

Medium-Term Management Plan for FY 2022 to 2024

May 11, 2022

Central Glass Co., Ltd.

Some figures relating to the Financial Goal and Capital Policy have been revised to reflect the changes described in the "Notice concerning the Fiscal 2022 to 2024 Medium-Term Management Plan and Impact on Financial Indicators" published on September 20, 2022. Such figures have been indicated with asterisks (**).

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1. Corporate Philosophy

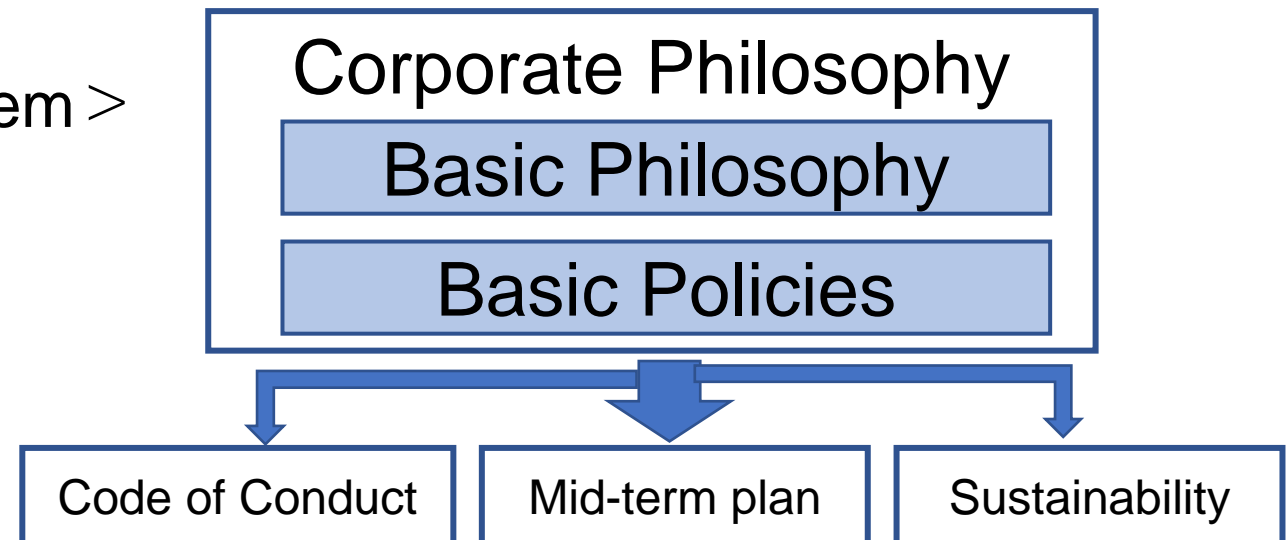
《Basic Philosophy》

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*.

*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.

< Corporate Philosophy System >



2. Long-Term Vision

Continuously Growing Company Driven by New Technologies and New Products Created through R&D



Establish a Profitable Business Model and Convert to a Highly Profitable Company

Basic Measures to Realize the Long-Term Vision

◆ Strengthen R&D as a growth driver

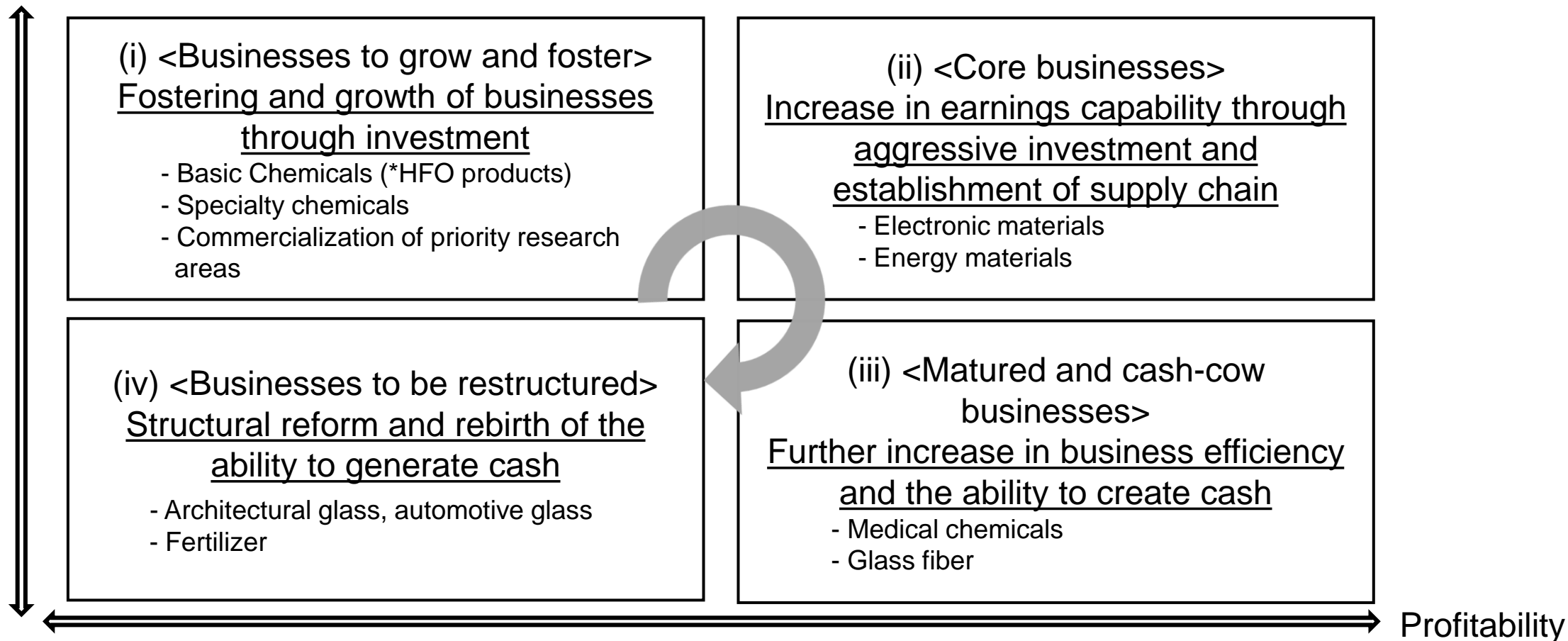
- Utilize core (fluorine) technologies to drive development of functional materials
- Accelerate acquisition of technologies in new fields with open innovation

◆ Clarify roles of each business and optimize the business portfolio

- Allocate investment and resources by priority to the growth and fostering of businesses and core businesses
- Further increase the ability to create cash in matured and cash-cow businesses, which stably create cash and secure funds for growth investment
- Establish restructuring targets for applicable businesses, including optimization of business size, for revival into a cash creation business

Business Portfolio

Growth



(*) HFO: Hydrofluoroolefin (Products that have low global warming potential (GWP) and comply with regulations on chlorofluorocarbon)

3. Medium-Term Management Plan for FY 2022 to 2024

(i)-1 Basic Policy

1. Achieve new growth by strengthening our business foundations and original technologies

- Return to a growth path
 - Concentrate managerial resources to the businesses to be grown in order to accelerate establishment of profitable business models and business expansion to growth markets
 - In the chemicals business, harvest the fruits of previous investments and continue further investment for the future
 - In the glass business, complete the structural reform and evolve toward profitable business
 - In other business, further increase earning capability and maximize free cash flow
- Continue strengthening R&D to ensure future growth
- Provide stakeholders with reassurance and reliability by increasing all employees' quality awareness

