

0→1 MAKE IT HAPPEN

FY23-2 Chemistry for Sustainable World

CEO PRESENTATION



橋本 修

HASHIMOTO Osamu

Mitsui Chemicals, Inc.

President & CEO

November 28, 2023

Message

Mitsui Chemicals was established on October 1, 1997, as a result of the merger between Mitsui Petrochemical Industries and Mitsui Toatsu Chemicals. Thanks to a variety of M&As, an expansion in mid-career hiring and a push to appoint talents from outside the company over the 26 years since then, the Mitsui Chemicals Group now has a diverse workforce from a wide range of backgrounds, with more than 80% of our staff having joined after the merger.

On top of boasting such diversity, Mitsui Chemicals also has change and innovation woven into its very DNA, which has been shaped by more than a century of history. Starting in 1912, the first generation of our company ventured into coal chemistry and the second into the petrochemicals sector. Both eras saw our company demonstrate the entrepreneurial spirit as it took on the challenge of solving social issues. Now, we are entering another period of great change that should be described as our third generation: the age of green chemicals, which will include replacing fossil fuels with alternative raw materials and making other efforts to reduce the environmental impact of business. The Mitsui Chemicals Group seeks to be a first mover as it works to help build a sustainable society.

The global environment surrounding our business is changing day by day – we are confronted by growing geopolitical risks including conflict in the Middle East, Russia’s invasion of Ukraine and friction between the U.S. and China, not to mention the sluggish pace of economic recovery and fluctuating interest rates. However, the Mitsui Chemicals Group will not be swayed from its quest to steadily implement the Basic Strategy of VISION 2030.

In addition, we will demonstrate our high regard for communication with our stakeholders as we continue, day by day, to take on the challenge of achieving VISION 2030 and sustainable growth.

November 2023
HASHIMOTO Osamu
President & CEO



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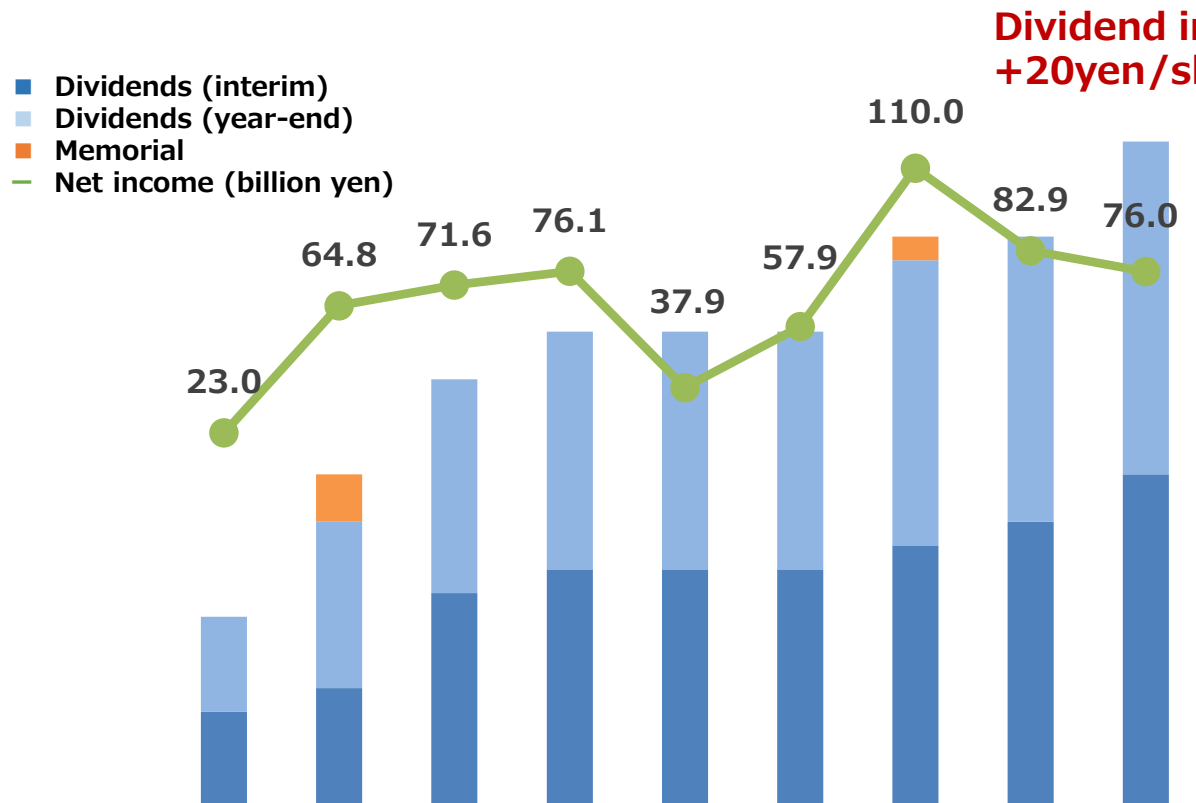
▶ **Business Performance**
Full-year outlook for FY23

