursuit of Industrial Health and Safety, and Safety and Disaster Preparedness	Reduce the number of complaints (percentage reduced year on year)
		Maintain and improve quality through outsourced contractor audits (annual auditing execution rate)
	H Enhancement of Supply Chain Management	Improve quality education
		Promote industrial health and safety (number of accidents that require leave)
	I Respect for Human Rights	Promote safety and disaster preparedness (number of serious accidents)
		Pursue CSR procurement
[Governance] J Enhancement of Compliance System	Strengthen initiatives to respect human rights	
	Enhance compliance education	
K Enhancement of Corporate Governance	Improve the evaluation of the effectiveness of the Board of Directors	

*¹ Based on the CO₂ emissions reduced at the use stage of the final products that use our environmentally friendly products. Avoided emissions are estimated using our unique formula to calculate reduced emissions through one year of use based on Company sales volume.



Top Priority Issues, Risks, and Opportunities

Achieving a decarbonized society is an urgent global issue. Our Group has ample room to contribute to leading areas through sales and development. Such areas include the reduction of greenhouse gas (GHG) emissions, the electrification of vehicles, and energy saving, etc. We believe taking such initiatives will create business opportunities and meet stakeholder expectations and needs.

	FY2022 Results	FY2023 Results	FY2024 Targets
	78.5 billion yen	72.0 billion yen	100.0 billion yen
	98%	110%	156%
Pursue the early launch of environmentally friendly coated fertilizers and develop new fertilizers using unused resources (plant residues, livestock waste, etc.) with low environmental impact (see P.71)			
<ul style="list-style-type: none"> • Electronic materials: Environment-friendly semiconductor materials and next-generation materials (SiC) • Battery materials: Electrolyte (EV and stationary) and Post-Li-ion battery development ★ Develop medical materials and research pharmaceuticals, focusing on life science as a next-growth area 			
	332,000 tons of CO ₂	356,000 tons of CO ₂	350,000 tons of CO ₂
	5,300,000 tons of CO ₂	5,150,000 tons of CO ₂	6,800,000 tons of CO ₂
	2.0t CO ₂ /million yen	2.2t CO ₂ /million yen	1.8t CO ₂ /million yen
	61.1m ³ /million yen	62.4m ³ /million yen	55.6m ³ /million yen
	15.6 thousand tons	8.3 thousand tons	8.8 thousand tons
	13%	17.0%	18.3%
	32.0%	70.8%	75.0%
	2.2%	2.4%	2.6%
	15%	45%	60%
	67.5%	68.1%	At least 80.0%
	17 hours	27 hours	20 hours
Aim to improve the value of the Group's human capital by improving and supporting education for Group companies (in Japan and overseas) to further develop their skills. (see PP.47-49)			

	FY2022 Results	FY2023 Results	FY2024 Targets	Final Targets
	24% reduction	40% reduction	Over 25% reduction	Zero complaints
	83%	96%	At least 90%	100% implementation
Improve workers' proficiency level by providing group-wide quality education, enhancing <i>Monozukuri</i> Education content at production sites, and increasing education opportunities.				
	6	8	0	0
	0	0	0	0
Survey and evaluate the CSR of business partners. Monitor the status of their CSR procurement as necessary. Survey and evaluate 100% of new business partners and increase investigation ratio (see P.52)				
Clarify and spread our human rights policy while enhancing in-house awareness-raising activities (established the Central Glass Group Human Rights Policy in February 2024)				
Continue and further improve internal education (frequency and areas of study) (see P.53)				
Aim to improve effectiveness through a self-assessment questionnaire (5-point scale). FY2023 results: 4.1. Disclose issues identified, confirm policies to address such issues, and strengthen the governance of the Board of Directors				

*2 Non-consolidated and seconded employees

*3 Training for employees held by the relevant departments of the head office. The Company revised education hours for FY2022 due to revised survey criteria.

We help achieve a sustainable society by developing global, one-of-a-kind technologies and products.



The semiconductor materials business drives the growth of Central Glass, using the world's first technology to develop SiC wafers recognized by NEDO as a subsidized project.

This special feature will introduce the technological developments and business strategies that drive our VISION 2030.

Executive Managing Officer in charge of
Electronic Materials Sales Department

Hidehisa Nanai

Expanding Semiconductor Market Boosted by AI Business Momentum

The semiconductor materials business is one of the most important specialty product sectors, serving as a key pillar of our VISION 2030. We target an operating income of 20 billion yen and an ROE of 10% or higher. The market for semiconductor materials is likely to expand over the long term.

But semiconductor market conditions have been quite challenging in recent years. The June 4, 2024, World Semiconductor Trade Statistics (WSTS) forecasts the global semiconductor market to see a sharp increase in demand for memory and certain logic products due to AI-related investments. Memory products are projected to grow significantly, increasing by 77% in 2024 and 25% in 2025, following declines of -16% in 2022 and -29% in 2023. Logic products, which saw minimal growth of 1% in 2023, are expected to grow by about 10% in 2024 and 2025.

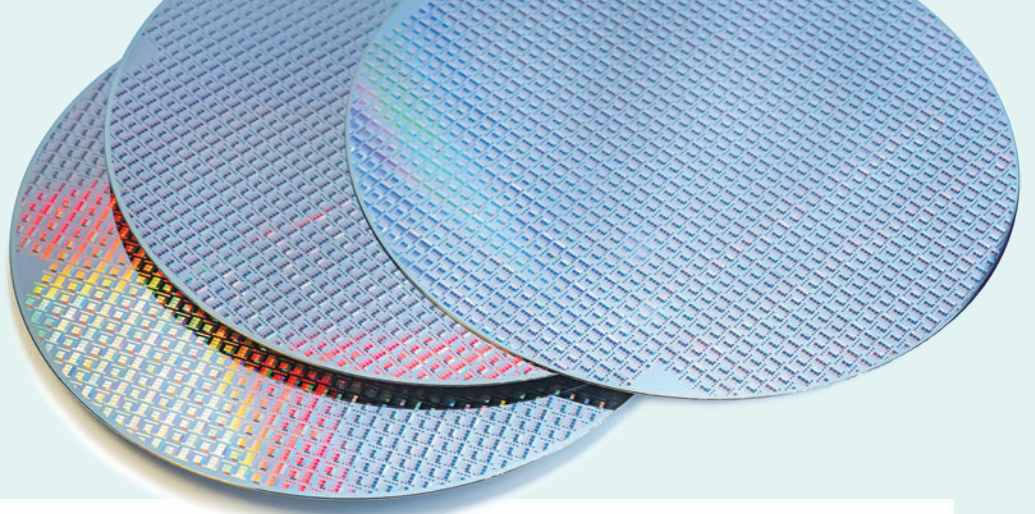
The semiconductor market is expected to expand

over the next three to four years, driven by AI-equipped PCs and smartphones entering the market in 2024. Sales of Central Glass electronic materials at Central Glass increased by over 30% year on year, and we intend to make the most of this positive trend.

Tackling Challenges in New Business Areas and High-Value-Added Materials Essential for Semiconductor Manufacturing

Central Glass provides high-value-added materials in the growing semiconductor industry indispensable to semiconductor manufacturing processes.

In short, manufacturing semiconductors involves fabricating intricate patterns on silicon wafers. Forming these intricate patterns includes repeating the (1) deposition, (2) photoresist exposure and development, (3) etching, and (4) cleaning processes. Such processes are referred to as front-end processes. Our electronic materials focus primarily on high-value-



added materials for front-end processes, divided into three key areas.

The first key area consists of specialty gas products used for etching to form fine patterns and cleaning equipment, while the second consists of polymer and monomer products for photoresist materials beginning with immersion ArF lithography generation. The third key area consists of Pattern Keeper products that inhibit pattern collapse caused by drying after cleaning.

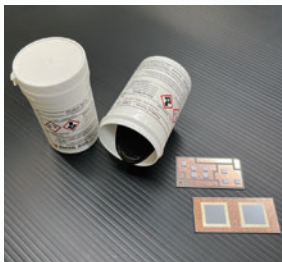
We also strive to acquire new business areas as we develop such high-performance products for conventional front-end processes.

In power semiconductors, we developed a unique silver paste that uses glass processing technology to create high bonding strength at low temperatures and low pressures. While this silver paste is used in back-end processes, it is evaluated on customer production lines. We are also working in SiC wafers and PFAS*-free photoresist-related materials, which play a leading role in front-end processing, as new environmentally friendly businesses.

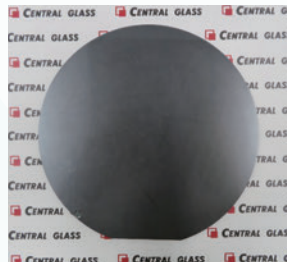
These products and businesses stem from our original R&D and are core to our transformation and growth into a specialty materials company, our goal as an R&D-oriented company.

*PFAS: Public concern is growing regarding the environmental impact of PFAS due to its resistant nature, with regulations being discussed mainly in Europe and the United States.

▶ See P.67 for more information on semiconductor manufacturing and front-end processes.



Silver paste



SiC single crystals using the solution method

Our Unique Strengths Valued by Global Semiconductor Manufacturers

Our integrated manufacturing structure for fluorine-based specialty gas products is a source of our competitiveness as we aim for long-term growth in the semiconductor field. Etching, or the process of using gases to process thin films on substrates, is an essential front-end process in semiconductor manufacturing. While gas products used in etching are usually derived from hydrofluoric acid, we produce such products through integrated manufacturing from fluorite, the raw material of hydrofluoric acid. Only a few companies worldwide possess this technology, which also mitigates various risks. Such factors lead to strong credibility with global semiconductor manufacturers and have boosted our market share in etching gases.

Central Glass also possesses strong sales channels and development bases in Taiwan, a world leader in semiconductor manufacturing and technology. We established a local sales subsidiary in Taiwan in 2005. Working with our Taiwanese customers in the early stages enabled the Company to respond promptly to day-to-day issues and address the issues of the next few generations, linking such initiatives to product development. We intend to establish a manufacturing base in Taiwan as well, striving to strengthen these relationships.

Providing high-value-added products through research and development is one of our major strengths. Our R&D is highly regarded by semiconductor manufacturers and semiconductor equipment manufacturers. The particularly high level of trust we earned in next-generation semiconductor gases has become another major strength of the Company. Our confidence in our gas technologies is unwavering. We build stronger relationships with semiconductor



Fluorite

manufacturers in our business, as we provide gas products for use as certified products in the new equipment developed by equipment manufacturers.

Developing the Next-Gen SiC Wafers for Power Semiconductors Adopted by NEDO

The mass production technology for silicon carbide (SiC) wafers developed by Central Glass was reclassified from a commissioned project to a subsidized project by the New Energy and Industrial Technology Development Organization (NEDO) in April 2024. Two of the three NEDO-subsidized companies advance this technology. We take pride in the recognition of our capabilities as an R&D-oriented company.

SiC wafers enable significant miniaturization of power semiconductors and reduce power loss. Conventional single-crystal ingots, the starting material of SiC wafers, are produced using the sublimation method, in which vaporized SiC powder is sublimated to solid form. Central Glass developed the solution method, which produces single-crystal ingots directly from solutions, enabling more efficient and high-quality production. The solution method was limited to use in laboratories until now, but we are the only company to implement this method at a practical level. Central Glass will leverage the high quality and high cost competitiveness of the solutions method to promote mass production of SiC wafers.

SiC wafers help enhance performance, especially in increasingly popular electric vehicles (EVs). These wafers also reduce power loss issues in EVs and enable quick recharging. We plan to manufacture and launch sales of SiC wafers by 2027-28. Integrating these wafers into society will allow us to improve EV performance and contribute to building a carbon-neutral society.

We are also making steady progress in research and development in areas out-side of SiC wafers. Our current efforts focus on developing etching gases for next-generation semiconductor production. We worked with equipment manufacturers to develop and

adopt a gas to create new shapes for logic products, which are actively developed for AI applications. We plan to conduct medium-scale production of this gas in Ube, Yamaguchi Prefecture, and establish full-scale mass production facilities in Taiwan and Japan. Expected uses of this new gas include cutting-edge logic applications, next-generation DRAM, and other memory devices, leading to a large market potential.

Central Glass also works to establish manufacturing bases in various countries to meet the growing demand for new product manufacturing. Our current overseas production line is a joint venture (JV) in China that manufactures WF₆. But we resolved to also establish a production base in Taiwan for F₂/N₂ and new gases due to strong demand from our Taiwanese customers, aiming to build stronger relationships of trust. We also plan to establish a joint venture with Foosung, anticipating strong synergies, and will actively target Korean manufacturers. Furthermore, we are deliberating on establishing a manufacturing base in the U.S., where future semiconductor production lines are likely to see the greatest global growth.

Environmental Responsiveness as a Business Strategy: Initiatives to Reduce GHG and Achieve PFAS-Free Products

Addressing the environment is a core mission of Central Glass, as we aim to become a specialty materials company that helps create a sustainable society by the year 2030. Our business strategy is not limited to our company vision. We also strive to expand business and acquire new businesses by addressing the environment in the development of conventional high-performance products.

We encourage the adoption of EVs through SiC technology and eliminated our use of NF₃ gas, a common cleaning gas, to reduce GHG emissions. Although we were the first manufacturer to develop NF₃, our commitment to environmental management

led us to swiftly withdraw from the market due to the high global warming coefficient of the gas.

We have now developed a cryogenic etching gas that greatly reduces the use of conventional carbon materials and have launched sales to semiconductor manufacturers in Japan and overseas. We also offer CEG® as next-generation semiconductor etching gases. CEG® is the brand name for Central Glass' innovative process gases for semiconductors. The CEG® series offers various process gases with reduced environmental impact than existing gases, suitable for 3D devices and cutting-edge materials.

Our role as a fluorine manufacturer allows us to also provide unique PFAS-free solutions to address the

social trends away from PFAS use. Our core design and synthesis capabilities enable these solutions to deliver the same functionality as PFAS-free products. Central Glass also works to create a carbon-neutral society in the gas business sector.

We aim to achieve VISION 2030, which works to create a sustainable society, and our corporate purpose. These efforts also represent our strategy as an R&D-oriented company. Central Glass is dedicated to taking on future challenges through our semiconductor materials business, driven by our strong commitment to transforming into a specialty materials company.

▶ See P.2-3 for more information.

Column

Female Employee Ratio Reaches 70% at Giga Gas & Electronic Materials Company (Taiwan) Leading the Semiconductor Market and Central Glass Diversity

Taiwan is an important sales base for the Electronic Materials business due to increased demand stimulating the development and manufacturing of semiconductors in the country. We entered the Taiwanese market in 2005 by investing in and acquiring Giga Gas & Electronic Materials Company, a local company.

Giga Gas & Electronic Materials Company sells special gases and other products used mainly in semiconductor manufacturing processes to local semiconductor manufacturers. The company also established strong relationships of trust with major semiconductor manufacturers through long-term transactions.

The group employs around 40 employees, including subsidiaries in Shanghai and Singapore. Of these employees, 70% are women, with 70% of those women working in management positions.



Working in frontline sales operations



Giga Gas & Electronic
Materials Company
Vice President

Diana Kuo

I have worked in the semiconductor specialty gases industry for almost 29 years and have been a member of my current sales team for 19 years. This wealth of experience allows me to understand market evolution and lead team efforts in customer retention and acquisition. I hope to foster an understanding of business insights and company strategies among team members to provide effective recommendations and solutions as a united team. A strong business with happy employees. That is my goal.

From Taiwan to Shanghai to Singapore, women are achieving world-class success. Central Glass aims to model our corporate culture after these successful women and value diversity throughout the Group.

Special Feature 2 Research and Development and IP Strategies

Addressing Social Issues With Innovative Technologies and Products as a Future-Focused R&D-Oriented Company



Central Glass is speeding up our transition to an R&D-oriented company, aiming to solve social issues with innovative technologies and products, guided by our Basic Philosophy, *Creating a Better Future through Monozukuri*. We conduct R&D to help build a sustainable society by promoting comfortable living, protecting the global environment, and prioritizing health and safety. Additionally, we have an intellectual property strategy that leverages R&D results in our businesses.

Executive Managing Officer in charge of Research Centers

Satoru Narizuka

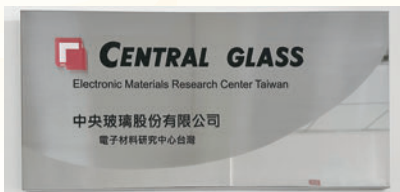
Research and Development System Across Three Research Centers and Four Fields Leveraging Core Technologies

Since July 2022, we have been conducting research and development through a three-laboratory system, consisting of the Fundamental Chemical Research Center, the Applied Chemical Research Center, and the New-STEP Research Center. Each lab has a defined role: creating fundamental technologies, developing functional materials efficiently, and carrying

out corporate research.

Our long-term vision, VISION 2030, aims to boost operating profit and ROE by 2030, while contributing to the creation of a sustainable society through the growth of specialty products and the improvement of essential products.

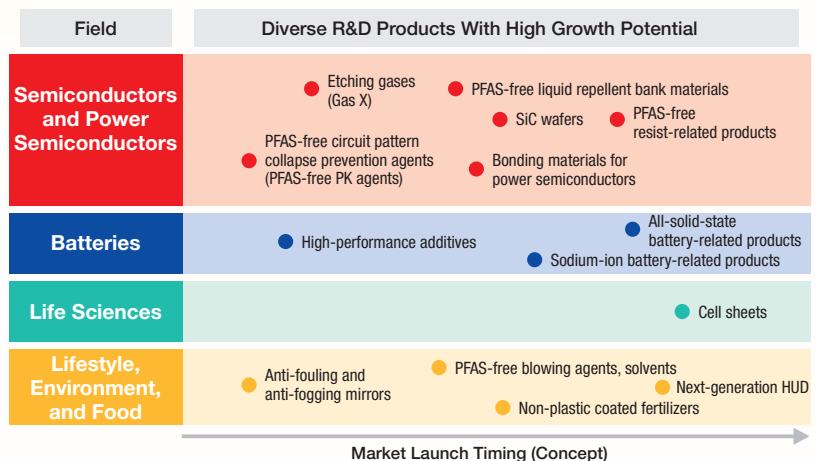
In specialty products, we focus on four fields, including semiconductors and life sciences. To strengthen these functional materials businesses, we actively pursue joint research with major customers both in Japan and overseas, enhance collaboration with overseas research



Electronic Materials Research Center Taiwan



New-STEP Research Center (Shonan Research Center)





centers, and increase capital investment in analysis, evaluation equipment, and other facilities.

In February 2020, we established the Electronic Materials Research Center Taiwan (ERCT) as an R&D hub for front-end semiconductor materials and next-generation display materials. The center focuses on information gathering and developing new materials in the semiconductor and power semiconductor fields. To support efficient research and development in the battery field, we are building a Functional Materials Laboratory within the Applied Chemical Research Center. The construction is set to be completed by March 2025.

In semiconductor-processing materials, we are focused on developing advanced and complex next-generation processing technologies. In the realm of next-generation power semiconductors, our primary focus is on manufacturing research using SiC as a substrate material (see p.30). In the field of electrolytes for lithium-ion batteries (LIBs), we not only establish a global production system but also explore ways to improve the manufacturing process of key raw materials to reduce costs and meet strong market demand. Additionally, we allocate research resources to develop other components beyond electrolytes and to create next-generation rechargeable batteries outside of LIBs.

Exploring Untapped Areas Through Open Innovation

In corporate research, we leverage open innovation actively with universities and other institutions to broaden our business portfolio into unexplored areas. Specifically, we focus on regenerative medicine materials, medical device materials, and drug discovery in the life sciences field, as well as energy-saving and carbon-neutral fields that utilize the particle technology developed in our glass business. Regarding regenerative medicine materials, we have established a new joint research course in the Department of Medicine at Yamaguchi University to promote research

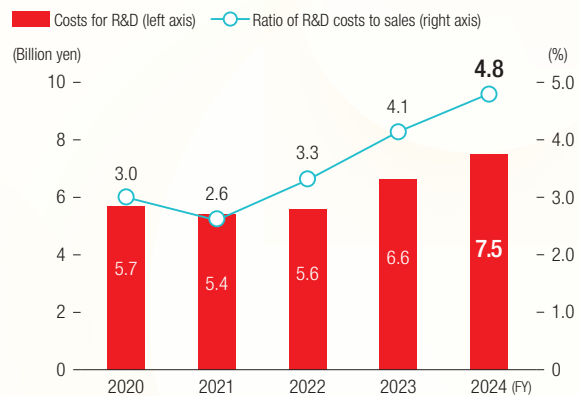
and development on tissue regeneration, including cell sheets (see p. 31).

In addition, we are using particle technology to develop bonding materials for power semiconductors. Business divisions are collaborating to accelerate the commercialization of this technology. Furthermore, we established a research group focused on data science within the New-STEP Research Center. The New-STEP Research Center engages in efficient research and development of functional materials.

Proactive R&D Investment Exceeding 4% of Sales

We are also making significant investments in R&D, with R&D expenses for FY2023 totaling 6.64 billion yen, or 4.14% of net sales. We project R&D expenses of 7.5 billion yen, or 4.8% of net sales, for 2024.

Costs for R&D/Ratio of R&D Costs to Sales



Trends in the Number of R&D Workers

FY	2020	2021	2022	2023	2024 (projection)
Total Number (as of 3/31)	264	252	272	291	323 ^{*1}
Female	39	35	38	45	56
Percentage of Women	14.8%	13.9%	14.0%	15.5%	17.3%
Total Number Compared to the Previous Year	101%	95%	108%	107%	111% ^{*2}

^{*1} As of August 1, 2024

^{*2} Total Number Compared to the End of March of the Same Year

Research Results in Each Field

Semiconductors and Power Semiconductors Field

Liquid-Repellent Bank Material (CEBIJAR® Series)

The inkjet method is gaining attention as a new manufacturing technology for the mass production of light-emitting layers for next-generation displays, addressing urgent issues of lower costs and larger sizes. Liquid-repellent bank material, which prevents color mixing between elements, requires liquid-repellent properties against ink (illuminant solution) and resistance to UV-ozone treatment. We have been developing a liquid-repellent bank material that meets these requirements using our proprietary fluorine compounds.