(i)-2 Basic Policy

2. Maintain a healthy financial base

- Distribute cash flows based on a well-balanced consideration of shareholder returns, investments, and financial discipline

3. Contribute to the global environment

- Reduce greenhouse gas emissions
- Provide products and technologies that contribute to reducing environmental burden

(ii) Financial Goals

ROE goal in the Medium-Term Management Plan:
Aim for achievement of 12%** ROE

		Indicator	FY 2021 Results
Financial goal	Major item	Operating Profit (100 million yen)	73
		Operating Profit Ratio	4%
	Financial indicator	ROE	(27%)
	Shareholder returns	Total Return Ratio	—
		Dividend on Equity (DOE)	2.1%
(Ref.) Management indicator	ROIC	4%	



FY 2024 Target
140
8%
12%**
At least 30%
3.6%**
6%

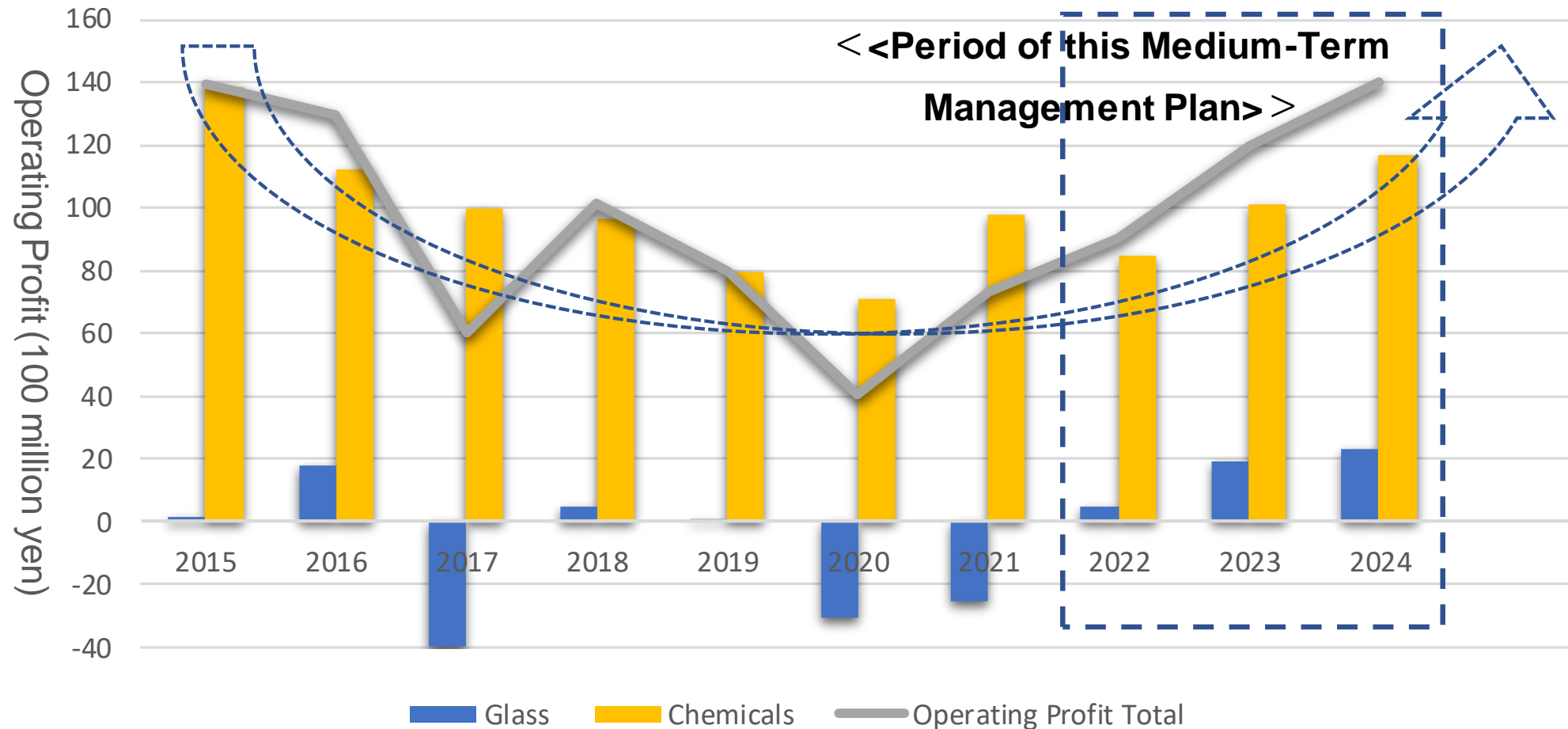
- ◆ Capital investments: 41.0 billion yen (3-year cumulative total)
- ◆ Cost for R&D: 24.0 billion yen (3-year cumulative total)

<Assumptions of Medium-Term Management Plan>

Exchange rate	JPY/USD: 110
Crude oil (CIF)	USD 102/barrel

- Chemicals business shows a trend of earnings growth
- Glass business is returning to being in the black

Trend in operating profit (by segment)



(iii) Capital Policy

Seek a capital structure focusing on optimization of investment and funding with the aim of maximization of enterprise value

<Basic policy for capital policy>

Funding	Stably and systematically raise funds through a combination of appropriate methods, taking into account the balance between funding cost and continuity (risk)
Management (Investment)	Inject capital to selected sources generating profits exceeding funding cost and cash flow exceeding invested capital
Distribution	Distribute generated cash based on a well-balanced consideration of shareholder returns, investments and financial discipline

(Unit: 100 million yen)

		3-year cumulative total
Operating CF		480
	Capital Investment	(410)
	Sales of assets	170
Investment CF Total		(240)
Free CF		240

	Dividend	(100)**
	Funding/repayment	340**
	Acquisition of treasury shares	(550)**
Financial CF Total		(310)**

<Policy for shareholder returns>

- ◆ Total Return Ratio: At least 30%
- ◆ DOE (Dividend on Equity Ratio): 3.6%**
- ◆ Acquisition of treasury shares

- Fundamentally based on the dividend criterion DOE and the dividend amount based on total shareholder return ratio and adjusted as needed

- Allocate about 50% of funds raised by sales of shares in the FY 2022 plan to acquisition of treasury shares