▶ **VISION 2030**
Basic policies toward 2030
Measures in line with our five-point Basic Strategy

Items (JPY bn)	FY2021	FY2022	FY2023	FY2023
	Results	Results	August Outlook	November Outlook
Sales revenue	1,613	1,880	1,850	1,757
Operating income before special items	162	114	125	112
Non-recurring items	△ 15	15	△ 10	△ 15
Operating income	147	129	115	97
Financial income / expenses	△ 6	△ 12	△ 3	1
Net income attributable to owners of the parent	110	83	84	76
Exchange rate (JPY/USD)	112	135	139	145
Domestic standard naphtha price (JPY/KL)	56,600	76,600	69,000	70,300
Growth domains	88	102	121	121

FY2023 August Outlook → November Outlook	
Increase (Decrease)	Rate
△ 93	-5%
△ 13	-10%
△ 5	-
△ 18	-16%
4	-
△ 8	-10%
6	
1,300	
0	0%

Provide stable and continuous shareholder returns



● FY23 dividend outlook

Interim

Year-end

Full year

$$70 \text{ JPY/share} + 70 \text{ JPY/share} = 140 \text{ JPY/share}$$

- ✓ Target DOE: 3.0% or more
- ✓ Stable and continuous dividend
- ✓ Flexible acquisition of treasury stock
- ✓ Target total return ratio: 30% or more

	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Dividend(yen)	40*	70*	90*	100	100	100	120	120	140
Acquisition of Treasury stock (billion yen)	-	-	5	10	10	-	10	10	
DOE(%)	2.0	3.4	3.7	3.7	3.6	3.4	3.5	3.1	
Total return ratio(%)	35	22	32	39	77	34	30	40	

*Dividends recalculated based on share consolidation

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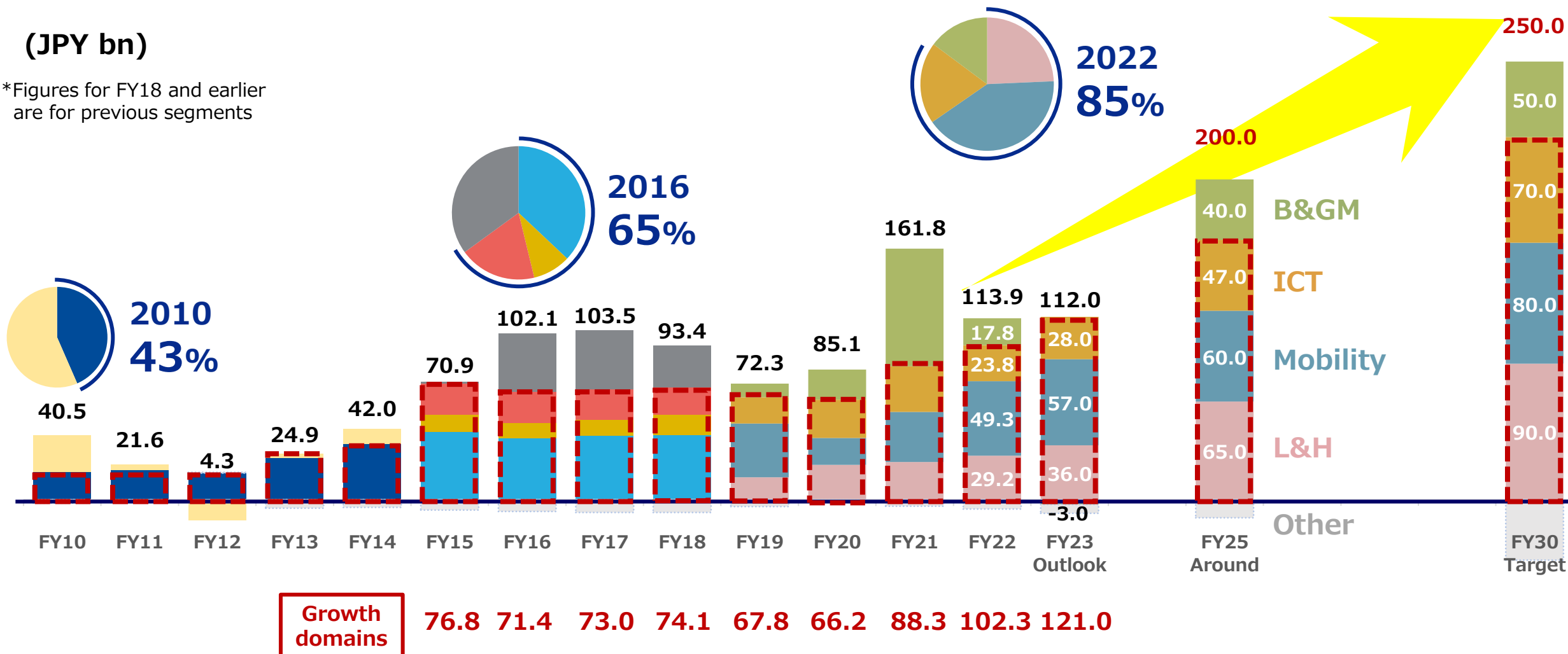
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- ◆ We have set a target of reaching 200 billion yen in operating income before special items by fiscal 2025, as a checkpoint for achieving our 2030 goals. To help achieve this target, we will implement strategies based on the basic policies laid out below in a speedy fashion.
 - We will continue to implement thorough cash flow management to prepare for growing uncertainty in international affairs and sudden changes in the business environment.
 - We will press on with effective KPI management based on both financial and non-financial perspectives, using these metrics to drive increases in corporate value.
 - As well as stepping up the pace of business portfolio transformation, we will aim to further reduce volatility by accelerating the second phase of Basic & Green Materials (B&GM) business restructuring. This will include establishing an optimized production setup at our crackers, among other efforts.
 - To swiftly implement our carbon neutrality initiatives in society, we will expand and speed up regional and multi-company collaborations as a first mover.
 - We will strengthen our business foundations by pursuing digital transformation and work style reform.
 - We will consider further boosting shareholder returns in line with the rise in profit levels. We will also seek to raise the level of our ROE and aim for additional improvements in capital efficiency.