Currently, the Company is focused on developing PFAS-free materials that meet industry requirements. Further improvements are being made to prepare for commercialization.

Comparison of Liquid Repellency to Ink



New Etching Gas (CEG® Series)

Demands for semiconductor materials include not only low environmental impact but also enhanced processing accuracy and throughput. To address these challenges, we have enhanced processing accuracy and throughput successfully for 2nm generation etching gas by fully utilizing our proprietary evaluation and simulation technologies. With these technologies, we will continue to offer solutions for next-generation etching materials.

Development of Next Generation Etching Material (Gas X)

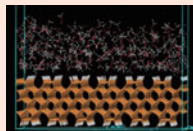
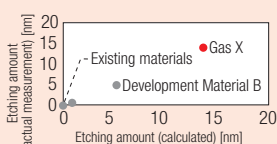
Development System

- We have established a rapid evaluation system to assess development materials using our own equipment.
- Etching accuracy has improved by **5 times or more** compared to existing materials.



Advanced Simulation Technology

- Predicts material performance and streamlines the development process.
- Estimates reaction models and verifies the mechanisms behind functional expression.



SiC Single Crystal for Power Semiconductors

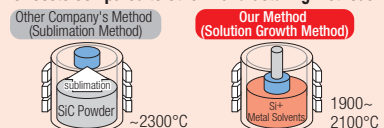
We aim to enter the SiC power semiconductor business using a new manufacturing technology known as the solution growth method. Currently, all SiC available on the market is produced using a method known as sublimation; however, the challenge lies in achieving both quality and cost-effectiveness. The solution growth method produces crystals from the liquid phase, providing better quality and cost efficiency. If implemented in practice, this method has the potential to outperform existing methods.

In developing SiC substrate materials, we focus on production technology for 6-inch single crystals using a solution growth method that allows for crystal elongation while maintaining high quality. The NEDO public recruitment project Green Innovation Fund Project/Building Next-Generation Infrastructure selected our project for 8-inch single crystals, *Development of High-Quality 8-Inch SiC Single Crystal and Wafer Manufacturing Technology*, and we began our efforts in FY2022. The project passed the stage-gate review at the end of FY2023 and advanced from a NEDO-contracted project to a NEDO-subsidized project in FY2024.

With the transition to the Green Innovation Fund grant program, we accelerate the research and development of high-quality, cost-competitive 8-inch SiC single crystals using the solution growth method. We are currently exploring the establishment of mass production for world-class high-quality 8-inch SiC wafers, contributing to the creation of a carbon-neutral society.

Features of Our Manufacturing Technology (Solution Growth Method)

Fewer Defects and Lower Costs Compared to Other Manufacturing Methods



Technological Development	Leading Development	Latecomer
Number of Defects (Quality)	Difficult to Reduce	Easy to Reduce
Manufacturing Cost	High	Low (Low temperature, Fast Growth)

Solution growth method 6-inch Prototype Crystal



Batteries Field

Stable Supply and Cost Reduction of Electrolytes for LIBs

Although the growth rate of the global EV market has slowed recently, steady growth is expected to continue in North America and elsewhere in the future, and LIB production volume is expected to expand accordingly. To ensure a stable global supply of electrolytes for LIBs, we are increasing LiPF_6 production using a highly efficient manufacturing process (in partnership with another company) and improving the process to reduce the cost of LiPF_6 and key additives. Through these electrolyte businesses, we will contribute to the achievement of carbon neutrality.

Development of Electrolytes for SIB

Sodium-ion batteries (SIBs) are rechargeable batteries gaining attention for their sustainability, as they use resource-abundant sodium salt as the primary electrolyte. We address the widespread adoption of SIBs by leveraging the technology we have developed for LIB electrolytes and focusing on improving the performance of electrolytes and additives for SIBs.

Life Sciences Field

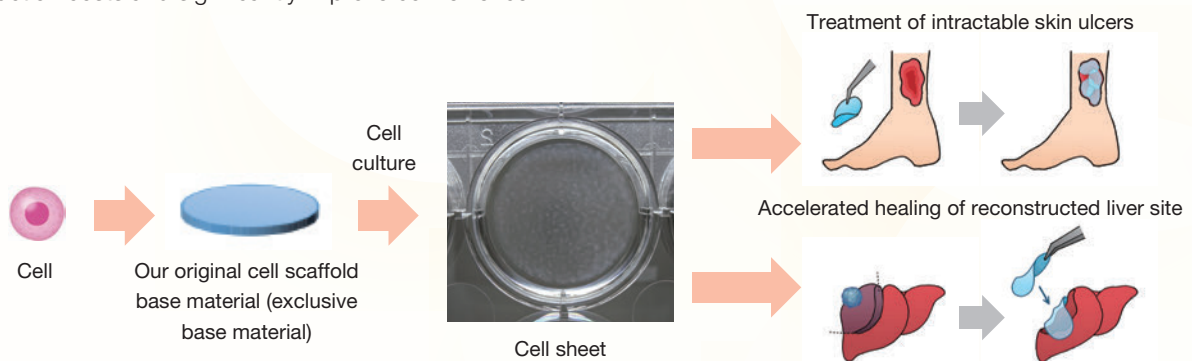
Development of Regenerative Medical Products (Cell Sheets and Specialized Substrate)

Regenerative medicine and other products that process cells are gaining attention as new options for patients who are difficult to treat with conventional pharmaceuticals. As a challenge to an unexplored area, we have begun developing cryopreserved allogenic fibroblast cell sheets and specialized substrate. The cell sheet is characterized by a high cell survival rate after freezing and thawing. Transplanting the cell sheet into a patient facilitates tissue regeneration in the affected area, making it highly effective for treating intractable skin ulcers and facilitating tissue regeneration in surgical applications. By freezing and storing cell sheets made from allogenic cells of healthy individuals rather than the patient, we believe we can reduce production costs and significantly improve convenience

by allowing for pre-manufacturing.

In June 2024, this research and development was selected for the FY2024 Yamaguchi prefectural subsidy program for the promotion of practical application and industrialization of regenerative medicine and the Ube city subsidy program for the promotion of advanced research and development and practical application of regenerative medicine. In September of the same year, we established a new joint research course at Yamaguchi University School of Medicine (course name: Study of Tissue Regeneration Treatment), and full-scale joint research has commenced.

We continue to promote research and development by leveraging strong collaboration among industry, academia, and the public. Our goal is to achieve early commercialization of the cell sheets in partnership with various related organizations.



Lifestyle, Environment, and Food Field

Automotive Window Glass

With advancements in automotive technology, automotive window glass must provide even higher levels of safety and convenience. We are developing glass for next-generation Heads Up Display (HUD) and Advanced Driver Assistance Systems (ADAS) by applying the glass processing, optical control, and other technologies we have developed over the years. We strive for the early mass production and implementation of next-generation HUDs. These displays project detailed information to enhance safe driving and create a comfortable driving environment.



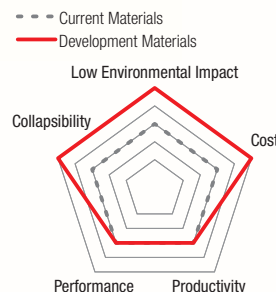
Next-generation HUD (image)

Environmentally Friendly Coated Fertilizers

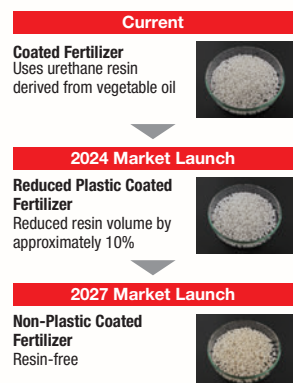
We aim to achieve sustainable farming by developing environmentally friendly coated fertilizers that do not use plastic. Plastics used as coating materials are hard to decompose in nature, so we develop new coating materials that have a lower environmental impact. The developed product is a coated nitrogen fertilizer made from a non-plastic coating material. After the coating dissolves, the shell becomes brittle and can break with minimal force. We believe this product will significantly help address environmental issues.

We are currently developing technology for mass production and plan to launch the product in 2027 after conducting liquidation field tests in 2025 and cultivation tests in 2026.

Design Guidelines for Environmentally Friendly Coated Fertilizers



Change to Non-Plastic Coated Fertilizer



Compliance with PFAS Regulations

As a fluorine manufacturer, we are committed to taking responsible action in response to the European PFAS restriction proposal released by ECHA (European Chemical Agency) in February 2023. We formed a cross-functional project team to review research themes related to PFAS and focus on developing PFAS-free products.



General Manager of Applied Chemical Research Center
Kazuhiro Yamanaka



General Manager of New-STEP Research Center
Satoru Miyazawa

IP Strategy

To maximize business earnings, the Business, Research, and Intellectual Property departments work together to advance IP strategies focused on the following two points.

(1) Preventing Infringement of Intellectual Property Rights

We carry out surveys to prevent infringing on other companies' intellectual property rights and incorporate the results into our R&D and business activities. We ensure respect for the intellectual property rights of other companies through Design Review/Stage Gate meetings. These meetings, involving the three departments, are held as R&D and business activities progress.

(2) Aligning our Application Strategy With the Business Strategy

We organize and visualize the status of our own and competitors' intellectual property rights through mapping and other methods. The three departments then determine which IP rights to acquire based on business trends and R&D progress. The three departments regularly discuss which IP rights to acquire and track its progress to ensure no opportunities are missed.

In BtoB, understanding downstream technologies in the commercial process is crucial. The research department is enhancing product evaluation systems and analytical technologies in support. The IP division collaborates with the research division to discuss these technologies from the perspective of acquiring IP rights. These discussions help secure IP rights for downstream technologies.

Strategies for Acquiring Intellectual Property Rights in Each Field

Semiconductors and Power Semiconductors Field

We developed the new etching gas (CEG® series) as our unique etching agent that meets the specifications for next-generation etching materials. This gas is essential to establish a strong barrier to entry for competitors. We focus on obtaining patents for SiC single crystals used in power semiconductors,

emphasizing the quality advantages of the solution growth method. Additionally, we align our manufacturing expertise strategically with these efforts.

Batteries Field

We are seeking patents in international markets actively to establish a global supply chain for electrolytes. We are also intensifying our efforts to acquire intellectual property rights for new high-performance additives for LIB electrolytes to meet customer needs. This includes developing electrolyte compositions with these additives, enhancing the LiPF₆ electrolyte process, and securing rights for our R&D results on sodium-ion batteries, the next-generation rechargeable batteries.

Life Sciences Field

We are collaborating with Yamaguchi University School of Medicine on cell sheets for regenerative medicine. To commercialize our findings, we will acquire intellectual property rights from multiple perspectives, including dedicated base materials suitable for clinical use and delivery methods to hospitals.

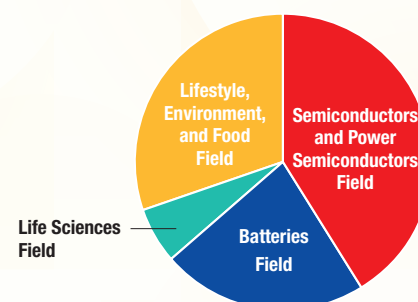
Lifestyle, Environment, and Food Field

We are focusing on next-generation HUDs and environmentally friendly coated fertilizers in these fields, as we believe both R&D themes address important social needs. We will acquire intellectual property rights for both basic and related inventions to ensure that future application development proceeds smoothly.

Percentage of Patents Held by Each Field

The semiconductor and power semiconductor fields, along with the battery field, are our two main R&D focuses, together accounting for about 65% of total patents held. We periodically review our held patents to adapt to changes in the business environment.

Percentage of Patents Held by the Company in Each Field



The Foundation for Value Creation: Sustainability Management

Sustainability Management

Basic Concept

The Group engages in efforts to solve environmental and social issues based on our Management Philosophy of Creating a Better Future Through *Monozukuri*, developing various businesses to help create a truly affluent society. This Basic Philosophy

represents the very essence of our approach to sustainability. We are committed to addressing environmental and social issues more seriously than ever through *Monozukuri*, helping to create a truly affluent society.

Central Glass aims to improve corporate value over the long term through business activities that consider the global environment, society, and economy.

Vision

The Group revised our original Basic Policies into what we now call our Purpose as a guideline for sustainable growth. This Purpose redefines our role and significance in society. We also formulated our long-term vision, VISION 2030, which will guide us through the year 2030. We set forth our aspirations in VISION 2030 to *Become*

a Specialty Materials Company Contributing to the Realization of a Sustainable Society.

We will unite our companies to become a corporate group that continues to create and provide valuable materials to serve our purpose in creating a sustainable society.

Policies

The Group identifies materialities that reflect our corporate philosophy, medium-term management plan, stakeholder expectations, and other factors, taking into consideration the business environment surrounding the Group and our basic approach to sustainability. We

create economic and social value through our efforts to solve such issues through our business activities.

We set medium- and long-term initiatives and targets which we pursue through the PDCA cycle under the supervision of the Board of Directors.

Promotion Framework

We established the Sustainability Committee to further strengthen Group sustainability initiatives by analyzing and evaluating such initiatives and activities across the organization. The committee then reports and makes recommendations to the Board of Directors

as necessary. The committee meets as necessary to centralize sustainability-related initiatives, analyze and evaluate plans and implementation status, and discuss, analyze, and evaluate sustainability-related issues.

Main Objectives	(1) Gain a comprehensive understanding of Group sustainability activities (2) Analyze and verify sustainability-related initiative contributions from a broad perspective (3) Make recommendations to management as necessary to resolve social issues
Composition	Chairperson: Executive in charge of the Corporate Administration Dept. Vice-Chairperson: Executive in charge of the Corporate Communications Dept. and the Environment and Safety Dept. Committee Members: Designated responsible persons of each department Secretariat: Corporate Administration Dept., Corporate Communications Dept., and Environment and Safety Dept.



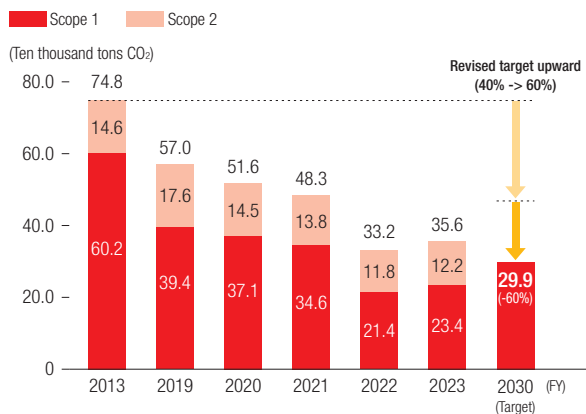
Addressing Climate Change

Carbon Neutrality Initiatives

The Central Glass Group takes active initiatives to protect the environment, including reducing greenhouse gas (GHG) emissions. Our efforts have included conserving energy, switching fuels, and other efforts to mitigate climate change. We set a new 60% reduction target for GHG emissions compared to FY2013 levels as we achieved our reduction target (Scope 1 and 2) for FY2030 ahead of schedule.

Production was temporarily halted in FY2022 due to the suspension of our glass kiln in Japan and large-scale maintenance, resulting in Scope 1 and 2 emissions totaling 332,000 t-CO₂. Total Scope 1 and 2 emissions in FY2023 amounted to 356,000 t-CO₂, an increase from the previous year. This increase was due to the completion of the flat glass kiln repair work and the return to normal production operations. Emissions totaled 748,000 t-CO₂ after structural adjustment, which excludes emissions from transferred European and U.S. Automotive Glass business, etc. from the FY2013 emissions results. We achieved a 52.3% reduction in GHG emissions in FY2023 compared to FY2013, achieving our previous FY2030 target of a 40% reduction compared to FY2013 ahead of schedule. To this end, we revised our medium-term target to a 60% reduction in GHG emissions by FY2030, compared to FY2013 levels.

GHG Emissions



CDP Score

The Company received a B- rating from CDP in the Climate Change and Water Security areas. The CDP is an international non-profit organization that evaluates environmental initiatives.

The FY2023 CDP survey results indicated that we set specific targets for environmental initiatives and developed mechanisms to reduce GHG emissions, water consumption, and other factors, leading to a higher score. We will continue our consistent and transparent efforts to respond to diverse stakeholder demands in environmental fields and implement efforts to reduce our negative environmental impacts.



Participation in the GX League

The Central Glass Group applied in February 2024 to participate in the GX League of the Ministry of Economy, Trade and Industry to help Japan achieve carbon neutrality by 2050. We also announced and began participating in the GX-ETS (Emission Trading Scheme), a voluntary emissions trading scheme in the GX League to begin full operations in FY2026.



The Foundation for Value Creation: Sustainability Management

Addressing Climate Change

Roadmap to Carbon Neutrality

We are currently formulating FY2035 reduction targets as our next medium-term target to achieve carbon neutrality by 2050. We plan to set reduction targets using both backcast and forecast approaches, using FY2019 as the emissions baseline. Our backcast approach recognizes the mitigation pathways outlined in the 6th report of the Intergovernmental Panel on Climate Change (IPCC). We aim to ensure our goals are feasible by regularly reviewing the economic viability of each emission reduction measure in our forecast approach.

We are exploring the phased introduction of Best Available Technology (BAT), including fuel conversion and total oxygen combustion in glass kilns, to reduce Scope 1 emissions. In January 2023, we introduced oxygen combustion technology in the glass kilns manufacturing glass fibers. This technology reduced our use of heavy oil by about 40% and reduced annual GHG emissions by about 4,000 tons-CO₂. We plan to further reduce GHG emissions in the glass fiber kiln through fuel conversion from heavy oil to city gas and other measures.

Furthermore, we will pursue technological

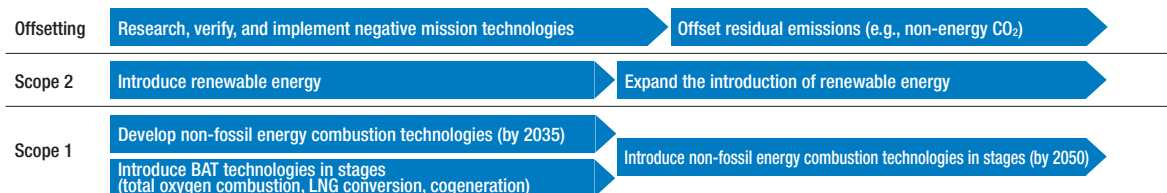
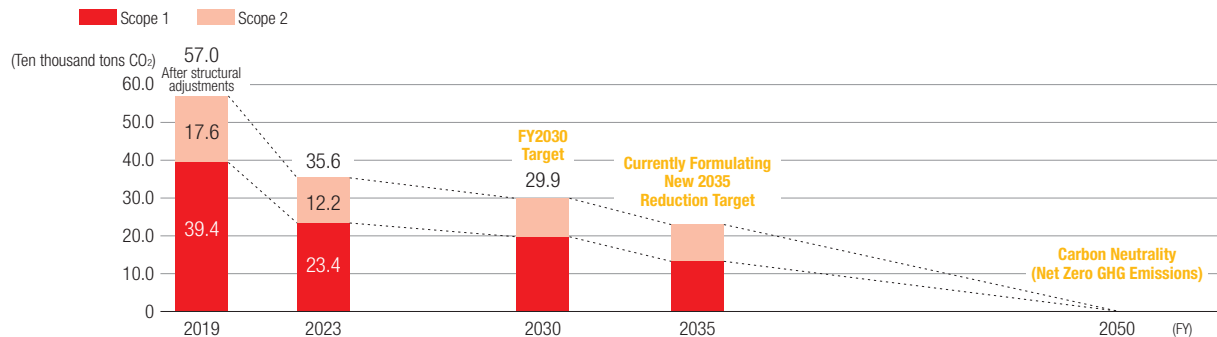
development and other measures due to the necessity of adopting combustion technology powered by non-fossil fuels.

To reduce Scope 2 emissions, we began purchasing electricity derived from renewable energy sources at certain business sites and plan to engage in further efforts to reduce these emissions.

On the other hand, glass production uses soda ash, limestone, and other carbonate raw materials generating CO₂ during vitrification. This CO₂ from carbonate raw materials, known as non-energy-derived CO₂, remains an unavoidable GHG emission, even if the energy source is fully converted to non-fossil fuels.

Group non-energy-derived CO₂ emissions account for about 8% of our Scope 1 emissions (according to FY2022 emission results). To this end, we began exploring negative emission technologies to offset our non-energy-derived CO₂ emissions to achieve carbon neutrality by 2050. There are various technologies available to achieve negative emissions. We will take the initiative to verify and implement various negative emission technologies, after thoroughly assessing their maturity, offset costs, and quantitative offset potential.

Roadmap to Carbon Neutrality



Disclosures Based on TCFD Recommendations

The Group views addressing climate change issues as one of our materialities. To this end, we address climate change impacts on our business in accordance with the Task Force on Climate-Related Financial Disclosures (TCFD) framework. We are committed to our efforts to reduce GHG emissions and address other climate change-related initiatives while gradually expanding our disclosures to enhance corporate value.

Governance

The Management Committee serves as the decision-making body for business execution, discussing and approving initiatives to address climate change and other environmental and social issues in the Group. We also established the Sustainability Committee to analyze and evaluate our efforts to address each issue across the organization. This committee also discusses individual policies and measures as necessary, reporting and proposing the discussion results to the Board of Directors as appropriate. The Board of Directors discusses and supervises Group responses to environmental issues, our progress, and other areas in response to discussions and recommendations made by the Management and Sustainability Committees.

Strategies

The Group takes the following initiatives to understand the impact of climate-related risks and opportunities on our business.

- Identify climate-related risks and opportunities
- Assess impact, period, and likelihood of occurrence for each risk and opportunity (simplified scenario analysis)

Transition risks are risks that arise during the process of social and economic decarbonization. We categorize these items from the perspectives of regulations, technologies, markets, and reputation. We present factors relevant to our business in an organized manner according to these classifications.

Physical risks consist of acute risks (arising from the increasing frequency and intensity of typhoons, floods, droughts, heat waves, and other weather-related events) and chronic risks (arising from increases in average surface temperatures and other long-term changes in climate patterns). We organize these risks in the same manner.

Climate-related opportunities are based on what Group businesses could gain from social and economic decarbonization or changes in weather and climate patterns due to climate change.