<Major investments>

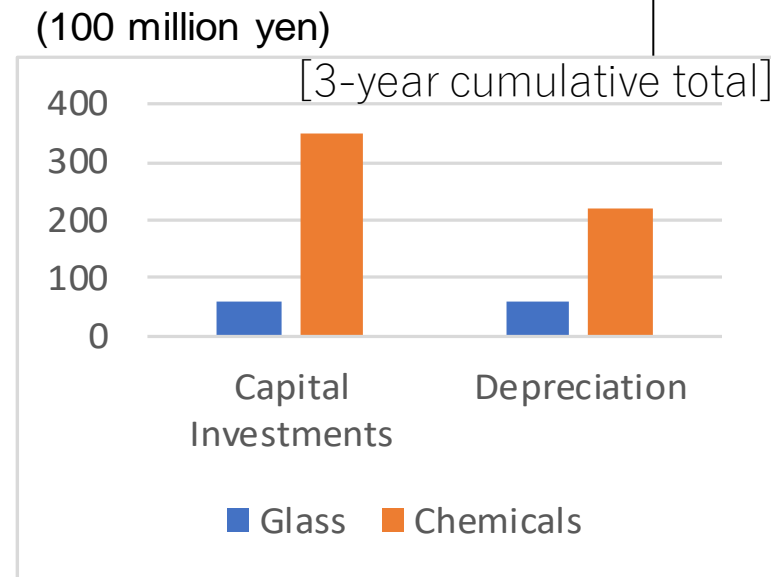
◆ Chemicals

- Invest in commercialization of priority research areas
(power semiconductor materials: From research to mass production facility)
- Electronic materials: Construct new product facilities and increase capacity
- Energy materials: Secure the ability to purchase raw materials (invest in supply chain)

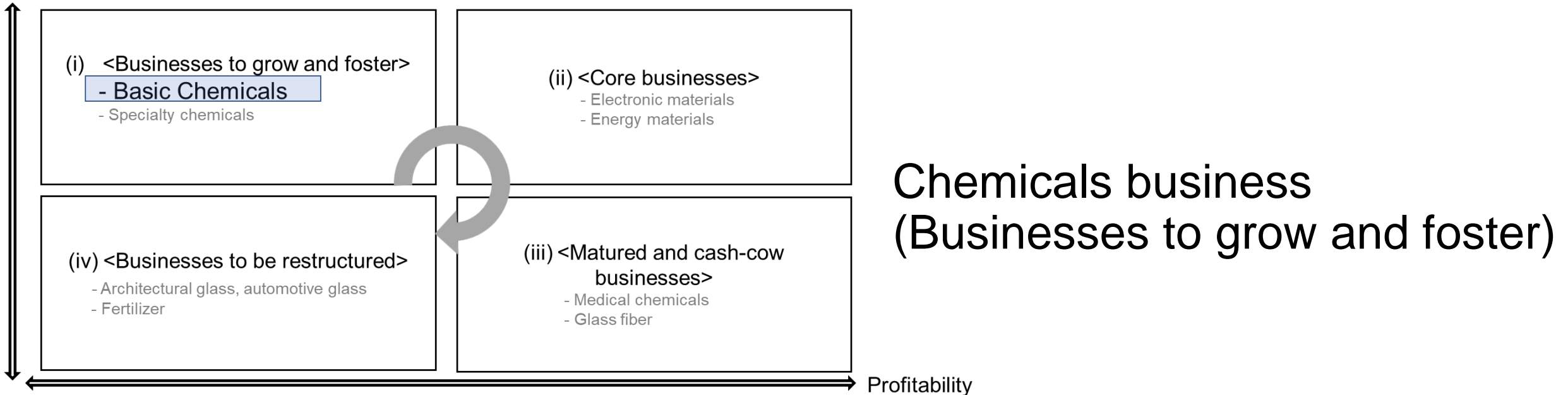
Expand manufacturing bases

◆ Glass

Invest mainly in maintenance and renewal within operating cash flow
(Keep free cash flow positive)



(iv) Overview by Business (FY 2022 to 2024)



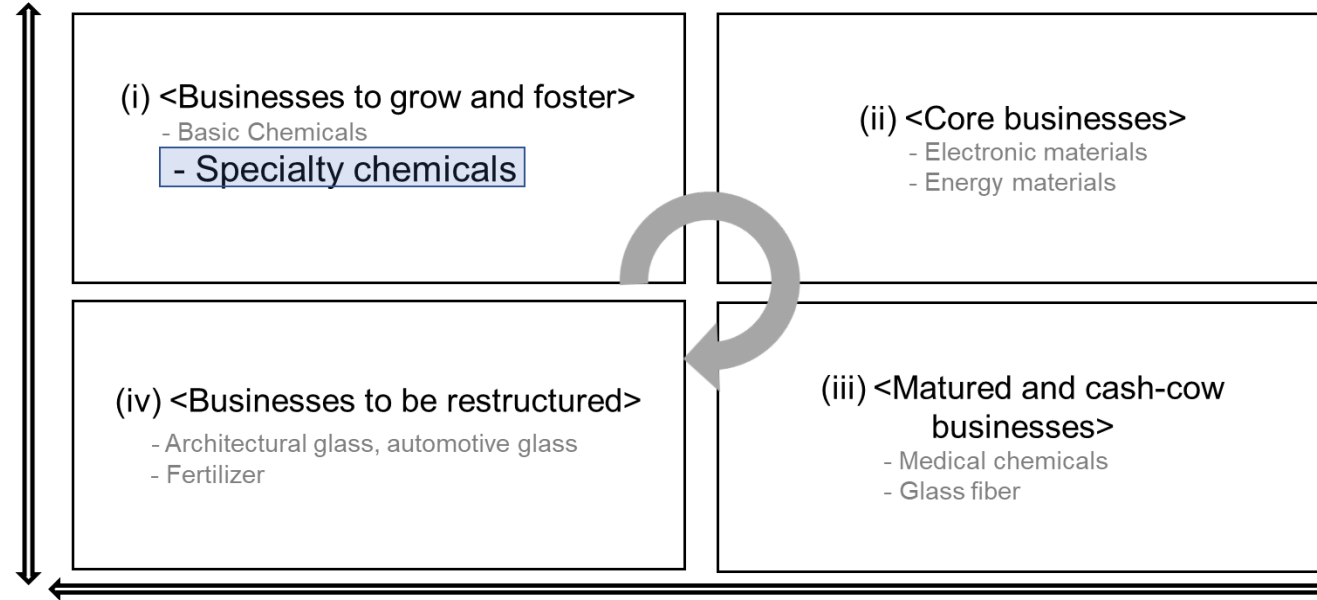
○ Basic Chemicals (Hydrofluoroolefin products such as fluorine cleaning agents and solvents, etc.)

<Market> Expecting a high market growth of HFO products because of their low global warming potential and high environmental performance

- For blowing agents among HFO products, secure revenues through stable supply
- For cleaning agents among HFO products, expand the production capacity and develop market by stimulating demand
- Implement R&D of new HFO products and enter new markets

(iv) Overview by Business (FY 2022 to 2024)

Growth



Chemicals business (Businesses to grow and foster)