The table on the next page summarizes climate-related risks, opportunities, and their impact based on the above perspectives.

Introducing an Internal Carbon Pricing System

The Central Glass Group introduced an Internal Carbon Pricing (ICP) system in June 2023 as part of our efforts to achieve our GHG emissions (Scope 1 and Scope 2) reduction targets. This system uses an internal carbon price to visualize carbon costs for use in capital investment decision-making.

We are committed to investing in reducing emissions to meet the growing demand for GHG reductions.

Reference: Internal carbon price (at introduction) of 10,000 yen/t-CO₂

The Foundation for Value Creation: Sustainability Management

Addressing Climate Change

Impacts of Climate-Related Risks and Opportunities

	Areas	Major Factors	Business Impacts	Period	Likelihood of Occurrence	Financial Impacts	Degree of Impact
Transition Risks	Regulations	Stricter carbon pricing and other GHG emission regulations	(Own emissions) Increase in operating costs due to higher carbon prices	Medium term	High	Increase in manufacturing costs	Large
			(Upstream supply chain emissions) Rising raw material and fuel prices due to rising carbon prices	Medium term	Medium	Increase in manufacturing costs	Medium
		Stricter energy conservation laws and regulations	Increase in procurement of renewable energy (wind, solar, etc.) due to Scope 2 reduction requirements	Medium term	High	Increase in manufacturing costs	Medium
			Increase in equipment renewals, investments, etc.	Medium to long term	High	Increase in manufacturing costs	Large
	Technologies	Changing customer expectations	Shift in demand to products with higher environmental performance from other companies	Medium to long term	Medium	Decrease in sales	Medium
		Progress toward a low-carbon economy	Increase in R&D expenses and capital expenditures to develop products with higher environmental performance	Medium to long term	Medium	Increase in R&D expenses and capital expenditures	Medium
Reputation	Changes in investor evaluations	Increase in financing costs resulting from our declining ESG reputation	Medium term	Medium	Increase in financing costs	Medium	
Physical Risks	Acute	Increasing and intensifying storms, floods, and other weather disasters	Damage to work sites and operation suspensions Operational suspension due to damage to logistics networks, substitute product procurement, loss of sales opportunities due to damage to sales partner companies	Short to medium term	High	Occurrence of recovery costs, decrease in sales	Medium
	Chronic	Heat waves and chronic rising temperatures	Heat stress, reduced operating capacity due to increased infection risk, lost sales opportunities	Short to medium term	High	Decrease in sales	Medium
			Increase in electricity consumption for air conditioning, increased maintenance due to equipment breakdowns, etc.	Short to medium term	High	Increase in manufacturing costs	Medium
		Increased drought due to low rainfall	Decrease in operating capacity due to increased water stress (shortages and deteriorating quality), lost sales opportunities	Short to medium term	High	Decrease in sales	Medium
Climate-Related Opportunities	Products and Services	Stricter refrigerant regulations	Increase in demand for refrigerant application products (HFO) with low GWP	Medium to long term	High	Increase in sales	Medium
		Growing demand for products with high energy-saving performance	Increase in demand for insulation foam products (HFO)	Medium to long term	Medium	Increase in sales	Medium
			Increase in demand for heat-insulating and heat-shielding glass	Medium to long term	Medium	Increase in sales	Medium
		Growing demand for energy efficiency using IoT	Increase in demand for process and cleaning gases for semiconductor equipment due to rising demand for semiconductor products	Medium term	High	Increase in sales	Medium
		EV market expansion	Increase in demand for electrolytes due to rising demand for lithium-ion batteries	Medium to long term	High	Increase in sales	Large

Period	Short-term: around 3 years Medium-term: until 2035 Long-term: from 2036
Likelihood of Occurrence	High Expected to occur Medium Moderately expected Low Unlikely to occur
Degree of Impact (Sales)	Large Over 15 billion yen Medium 1.5-15 billion yen Small Less than 1.5 billion yen
Degree of Impact (Costs and Profits)	Large Over 4 billion yen Medium 0.4-4 billion yen Small Less than 0.4 billion yen, including cases with potential positive impacts

Main Reference Scenarios

Below 2°C Scenario: International Energy Agency (IEA), World Energy Outlook 2023 (WEO 2023), Announcement Pledge Scenario (APS),

Network for Greening the Financial System (NGFS) Version 4, *Below 2°C Scenario*

4°C Scenario: Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (AR6)

Risk Management

Each business unit identifies and assesses operational risks and impacts, reporting them to management as needed. The Sustainability Committee also shares, analyzes, and evaluates business risks, opportunities, and countermeasures related to climate change and other factors across the organization. The committee then reports and makes proposals to the Board of Directors as necessary.

We launched the target management framework for medium- to long-term GHG emission reduction in FY2023. This framework addresses Scope 1 and 2 emissions, striving to achieve our 2030 target and 2050 net zero GHG emissions target. We consider this framework important to our activities to reduce GHG emissions. The main initiatives of the framework include estimating future emissions, evaluating the possibility of achieving targets, formulating action plans to reduce emissions, and revising such plans as necessary.

Medium- and Long-Term GHG Emission Targets

Category	Indicator	Scope	FY2030 Target	2050 Target
GHG emission reduction	Scope 1 and 2 emissions	Group + consolidated companies	60% reduction vs. FY2013*	Net zero emissions

*We revised our previous target upwards from a 40% reduction compared to FY2013 levels.

GHG Emissions Data

(10,000 t-CO₂)

	2013*	2019	2020	2021	2022	2023	FY2030 Target
Scope 1	60.2	39.4	37.1	34.6	21.4	23.4	—
Scope 2	14.6	17.6	14.5	13.8	11.8	12.2	—
Scope 1+2	74.8	57.0	51.6	48.3	33.2	35.6	29.9
Reduction Ratio Compared to the Base Year	—	-23.8%	-31.0%	-35.4%	-55.6%	-52.3%	-60%

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

The Central Glass Group intends to continue to enhance our climate-related disclosures. We will conduct detailed scenario analyses of the business

Indicators and Targets

- Aim to reduce group-wide GHG emissions (Scope 1 and 2), including overseas companies, by 60% by FY2030 compared to FY2013 levels
- Aim for net zero GHG emissions by 2050

Emissions Results

FY2022 emissions totaled 332,000 t-CO₂ of Scope 1 and 2, a 55.6% reduction from FY2013 levels, mainly due to the suspension of glass kilns in Japan. Scope 1 and 2 emissions increased to 356,000 t-CO₂ in FY2023 from the previous fiscal year. This increase stemmed from our return to normal operations following the periodic repair of the flat glass kiln conducted in the previous year.

impacts of climate-related risks and opportunities. We will also explore response strategies and develop transition and adaptation plans based on these results.

The Foundation for Value Creation: Sustainability Management

Improvement of Energy Use Efficiency (Resource Conservation)

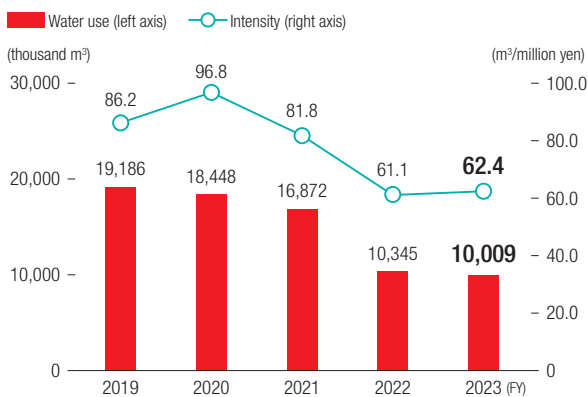
Improving Energy Use Efficiency

The Central Glass Group considers the efficient use of resources to be a materiality. We established short-term KPIs for water consumption and final disposal of industrial waste, working to reduce these levels.

Effective Use of Water Resources

We implemented measures in FY2023 to achieve our target of 61.1 m³/million yen, equivalent to the water intake intensity per sales unit from the previous year. These efforts resulted in a lower Group-wide absolute water intake volume from the previous year. However, the water intake intensity per sales unit increased slightly to 62.4 m³/million yen, falling short of the target. This increase was due to flat glass production lines resuming operations after periodic repairs conducted in the previous fiscal year, as well as changes in sales composition. We will continue to work to lower our water intake intensity per sales unit over the medium to long term by making active efforts to use water effectively.

Water Consumption (Water Intake) and Intensity Per sales unit

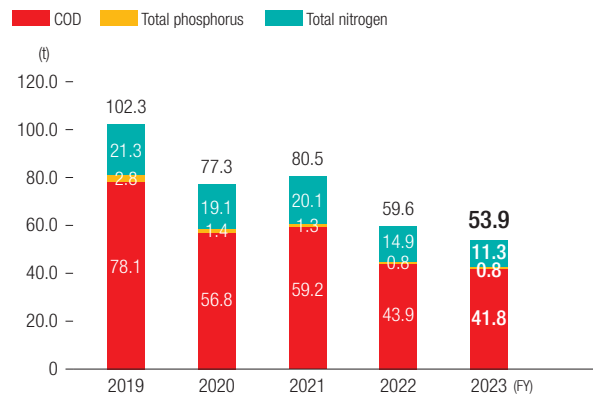


Water Pollutant Discharge

The Group monitors the concentration and discharge amounts of COD, total phosphorus, total nitrogen, and other water pollutants. We monitor such pollutants in compliance with the Water Pollution Control Act, laws and regulations of each country, and regional discharge standards where our facilities

operate. We install wastewater treatment facilities at each plant to remove pollutants and recover active ingredients from wastewater before discharge into the environment. Our water pollutant discharge decreased slightly in FY2023 from the previous year due to a decrease in production. We will continue to manage water pollutant discharge going forward.

Amount of Water Pollutant Discharge



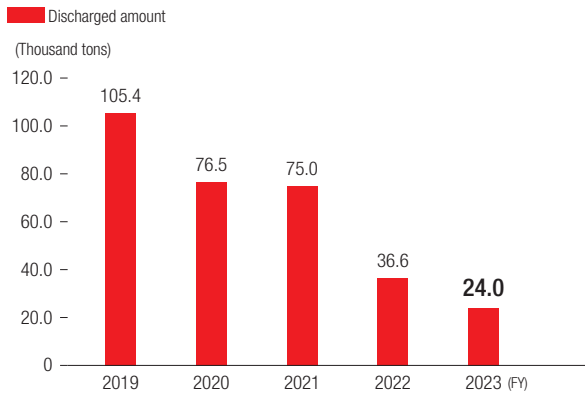
Reducing Waste

The Group engages in Responsible Care activities to implement the 3Rs (Reduce, Reuse, Recycle) further, striving to reduce industrial waste discharge while ensuring proper waste disposal management. Group industrial waste discharge decreased in FY2023 compared to FY2022. Amounts of waste recycled also decreased compared to FY2022. We also achieved our FY2023 with the final disposal amount totaling 8.3 thousand tons.

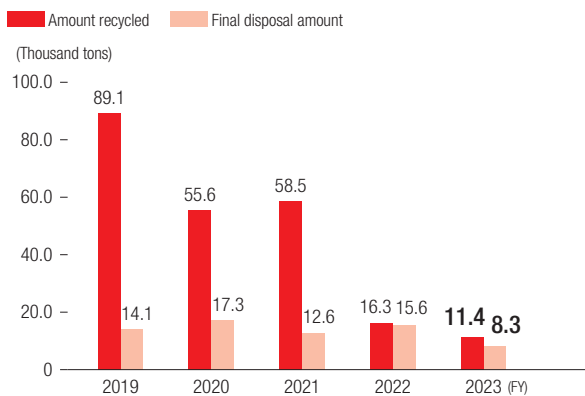
The Group began aggregating industrial waste from products using plastic in FY2021 per the enforcement of the Plastic Resource Circulation Act (April 1, 2022). The amount of industrial waste from products using plastic in FY2023 remained similar to FY2022 levels. Waste recycled at destination processors decreased

from FY2022 and recycling rates declined. We will continue to implement initiatives to reduce and recycle industrial waste from products using plastic.

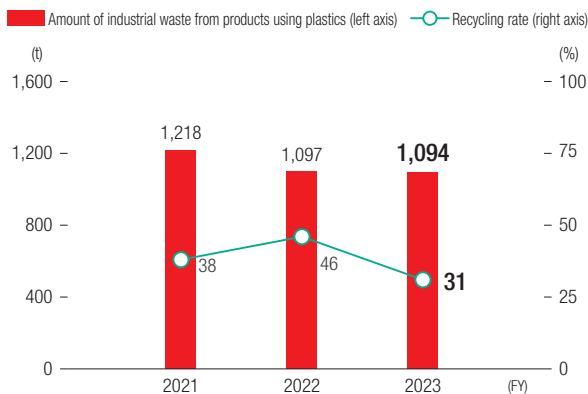
Amount of Industrial Waste Discharged



Industrial Waste Recycled/Final Disposed Amount



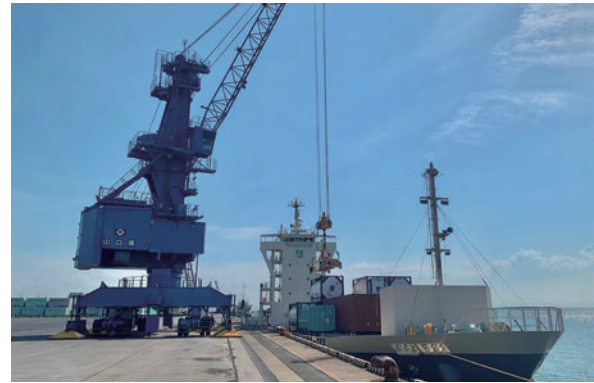
Industrial Waste From Products Using Plastic/Recycling Rate



Modal Shift Initiatives

We must not only reduce CO₂ emissions but also implement modal shifts to use resources effectively and reduce adverse environmental impacts.

The Group explores the use of less environmentally burdensome ships, instead of trucks and other vehicles, in the procurement of raw materials and the transportation of products. Using such environmentally friendly ships enables energy consumption reduction and enhances transportation efficiency. We also established a working group to improve logistics. The sales department, factories, and indirect departments work together to list and conduct trial logistics improvement measures to secure transportation means in logistics, reduce energy consumption, reduce adverse environmental impacts, and address concerns about cost increases. The Group is committed to continuing efforts to reduce the adverse environmental impact of our logistics operations and establish a sustainable logistics network.



The Foundation for Value Creation: Sustainability Management

Improvement of Energy Use Efficiency (Resource Conservation)

Transitioning to a Circular Economy

The Group uses fluorite, silica sand, and other natural resources in manufacturing our products. We strive to make effective use of the earth's limited resources, advance our existing 3Rs (Reduce, Reuse, Recycle) initiatives, reuse resources, and expand our use of recycled resources. Specific examples of our efforts to use recycled resources include our use of recovered fluorite from conventional in-house processes and our use of fluorite generated from fluorine-containing wastewater discharged by other companies. We also began efforts to expand our use of cullet recovered after the use of various flat glass products, aiming to reduce the amount of natural silica sand used in glass production. We will explore using recycled raw materials in all phases of our business and implement initiatives aimed at building resource recycling cycles.

Participating in Circular Partners

Working with the relevant parties to broaden our areas of collaboration is essential to create a circular economy. We joined the industry-government-academia partnership on the circular economy (known as "Circular Partners") sponsored by the Ministry of Economy, Trade and Industry in October 2023, aiming to help create a circular economy. We also participate in the discussions to develop a country-wide vision and roadmap in the working group established under Circular Partners. The Central Glass Group will set targets for our circular economy initiatives and establish medium- and long-term efforts to achieve these targets.



Recovering and Recycling Calcium Fluoride (Fluorite)

The Group applied our long-developed fluorochemical technologies to expand our business into fine chemicals, our current core business. Fluorite, the raw material for hydrogen fluoride, is a natural resource with limited production countries and reserves. To this end, Central Glass developed a recycling technology to recover fluorine as fluorite from fluorine-containing waste liquid discharged during manufacturing processes. We use part of this recovered fluorite as a raw material for our hydrogen fluoride, effectively using resources and reducing waste. We also applied our expertise in developing recycling technologies to begin using the fluorite generated from fluorine-containing wastewater generated by our suppliers and other companies. We are committed to creating a circular economy by supplying hydrogen fluoride produced from recovered fluorite to the source of recovery.



Natural fluorite



Recovered fluorite

Occupational Health and Safety, Safety and Disaster Preparedness, and Chemical Substance Management

The Central Glass Group strives to ensure safe workplaces and formulates an annual Health and Safety Management Policy. To this end, we engage in occupational health and safety activities, as well as safety and disaster prevention activities at each of our business locations in Japan and overseas. We also manage chemical substances in consideration of health, safety, and the environment by complying with chemical substance control laws and regulations around the world and disclosing SDSs for our major products on our website.

Occupational Health and Safety

We strive to eliminate potential hazards in our work environments and engage in activities to take responsibility for protecting our own lives, bodies, and health. In FY2023, the number of occupational accidents at our company, domestic subsidiaries and affiliates, and subcontractors totaled 21, 8 of which required leave (up 2) and 13 that did not require leave (down 8).

Safety and Disaster Preparedness

The Group works to improve our safety and disaster preparedness systems, striving to reach our goal of zero accidents, including fires, explosions, and chemical substance spills. We pay particular attention

to the large number of accidents in recent years involving damage to property caused by forklifts.

In FY2023, we strived to prevent accidents with partner companies by continuing to discuss accident causes and countermeasures, based on prior accident cases, and offering forklift training taught by external instructors.

Autonomous Chemical Substance Management

The Group pursues the autonomous management of chemical substances by sharing labels and safety data sheets (SDS*), conducting risk assessments, and using the appropriate protective equipment.

*Safety Data Sheet (SDS): A document on the physicochemical properties, hazards, toxicity, etc. contained in chemical products.

▶ Initiative Examples

Safety Experience Learning Center and Hazard Experience Dojo (Ube Plant, Central Glass Products)



We teach safety experience by utilizing equipment to mimic actual cases of previous accidents. Such accidents include being caught and entangled in V-belts and screw conveyors, and slipping on floor surfaces under different conditions. Our employees, affiliates, and subcontractors participate actively in this training to help improve their danger perception.

Disaster Drills



We established a thorough safety and disaster preparedness framework to achieve our goal of zero equipment-related accidents. We also hold regular disaster drills at each business location to confirm roles and responsibilities in case of emergency.

Introducing Tablets for Emergency Situations (Training Session)



One problem we face is that the content of information conveyed through transceiver voice communication varies depending on the messenger's level of understanding. We introduced tablets in recent years as a way to gather real-time information, including videos. This two-way voice and video communication method allows messengers to communicate detailed information, enabling prompt responses in the event of an accident. We also strive to improve our safety and disaster preparedness by holding disaster drills and other activities to identify usage issues with the terminals.

Drones



We explore the use of drones in factories as a part of our efforts in smart security activities. We are considering using drones to inspect high narrow spaces (e.g., inside tanks and equipment), as well as to survey raw materials in the field. We also work to expand the digital transformation (DX) of our factories by training qualified equipment inspectors and holding briefings with experts on how to utilize this technology.

Human Capital

The Central Glass Group aims to increase the value of our human capital as a corporation that continues providing superior products with high-added value. To this end, we enhance our human resources system and training system to improve the skills of Group company employees.

Respect for Human Rights

Basic Concept

Respect for human rights is fundamental to our corporate activities to achieve our Basic Philosophy. The Central Glass Group upholds respect for human rights as essential to those impacted by our business activities. We also define respect for human rights as a materiality in our initiatives.

Initiatives

(1) Formulating the Central Glass Group Human Rights Policy

The Guiding Principles on Business and Human Rights ("Guiding Principles," below), adopted by the United Nations Human Rights Council in June 2011, require companies to announce their policies to the public on respect for human rights. The Guiding Principles also call for companies to avoid, control, mitigate, and address negative impacts on human rights through company activities. The Group established the Central Glass Group Human Rights Policy in February 2024 based on the Guiding Principles. The Board of Directors approved this policy.

We also support and respect international norms on human rights, including the *International Bill of Human Rights* (consisting of the *Universal Declaration of Human Rights*; the *International Covenant on Economic, Social and Cultural Rights*; and the *International Covenant on Civil and Political Rights*) and the *ILO Declaration on Fundamental Principles and Rights at Work*.

(2) Educational Activities for Employees

We added respect for human rights as a topic to our group training programs in FY2024 to disseminate the concept of our human rights policy to employees.

(3) Supply Chain Management

We formulated the Supplier Code of Conduct, requiring suppliers to uphold and respect this code.

Central Glass Group Human Rights Policy

1. Positioning and Scope of Application

The Policy applies to corporate officers and employees of the Central Glass Group. We also expect that other parties directly involved in the Group's businesses, products, or services, such as business partners and suppliers, to support the content of the policy and encourage them to respect it.

2. Respect for Human Rights

The Central Glass Group respects the fundamental human rights and diversity of all people and does not recognize any discrimination or acts that harm the dignity of individuals. In addition, we respect the fundamental rights of labor, prohibit forced labor and child labor, pay appropriate wages, manage working hours, and strive to create a healthy and safe working environment.

The Central Glass Group seeks ways to respect internationally recognized principles of human rights in the face of conflicting requirements while complying with local laws and regulations in each country and region.

3. Initiatives to Promote Respect for Human Rights

(1) Dissemination and Education of Human Rights Policies

We conduct education within the Group to raise awareness of human rights, ensure that corporate officers and employees properly understand human rights, and ensure that the Policy is firmly established throughout the Group.

(2) Remedies and Corrections

If it becomes apparent that business activities have caused or contributed to adverse impacts on human rights, we will work to remedy and correct them.

(3) Human Rights Due Diligence

We identify and assess the adverse impacts on human rights that may be involved through corporate activities or as a result of business relationships, and we work to prevent and mitigate the identified adverse impacts, and continue to evaluate the effectiveness of these efforts.

(4) Information Disclosure

We disclose our initiatives to respect human rights through our website, integrated report, and others.