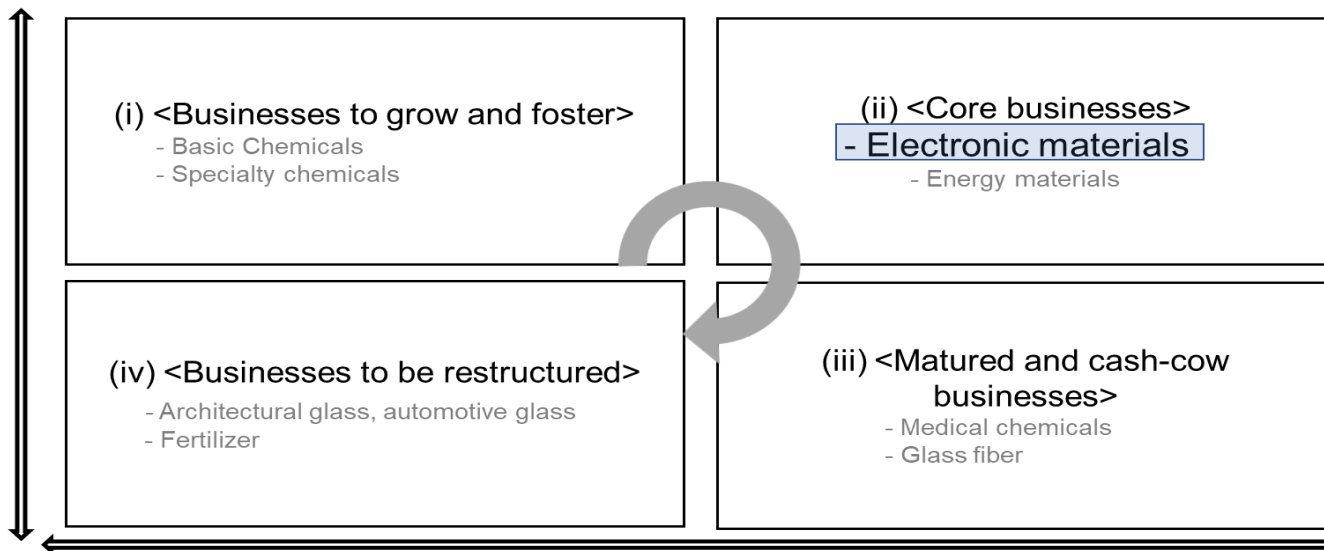
Profitability

○ Specialty chemicals (Active intermediates for agrochemicals and fluorine organic/inorganic compounds, etc.)

- Consolidate production bases and improve revenues by reviewing sales strategy
- Keep margin through price rise and sell new products including materials for resists
- Share needs by deepening the relationship with customers and develop high value-added products using core technology (fluorine technology)

(iv) Overview by Business (FY 2022 to 2024)

Growth



Chemicals business (Core businesses)

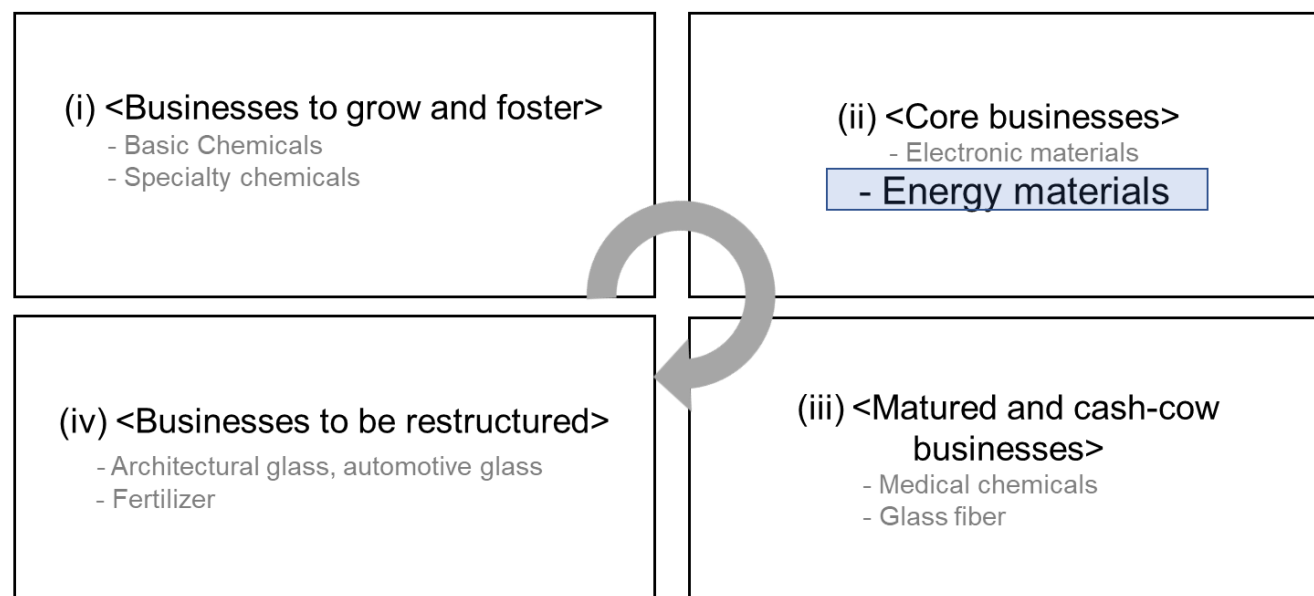
○ Electronic materials

(Products for electronic materials such as specialty gas-related products for semiconductor applications)

<Market> Demand is expanding for semiconductor materials as the semiconductor market expands.

- Reliably obtain demand by launching R&D institutions located in consumption areas to deepen the relationship with customers
- Promote sales of high value-added products created by R&D such as etching gas in cooperation with equipment manufacturers
- Advance R&D and commercialization of new products and commercialize products (such as SiC business) other than the core gas products

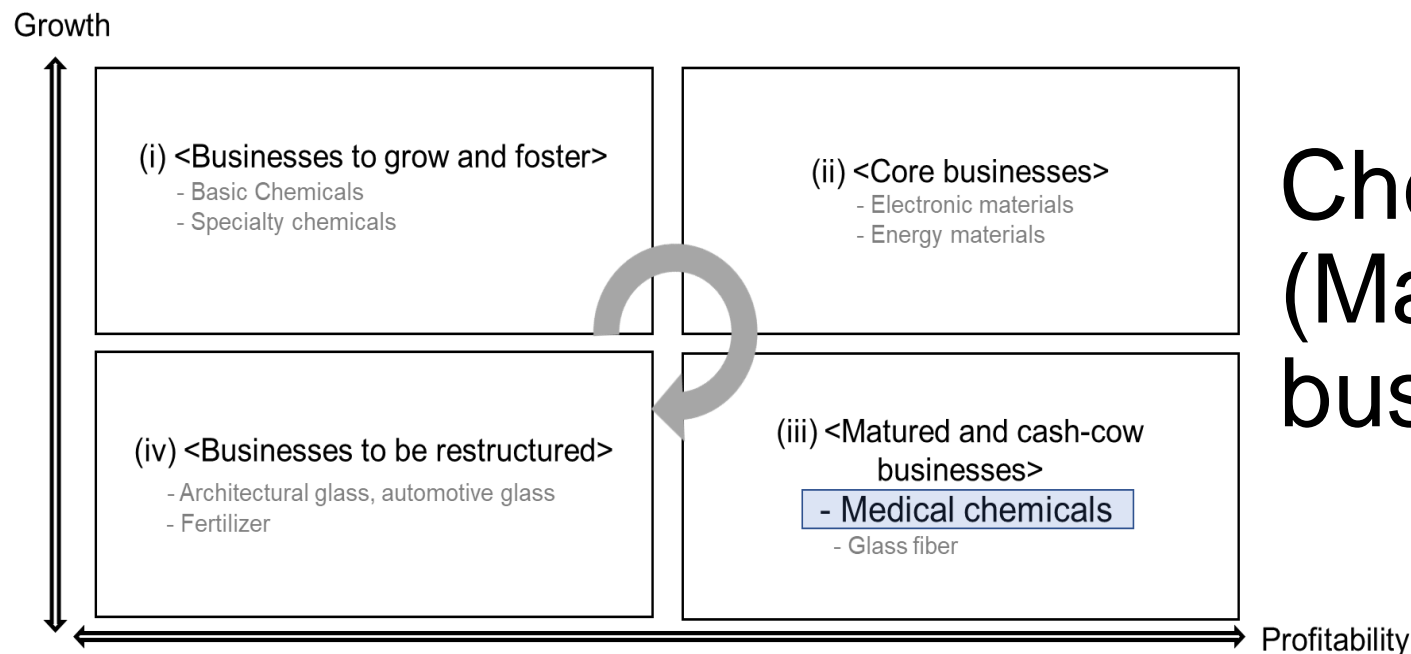
(iv) Overview by Business (FY 2022 to 2024)



Chemicals business (Core businesses)

- Energy materials (Electrolytes for Lithium-Ion batteries, etc.)
 <Market> The market of electrolytes for Li-ion batteries is significantly expanding with the expansion of the EV market.
- Place production bases in Japan, Europe, and Asia to meet user needs
- Establish the supply chain through joint ventures, secure materials, and realize stable supply
- Implement R&D of high-performance additive agents for differentiation and increasing competitiveness
- Grow customer base with high performance products and the ability to secure raw materials

(iv) Overview by Business (FY 2022 to 2024)



Chemicals business (Matured and cash-cow businesses)

○ Medical chemicals (Active ingredients & intermediates for pharmaceuticals such as anesthetics)

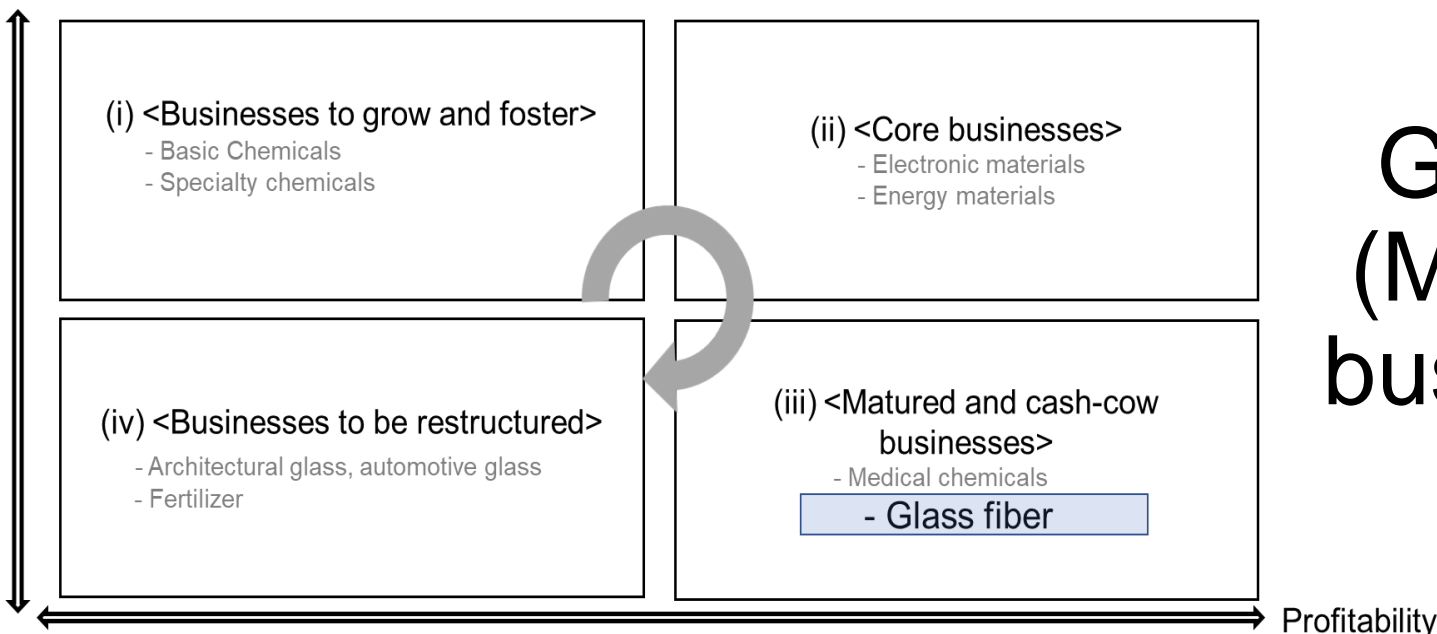
<Market> There is a sign in the pharmaceutical-related market that the slump after the onset of COVID-19 will end.

- The core product holds a certain level of share despite competition with competing and generic products.

It has the advantage in low global warming potential over competing products.

- Explore for and commercialize the next core products through aggressive R&D

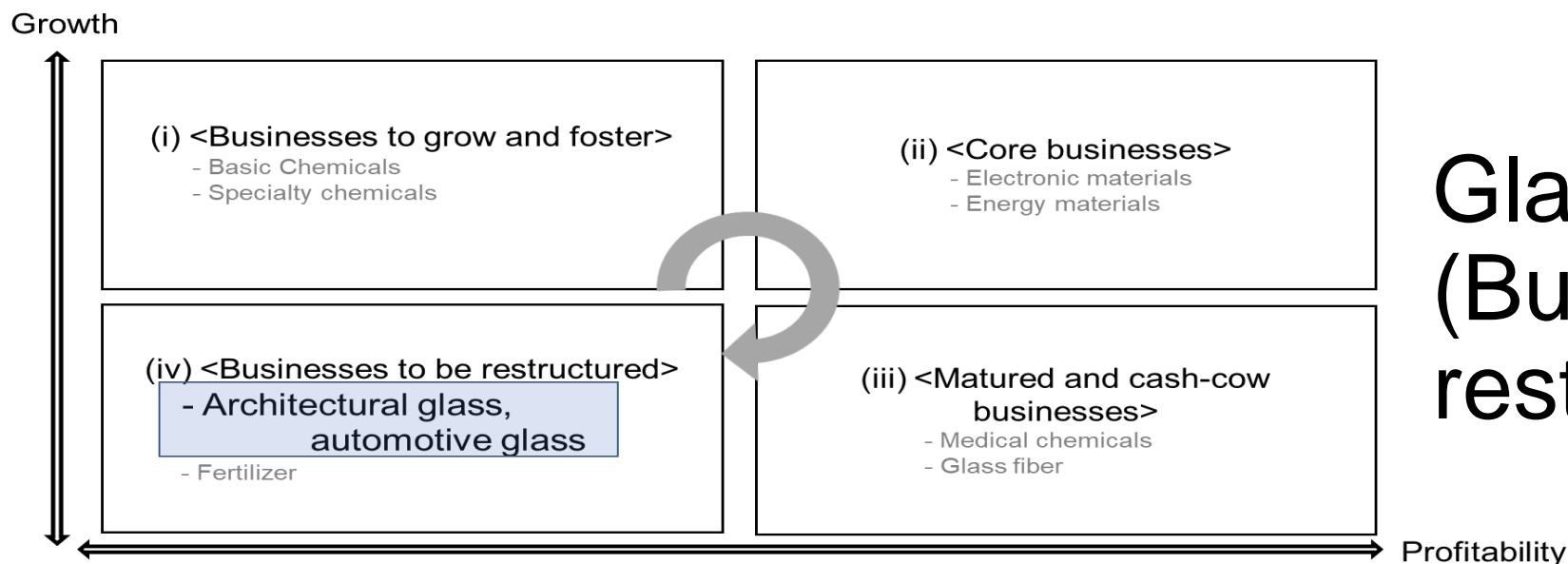
(iv) Overview by Business (FY 2022 to 2024)