Human Resources Strategy

Our Basic Philosophy is *creating a better future through monozukuri* - The Central Glass Group will contribute to the establishment of a truly prosperous society through the spirit of *monozukuri*. We define *monozukuri* as all Group corporate activities, from research and development, manufacturing, and sales to activities to ensure quality in our operations and contribute to society.

We recognize that people are the key to achieving this philosophy, and above all, supporting *monozukuri*. To this end, the Group is committed to recruiting, training, assigning, and retaining employees.

Achieving our VISION 2030, based on our purpose, requires sharing stakeholder values and goals regarding technology, solutions, quality, and environmental sustainability. The sensitivity and diversity of each employee are also essential for generating ideas and meeting such needs.

In this way, a corporate culture that values people (our employees) supports *monozukuri* (corporate activities) and creates new value. Establishing such a culture requires us to become a company that overflows with happiness and vitality, where people accept one another and speak freely.

Central Glass Group Human Resources Strategy

- Securing Four Elements -

- 1 **Secure acceptability** Recognize individuality
- 2 **Secure a place to belong** Understand your purpose
- 3 **Secure equity** Speak freely and take on challenges
- 4 **Secure fairness** Remain highly motivated

The Group will leverage our longstanding culture of honesty and integrity, cultivated and passed down through generations since our founding, to develop our employees and corporate culture. To this end, we strive to provide opportunities and establish environments under our *Securing Four Elements* slogan, improving the psychological safety of our employees to ensure

their happiness. We also implement employee health management, health maintenance, and mental health measures to improve employee well-being and promote sustainability.

We are committed to incorporating these four elements into specific materialities and KPIs to support management and business strategy, as well as achieve our corporate philosophy.

● Women's Empowerment

We set targets in accordance with the *Act on Promotion of Women's Participation and Advancement* and the *Act for Measures to Support the Development of the Next Generation*. We strive to expand opportunities for female employees to play active roles and create comfortable working environments.

We implement various initiatives to improve our work environment and increase the ratio of female employees. We began offering career planning training for those returning from childcare leave to enable female employees to work with peace of mind in building long-term careers despite time constraints and childcare-related concerns. The Group also strives to foster an atmosphere where anyone can aspire to managerial roles. We provide managerial training for female employees, along with awareness training for supervisors overseeing female team members.

Building such an empowering environment for female employees will increase the ratio of female employees and female employees in manager positions, create an organization with diverse perspectives, and revitalize our corporate culture.

	FY2023 Results	FY2025 Targets
Ratio of female employees	12.0%	12.5%
Ratio of female management positions	1.8%	2.5%
Ratio of male employees utilizing parental leave	70.0%	75.0%

* Non-consolidated and seconded employees

● Encouraging male employees to take parental leave

We actively support our male employees to fully embrace their role in childcare, as male participation in childcare has become standard. Human resources

The Foundation for Value Creation: Sustainability Management

Human Capital

representatives speak directly with employees when they first apply to explain our various childcare systems, including parental leave. Representatives also provide detailed consultations regarding specific schedules and how to use the systems. Our childcare-related systems go beyond what is stipulated in the Child Care and Family Care Leave Act, offering partial salary compensation and incentives for childcare leave.

We recognize the need to raise awareness across the workplace, extending beyond just those taking childcare leave. We periodically remind the entire company about these systems and consider future trainings to raise awareness among those in managerial positions.

Central Glass fosters a culture in which male employees can freely take childcare leave, committed to becoming a company that allows everyone, regardless of gender, to balance work and childcare, allowing employees to comfortably pursue long-term careers.

● Enhancing Engagement

Employee engagement is an indicator of the affinity between a company and its employees. Our goal is to ensure all employees remain highly motivated in their jobs and share company visions and goals. We conduct engagement surveys and clarify issues based on survey results. We then explore measures to address such issues at the company and workplaces and encourage improvement activities.

Company Improvement Activities

We began holding town hall meetings with the president in May 2024 to raise awareness and disseminate our management situation, direction, and future vision. Meetings are kept small to ensure participants can speak face-to-face in a comfortable, friendly atmosphere. Participants ask questions about



the background of our recent management decisions and company policies, commenting that such discussions help them make sense of their own work.

Workplace Improvement Activities

We hold workplace sharing meetings to discuss workplace improvement measures based on the results of each workplace. Employees have commented that these improvement activities led to more active communication and provided opportunities to reflect deeply on the work within their own departments. We believe that these activities help raise awareness that the thoughts and actions of each employee contribute to company improvement.

Response Rate

The survey response rate has remained above 98% in the two surveys conducted to date, indicating strong employee interest in and engagement with the company. We are committed to working together to improve future engagement.

Health and Productivity Management

The Group is committed to achieving our corporate philosophy of *creating a better future through monozukuri*. We strive to uphold and enhance employee safety and health to ensure the overall well-being and happiness of all employees.

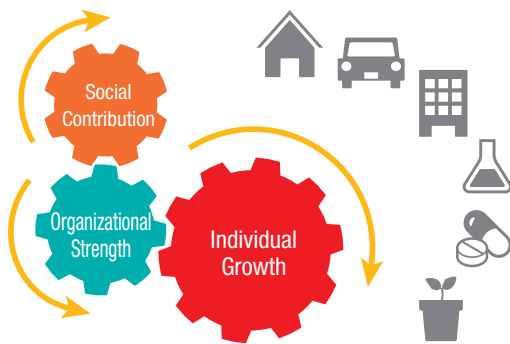
Basic Policy

- a. We regard the mental and physical health of our employees as our greatest asset and take active measures to maintain and promote employee health.
- b. We strive to enhance productivity and increase corporate value over the medium to long term by enhancing the well-being of employees.
- c. We work to create safe and healthy work environments for our employees.

We declared the aforementioned Health Management Declaration to fully implement health management initiatives. We also established the Health Promotion Committee in May 2024 under the direct control of the president as an organization to implement health management. Furthermore, we plan to launch a health management system in FY2024 to ensure the effective promotion of employee health.

Basic Policy for Human Resource Development

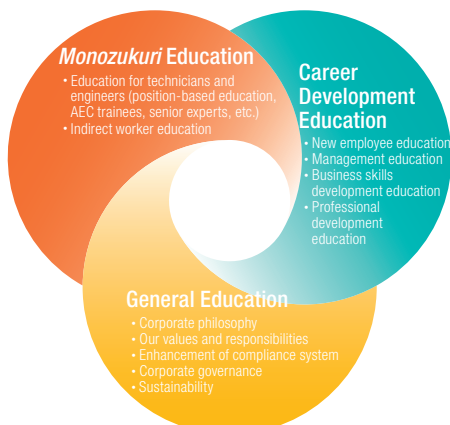
Central Glass views human resources as a key source of our competitive advantage. We respect the diversity and independence of each employee in our organization, committed to systematic human resource and career development. We consider our employees to be an important capital, endeavoring to enhance employee satisfaction and strive for individual growth and organizational strength. To this end, we will enhance our corporate value through creative *monozukuri* and help achieve a sustainable and prosperous society.



Education System and Ideal Human Resources

Central Glass established an education system based on our three pillars of general, *monozukuri*, and career development education. Such education supports the growth and self-realization of each employee while aiming to improve organizational cohesion and productivity.

We also aim to clarify our ideal human resources to support such employee growth and foster a flexible and strong organization.



Ideal Human Resources

1. Individuals with a strong sense of responsibility who act independently
2. Individuals who make sincere and honest efforts to embody our corporate philosophy and management policies
3. Individuals with innovative, original ideas and strong creative abilities.
4. Individuals who embrace continuous self-improvement to adapt quickly to changing environments
5. Individuals with a global, long-term perspective who have open minds



Genuine Social Contribution

General education provides each employee with the opportunity to deepen their understanding of our corporate philosophy and our values and responsibilities. Participants also reflect on their own contribution as members of our organization in developing society and the company. We began offering various general educational programs in FY2019, including self-study e-learning programs for all Central Glass Group employees, including senior management. We also began offering opportunities for younger employees to have discussions with senior management on our corporate philosophy and company policies. Such discussions also introduce specific examples of compliance responses and provide example violations. General education enables mutual learning among participants, raising awareness and reforming our corporate culture.

We also pursue diversity, equity, inclusion, and sustainability education, while engaging in active efforts to improve employee engagement.

The Foundation for Value Creation: Sustainability Management

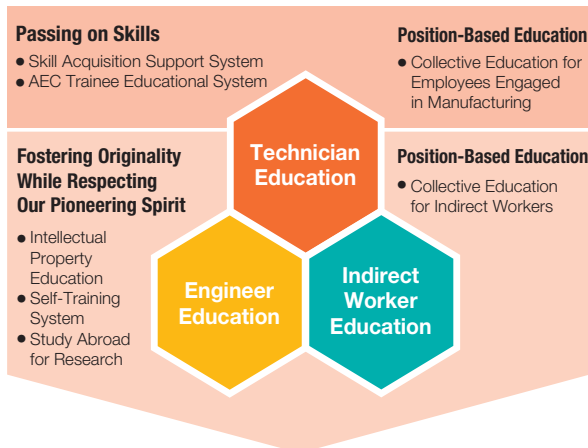
Human Capital

Enhancing Skills and Transferring Technical Skills

We implement *monozukuri* education to survive global competition as a manufacturing company. This education supports engineers, technicians, and indirect workers in acquiring the knowledge and skills needed in their expected roles, while raising awareness among such employees.

One such program for technicians utilizes the Active Expert Center (AEC) as a venue for training potential manufacturing division leaders through practical training activities. (170 employees have completed the program since its inception in 2006.)

We also offer the skill acquisition support system to appoint employees with unique skills as senior experts to pass down their technologies and skills.



Revitalize the Organization and Enhance Productivity



Column

17th AEC Trainee

Chemicals Production Section, Chemicals Production Department, Ube Plant, Central Glass Co., Ltd.

Takuya Matsumoto

This year was fulfilling, as I gained insights into areas beyond machine operations. I gained essential operational knowledge, learned problem-solving techniques, and heightened my sensitivity to potential danger through AEC activities. I will leverage what I learned to train my team members, analyze process quality data, and through quality check activities.

Speciality Chemicals Section - 3, Kawasaki Plant, Central Glass Co., Ltd.

Hiroaki Harada

Training away from my job site allowed me to learn methods for identifying data variations and other issues, as well as ways to identify solutions. I use this experience to guide junior staff and to prepare materials for quality check activities.



Production Technology Section, Production Technology Department, Central Glass Products Co., Ltd.

Taishi Maeda

Being promoted to my current position leading operations allowed me to appreciate how the training reinforced quality check basics and problem-solving skills. The training helped me enhance my problem-solving skills using the three realities approach, which I now utilize to improve yield on our new mirror line.

Automotive Glass Production Section-1, Mie Glass Industry Co., Ltd.

Ren Nakamura

Most of what I experienced at AEC was new, providing valuable insights as I observed other departments at the Matsusaka Plant, participated in meetings, and visited the Ube Plant and the Kasugai Plant of Central Glass Fiber.

Global Human Resource Development

One of the career development educational programs is the global human resource development. As Central Glass expands business overseas, it is essential to secure human resources capable of borderless operations. To this end, we support employees in strengthening language skills in English, Chinese, Korean, Czech, and other languages.

Our English Course for Overseas Personnel Development aims to provide employees with more practical language skills. This strengthening program sends participants to a camp-based language school in Japan to improve language skills through intensive online lessons. Five students participated in this English course in FY2023 and improved their speaking test scores.

We also offer vocational training at our overseas affiliates, allowing young employees to experience work and life abroad in preparation for future assignments and business negotiations with international suppliers. We are planning vocational training in China (Shanghai) for FY2024.

We evaluate the suitability and mental health risks of employees scheduled for overseas assignments prior to departure and advise the employee and their supervisor. In this way, we ensure smooth work and communication with local staff at the new location. We also send interested parties to external training programs to enhance their adaptability to diverse cultures and values.

Developing Management Candidates

Central Glass sends employees to graduate MOT programs to foster those well-versed in technologies and management and who are capable of strategic training and technological development. We sent one employee in FY2023. In this way, we foster researchers and engineers capable of efficiently commercializing our research and technological advancements aiming for sustainable growth in corporate value.

We also established management training for assistant managers in FY2023. This training aims to enhance skills on a broader perspective to develop leaders based on the theme of solving problems in one's own division while interacting with other divisions. We will continue to develop human resources candidates for management positions.

Column

MOT Commuter

Central Glass Co., Ltd.
Personnel & General Affairs
Department, Ube Plant

Koji Nishimura



I began attending a two-year program at the Department of Management of Technology (MOT) of the Yamaguchi University Graduate School of Technology Management in April 2023. MOT is a graduate school that teaches accounting, corporate strategy, intellectual property management, and technology-based management. I actively participate in discussions, as the school values proactive students with a strong commitment to active learning.

I continue to work while I attend this program, so I deal with a large number of assignments and prep work. But I overcame these hardships by concentrating on my school reports, research assignments, and lecture prep on Sundays. I joined a seminar where I currently work on a specific research project in my second year.

Gaining vast knowledge and skills directly useful in my work and interacting with professors and other working students of various ages and industries have been enriching experiences. I strive to leverage what I learn at MOT to contribute to the company.



General Manager, Personnel
Department

Seiji Konishi



General Manager, Career Creation
Center

Urara Oi

The Foundation for Value Creation: Sustainability Management

Quality Management

We emphasize quality control initiatives that place customer satisfaction first. In addition to complying with laws and regulations, the Group takes customer feedback sincerely to provide reliable products and services loved by customers.

Quality Guidelines

We formulated Quality Guidelines as a guideline for *Our Values and Responsibilities* based on the Central Glass Group Corporate Philosophy: *We continuously seek to enhance quality and uphold our promises to society and our customers.* The Quality Guidelines form a framework to Prevent, Detect, and Respond to quality issues, which are important perspectives for compliance. Based on the quality guidelines, each organization's quality policy is determined.

	Item	Description
Prevent	Cultivate a culture of quality	Provide high quality and reliable products by ensuring compliance with laws and regulations, clients' requirements, and social responsibilities.
	Perform continuous improvements	Continuously implement quality improvement activities, as well as encourage employees to enhance their awareness and abilities throughout the entire supply chain to keep developing the quality and safety of our products.
	Update and enforce policies and procedures	Comply with each policy and procedure and update them as needed.
	Improve organizational structures	Ensure the independence and authority of quality control and quality assurance departments so that they can fully exercise their respective duties.
	Invest in human resources and facilities	Invest appropriately in human resources and facilities that are essential to achieving our quality objectives.
Detect	Strengthen audit systems	Detect problems quickly through layered audits conducted by the plants, quality assurance departments, and audit departments.
	Streamline reporting systems	Clarify reporting procedures and reporting guidelines to ensure quick responses to quality issues.
Respond	Respond to problems with corrective and preventive actions	Prevent recurrences of quality problems by identifying and analyzing the causes, in addition to taking necessary measures such as prompt information disclosure.

Quality Management System

We aim to be an organization that offers reassurance and reliability to stakeholders. We do so by ensuring that we provide products and services meeting the needs of customers and society, and we take action to promote quality activities under the following Quality Management System.

● Group Quality Compliance Committee

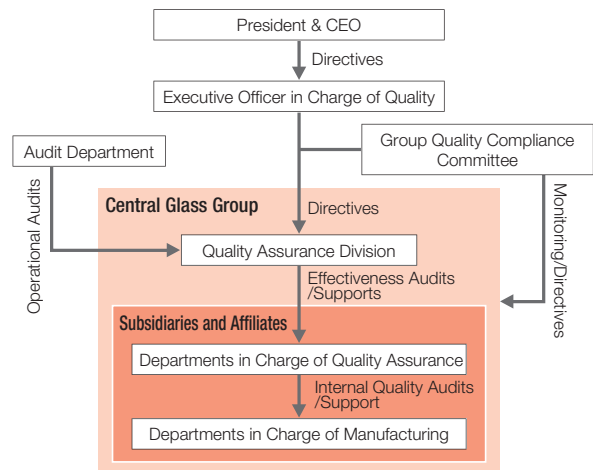
The Group Quality Compliance Committee serves as a cross-functional organization to strengthen our Quality Management System.

The committee holds three types of meetings: a Quality Promotion Meeting to improve quality activities

based on the PDCA cycle, an Emergency Response Meeting to promptly address quality and product safety issues, and a Corrective Action Meeting to ensure that problems do not recur.

● Multilayer Audits

We incorporate the concept of multilayered audits into internal audits. Specifically, the Company implements a three-layered auditing system comprised of internal quality audits initiated by quality assurance departments at the plants, effectiveness audits to confirm the effectiveness of internal quality audits of each plant conducted by the quality assurance department at headquarters, and operational audits of the quality assurance department at the headquarters conducted by the Audit Department.



● Reporting Line for Quality Issues

We have established a reporting line to promptly respond to quality issues by quickly receiving information on various quality issues discovered by customers or at manufacturing sites and reporting to an appropriate department in charge. This reporting procedure also provides a system to quickly report serious quality issues to management in order to take emergency measures without any delay.

● Medium-Term Management Plan: Measures Toward Improving Quality Awareness

Our Medium-Term Management Plan for FY2022 to FY2024 calls for us to strengthen quality activities through “thorough daily management and vitalization of improvement activities,” and “Develop human resources supporting quality activities by enhancing quality education,” as priority measures, and we have put them into practice.

Objective

To be an organization offering reassurance and reliability to stakeholders by ensuring products and services that meet the needs of customers and society.

Measures

- (1) Strengthen the quality management system through the operation of the Group Quality Compliance Committee.
 - (2) Strengthen and maintain the Group's quality assurance system through multi-layered audits and audit suppliers proactively, including outsourcing and contractors.
 - (3) Properly engage reporting lines for quality issues to respond to any quality issue promptly. Report serious quality issues to management promptly for emergency measures to be taken without any delay.
 - (4) Strengthen quality activities at sites through thorough daily management and the revitalization of improvement activities.
 - (5) Enhance quality education for all divisions and positions to develop human resources that support quality activities.
-

Product Quality Improvement

● Quality Control System for Products and Services

Each plant, subsidiary, and affiliate has established a quality control system based on appropriate quality management systems (ISO9001, IATF16949 *1) and standards (JIS, GMP *2) to maintain and improve product quality and services provided to customers.

*1 International standard for quality management systems specific to the automotive industry.

*2 Standards for manufacturing control and quality control of pharmaceuticals.

● Measures at Plants, Subsidiaries, and Affiliates

We conduct QC circle activities, one of the elements of TQM, to maintain and improve product quality. These activities are aimed at the Group's development through the growth of human resources and the organization, and play a part in achieving our basic philosophy, *Building a Better Future through Monozukuri*.

Materiality

● Reduce the Number of Complaints

We will address the improvement of product quality and customer satisfaction by setting a year-to-year reduction rate concerning the number of complaints

as a KPI. Our target will be to reduce the number of complaints to half during the Medium-Term Plan period.

In FY2023, we addressed quality issues by using our reporting line for quality issues, ensuring corrective actions for complaints and other quality problems. In addition, conscientious daily management and vitalization of improvement activities helped achieve a 40% reduction compared to the previous year. We will make similar efforts in FY2024, aiming to achieve a target of 25% reduction.

● Maintenance/Improvement of Quality by Audits Conducted by Contractors

We will maintain and improve the quality of the entire supply chain of the Central Glass Group by conducting external audits by high-quality contractors.

In FY2023, we achieved an audit implementation rate of 96% with the support of said contractors. We also provided assistance for corrective actions or improvements requested at the time to further improve quality. In FY2024, we will begin systematic audits to achieve an implementation rate of 90% or higher.

● Quality Education Position-Based Education

We provide systematic quality education from aspects of career development and monozukuri according to the Central Glass Group's educational system. Under career development education, we provide systematic quality education for all positions, offering content considered necessary at those respective positions. In addition, we introduced product quality e-learning content in FY2023.

Under *monozukuri* education provided at production sites, we created guidelines for position-based education to improve the content of product quality education. We are rolling these guidelines out to each production site. We will improve the content of the quality education and increase the education opportunities for employees.

Lectures on Quality

As part of quality education, in November 2023, we invited an outside instructor to give a quality lecture titled, "Enhancing Quality Awareness and Building an Open Culture through TQM." The event was held online for an audience of roughly 1,500 people. We will continue to choose topics to raise group-wide quality awareness and provide opportunities for all group employees to reflect on quality.

The Foundation for Value Creation: Sustainability Management

Purchasing Policy

The Central Glass Group conducts purchasing activities based on our Basic Purchasing Policy under our corporate philosophy of Creating a Better Future Through *Monozukuri*. We also established a Supplier Code of Conduct to share with our business partners to address social issues throughout our supply chain as a part of our efforts to create a sustainable society.

Establishing the Central Glass Group Purchasing Policy

The Group identified strengthening supply chain management as one of our 11 materialities, stipulating CSR procurement as a measure to address this matter.

We formulated the Central Glass Group Purchasing Policy (Basic Purchasing Policy and Supplier Code of Conduct) in March 2024 as one of our initiatives. The Board of Directors approved this policy.

Basic Purchasing Policy

1. Compliance with laws, regulations, and international norms

In purchasing activities, we comply with the laws and regulations of each country and region, and support and respect international norms.

2. Fair and impartial transactions

We conduct open, fair, and impartial purchasing activities based on the principle of free competition.

3. Selection based on economic rationality

We conduct the selection of business partners through the comprehensive evaluation of economic rationality (quality, price, delivery, stable supply, reliability, after-sales service, technology development capabilities, the stability of the business foundation, response in the event of trouble, and other factors).

4. Coexistence and co-prosperity with business partners

We aim to realize peaceful coexistence and mutual prosperity by building long-term confidential relationships with our business partners.

5. Consideration of human rights and the environment

We promote purchasing activities considering human rights and environmental conservation.

Supplier Code of Conduct (Excerpt)

1. Fair trade, compliance with laws, and support and respect for international norms
 2. Ensuring product quality and safety
 3. Respect for intellectual property rights
 4. Prohibition of giving or receiving inappropriate benefits
 5. Prohibition of insider trading
 6. Management of confidential information and personal information
 7. Initiatives to preserve the environment and create a safe working environment
 8. No relationship with anti-social forces
 9. Thorough security trade control
 10. Respect for human rights
 11. Initiatives against conflict minerals
-

Efforts to Strengthen Our Supply Chains

The Central Glass Group believes it is necessary to our business that the entire supply chain, including our suppliers, addresses issues to create a sustainable society and fulfill our social responsibility.

We request that the Group and our suppliers comply with each item of our Code of Conduct and encourage the deployment of similar principles throughout their supply chains.

We began distributing Supplier Agreement Confirmation Forms in FY2024 to our major suppliers to confirm their initiative status in this Code of Conduct.

The Central Glass Group plans to gradually introduce these forms to all suppliers going forward. We ask suppliers to remedy any issues identified, aiming to improve the entire supply chain.

Enhancement of Compliance System

The Central Glass Group considers the development and implementation of a compliance system to be essential to fulfill our corporate social responsibilities. We work with integrity in our daily activities in accordance with *Our Values and Responsibilities*.

Group Structure

The Group established the Compliance Promotion Committee to investigate and deliberate relevant matters to ensure compliance. The committee reports matters reported through the internal reporting system and other matters related to compliance awareness and system development to the Board of Directors upon deliberation. The Group also established the following committees to address compliance: the Environment and Safety Promotion Committee, Anti-Monopoly Law Observance Committee, Group Quality Compliance Committee, Security Trade Control Committee, Financial Reporting Risk Assessment Committee, and Sustainability Committee. These committees deliberate on each specialized topic and report to the Board of Directors. See P.58 for a diagram of the structure.

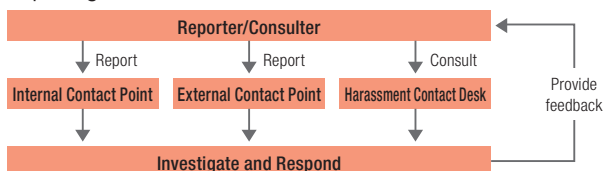
Whistleblowing System

The Group established an internal reporting system to ensure the early detection and resolution of compliance issues involving the company and our employees.

The Compliance Promotion Committee Secretariat (Legal Department) and outside attorneys serve as contact points for reporting, available via e-mail or telephone. The Group also provides dedicated in-house consultation desks to address various issues, including the Harassment Consultation Desk for various types of harassment issues.

We establish rules to prohibit any disadvantageous treatment in reporting or harassment consultations, creating an environment that allows employees to have peace of mind when reporting or consulting with others.

Reporting Process



Compliance Initiatives

Compliance Manual

The Central Glass Compliance Manual outlines the rules to ensure Group officer and employee compliance based on *Our Values and Responsibilities*. The manual describes the laws, regulations, and norms to be complied with based on the relevant relationship, including for customers, suppliers, community, society, and so on. Employees have access to this manual at any time.

The Compliance Manual covers *Compliance with Antitrust Laws* and *Gifts and Entertainment (including Overseas)* to ensure transparent relationships with customers and business partners. Note that the Anti-Monopoly Law Observance Committee works to ensure thorough compliance with antitrust laws.

The Compliance Manual also includes information on the whistleblower hotline and informs employees about the whistleblower system.

Compliance Education

We conduct annual e-learning training for all employees to ensure that all employees, including those at group companies, are aware of the importance of compliance. We also work to raise awareness of compliance by providing employees time to converse with directors and officers to deepen their understanding of compliance during training by job level.

Other compliance education includes necessary training from external instructors on compliance with antitrust laws, security trade control, and various other matters.

One such example is the necessary education we provide on anti-bribery regulations and other internal rules we implement to prevent bribery, etc. The Group received no reported cases of anti-bribery regulation violations in FY2023.

We conducted various training programs in FY2023, including in-house seminars on security trade control as well as in-house lectures by outside instructors on security trade control and antitrust laws.

The Foundation for Value Creation: Sustainability Management
Corporate Governance

Maximizing Corporate Value by Achieving VISION 2030



Director,
Executive Managing Officer

Tetsuo Kanai

Director,
Executive Managing Officer

Yoshinori Akamatsu

Outside Director

Shiori Ishihara

Outside Director

Masaya Kawata

Outside Director

Tetsuo Nishide

Director, Senior Executive
Managing Officer

Akihiro Ishii

Representative Director,
Chairman

Tadashi Shimizu



Full-Time Corporate Auditor

Takao Tomioka

Representative Director,
President & CEO

Kazuhiko Maeda

Full-Time Corporate Auditor

Masanori Murata

Outside Corporate Auditor

Toshihide Nishimura

Outside Corporate Auditor

Masako Goto

Outside Corporate Auditor

Toshifumi Mikayama

The Foundation for Value Creation: Sustainability Management

Corporate Governance

Director Introduction (as of end of June, 2024)

Representative Director, Chairman

Tadashi Shimizu

April	1978	Joined the Company
October	2005	General Manager, International Business Department
October	2010	General Manager, Personnel Department
June	2011	Executive Officer, General Manager, Personnel Department
June	2012	Director, Executive Managing Officer, General Manager, Personnel Department
June	2013	Director, Executive Managing Officer
June	2015	Representative Director, Senior Executive Managing Officer, General Manager, International Business Department
June	2016	Representative Director, Senior Executive Managing Officer
June	2017	Representative Director, President & CEO
June	2023	Representative Director, Chairman (present position)

Director, Executive Managing Officer

Tetsuo Kanai

April	1988	Joined the Company
November	2014	General Manager, Automotive Glass Department; Representative Director (concurrent) of Central Saint-Gobain Investment Co., Ltd.
April	2018	CEO of Carlex Glass America, LLC and Director, Chairman of the Board of Carlex Glass Luxembourg S.A. (concurrent)
September	2019	CEO of Carlex Glass America, LLC
April	2021	General Manager, Corporate Administration Department
June	2022	Executive Officer, General Manager, Corporate Administration Department
June	2023	Executive Managing Officer
June	2024	Director, Executive Managing Officer (present position)

Representative Director, President & CEO

Kazuhiko Maeda

April	1984	Joined the Company
June	2006	General Manager, Chemicals Business Development Department
October	2009	General Manager, Chemicals Business Development Department (Organization name in Japanese changed with English unchanged)
October	2012	General Manager, Energy Materials Sales Department
June	2014	Executive Officer, General Manager, Energy Materials Sales Department
June	2015	Director, Executive Managing Officer
June	2021	Representative Director, Senior Executive Managing Officer
June	2022	Representative Director, Senior Executive Vice President
June	2023	Representative Director, President & CEO (present position)

Director

Tetsuo Nishide

April	1975	Joined Ministry of International Trade and Industry
April	1999	Professor, Graduate School of Nara Institute of Science and Technology (concurrent)
July	2002	Director General, Chugoku Bureau of Economy, Trade and Industry, Ministry of Economy, Trade and Industry
June	2004	Executive Director of Vinyl Environmental Council
April	2007	Specially Appointed Professor, Graduate School of Business Design at Rikkyo University
July	2007	Director General of (Incorporated Association) Japan Chemical Industry Association
April	2011	Director General of (General Incorporated Association) Japan Chemical Industry Association
June	2016	Chairman of (General Incorporated Foundation) Japan Chemical Innovation and Inspection Institute
June	2017	Director of the Company (present position)

Director, Senior Executive Managing Officer

Akihiro Ishii

April	1986	Joined the Company
September	2016	General Manager, Chemical Research Center
June	2019	Executive Officer, General Manager, Chemical Research Center
June	2021	Executive Managing Officer, General Manager, Chemical Research Center
July	2022	Executive Managing Officer
June	2023	Director, Executive Managing Officer
June	2024	Director, Senior Executive Managing Officer (present position)

Director

Masaya Kawata

April	1975	Joined Nisshinbo Industries, Inc. (currently Nisshinbo Holdings Inc.)
June	2006	Managing Officer, General Manager, Human Resources Division of Nisshinbo Industries, Inc.
May	2007	Deputy General Manager, Accounting & Finance Department of Nisshinbo Industries, Inc. (concurrent)
June	2007	Director, Executive Officer of Nisshinbo Industries, Inc.
April	2008	Deputy Chief of Business Support Center, Nisshinbo Industries, Inc.
June	2009	Representative Director, President of Nisshinbo Brake Inc.
June	2010	Director, Executive Managing Officer of Nisshinbo Holdings Inc.
June	2011	Deputy Chief of Corporate Strategy Center, General Manager, Business Development Division of Nisshinbo Holdings Inc., and Representative Director and President of Nisshinbo Chemical Inc. (concurrent)
June	2012	Director, Senior Executive Managing Officer of Nisshinbo Holdings Inc. and Representative Director and President of Nisshinbo Mechatronics, Inc.
June	2013	Representative Director, President of Nisshinbo Holdings Inc.
June	2019	Representative Director, Chairman of Nisshinbo Holdings Inc.
June	2021	Director of the Company (present position)
March	2022	Director, Chairman of Nisshinbo Holdings Inc.

Director, Executive Managing Officer

Yoshinori Akamatsu

April	1989	Joined the Company
April	2021	General Manager, Chemicals Sales Department
April	2022	Executive Officer, General Manager, Chemicals Sales Department
June	2022	Executive Managing Officer, General Manager, Chemicals Sales Department
October	2022	Executive Managing Officer
June	2023	Director, Executive Managing Officer (present position)

Director

Shiori Ishihara

- April 2010 Joined the Bank of Japan
- December 2014 Registered as an attorney (Daini Tokyo Bar Association); joined Asahi Law Office
- April 2017 Joined Freeman & Partners
- September 2019 Joined Smith, Gambrell & Russell, LLP, USA
- September 2020 Re-registered as an attorney (Daini Tokyo Bar Association); rejoined Asahi Law Office (present position)
- October 2021 Registered as an attorney-at-law in the State of New York, U.S.A.
- January 2023 Partner of Asahi Law Offices (present position)
- June 2024 Director of the Company (present position)

Full-Time Corporate Auditor

Takao Tomioka

- June 1990 Joined the Company
- April 2014 General Manager, Intellectual Property Department
- June 2018 General Manager, Glass Quality Assurance Department
- June 2021 Full-Time Corporate Auditor (present position)

Full-Time Corporate Auditor

Masanori Murata

- April 1988 Joined the Company
- June 2018 General Manager, Audit Department
- June 2022 Full-Time Corporate Auditor (present position)

Corporate Auditor

Toshihide Nishimura

- April 1979 Joined Onoda Cement Co., Ltd. (currently Taiheiyō Cement Corporation)
- April 2006 General Manager, Construction Materials Business Department of Taiheiyō Cement Corporation
- May 2009 General Manager, Accounting & Finance Department of Taiheiyō Cement Corporation
- April 2012 Executive Officer, General Manager, Related Business Department of Taiheiyō Cement Corporation
- April 2015 Executive Managing Officer of Taiheiyō Cement Corporation
- June 2015 Director, Executive Managing Officer of Taiheiyō Cement Corporation
- June 2016 Corporate Auditor of Nippon Concrete Industries Co., Ltd.
- April 2017 Director of Taiheiyō Cement Corporation
- June 2017 Full-Time Corporate Auditor of Taiheiyō Cement Corporation
- June 2021 Corporate Auditor of the Company (present position)

Corporate Auditor

Toshifumi Mikayama

- April 1983 Joined Kirin Brewery Co., Ltd. (currently Kirin Holdings, Inc.)
- September 2002 Director of Pharmaceutical Research Laboratory, Pharmaceutical Division of Kirin Brewery Co., Ltd.
- March 2004 General Manager, Planning Division, Pharmaceutical Division of Kirin Brewery Co., Ltd.
- July 2007 Directors, Executive Officer, Head, f Research Division of Kirin Pharma Company, Limited
- October 2008 Executive Officer, Head, Research Division of Kyowa Hakko Kirin Co., Ltd. (currently Kyowa Kirin Co., Ltd.)
- April 2010 Executive Officer, General Manager, Corporate Strategy & Planning Department of Kyowa Hakko Kirin Co., Ltd.
- March 2012 Executive Managing Officer, General Manager, Overseas Business Department of Kyowa Hakko Kirin Co., Ltd.
- March 2014 Director, Executive Managing Officer, General Manager, Overseas Business Department of Kyowa Hakko Kirin Co., Ltd.
- March 2018 Director, Senior Executive Managing Officer, Supervising Overseas Business of Kyowa Hakko Kirin Co., Ltd.
- March 2021 Director, Executive Vice President Supervising Overseas Business Department of Kyowa Kirin Co., Ltd.
- June 2023 Chairman of Kato Memorial Bioscience Foundation (present position) Corporate Auditor of the Company (present position)

Corporate Auditor

Masako Goto

- October 2000 Joined Showa Ota & Co. and Century Audit Corporation (currently Ernst & Young ShinNihon LLC)
- April 2004 Registered as a certified public accountant
- October 2007 Manager of Shin Nihon & Co. (currently Ernst & Young ShinNihon LLC)
- August 2017 Vice-Chairperson of Public Relations Committee of the Japanese Institute of Certified Public Accountants
- October 2017 Senior Manager of Shin Nihon & Co. (currently Ernst & Young ShinNihon LLC)
- June 2023 Representative of Masako Goto Certified Accountant Office (present position) Corporate Auditor of the Company (present position)

Executive Officers

(excluding individuals concurrently serving as Director)

Executive Managing Officers	Hidehisa Nanai Isamu Mori Mototsugu Ichinose Masaaki Kawase Shigeru Suenaga Satoru Narizuka
Executive Officers	Taizo Kawakita Masahiro Seko Shinichi Okamura Yuzuru Morino Masato Nakashima Masatomi Kanai Tadayuki Kawashima

The Foundation for Value Creation: Sustainability Management

Corporate Governance

The Company is committed to achieving sustainable growth and enhancing corporate value. To this end, we strive to further enhance and strengthen corporate governance, aiming to enhance the transparency and fairness of management.

Corporate Governance

Our basic approach to corporate governance is to ensure the constant enhancement of transparency and fairness of our management. We aim to establish an efficient and rational organizational structure that responds quickly to changes in the business environment, further enhancing corporate value and expanding earnings.

Based on this concept, the Company bases our corporate governance on the Board of Directors and the Board of Corporate Auditors. We also introduced an executive officer system to streamline the Board of Directors by separating functions related to decision-making for important management matters and business execution supervision. In this way, we strive to enhance management efficiency and speed.

We also employ accounting auditors as required by the Companies Act, and established the Audit Department as an internal audit division. The Audit Department audits the overall operations of our Company and subsidiaries, reporting results to representative directors and corporate auditors.

Corporate auditors, accounting auditors, and the Audit Department exchange information and opinions, share issues, and enhance and streamline audits.

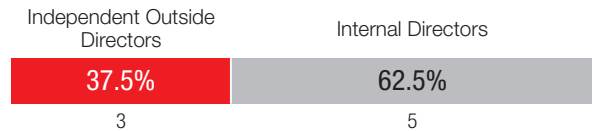
Corporate Governance Structure Outline

As of June 27, 2024

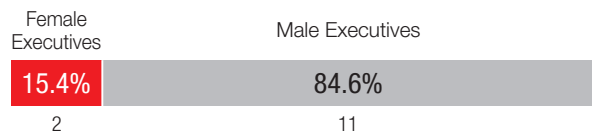
Item	Details
Organizational structure	Company with a Board of Corporate Auditors
Number of directors	8 (1)
Number of outside directors	3 (1)
Director term	1 year
Executive officer system	Established
Number of auditors	5 (1)
Number of outside corporate auditors	3 (1)
Total number of executives	13
Ratio of female executives	2 (15.4%)

*Figures in parentheses indicate the number of female officers

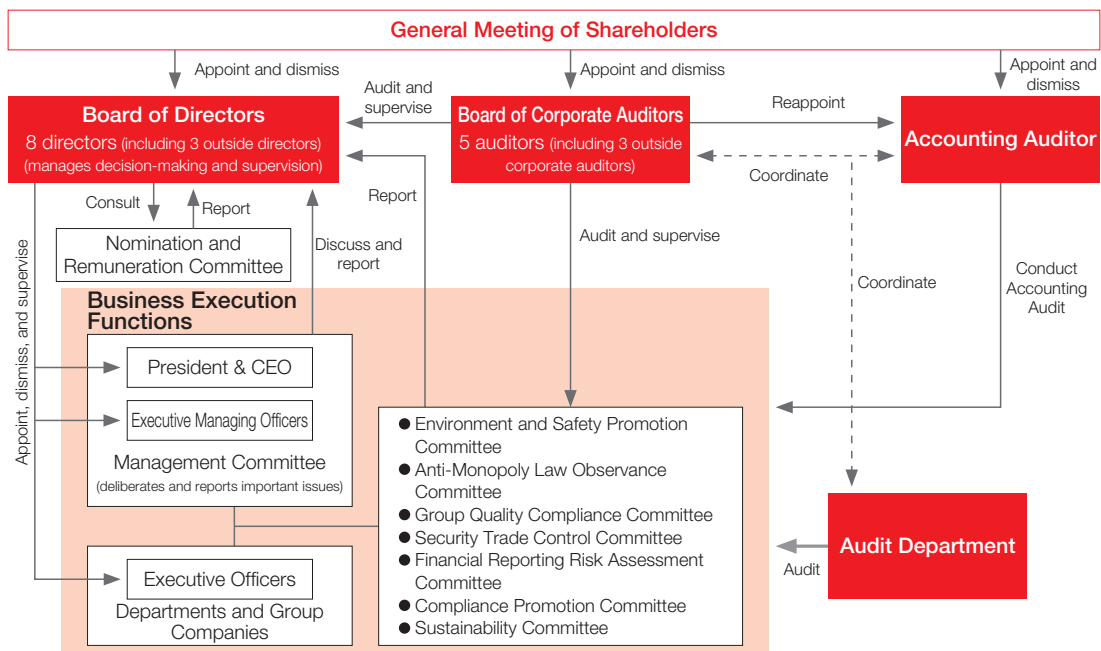
Ratio of Independent Outside Directors to All Directors



Percentage of Female Executives and Corporate Auditors



Corporate Governance Structure Chart (as of June 27, 2024)



Legend: Internal  / Outside 

Board of Directors

Chair: Representative director and chairman / Members: 

The Board of Directors meets monthly or as needed to deliberate and decide on statutory resolutions and important management matters in accordance with Board regulations. The Board also supervises the execution of duties by directors, the president, and other executive officers.

Outside directors and outside corporate auditors, free from any possibility of conflict of interest with general shareholders, play a role in ensuring the fairness of the Board of Directors decisions and eliminating arbitrary decisions.

Board of Corporate Auditors

Chair: Full-time corporate auditor / Members: 

The Board of Corporate Auditors meets monthly or as needed to discuss and resolve important audit matters. The Board of Corporate Auditors also shares information and exchanges opinions closely among members. The Board also exchanges opinions on a regular basis with the representative director on important audit issues.

Corporate auditors attend Board of Directors meetings and other important meetings to supervise the execution of duties by directors and executive officers. The auditors also audit business execution at each Company business unit and subsidiaries and affiliates.

Management Committee

Chair: President & CEO / Members: 

The Management Committee consists of executive managing officers and executive officers as defined in the committee regulations. The committee also meets once a week in accordance with these regulations to discuss important business execution matters. The president and CEO serves as the committee chair and makes decisions on such matters. The Management Committee also reviews proposals to be submitted to the Board of Directors.

Nomination and Remuneration Committee

Chair: Outside director / Members: 

We established the Nomination and Remuneration Committee as a voluntary advisory body to the Board of Directors. This committee further enhances our corporate governance by strengthening the independence, objectivity, and accountability of Board functions regarding the nomination and remuneration

of directors and corporate auditors. The Committee consists of at least three members, a majority of whom are independent outside directors, with at least one representative director. Committee members appoint an outside director on the committee to serve as chair of the Nomination and Remuneration Committee. The chair may also serve as facilitator of the committee.

FY2023 Activities

Position	Name	Board of Directors	Nomination and Remuneration Committee
Directors	Tadashi Shimizu	100% (15/15 meetings)	100% (8/8 meetings)
	Kazuhiko Maeda	100% (15/15 meetings)	100% (8/8 meetings)
	Minoru Irisawa	100% (15/15 meetings)	
	Nobuyuki Tokunaga	100% (15/15 meetings)	
	Akihiro Ishii	100% (15/15 meetings)	
	Yoshinori Akamatsu	100% (15/15 meetings)	
Outside Director	Tetsuo Nishide	100% (15/15 meetings)	100% (8/8 meetings)
	Kimi Koinuma	100% (15/15 meetings)	100% (8/8 meetings)
	Masaya Kawata	93% (14/15 meetings)	100% (8/8 meetings)
Corporate Auditors	Takao Tomioka	100% (15/15 meetings)	
	Masanori Murata	100% (15/15 meetings)	
Outside Corporate Auditors	Masaaki Hori	100% (3/3 meetings)	
	Hiroyuki Kawai	100% (3/3 meetings)	
	Toshihide Nishimura	93% (14/15 meetings)	
	Toshifumi Mikayama	100% (12/12 meetings)	
	Masako Goto	100% (12/12 meetings)	

On June 29, 2023, Masaaki Hori and Hiroyuki Kawai stepped down, while Toshifumi Mikayama and Masako Goto were appointed as corporate auditors. These changes resulted in their attendance at the Board of Directors to differ from other directors and corporate auditors.

Changes in Corporate Governance Enhancement

Date	Matters	
2000s	June 2004	Introduced the executive officer system
	June 2005	Increased corporate auditors (4 -> 5)
	June 2006	Abolished retirement benefits for executives Changed term for directors (2 years -> 1 year)
	June 2009	Appointed outside directors
2010s	June 2013	Increased the number of outside directors (1 -> 2)
	December 2015	Began evaluating the effectiveness of the Board of Directors
	June 2018	Appointed a female outside director Increased the number of outside directors (2 -> 3)
	March 2019	Abolished ant-takeover measures Established the Nomination and Remuneration Committee
2020s	November 2021	Established the Sustainability Committee
	December	Disclosed our skills matrix
July 2023	Appointed an outside director as chair of the Nomination and Remuneration Committee	

Appointing Executives

Policy and Procedure for the Appointment of Executives

Director and executive officer candidates nominated and appointed by the Board of Directors must be knowledgeable in various corporate management

The Foundation for Value Creation: Sustainability Management

Corporate Governance

matters and have excellent character, insight, and execution skills. Directors should also be capable of fulfilling their managerial duties. The Board of Directors nominates director candidates in accordance with Nomination and Remuneration Committee reports and director regulations. The Board of Directors also appoints executive officers in accordance with Nomination and Remuneration Committee reports and executive officer regulations.