Glass business (Matured and cash-cow businesses)

- Glass fiber (Resin-reinforced materials and automotive sound-absorbing materials, etc.)
 - Glass fiber: Strengthen earnings power through selling optimum product mix suited to needs
Advance development of new products
 - Glass wool: Sell products focusing on automotive applications
Increase promotion of high value-added acoustic absorbents

(iv) Overview by Business (Structural Improvements in Glass Business)



Glass business (Businesses to be restructured)

<Overseas glass business>

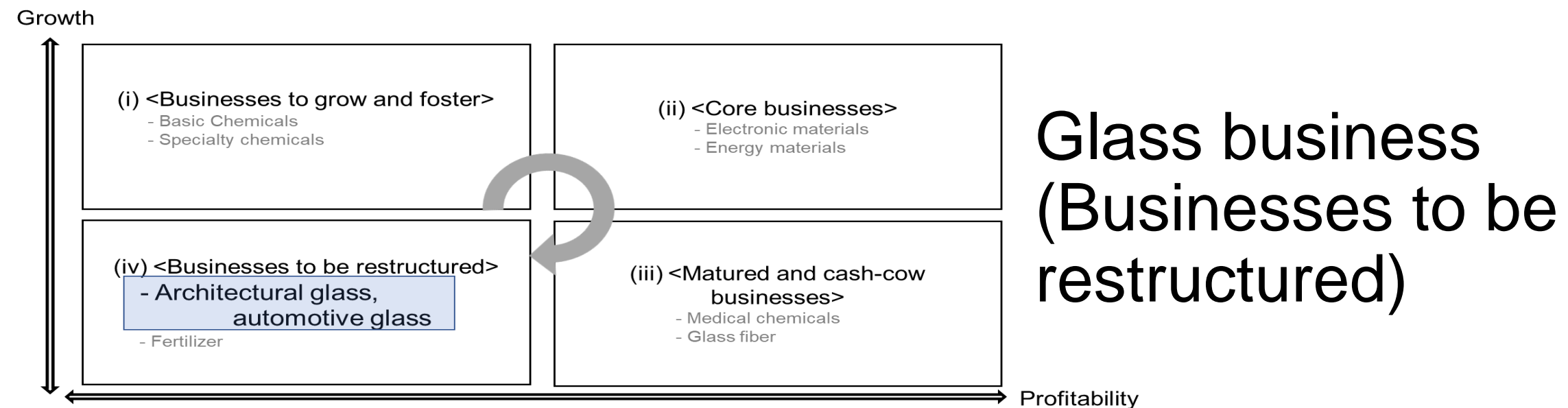
- Determined the transfer of the automotive glass businesses in the United States and Europe in FY 2021

Concentrate the structural improvements in glass business to domestic business

<Domestic glass business>

- Suspended two furnaces among four furnaces for flat glass production in FY 2021
- Consolidate sales and processing bases for architectural glass

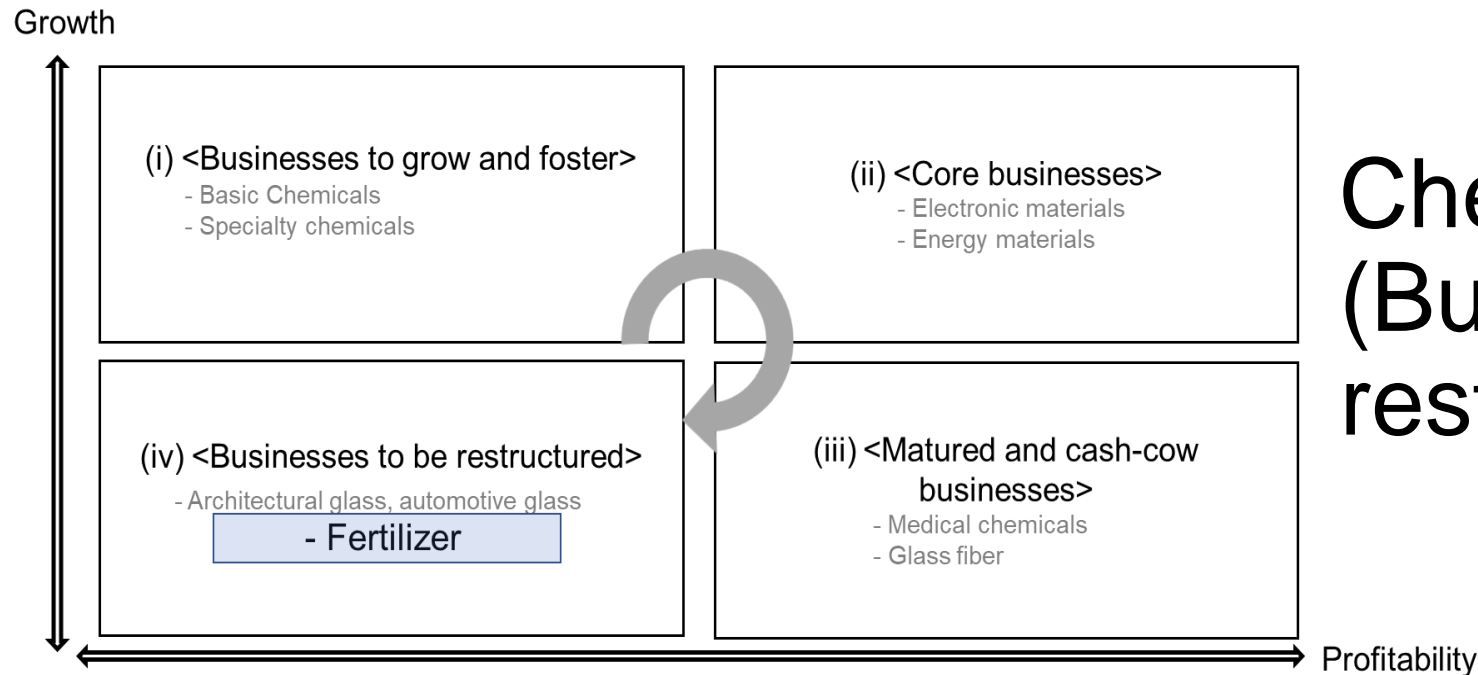
(iv) Overview by Business (FY 2022 to 2024)



Split the glass business (architectural glass and automotive glass) from the Company during FY 2022
Optimize business scale and regenerate the business as a cash creation business

- Architectural glass (Insulating glass and mirrors, etc.)
 - Implement and complete fixed cost reduction by matching production to demand and establishing a sales structure
 - Keep the upward trend in profitability by covering the increase in raw material and fuel costs through revision of pricing
- Automotive glass (Laminated glass and tempered glass)
 - Pass through increases in raw material and fuel costs to pricing
 - Realize improvement in profitability by optimizing business scale to demand and reducing costs

(iv) Overview by Business (FY 2022 to 2024)



Chemicals business (Businesses to be restructured)

○ Fertilizer (Controlled-release coated fertilizer, etc.)