Corporate auditors nominated by the Board of Directors should cooperate with the Board to contribute to Company supervisory functions, audit the execution of director duties as an independent body accountable to shareholders, and strive to maintain independence. At the same time, auditors must maintain a constant fair and unbiased attitude and act based on their own convictions. The Board of Directors nominates corporate auditors based on Nomination and Remuneration Committee reports with the consent of the Board of Corporate Auditors.

Executive Remuneration

Policy on Determining Executive Remuneration

The Board of Directors delegates the Nomination and Remuneration Committee to conduct a multifaceted review, including on director consistency with decision-making policies, to determine monetary remuneration for individual directors. As a result, we have determined that individual remuneration is in line with our decision-making policies.

Basic Policy

Director remuneration at Central Glass is structured to motivate management in the effective implementation of the management plan and business strategies aimed at sustainable development and the medium- to long-term enhancement of corporate value. The Board of Directors determines our remuneration policy based on Nomination and Remuneration Committee reports, which take into account the responsibilities of each position and impact on Company management. Director remuneration (excluding outside directors) consists of (1) fixed remuneration (monetary), (2) performance-based remuneration (monetary) and (3) performance-based stock remuneration. Remuneration for outside directors consists solely of fixed compensation to ensure the appropriate execution of their duties in supervising business.

Remuneration for corporate auditors also consists solely of fixed remuneration, determined through corporate auditor discussions.

(1) Policy on determining fixed remuneration

The Nomination and Remuneration Committee deliberates and determines fixed remuneration (excluding that for corporate auditors) based on job position and recommended evaluations from the president and CEO. These recommendations reference survey data from an external professional organization.

(2) Policy on determining performance-based remuneration

We multiply base amounts by achievement coefficients to determine performance-based remuneration. The Nomination and Remuneration Committee determines this base amount by discussing job position and recommended evaluations from the president and CEO. We calculate achievement coefficients based on the extent to which consolidated ordinary profit and total shareholder return (including total dividends and share buybacks) meet their targets for the previous fiscal year.

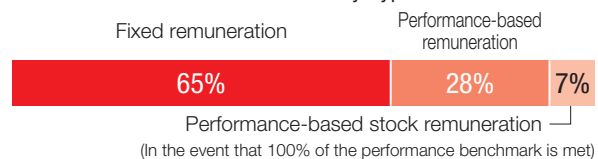
(3) Policy on determining performance-based stock remuneration

We grant performance-linked stock remuneration in accordance with the Stock Delivery Regulations, awarding points (one point equals one share) each fiscal year based on the achievement of target indices. In principle, we deliver shares and cash in line with accumulated points upon retirement. We determine the points awarded based on the achievement of our target consolidated ordinary income indicator for the fiscal year, based on basic points for each position.

Percentage of Remuneration by Type

The following diagram illustrates the estimated percentage distribution of each type of director remuneration.

Director Remuneration Breakdown by Type



Evaluating the Board of Directors Effectiveness

Our Board of Directors takes initiative in analyzing and evaluating its own performance. The Board conducts

questionnaires to assess effectiveness once a year to improve functionality.

The Board of Directors had all directors and corporate auditors conduct a self-evaluation using questionnaires in March 2024. The Board of Directors then analyzed and evaluated Board effectiveness based on questionnaire results. This evaluation determined that the Board of Directors is operating effectively as a whole.

Issues identified in the previous analysis and evaluation included strengthening communication among members and engaging in more active discussions at Board meetings. As part of our measures to address these issues, we resumed holding Board of Directors meetings in person as a standard practice. The Board also held a series of discussions on our long-term vision, management focused on the cost of capital and stock prices, and other important topics at Board meetings and other occasions. Such discussions included outside directors and contributed to strengthening communication and stimulating discussions. The Board will continue to provide more frequent opportunities to discuss important topics.

Executive Diversity (Skill Matrix)

The Company limits the Board of Directors to no more than 10 members. We consider this number to be an appropriate size for the Board to continue making accurate and prompt decisions. The Board of Directors should consist of well-balanced individuals who are knowledgeable in various corporate management matters and have excellent character, insight, and execution skills. Directors should also be capable of fulfilling their managerial duties. The skills and attributes

Skills Matrix

Position	Name	Knowledge, Experience, and Capabilities						
		Management	Finance and Accounting	Law and Compliance	International Affairs	Sustainability	Sales and Marketing	Technologies and R&D
Directors	Tadashi Shimizu	●	●	●	●			
	Kazuhiko Maeda	●		●	●	●	●	●
	Akihiro Ishii	●				●		●
	Yoshinori Akamatsu	●			●		●	●
	Tetsuo Kanai	●	●	●	●	●	●	
	Tetsuo Nishide	●			●	●		●
	Masaya Kawata	●	●		●			
	Shiori Ishihara			●	●			
Corporate Auditors	Takao Tomioka					●		●
	Masanori Murata		●	●				
	Toshihide Nishimura	●	●					
	Toshifumi Mikayama	●			●			●
	Masako Goto		●					

of each director and corporate auditor are as follows.

Cross-Shareholdings

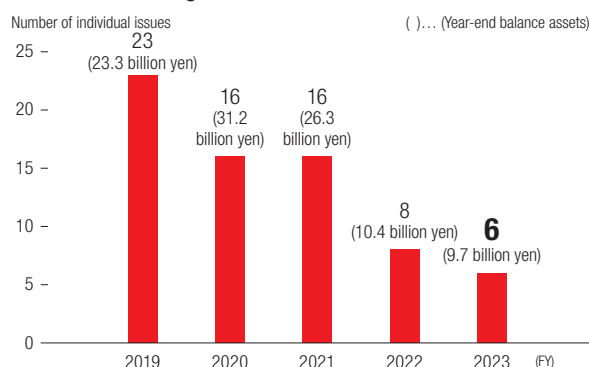
Policy on the Reduction of Cross-Shareholdings

The Company evaluates each individual stock to determine the appropriateness of the listed cross-shareholdings and whether the benefits and risks justify the cost of capital. We also consider selling shares that do not contribute to the medium- to long-term improvement of our corporate value, thereby reducing cross-shareholdings.

We plan to retain listed shares that contribute to the medium- to long-term improvement of our corporate value. We base this decision on a comprehensive assessment of management strategies, measures to address risks, and other non-financial factors to maintain and strengthen partnerships, transactional relationships, and business ties.

Based on the above policy, the Board of Directors examines and reviews cross-shareholdings listed shares based on the above policy on a regular basis.

Cross-Shareholdings



Message From Outside Directors



Having redefined a Purpose and formulated the VISION 2030 long-term vision, Central Glass must now improve the effectiveness of strategy and governance. We encourage the company to deepen and improve the structure and function of its Board of Directors.

What must Central Glass do to increase corporate value sustainably?

Outside Director
Masaya Kawata

I believe Central Glass has advanced and improved its business portfolio and organizational structure steadily over the past several years. These improvements took the form of new challenges, reforms, and business restructuring, supported by the united efforts of the employees under the leadership of management. During that time, the company has gone through major changes in management resources, finally reaching a stage of moving toward new growth.

To increase corporate value sustainably, a company must pursue policies and strategies that clearly integrate financial and non-financial aspects and economic and social value (ROE and ESG). This is an excellent time to discuss what the company should do under the next medium-term management plan and VISION 2030.

In addition to authentic discussions on cost of capital, stock price, environmental management, etc., the

company needs to accelerate a shared awareness and further discussions on corporate culture, organizational climate, DE&I, and employee engagement, taking global perspectives into account as well. The company will also need to consider from a macro and long-term perspective how the management level discussions and scenarios regarding R&D and business development contribute to increasing corporate value, looking from a higher level of abstraction or in much more detail as appropriate. Management-level discussions regarding R&D and business development must address how scenarios contribute to the enhancement of corporate value from a macro and long-term perspective, looking from a higher level of abstraction or in much more detail as appropriate.

Promoting these types of highly effective discussions at Board meetings will lead to enhancing corporate value. This is one role we perform as outside directors.

Monitoring management and business execution, while striving to build a diverse organization

Outside Director

Shiori Ishihara

My name is Shiori Ishihara, an attorney appointed as an outside director in June this year. My main focus has been in the area of dispute resolution, and I have worked on a wide variety of cases, including fraud investigations, power harassment, sexual harassment, and whistleblower cases. In addition to corporate legal affairs, I have also dealt with issues related to private matters, including family and criminal cases.

As an outside director, I believe I have a wide range of roles to fulfill. First and foremost, however, is the role of monitoring and checking for misconduct or inappropriate management and business execution. Here, I intend to contribute my strengths in knowledge and sense of balance,

cultivated through my legal practice. I hope to help maximize the Company's corporate value by offering opinions and asking questions from an objective standpoint, as well as by being involved actively in risk management.

One area I believe is of particular importance in organizational management is diversity, equity, and inclusion (DE&I). Companies built by members from diverse backgrounds who freely express their values without restrictions by gender, age, educational background, nationality, disability, or any other specific attribute, find enhanced corporate value and medium- to long-term growth. I am committed to helping create this type of environment and structure.

The challenge of communicating strengths and growth potential not readily apparent

Outside Director

Tetsuo Nishide

I have served as an outside director since 2017, during which time the company has shifted management policy from an emphasis on business scale to an emphasis on profits and ESG. Striking a balance between short-term shareholder profit and medium- to long-term shareholder profit is both important and difficult. Seeking to enhance the sustainable development of business makes the job even harder.

The Glass business posted temporary losses due to structural improvements in light of the business environment, including the withdrawal from overseas operations, disposal of excess equipment in the domestic Glass business, spin-offs, and strengthening quality management systems. However, the company is transitioning steadily toward a structure capable of generating stable profits.


Chemicals manufacturing is another pillar of the company. These chemicals include a product based on superior fluorine-related chemical technology

used in the semiconductor manufacturing process, electrolytes used in lithium-ion batteries, APIs for inhalation anesthesia, and many more chemicals used as raw materials or components. These products may not be readily apparent to the general consumer, but they are all specialty chemical products that contribute to solving social issues common to all of humanity, including information technology, climate change, and medical and welfare issues. The process from development to commercialization takes time, while maintaining continuous R&D investment and keeping a strong competitive position are important to deepen partnerships with customers who are highly competitive end product manufacturers who will make the business bases more solid.

The company's strengths and growth potential are not readily visible from the outside, so Central Glass faces a significant challenge in communicating these strengths and potential more widely.

At a Glance

Business Name	Net Sales Composition (%)	Business Fields	Sales (Billion yen)	Business Overview												
Chemicals Business	12.2%	Electronic Materials	<table border="1"> <tr><th>FY</th><td>2019</td><td>2020</td><td>2021</td><td>2022</td><td>2023</td></tr> <tr><th>Sales</th><td>15.9</td><td>17.7</td><td>19.9</td><td>19.2</td><td>19.5</td></tr> </table>	FY	2019	2020	2021	2022	2023	Sales	15.9	17.7	19.9	19.2	19.5	Sales of specialty gas products and resist materials for semiconductors were level year on year as global demand for semiconductors began to recover from a low point toward the end of the fiscal year. At the same time, we consolidated one overseas sales subsidiary, which contributed to an increase in sales resulting in higher sales than the previous fiscal year.
		FY	2019	2020	2021	2022	2023									
		Sales	15.9	17.7	19.9	19.2	19.5									
		Medi-Chemicals	<table border="1"> <tr><th>FY</th><td>2019</td><td>2020</td><td>2021</td><td>2022</td><td>2023</td></tr> <tr><th>Sales</th><td>17.7</td><td>14.1</td><td>15.1</td><td>16.4</td><td>16.3</td></tr> </table>	FY	2019	2020	2021	2022	2023	Sales	17.7	14.1	15.1	16.4	16.3	While shipments of medical-related products were strong, sales were level year on year due to weak sales at consolidated overseas subsidiaries.
		FY	2019	2020	2021	2022	2023									
Sales	17.7	14.1	15.1	16.4	16.3											
Energy Materials	<table border="1"> <tr><th>FY</th><td>2019</td><td>2020</td><td>2021</td><td>2022</td><td>2023</td></tr> <tr><th>Sales</th><td>11.7</td><td>15.6</td><td>22.9</td><td>36.3</td><td>32.4</td></tr> </table>	FY	2019	2020	2021	2022	2023	Sales	11.7	15.6	22.9	36.3	32.4	Sales decreased year on year due to lower sales of electrolytes for lithium-ion batteries caused by slower growth of the EV market in China and Europe, as well as greater competition.		
FY	2019	2020	2021	2022	2023											
Sales	11.7	15.6	22.9	36.3	32.4											
Applied Chemicals	<table border="1"> <tr><th>FY</th><td>2019</td><td>2020</td><td>2021</td><td>2022</td><td>2023</td></tr> <tr><th>Sales</th><td>21.3</td><td>16.2</td><td>20.9</td><td>23.3</td><td>17.0</td></tr> </table>	FY	2019	2020	2021	2022	2023	Sales	21.3	16.2	20.9	23.3	17.0	Sales of HFO products fell year on year, as sales of raw materials for blowing agents declined due to sluggish housing starts in major countries. At the same time, sales of agrochemical-related products declined in negative reaction to advance shipments at the end of the previous fiscal year.		
FY	2019	2020	2021	2022	2023											
Sales	21.3	16.2	20.9	23.3	17.0											
Fertilizers	<table border="1"> <tr><th>FY</th><td>2019</td><td>2020</td><td>2021</td><td>2022</td><td>2023</td></tr> <tr><th>Sales</th><td>11.7</td><td>10.4</td><td>11.2</td><td>14.7</td><td>10.9</td></tr> </table>	FY	2019	2020	2021	2022	2023	Sales	11.7	10.4	11.2	14.7	10.9	Sales were lower year on year due to a slowdown in cargo movement of distribution inventories and the impact of limited purchasing in response to June and November price reductions.		
FY	2019	2020	2021	2022	2023											
Sales	11.7	10.4	11.2	14.7	10.9											
Glass Business	31.9%	Glass	<table border="1"> <tr><th>FY</th><td>2019</td><td>2020</td><td>2021</td><td>2022</td><td>2023</td></tr> <tr><th>Sales</th><td>136.2</td><td>105.4</td><td>104.7</td><td>46.9</td><td>51.2</td></tr> </table>	FY	2019	2020	2021	2022	2023	Sales	136.2	105.4	104.7	46.9	51.2	While construction demand dipped lower year on year, sales of architectural glass increased amid product price revisions. Sales of automotive glass increased year on year with the full-year recovery in sales volume and continued product price revisions.
		FY	2019	2020	2021	2022	2023									
Sales	136.2	105.4	104.7	46.9	51.2											
Glass Fiber	<table border="1"> <tr><th>FY</th><td>2019</td><td>2020</td><td>2021</td><td>2022</td><td>2023</td></tr> <tr><th>Sales</th><td>8.0</td><td>7.0</td><td>7.1</td><td>7.8</td><td>8.2</td></tr> </table>	FY	2019	2020	2021	2022	2023	Sales	8.0	7.0	7.1	7.8	8.2	Despite a decrease in demand for electronic materials, sales rose year on year with the recovery in automotive production.		
FY	2019	2020	2021	2022	2023											
Sales	8.0	7.0	7.1	7.8	8.2											

Current Initiatives (2024)	2030 Vision	Representative Products and Fields
<ul style="list-style-type: none"> • New etching gas for logic applications at 2nm and beyond • Construct 20% F2/N2 factory in Taiwan • Customer-oriented R&D at Taiwan Research Center • Consider a collaboration with Foosung of South Korea • NEDO GI Fund subsidy to study the mass production of SiC wafers • Started customer sample work of bonding materials for power semiconductors 	<p>Focus on advanced semiconductor materials and power semiconductors</p> <ul style="list-style-type: none"> • Provide solutions for PFAS-free and GHG reduction • Begin mass production of SiC wafers • Expand sales to 2.4 times current level 	<ul style="list-style-type: none"> ● High purity gas for semiconductor processes 
<ul style="list-style-type: none"> • Maintain leading position as a supplier of pharmaceutical ingredients • Ensure stable supply by building a strong supply chain • Become compliant with the latest Japan-U.S.-Europe GMP • More than 30 years of marketing inhalation anesthetics and more than 1 billion cases sold across more than 113 countries 	<p>Improve human health through APIs for inhalation anesthesia</p> <ul style="list-style-type: none"> • Maintain our position as a leading company in the supply of bulk APIs for inhalation anesthesia • Maintain sustainable profitability • Advance R&D in regenerative medicine 	<ul style="list-style-type: none"> ● Sevoflurane 
<ul style="list-style-type: none"> • Develop supply chain in the U.S. • Respond to regulatory legislation in each country 	<p>Contribute to the environment through the EV electrolyte business</p> <ul style="list-style-type: none"> • Triple sales volume (to 100,000 tons) • Commercialize next-generation battery materials (business sales target: 100 billion yen) 	<ul style="list-style-type: none"> ● Electrolytes and additives for lithium-ion batteries 
<ul style="list-style-type: none"> • Identify the needs for mandatory energy conservation standards (for all buildings) met through HFO blowing agents • Expand sales of nonflammable HFO solvents offering high cleaning power • Develop new products (PFAS-free products, etc.) 	<p>Enhance fluorine technologies to expand next-generation high-performance products</p> <ul style="list-style-type: none"> • Roll out HFO Products on a global scale • Meet compliance of functional material products for PFAS regulations • Optimize production system (business sales target: 20 billion yen) 	<ul style="list-style-type: none"> ● Blowing agent for high-performance heat insulating 
<ul style="list-style-type: none"> • Start sales of reduced-plastic fertilizers (reduces resin volume by approximately 10%) • Scheduled to begin sales of resin-free non-plastic coated fertilizers in 2027 	<p>Solve social issues in agriculture through environmentally friendly coated fertilizers</p> <ul style="list-style-type: none"> • Contribute to sustainable agriculture (food security) by offering non-plastic coated fertilizers • Secure stable profitability 	<ul style="list-style-type: none"> ● Coated fertilizers and use cases 
<ul style="list-style-type: none"> • Pursue human resources strategies with an eye to the future • Implement sales strategies that minimize costs based on production capacity and pass on inflationary costs of raw materials and fuel to prices • Pursue IT and DX • Develop and sell new high value-added products (eco-glass, etc.) • Explore proactive capital investment based on business strategy 	<p>Focus on stable revenue contribution</p> <ul style="list-style-type: none"> • Stable revenue contribution • Provide safe and secure products that are environmentally friendly and comfortable 	<ul style="list-style-type: none"> ● Automotive glass 
<ul style="list-style-type: none"> • Capture demand for rubber belts for automobiles, semiconductor manufacturing equipment, etc. • Reduce CO₂ and other emissions through fuel conversion • Step up recycling • Automate facilities, implement DX 	<p>Increase profitability and improve business value</p> <ul style="list-style-type: none"> • Double profitability • Establish an integrated, environmentally friendly structure, from raw materials to manufacturing (business sales target: 10 billion yen) 	<ul style="list-style-type: none"> ● Soundproofing and heat insulation materials for automobiles 

Semiconductors and Power Semiconductors

Flagship Products

Manufacture and sale of high-purity gases for semiconductor processes, resist materials, and pattern collapse prevention agent ("Pattern Keeper")

Business Objectives

Focus on advanced semiconductor materials and power semiconductors

2030 Vision

- Provide PFAS-free and GHG* reduction solutions
- Begin mass production of SiC wafers
- Achieve 2.4 x higher sales compared to FY2023

* Greenhouse gases

Message From the Head of Business

The Electronic Materials business considers advanced semiconductors and power semiconductors as growth businesses. We work to develop new products and expand global sales channels to achieve VISION 2030. We received high evaluations of our new etching gases (the CEG® Series) from semiconductor manufacturers. These evaluations are in response to trends toward miniaturization and higher integration of semiconductors, as well as the growing need for environmentally friendly products, including GHG reduction and PFAS-free products. We also focus on the development of SiC wafers, the substrates for power semiconductors, and other peripheral materials for power semiconductors to help achieve a decarbonized society.



Executive Officer, General Manager, Electronic Materials Sales Department
Tadayuki Kawashima

Medium- to Long-Term Strategy for Our 2030 Vision

The Electronic Materials business aims for a consolidated net sales of 47 billion yen in 2030, 2.4 times higher than FY2023 levels. To this end, we will expand our lineup for etching gas for cutting-edge semiconductors and other high-performance products. We will also expand GHG-reduction, PFAS-free, and other environmentally friendly products to achieve this target. We strive to develop high-quality SiC wafers using the NEDO GI fund and other high-value-added products for power semiconductors, striving for early mass production. We also aim to create high-quality, safe smart factories that utilize digital transformation.

FY2024 Initiatives

The miniaturization of semiconductors has led to changes in GAA and CFET transistor structures, leading to growing demand for etching processes with high selectivity at cryogenic temperatures. We released and began supplying several new etching gases in response to such demand, as well as to the increasing environmental need to reduce GHGs. We also began deliberating the construction of a gas production base in Taiwan in response to localization by overseas customers. Deliberations also include exploring collaborations with Fooksung for fluorinated gases and establishing a local production system in South Korea.

ESG Initiatives

Central Glass resolved to withdraw early from the NF₃ business due to its high global warming coefficient. We strive to accelerate our development and provision of environmentally friendly products, including GHG reduction and PFAS-free products. We will also accelerate the development of high-quality, cost-competitive 8-inch SiC wafers to achieve a carbon-neutral society. We began securing a sustainable logistics network for existing gas products to address the 2024 logistics problem and create energy-saving factories through digital transformation.

SWOT Analysis: Strengths, Weaknesses, Opportunities, Threats

- R&D-oriented company engaging in semiconductor gas business and semiconductor chemical solutions business
- Integrated manufacturing (fluorite -> anhydrous hydrofluoric acid -> fluorinated chemical products) in our mother factory in Japan
- Early withdrawal from high-GWP NF₃ business and focusing our development resources on new low-GWP gases, PFAS-free products, and other environmentally friendly products

- Growing needs for environmental responses such as decarbonization by semiconductor manufacturers
- Accelerated adoption of new materials due to changes in device structure along with trends toward higher semiconductor density and power savings
- Shifts to localization among overseas customers

- Dependence on China for W-metal, fluorite, and other raw materials (we are deliberate on introducing non-Chinese sources)
- Insufficient overseas development system (we will enhance joint research with imec in Belgium and accelerate customer-oriented R&D at the Taiwan Research Center)
- Overseas production base shortage (we began deliberations on the possibility of securing local production bases in Taiwan and South Korea)

- Intensifying competition with local suppliers (we will shift to high value-added products by establishing local production systems and expand intellectual property)
- Supply chain disruptions stemming from geopolitical risks (we will diversify raw material sources)

C G C

How Semiconductors are Made

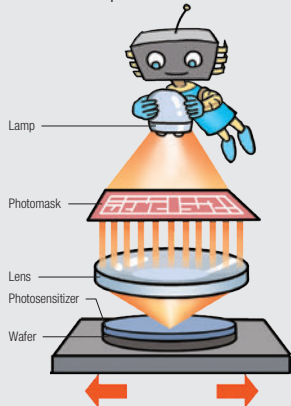
Design Circuits and Patterns

Create Photomasks

We create negative photoresists for IC patterns to be etched onto wafers, etching patterns onto glass one chip at a time.

Form Pattern on Wafer Surface

We etch patterns on wafer surfaces. As shown in the following picture, we use a lens to reduce and transfer the patterns onto a very small scale. We then develop the wafers.

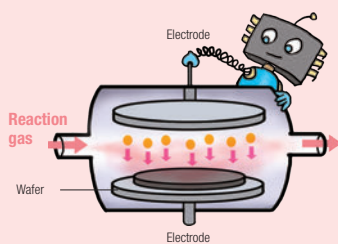


Etching

We remove unwanted oxide film by etching the developed wafers. Then, we remove the remaining resist.

• High-purity etching gases

The CEG® Series, HF, 20% F₂/Ar, and other innovative etch gases with low environmental impact, suitable for 3D devices and advanced materials

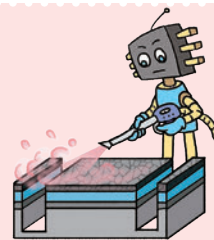


Remove Resist and Clean

We use oxygen plasma to remove the remaining photoresist after etching. Wafers are then immersed in a chemical solution in cleaning equipment to remove the remaining impurities on the wafer.

• Pattern Keeper

Prevent pattern collapse when drying wafers in the cleaning process

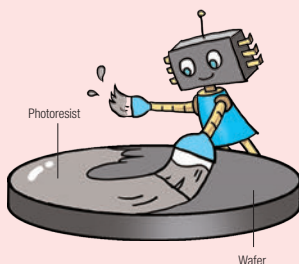


Apply Photoresist

We apply a thin, even layer of a photosensitive agent called photoresist to surfaces to make wafers photosensitive.

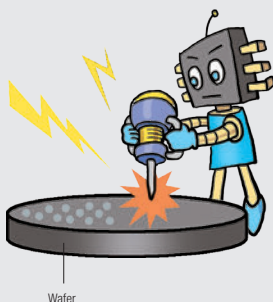
• Photoresist materials

Various fluorine-containing monomers and polymers, which offer high water repellency and solubility in developing solutions



Conduct Oxidation, Diffusion, CVD, and Ion Implantation

We implant the necessary ions into the wafer to create components.



Form Electrodes

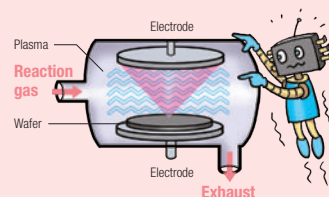
We create an aluminum metal layer for electrode wiring on wafer surfaces. We form an aluminum metal film for electrode wiring on the surface of the wafer by sputtering an aluminum target using an inert gas plasma.

• High-purity deposition gases

Deposition gases (WF₆, trimethylsilane)

• High purity cleaning gases

Deposition equipment cleaning gases (ClF₃, 20% F₂/N₂)



Business Strategies

Medi-Chemicals Business

Life Sciences

Flagship Products

Chemicals for API (active pharmaceutical ingredients), including those for inhalation anesthesia, intermediates, and pharmaceuticals



Business Objectives

Improve human health through inhalation anesthesia APIs

2030 Vision

- Maintain our position as a leading company in the supply of bulk APIs for inhalation anesthesia
- Maintain sustainable profitability
- Advance R&D into regenerative medicine fields

Medium- to Long-Term Strategy for Our 2030 Vision

The Medi-Chemicals Business will continue our tireless efforts to strengthen the supply chain further and comply with the latest GMP in each country as a leading supplier of sevoflurane, an API for inhalation anesthesia. In this way, we aim to maintain and strengthen a reliable and stable supply structure. We will also engage in R&D activities and explore business models to launch new products in regenerative medicine.

Message From the Head of Business

The Medi-Chemicals Business conducts R&D and the mass production of bulk pharmaceutical APIs and intermediates leveraging our strength in organic fluoride synthesis technologies. Our business overcame numerous failures and hardships with our unique technologies and ideas, improving lifestyles and health by providing sevoflurane, an API for inhalation anesthesia, and other such products. We will continue to take on further challenges, focusing on regenerative medicine as a new target area and introducing new products to the market.



General Manager, Medi-Chemicals Sales Department

Koichi Miyauchi

FY2024 Initiatives

The intensifying competition with generic medicine in the pharmaceutical market is no exception for sevoflurane, an API for inhalation anesthesia that our business manufactures and supplies. A key issue we face in this environment is how to maintain or expand sales volume. We work closely with our customers (pharmaceutical companies) to address this issue and maintain sales volumes in the countries in which we currently conduct sales. We also deliberate entering new markets where our products are not yet sold. Other initiatives we pursue include strengthening our stable supply (through diversifying material sources) and implementing modal shifts (considering the switch to ships for delivery in Japan).

ESG Initiatives

The Ube Plant is adjacent to the Ube port. This location allows us to implement initiatives to reduce CO₂ emissions by switching product transportation in Japan from trucks to ships. We are currently acquiring data, etc., through trial transportation. The Medi-Chemicals Business also has experience in switching from truck to rail and sea transportation for certain raw materials in Japan. We also work to recover and recycle waste liquids and raw materials by collaborating with our research, engineering, and manufacturing divisions.



SWOT Analysis: Strengths, Weaknesses, Opportunities, Threats

- Production system that allows integrated production from hydrofluoric acid, our main raw material
- Quality assurance support backed by advanced analysis technologies
- Manufacturing quality management system that continues to comply with the FDA inspection criteria, etc.
- Experience in conducting joint development with countless pharmaceutical companies

- Existing products are customized for specific drugs and medical devices, making it difficult to expand sales or develop new applications
- Mass production bases located in Japan only
- High costs and low success rates in drug development

- Market expansions due to aging populations in developed countries and higher healthcare standards in developing countries
- Market launch and growth for regenerative medicine

- Generic medicine expansion and the curtailing of medical expenses
- Stricter regulation of fluorine compounds through PFAS regulation

Business Strategies

Energy Materials Business

Batteries

Flagship Products

Electrolytes and additives for lithium-ion batteries

Business Objectives

Contribute to the environment through the EV electrolyte business

2030 Vision

- Triple sales volume (100,000 tons)
- Commercialize next-generation battery components
- 100 billion yen sales target

Medium- to Long-Term Strategy for Our 2030 Vision

The Energy Materials Business will continue to expand sales to existing customers in Japan and overseas. At the same time, we will research and develop new additives, new electrolyte compositions, and next-generation battery materials to meet customer needs and acquire new customers. We strive to first secure a presence in North America by establishing production bases with our partners in North America. We are committed to leveraging our existing manufacturing bases in Japan, Korea, China, and Europe and maximizing our global supply chains and technological capabilities to receive orders.

ESG Initiatives

Electric vehicles are powered by lithium-ion batteries and do not emit CO₂ when operated, contributing significantly to preventing global warming. Electrolytes are one of the four major components of lithium-ion batteries and play a role in reducing CO₂ emissions. LiPF₆ is a main raw material of our electrolytes manufactured by our subsidiaries and affiliates using low-cost, energy-saving processes based on our proprietary technology. Our manufacturing is completely environmentally friendly, from raw materials to production, transportation, and product applications.

SWOT Analysis: Strengths, Weaknesses, Opportunities, Threats

- Enhanced battery characteristics through the use of proprietary additives
- Technological capabilities to propose new electrolyte compositions suitable for various battery manufacturer cells
- Global supply system with manufacturing facilities in Japan, Korea, China, Europe, and the U.S.
- Capability to procure stable and low-cost raw materials by utilizing multiple raw material sources and our raw material supply chains in Japan and overseas.

- Steady annual growth in demand for EVs and large storage batteries on a global basis against a backdrop of energy issues and efforts to reduce CO₂ emissions
- Trends in the U.S. and European countries to shift away from Chinese manufacturers in battery-related industries
- Penetrating the U.S. market in response to the U.S. IRA bill
- Local production for local consumption in the battery industries in Europe and the U.S.

FY2024 Initiatives

We will continue to expand sales to existing customers while strengthening our research and development of new additives and electrolyte compositions to acquire new customers. We view North America as a priority market for development, securing manufacturing bases in the continent through collaboration with Duksan of South Korea. The Energy Materials Business will also accelerate our global expansion of raw material procurement toward a more multilayered supply chain in response to the shift away from China as well as the IRA bill in the U.S. Furthermore, we are exploring sodium-ion batteries and other next-generation rechargeable battery material businesses.

Message From the Head of Business

We expect steady growth of large batteries used in EVs and other products due to compliance measures with the IRA bill and European battery regulations, as well as battery manufacturers in each region localizing production near consumption areas. Under such circumstances, we secured bases in the U.S. in addition to our bases in Japan, Korea, China, and the Czech Republic. We also engage in active business development, targeting the worldwide market and establishing our presence in pivotal global areas with a target sales volume of 100,000 tons. The Energy Materials Business is committed to contributing to further global environment preservation.



General Manager, Energy Materials Sales Department
Masaaki Kawakami



Essential Products
Lifestyle, Environment, and Food

Flagship Products

HFO products (blowing agents and solvents), fluorine-containing functional materials, and active ingredients and intermediates for agrochemicals

Business Objectives

Enhance fluorine technologies to expand next-generation high-performance products

2030 Vision

- Expand HFO product sales
- Develop and expand sales of functional material products
- Target 20 billion yen in sales, mainly from growth of HFO products

Medium- to Long-Term Strategy for Our 2030 Vision

The blowing agent business strives to expand sales by capturing the needs arising from the mandatory energy conservation standards to be applied to all buildings in Japan in 2025. The solvent business will capture demand for alternatives to current-generation solvents, launch new solvents to complement HFO solvents, and promote overseas sales. We will also develop new functional products, particularly PFAS-free products, aiming for 20 billion yen in sales.

Message From the Head of Business

The Applied Chemicals business utilizes our core (fluorine) technologies to provide a wide range of products from blowing agents, solvents, functional materials, and active ingredients for agrochemicals. We produce earth-friendly blowing agents and solvents with an extremely low global warming potential (GWP) that do not harm the ozone layer. We also ensure proper compliance with the recent regulations on the use of organic fluorine compounds (PFAS) proposed by the European Union and strengthen our sales. Over the medium to long term, the Applied Chemicals business is committed to developing highly original PFAS-free products based on our core technologies and expanding business by providing environmentally friendly and safe products.



Executive Officer, General Manager, Applied Chemicals Sales Department

Masatomi Kanai

FY2024 Initiatives

The blowing agent business will contribute to domestic user BCPs as the only manufacturer of HFO-1233zd(E) in Japan with our stable inventories. We will also strengthen our direct delivery services. The solvent business will also contribute to improving the global environment and the work environment at cleaning sites through the provision of CELEFIN® 1233Z. This product offers high environmental and safety performance as a substitute for HFCs, HFEs, and brominated solvents. We will also strive to further reduce costs for other functional and agrochemical products to address the intensifying competition from companies in emerging countries.

ESG Initiatives

We will offer a wide range of HFO products with extremely low GWP to help solve global warming issues. HFO-1233zd (E) for blowing agent applications offers better insulation performance than conventional products, likely providing energy-saving effects. CELEFIN® 1233Z for solvent applications is nonflammable and offers superior cleaning performance, meeting the needs of society to minimize fire risks at work sites.

SWOT Analysis: Strengths, Weaknesses, Opportunities, Threats

- S**
- Integrated manufacturing (fluorite -> anhydrous hydrofluoric acid -> fluorinated chemical products)
 - Provision of HFO products with extremely low GWP
 - Provision of HFO solvents with both cleaning power and nonflammability

- W**
- Dependence on China for fluorite, a major material (we are securing stable domestic stock and expanding the use of fluorite not produced in China in response)
 - Resources for market development, information gathering, etc., are spread too thin due to our diverse range of products in a wide range of industries

- O**
- Expanding demand for products with low GWP in response to global warming
 - Expanding demand for products made in Japan due to heightened geopolitical risks
 - Increased demand for PFAS-free products

- T**
- Tarnished image of fluorochemical products due to the the proposed PFAS regulations in Europe (member industry associations and individual companies are advocating and lobbying for appropriate PFAS regulation and we are accelerating R&D for PFAS-free products)
 - Cost competition with companies in emerging countries (we will reduce costs through improved productivity and DX, develop new products, and increase intellectual property assets)

Business Strategies

Fertilizers Business

Central Chemical Co., Ltd.

Essential Products
Lifestyle, Environment, and Food

Flagship Products
Coated fertilizer (Cera-coat R), NPK compound fertilizer, NK compound fertilizer, ammonium chloride, and mixed fertilizer

Business Objectives

Solve social issues in agriculture through environmentally friendly coated fertilizers

2030 Vision

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

Medium- to Long-Term Strategy for Our 2030 Vision

The Fertilizers business will accelerate commercial production of environmentally friendly coated fertilizers for agriculture that do not rely on plastics. We aim to launch these products in 2027 after conducting field elution tests in 2025 and cultivation tests in 2026.

We also formed a development team to utilize underutilized resources in Japan to address the MIDORI Strategy for Sustainable Food Systems. The Fertilizers business is committed to expanding chemical fertilizers using wood combustion ash and poultry litter combustion ash, aiming to introduce such resource-recycling fertilizers on the market.

Message From the Head of Business

Central Chemical manufactures and sells chemical fertilizers, mainly coated fertilizers (Cera-coat R). Cera-coat R is a labor-saving fertilizer that controls elution to suit crop growth, but we also consider it urgent to solve recent marine plastic pollution issues. To this end, we launched plastic-reduced Cera-coat R and succeeded in developing a plastic-free environmentally friendly coated fertilizer. Central Chemical will continue to expand sales and scale up these fertilizers while utilizing livestock manure combustion ash, wood ash, and other unused resources to create a lineup of environmentally friendly fertilizers.



General Manager, Agri Business Administration Department
Naokatsu Sakata
Representative Director and President, Central Chemical Co., Ltd.

FY2024 Initiatives

The Japanese agriculture industry faces a declining and aging farmer population, resulting in demand for labor-saving fertilizers. Although we focus on Cera-coat R product sales, we will switch to Cera-coat RS products in FY2024. Cera-coat RS is environmentally friendly and features reduced amounts of plastic. Furthermore, we strive to accelerate deliberations on the mass production of plastic-free environmentally friendly coated fertilizers developed for sustainable agriculture, aiming for early market launch.

ESG Initiatives

Our flagship product, Cera-coat R, obtained the biomass mark. We list the percentage of vegetable oil used as a coating material on each renewed bag of fertilizer. Our business also transfers fertilizer bags, flexible containers, and other plastics to reuse destinations. We also strive to reduce our environmental impact by implementing modal shifts in certain areas of logistics.



SWOT Analysis: Strengths, Weaknesses, Opportunities, Threats

S

- Introducing coated fertilizer with reduced plastics through the use of proprietary technologies
- Developing plastic-free environmentally friendly coated fertilizers
- Broad lineup of advanced chemical fertilizers, coated fertilizers, and compound fertilizers adaptable to crop growth in different regions

W

- Inability to manufacture compost and organic fertilizers in-house
- Single production site located in Yamaguchi Prefecture
- Fertilizers produced in-house products can only be used for rice and wheat

O

- Three-Industry Roadmap on *Achieving Agriculture by 2030 That Does Not Rely on Coated Fertilizers That Use Plastic*
- MIDORI Strategy for Sustainable Food Systems
- Treaties on preventing of marine and other plastic pollution

T

- Export restrictions in countries where we source fertilizer raw materials
- Decreasing rice field acreage in Japan
- Decreasing food consumption due to declining population in Japan

Business Strategies

Glass Business

Central Glass Products Co., Ltd.

Essential Products

Lifestyle, Environment, and Food

Flagship Products

Architectural glass (eco-glass, disaster-prevention-safety-glass, tempered glass, mirrors, etc.)
Automotive glass (windshields, door glass, rear windows, sunroof windows, etc.)

Business Objectives

Focus on stable revenue contribution

2030 Vision

- Stable revenue contribution
- Provide safe and secure products that are environmentally friendly and comfortable

Message From the Head of Business

Central Glass Products manages the Glass business, having taken over and launched business operations in April 2023. We take earnest measures to address environmental issues of growing global concern based on the glass manufacturing technology and wealth of experience the Glass business accumulated over the years. Central Glass Products is committed to making concerted efforts to provide products and services that lead to a comfortable future for everyone.

We will continue our tireless efforts and take on challenges to grow into a highly sustainable company by improving operations and production technologies through DX, creating rewarding work environments, and providing customers with reliable, safe, and secure products.



Executive Managing Officer
Masaaki Kawase

Representative Director and
President, Central Glass
Products Co., Ltd.

Medium- to Long-Term Strategy for Our 2030 Vision

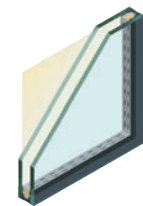
- Operate business focused on cash flow and profitability
- Take on the challenge to develop specialty products that meet market needs and contribute to the environment
- Ensure implementation of our roadmap to carbon neutrality
- Streamline the plan to produce glass furnaces by optimizing the entire plan
- Reinforce the management of quality, environment and supply chain
- Promote cost-cutting through business improvements utilizing information technology (IT) and digital transformation (DX)

FY2024 Initiatives

- Implement a future-oriented human resource strategy (recruitment, human resource education, evaluation systems, creation of a comfortable working environment)
- Implement a sales strategy that minimizes costs based on production capacity and pass on inflationary costs of raw materials and fuel to prices
- Utilize IT and DX to pursue paperless and visualization
- Develop and promote sales of new high value-added products (eco-glass, etc.)
- Explore proactive capital investment based on business strategy

ESG Initiatives

We reduced GHG emissions by 40% in our glass operations by 2022, compared to FY2013, and have been taking active measures to improve our energy conservation since. We also introduced renewable energy by converting a portion of the electricity purchased from power providers to CO₂-free energy in April 2023. The Glass business is committed to installing solar panels and implementing other measures to achieve the 60% GHG emission reduction target of the Central Glass Group for FY2030 compared to FY2013 levels.



Eco-glass

SWOT Analysis: Strengths, Weaknesses, Opportunities, Threats

- Integrated production from flat glass manufacturing to automotive and architectural glass products
- Developing new products and technologies based on a long-standing credibility with clients
- Capable of providing high-value-added products with high environmental contribution

- Increased demand for high value-added glass contributing to energy conservation and carbon neutrality (eco-glass, thermal insulating glass, UV/IR-cut glass, thin flat glass, etc.)
- Responding to CASE in the automotive glass business (automotive technology trends: connected, autonomous driving, etc.)

- Necessity of reducing GHG emissions and making a major capital investment in the replacement of facilities for the equipment industry

- Reduction of large GHG quantities generated in glass manufacturing processes
- Soaring energy procurement costs
- Decreasing automobile shipments and housing construction due to declining population in Japan

Business Strategies

Glass Fiber Business

Central Glass Fiber Co., Ltd.

Essential Products

Lifestyle, Environment, and Food

Flagship Products

Roving, chopped strand, chopped strand mat, milled fiber, rubber coated glass cord, glass wool for vehicles

Business Objectives

Increase profitability and improve business value

2030 Vision

- Double profitability
- Establish an integrated, environmentally friendly structure from raw materials to manufacturing
- 10 billion yen sales target

Medium- to Long-Term Strategy for Our 2030 Vision

The Glass Fiber business will enhance future growth and our contributions to the environment to increase the value of our business.

The glass fiber business aims to continue generating steady profits by making appropriate investments to ensure stable operations, given that long fibers have diverse applications in social infrastructure. We will also enhance profitability by focusing on developing and expanding sales for new products for electronic materials, as well as strengthening our supply structure of glass cords for rubber reinforcement.

The glass wool business works to achieve stable business operations. Our efforts include capturing the growing need for automobile sound insulation materials in response to tightened pass-by noise regulations, introducing new products, and encouraging recycling to reduce industrial waste.

ESG Initiatives

The Glass Fiber business has strived to improve product yield and conserve energy and worked to convert fuels used in glass furnaces. We will continue to introduce technologies that reduce GHG emissions and enhance energy efficiency in stages, establish recycling technologies, and aim for stable business operations that contribute to a recycling-oriented society.

SWOT Analysis: Strengths, Weaknesses, Opportunities, Threats

- Experience in delivering products to numerous key industries for automobiles, housing, electronic materials, infrastructure, etc.
- Technologies and product qualities cultivated over a long period of time as a glass fiber manufacturer

- Diversification of customer needs due to globalization and other factors
- Expansion of the highly-functional resin market in the electronics parts sector
- Increased demand for the lightening of automobiles and incombustible automotive materials following the trend of vehicle electrification
- Reinforcing sound insulation performance of automotive glass to respond to tightened pass-by noise regulations

- Energy-intensive business structure
- Business scale smaller compared to that of global leading manufacturers
- Periodic renewal costs of updating glass furnaces and other facilities

- Decreasing demand due to global economic slowdown
- Decreasing demand in Japan and contraction of the Japanese economy due to the declining population, etc.
- Supply chain instability due to changes in global conditions
- Soaring raw fuel material and logistics costs

Message From the Head of Business

Central Glass Fiber manages the Glass Fiber business, operating two divisions: the glass fiber division and the glass wool division. We have maintained stable business operations for more than half a century by receiving support from customers in diverse industries and providing high value-added products that meet individual needs.