<Market> A downward trend in area under tillage resulting from the aging of farmworkers and farm retirements

- Secure stable sales mainly through coated fertilizer which compensates for the aging of farmworkers by saving labor
- Advance R&D of environmental-friendly fertilizer consistent with the Resource Circulation Strategy for Plastics

(v) R&D Policy

- Focus areas

Electronic materials, energy materials, and priority areas of corporate research (*)

<Priority areas of corporate research>

Area	Theme for development	Open innovation
Energy saving	Next-generation power semiconductor materials	Universities and national projects
Medical materials	Medical materials and drug development using the specific protein solubility of our fluorine compound	Universities, national projects, ventures and satellite research centers
Carbon neutrality	Related materials using the core technology for manufacturing micro-particulates, and catalysts	Universities and national projects

(*) Corporate research refers to the long-term research exploring for new areas in foundation research.

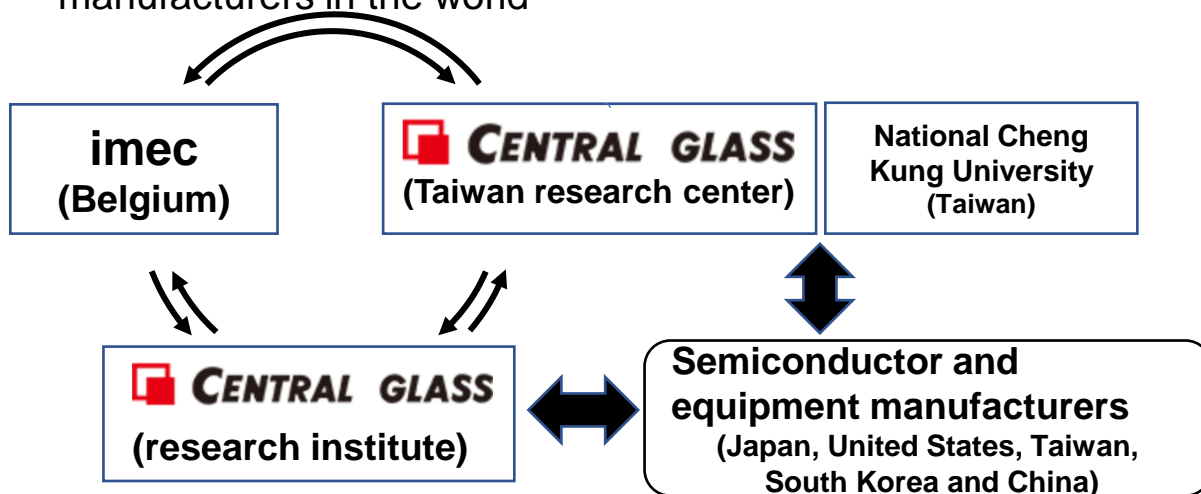
Expansion into unprecedented areas with our core technologies + open innovation, and sustainability-conscious R&D planning

- Aggressively inject R&D resources toward solution proposition for customer needs (such as potential needs, performance improvement and environmental burden reduction)
- Strengthen functional materials business by improving application development technologies (performance assessment and data science) (expansion of applications of our original compounds)

Electronic materials field

■ Development of the next-generation semiconductor materials

*Create new functional materials realizing the next-generation process in cooperation with the cutting-edge research institutions for meeting requests of semiconductor and equipment manufacturers in the world



■ Development of environment-friendly semiconductor materials

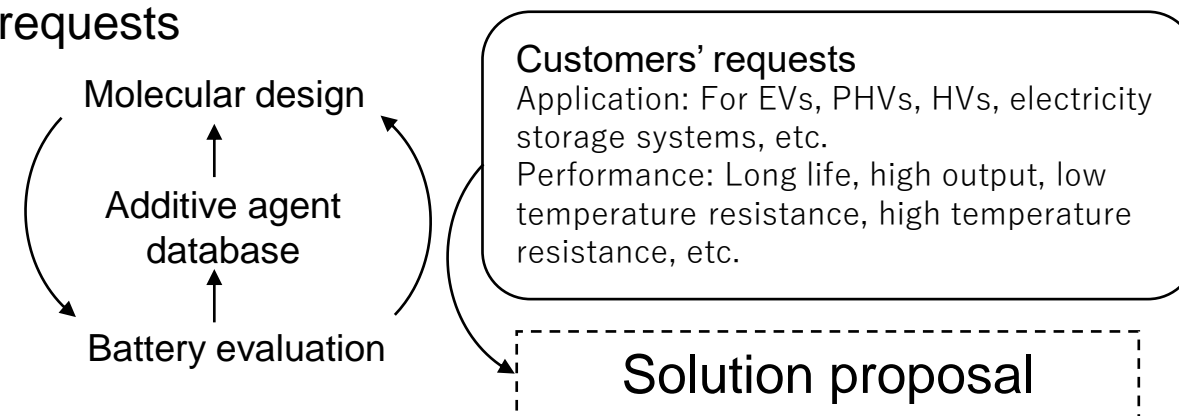
*Proposal for environment-friendly next-generation materials and process

- Low GWP etching gas

Energy materials field

■ Development of custom-made electrolytes for Li-ion batteries

*Create custom-made electrolytes meeting customers' requests



■ Development of post-Li-ion batteries

*Explore for Li-ion battery alternatives to support the environment and diversification

- Li-metal batteries
- Co- and Ni- free batteries
- Na-ion batteries

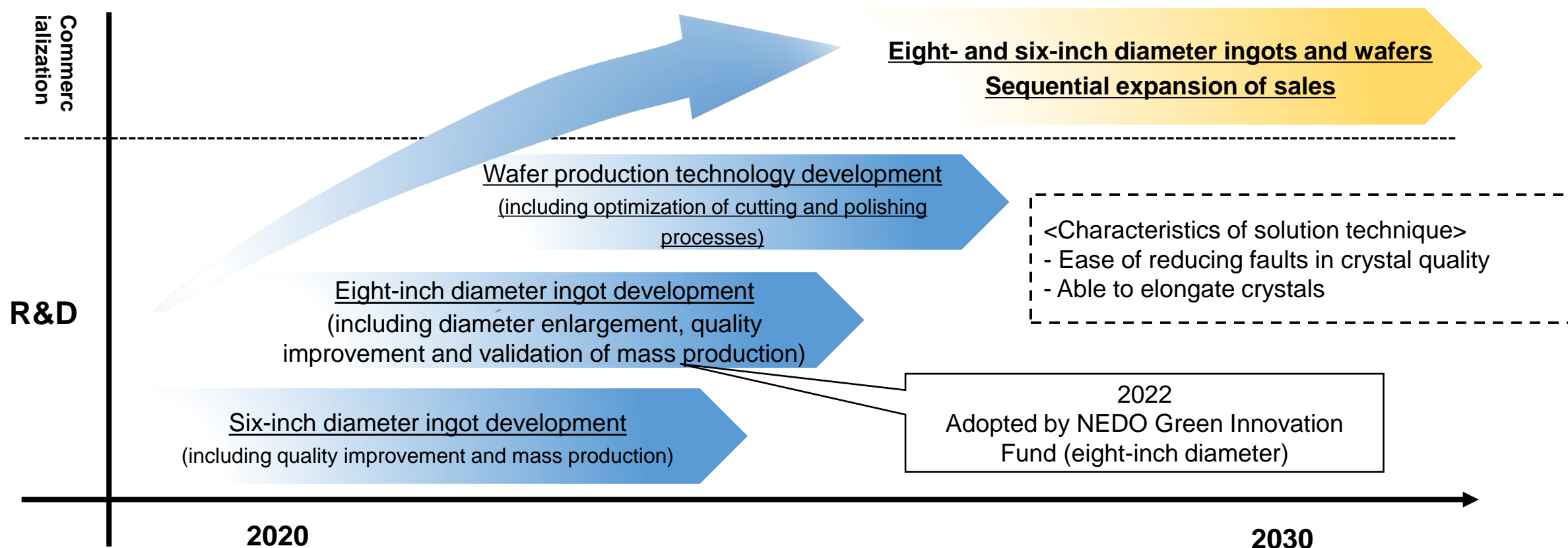


- Product Business Model Based on R&D “Commercialization of SiC”

Under our corporate research system where new areas are widely explored, we focus on next generation power semiconductor materials and SiC, which contribute to improvement in performance of rapidly popularizing EVs. We have advanced R&D of solution techniques with superior quality, and we are close to establishing mass production techniques for six-inch ingots. Eight-inch ingots were adopted by the NEDO Green Innovation Fund, and development was started. Also, for wafers, we are accelerating R&D towards commercialization.

Characteristics of SiC power semiconductors: Possible to significantly reduce the loss of energy at conversion of power

→ **Can contribute to realization of a carbon-neutral society**



Intellectual Property Strategy

(Advance a three-pronged strategy along with business and research and maximize earnings)

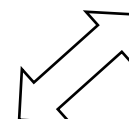
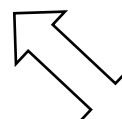
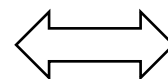
- ◆ Intellectual property department plays the role of creating and using intellectual property rights and respecting the intellectual property rights of other companies.
- ◆ Intellectual property department contributes to present and future profits of the Company through intellectual property rights in cooperation with business and research departments.

Business strategy

- Potential and existing requests of customers
- Competitor trends

Research strategy

- Themes directly related to business
- Corporate research
- Open innovation



Intellectual property strategy

- Evaluation of business trends and intellectual property rights (of the Company and other companies)
- Establishment of patent strategy in line with the Business strategy
- Surveys to prevent violations of intellectual property rights
- Periodic survey on uses of intellectual property rights
- Contracts that take into account the Patent Act and related acts

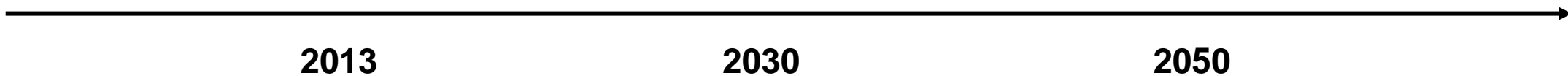
(vi) Measures toward the Global Environment

Reduction in Greenhouse Gas (GHG) Emissions

**Challenge to realize net-zero GHG emissions in 2050
(Scope 1 + 2)**

Milestone reduction goal for GHG emissions in 2030 (vs. 2013)
◆Our goal (our group total volume): reduction goal of 40%

*For automotive glass businesses in United States and Europe (agreed to be transferred, all has been deducted after 2013, the criterion year for comparison.



- 2013**
- <GHG-reducing technologies in manufacturing processes>
- Fuel conversion (including LNG and total oxygen combustion)
 - Waste heat recovery
 - Production efficiency by effectively using by-products

- 2030**
- <GHG-reducing products on the market> (*outside the scope of emission reduction of the company)
- Architecture glass (heat and sound insulation) and automotive weight-reducing thin laminated flat glass
 - Products with low global warming potential (including next-generation fluorinated cleaning agents)
 - Power semiconductor materials

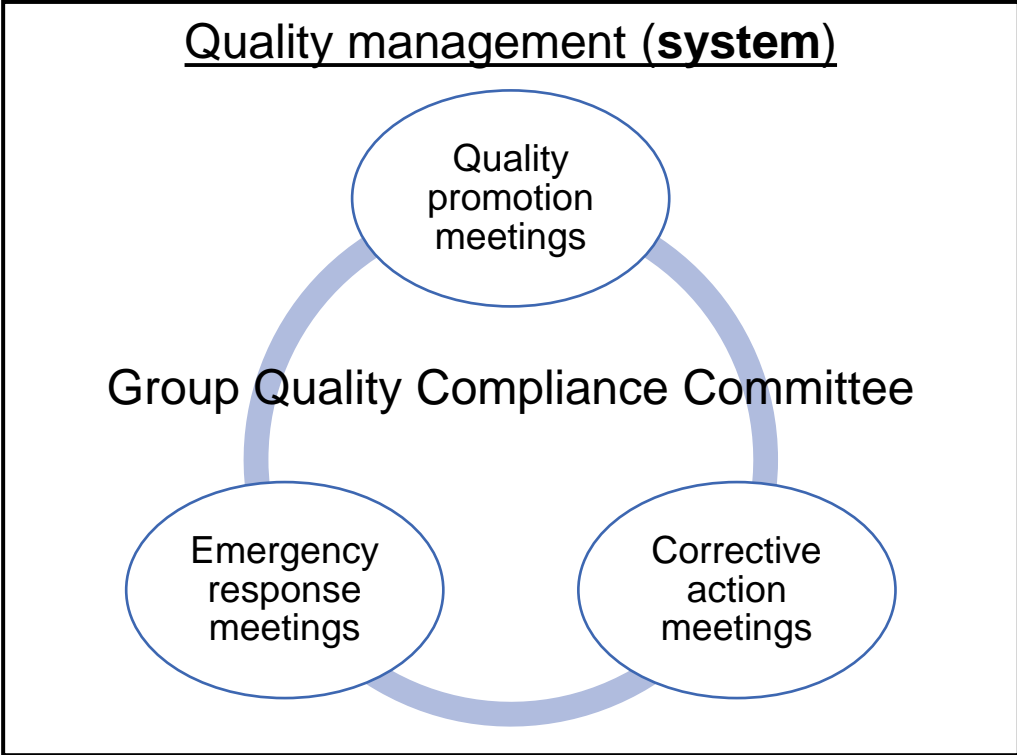
2050

(vii) Measures toward Improving Quality Awareness

Become an organization giving reassurance and reliability to stakeholders by ensuring provision of products and services meeting the needs of customers and society



<Permeation of quality culture>



- Quality management (operation)
- Strengthen and maintain the quality assurance system through multilayer audits (including audits of suppliers)
 - Immediately deal with issues through operation of the quality issue reporting line
- (Priority measures in the Medium-Term Management Plan)

 - Improve quality activities through thorough daily management and promotion of improvement activities
 - Develop human resources supporting quality activities by improving quality education

Cautionary Note

The Company's plans, strategies, and expectations for future performance are contained in this material. Such plans are based on economic conditions, market size, and business policies available to the Group's management and presuppositions that the management considers reasonable as of May 11, 2022. The Group does not provide any guarantee whatsoever regarding the feasibility and certainty of these statements.

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