We will strengthen the profitability of essential products, aiming to continue contributing to society through sustainable GHG reduction, recycling, and other business operations.



General Manager, Glass Fiber Business Administration Department

Toshhiro Fujita

Central Glass Fiber Co., Ltd.
Representative Director and President, Central Glass Fiber Co., Ltd.

FY2024 Initiatives

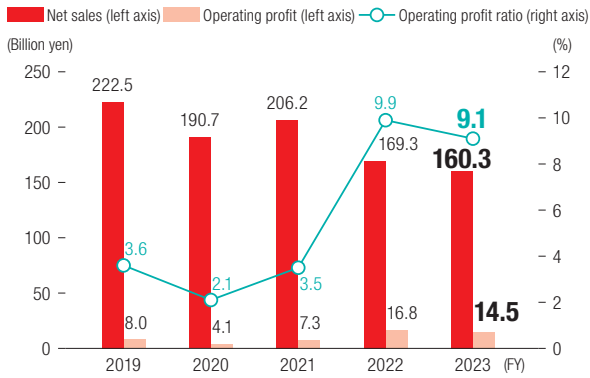
The glass fiber business will expand sales of high value-added priority products amid slow demand recovery for electronic materials and other sectors. At the same time, we will focus on developing new products and passing the increased costs of logistics, labor, and other areas onto prices.

The glass wool business will monitor automobile manufacturer trends and maintain a stable supply system. We will also automate production processes and implement DX to improve production efficiency and quality, as well as establish recycling technologies. At the same time, we will pursue activities to receive orders and meet the growing needs associated with the spread of vehicle electrification.

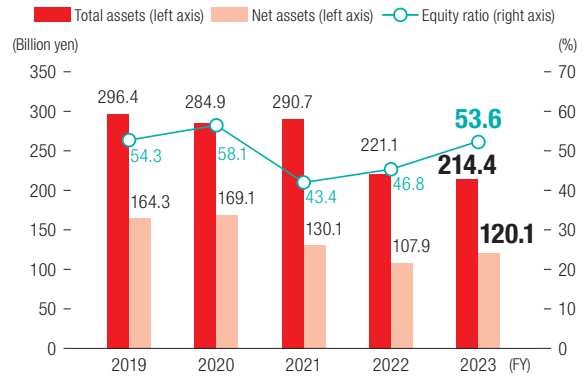
Financial and Non-Financial Highlights

Financial Highlights

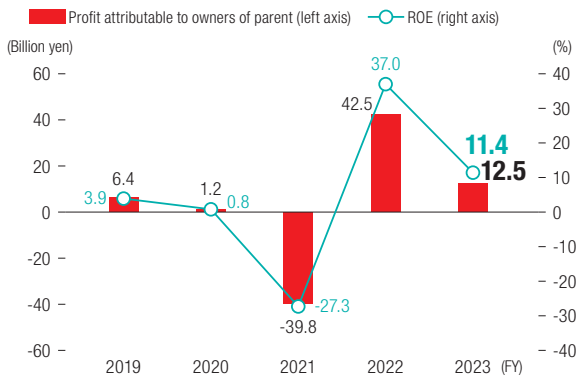
Net Sales, Operating Profit, Operating Profit Ratio



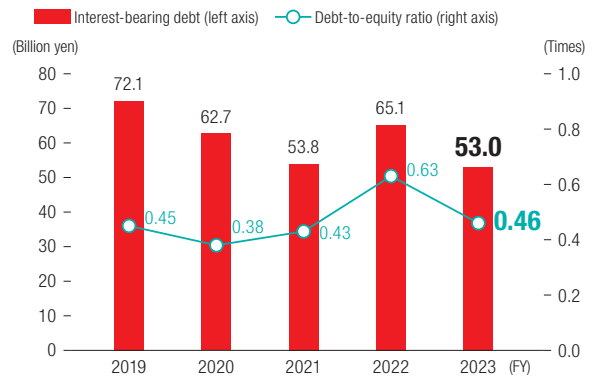
Total Assets, Net Assets, Equity Ratio



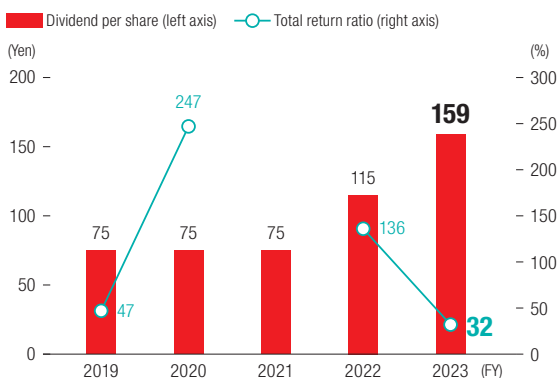
Profit Attributable to Owners of Parent, Return on Equity (ROE)



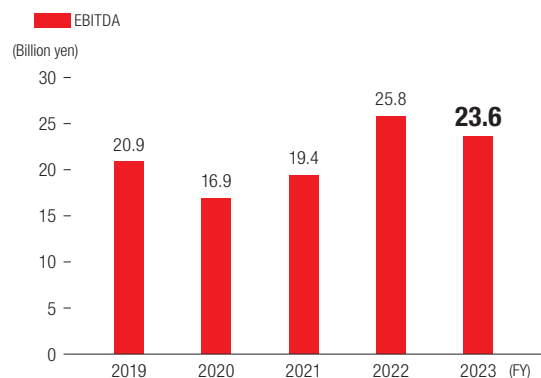
Interest-Bearing Debt, Debt-to-Equity Ratio



Dividend Per Share, Total Return Ratio

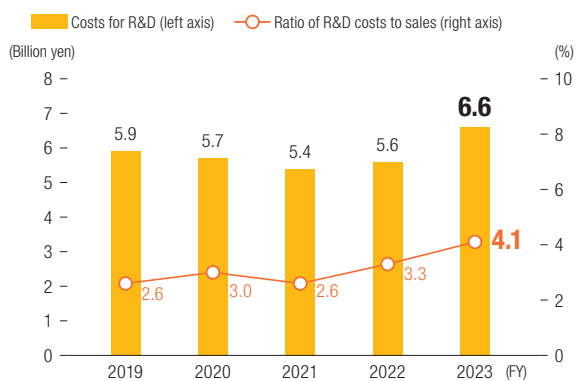


EBITDA (Operating Profit + Depreciation)

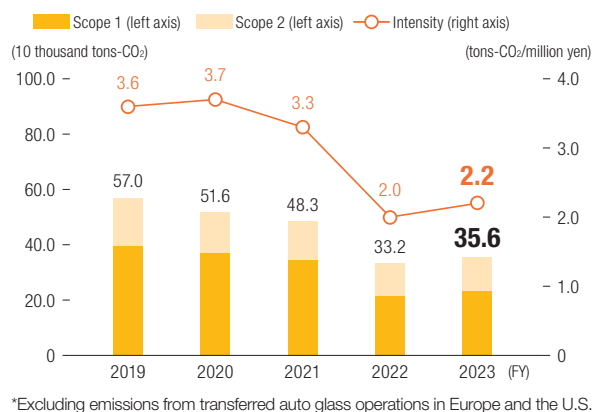


Non-Financial Highlights

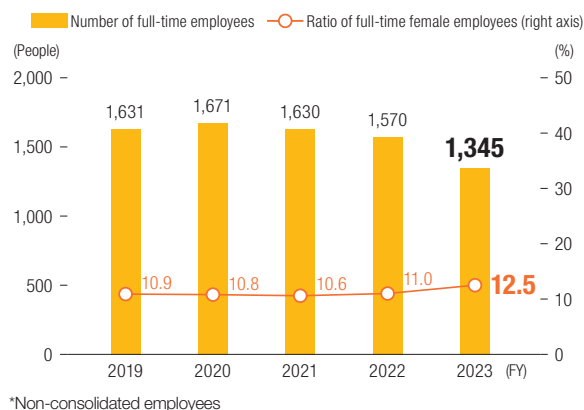
R&D Costs, Ratio of R&D Costs to Sales



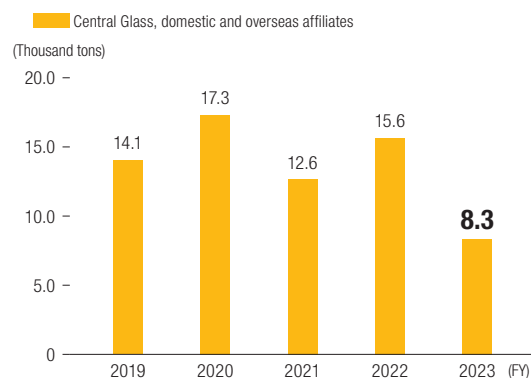
GHG Emissions (Scope 1 and 2)



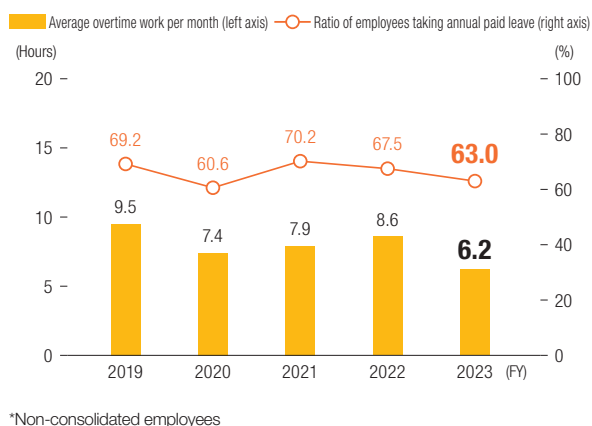
Full-Time Employees, Ratio of Full-Time Female Employees



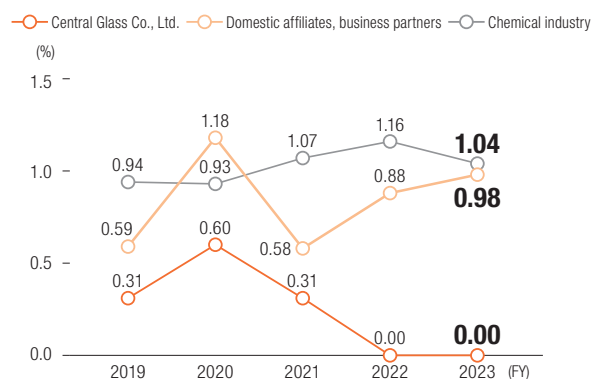
Final Disposed Amount of Industrial Waste



Average Overtime Work per Month, Ratio of Employees Taking Annual Paid Leave



Lost-Time Incident Rate



11-Year Financial Summary

Key Financial Data	FY2013	FY2014	FY2015	FY2016
Net sales	191,581	199,010	235,361	228,898
Chemicals	86,778	87,781	82,358	78,672
Glass	104,803	111,228	153,002	150,226
Operating profit	10,111	11,542	13,947	12,982
Chemicals	10,176	12,169	13,805	11,202
Glass	-60	-623	137	1,780
Ordinary income	11,715	14,321	14,615	15,091
Profit attributable to owner of parent	5,003	10,393	10,047	10,703
Total assets	241,233	282,139	277,627	314,045
Net assets	135,185	156,580	159,946	172,950
Cash and deposits	20,557	19,676	19,372	31,342
Interest-bearing debt	44,744	55,960	55,427	73,743
Capital investment	8,770	12,348	20,346	24,903
Depreciation	8,919	9,287	10,675	10,578
R&D costs	5,417	5,780	5,613	5,496
Equity ratio	55.3	54.4	56.3	54.1
D/E ratio (times)	0.34	0.36	0.35	0.43
ROE (%)	3.89	7.22	6.45	6.54
Net assets per share (yen)	3,188.82	3,688.81	3,804.85	4,156.13
Net income per share (yen)	119.58	248.42	242.00	261.02
Dividend per share (yen)	8	9	10	11
Dividend payout ratio (%)	33.4	18.1	20.7	21.1
Price-earnings ratio (PER) (times)	14.01	11.41	12.62	9.08
Price-book value ratio (PBR) (times)	0.53	0.77	0.80	0.57
Cash flow from operating activities	19,479	13,082	24,235	17,331
Cash flow from investing activities	-10,645	-23,366	-20,883	-21,442
Cash flow from financing activities	-13,285	8,611	-3,629	15,463

* Central Glass Co., Ltd. conducted a 5-for-1 reverse stock split for common shares on October 1, 2017. Accordingly, per-stock information above has been adjusted retroactively, assuming the reverse split occurred prior to October 1, 2017.

Unit: Million yen

	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023
	227,810	229,901	222,469	190,673	206,184	169,309	160,339
	81,196	79,163	78,232	78,274	94,345	114,625	100,926
	146,613	150,737	144,236	112,398	111,838	54,684	59,413
	6,039	10,135	7,975	4,064	7,262	16,757	14,526
	9,998	9,648	7,951	7,084	9,778	14,095	10,588
	-3,958	487	24	-3,020	-2,515	2,662	3,938
	6,327	11,169	8,565	4,749	11,936	19,637	16,269
	2,980	7,577	6,418	1,230	-39,844	42,494	12,478
	316,846	307,103	296,427	284,906	290,696	221,090	214,404
	175,628	168,931	164,339	169,083	130,063	107,861	120,050
	22,673	21,732	26,256	27,975	28,216	17,844	21,000
	71,029	73,350	72,109	62,704	53,848	65,092	53,006
	20,240	20,125	11,935	7,649	9,514	7,061	6,147
	12,148	12,596	12,930	12,850	12,182	9,029	9,117
	5,801	5,809	5,866	5,744	5,448	5,638	6,642
	54.4	53.8	54.3	58.1	43.4	46.8	53.6
	0.41	0.44	0.45	0.38	0.43	0.63	0.46
	1.74	4.49	3.93	0.75	-27.32	37.02	11.4
	4,255.09	4,083.74	3,978.44	4,091.41	3,115.69	4,176.04	4,637.42
	73.45	187.23	158.59	30.40	-984.58	1,222.21	503.55
	30	75	75	75	75	115	159
	40.8	40.1	47.3	246.7	-	9.4	31.6
	33.74	12.98	11.87	77.50	-	2.40	5.8
	0.58	0.60	0.47	0.58	0.67	0.70	0.63
	16,351	12,650	17,226	17,918	14,872	16,599	22,236
	-19,778	-14,336	-7,856	-3,737	-1,839	19,958	-3,338
	-5,128	291	-5,295	-13,121	-12,744	-47,039	-15,971

Corporate Information/Stock Information

Corporate Information (as of March 2024)

Corporate Outline

Corporate Name	Central Glass Co., Ltd.	Business Fields	[Chemicals Business] Electronic materials, medi-chemicals, energy materials, applied chemicals, and fertilizers
Established	October 10, 1936		
Head Office	Kowa-Hitotsubashi Bldg., 7-1 Kanda-Nishikicho 3-chome, Chiyoda-ku, Tokyo, 101-0054 Japan (Registered Head Office: 5253 Okiube, Ube City, Yamaguchi)		[Glass Business] Architectural glass, automotive glass, and glass fiber
Capital	18,168 million yen	Employees	Consolidated: 3,314 Non-consolidated: 1,345
		Net Sales	Consolidated: 160.3 billion yen Non-consolidated: 52.2 billion yen

Production Bases, R&D Bases, and Main Subsidiaries and Affiliates

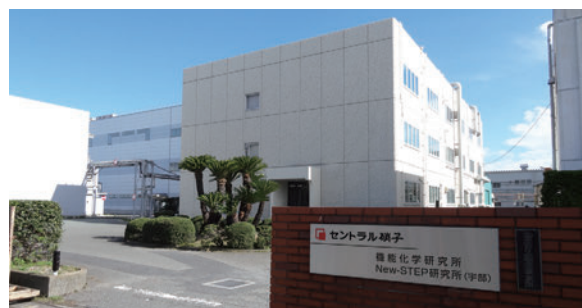
Production Bases	Ube Plant Kawasaki Plant
Research Centers	Fundamental Chemical Research Center Applied Chemical Research Center New-STEP Research Center
R&D Bases	Electronic Materials Research Center Taiwan Shonan Research Center
Subsidiaries and Affiliates	[Chemicals Business] Central Chemical Co., Ltd. Central Glass Czech s.r.o. (Czech) Giga Gas & Electronic Materials Company (Taiwan) JCEL Co., Ltd. (South Korea) Central Glass Chemspec Company Ltd. (China) Central Glass Trading (Shanghai) Co., Ltd. (China) Tosho Central Co., Ltd. Central Engineering Co., Ltd.

[Glass Business]

Central Glass Products Co., Ltd.
Central Glass Sales Co., Ltd.
Central Glass Engineering Co., Ltd.
Central Glass Plant Services Co., Ltd.
Central Saint-Gobain Co., Ltd.
Mie Glass Industry Co., Ltd.
Japan Tempered & Laminated Glass Co., Ltd.
Central Glass Fiber Co., Ltd.



Ube Plant



Applied Chemical Research Center and New-STEP Research Center (Ube)

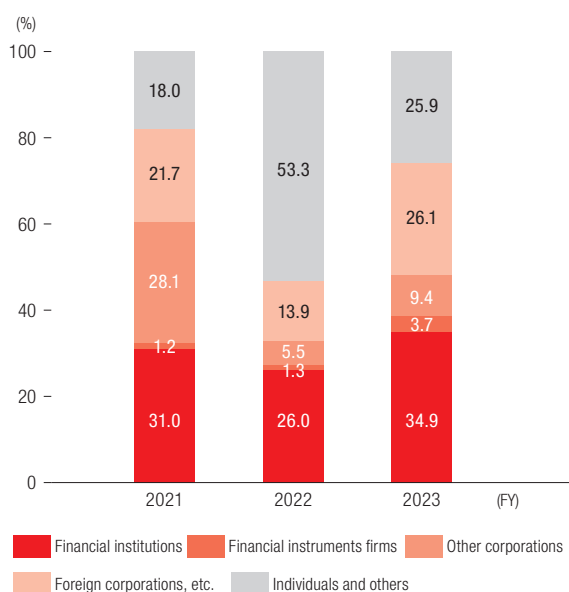


Shonan Research Center (in Shonan Health Innovation Park)

Stock Information (as of March 2024)

Stock and Shareholder Information

Listed Stock Exchange	Tokyo Stock Exchange (Prime Market)
Securities Code	4044
Total Number of Authorized Shares	171,903,980 shares
Number of Shares Issued	26,000,000 shares (including 712,884 treasury shares)
Number of Shareholders	13,817 persons



Principal Shareholders

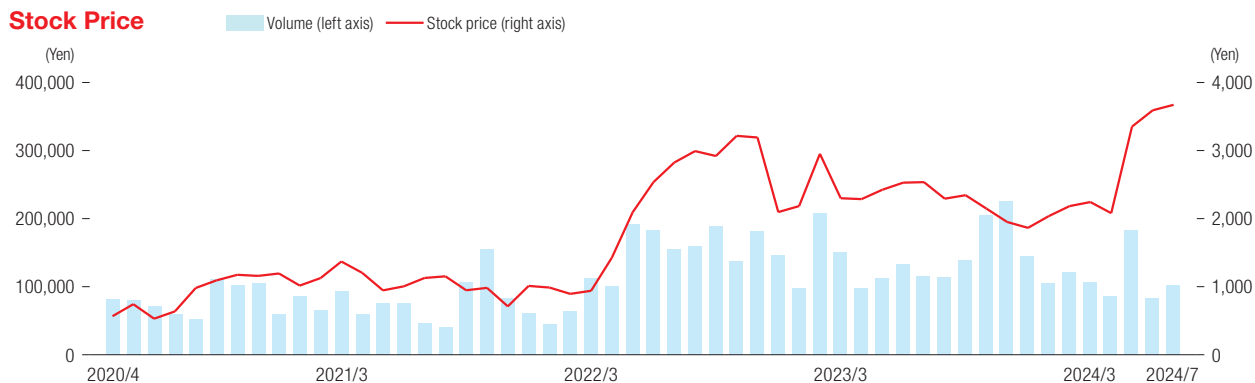
Shareholder	Number of Shares Held (thousand shares)	Shareholding Ratio (%)*
The Master Trust Bank of Japan, Ltd. (Trust Account)	2,643	10.46
Custody Bank of Japan, Ltd. (Trust Account)	1,886	7.46
Mizuho Trust & Banking Co., Ltd. as trustee for Retirement Benefit Trust of Mizuho Bank, Ltd. (re-entrusted by Trust & Custody Services Bank, Ltd.) Custody Bank of Japan, Ltd.	1,000	3.95
The Yamaguchi Bank, Ltd.	640	2.53
DFA INTL SMALL CAP VALUE PORTFOLIO	548	2.17
CG Business Partner Shareholding Association	539	2.13
CG Cooperation Company Shareholding Association	534	2.11
The Master Trust Bank of Japan, Ltd. (as trustee for Retirement Benefit Trust of The Yamaguchi Bank, Ltd.)	447	1.77
Nippon Life Insurance Company	386	1.53
Custody Bank of Japan, Ltd. (as trustee for Retirement Benefit Trust of Sumitomo Mitsui Trust Bank, Limited.)	378	1.49

* The shareholding ratio is calculated after deducting the number of treasury shares.

Dividend and Dividend Payout Ratio

FY	Dividend (yen)	Dividend Payout Ratio (%)
2019	75	47
2020	75	247
2021	75	-
2022	115	9
2023	159	32

Stock Price



Total Shareholder Return (TSR)

	FY2019	FY2020	FY2021	FY2022	FY2023
Total shareholder return (TSR)	80.5	103.1	95.1	134.9	140.0
Comparison index: TOPIX (including dividends)	90.5	128.6	131.2	138.8	196.2

CENTRAL GLASS Co., Ltd.

Central Glass Co., Ltd.

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