Increasing profit through steady expansion of growth domains and further progress with B&GM restructuring

(JPY bn)

*Figures for FY18 and earlier are for previous segments



Becoming a truly global specialty company by advancing strategies and pursuing multi-company collaborations in the growth domains as well as B&GM

VISION 2030
Current phase onward

Becoming a
global specialty company
by 2030

Growth domains



L&HC

Active investment & returns

Ophthalmic lens materials
Agrochemical products
TAFMER™
ADMER™
ICROS™ Tape

Organic growth

Ophthalmic lens materials
Agrochemical products
Solar cell encapsulants
Monomaterials
Semiconductor-related materials

New businesses + M&A

Around existing areas of focus
Relating to solutions



Mobility



ICT

High-growth, high-profitability
global specialty chemicals
businesses

Proactively pursue multi-company tie-ups
that will help to step up the pace of growth



B&GM

Speeding up restructuring

PH TDI
PTA/PET PE/PP

Bolstering downstream businesses

HQ High-performance PP
High-performance MDI
Catalysts Honshu Chemical Industry

Sustainable **green chemicals**
business centered on
competitive derivatives

Decarbonization

Ammonia firing

Biomass

Bio-based hydrocarbons

Recycling

Monomaterials technology

CCU

Carbon Neutral Research Center

Step up efforts to advance
regional and multi-company collaborations

Green Sustainable
Chemicals Division



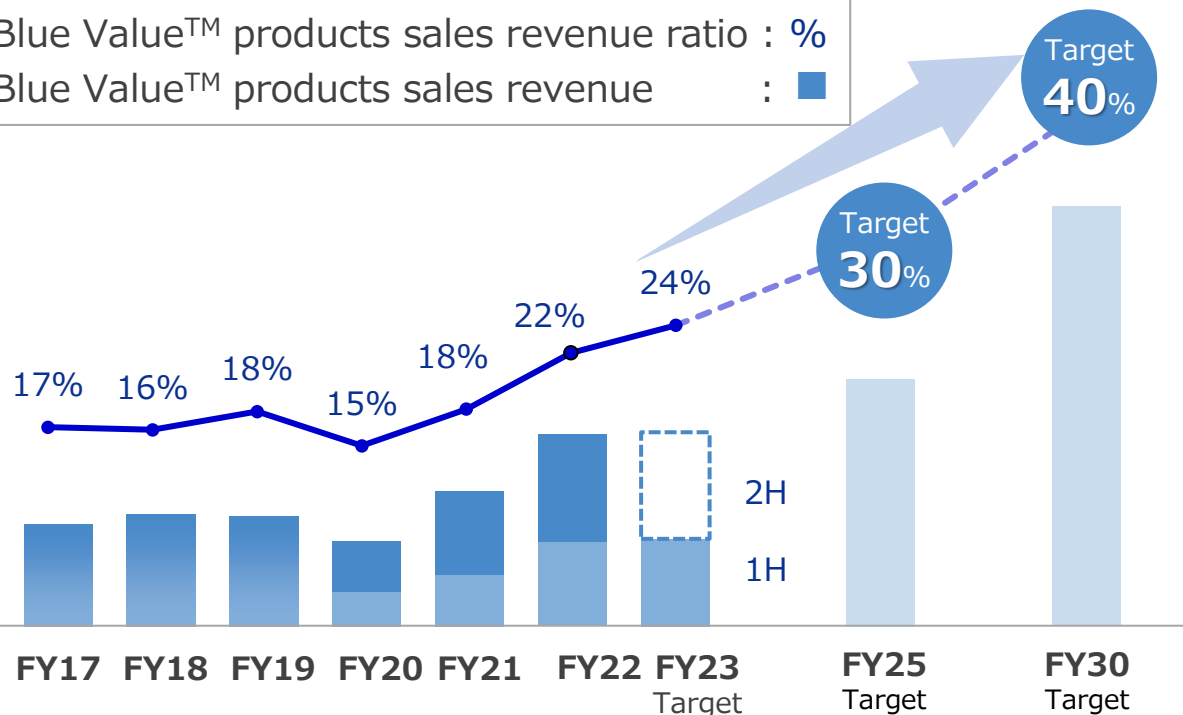
Environmental Contributions Blue Value™

- Reducing CO₂
- Conserving resources
- Coexisting with nature

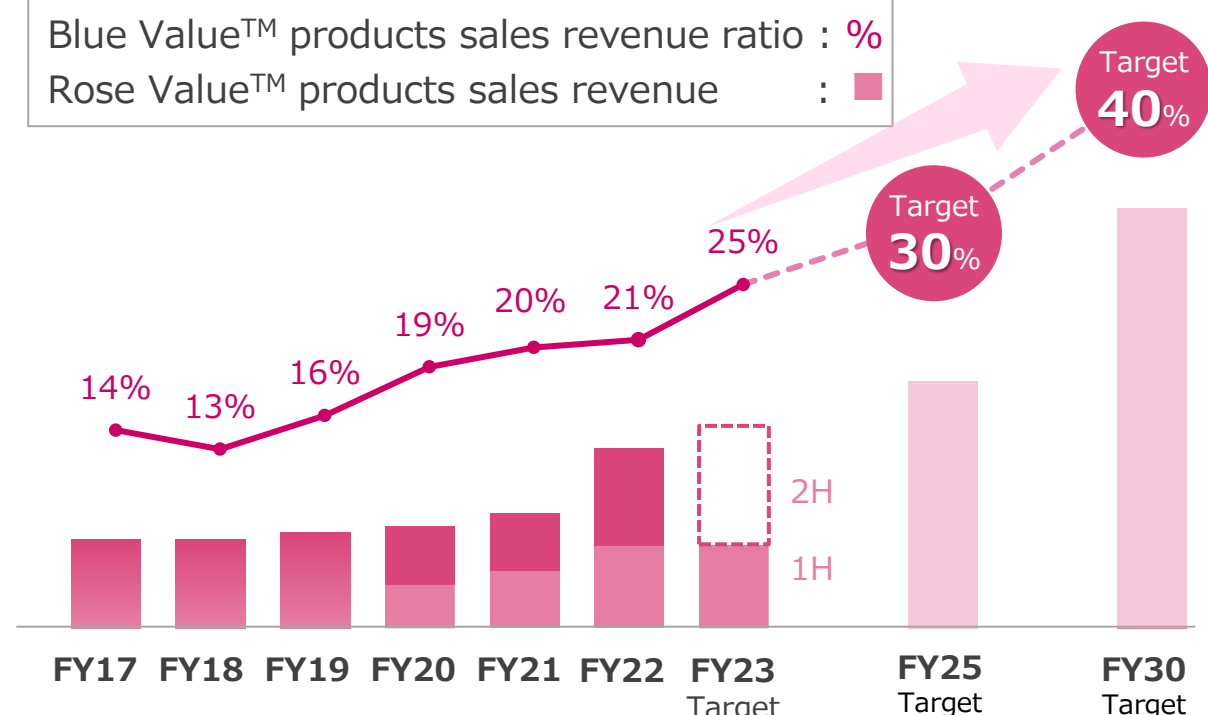
QOL Improvements Rose Value™

- Enriching life and society
- Extending healthy life-span
- Protecting food

Blue Value™ products sales revenue ratio : %
Blue Value™ products sales revenue : ■



Blue Value™ products sales revenue ratio : %
Rose Value™ products sales revenue : ■



Aiming to combine corporate growth with social contributions through ongoing business portfolio transformation, amid strong sales revenue from Blue Value™ & Rose Value™ products

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STRATEGY

01



Pursuing business portfolio transformation

- ▶ Rolling out a social issue perspective in all of our businesses
- ▶ Achieving growth by expanding and fleshing out our business domains
- ▶ Accelerating structural reform of our existing businesses and transforming businesses with a focus on green materials

STRATEGY

02



Building solutions-based business models

- ▶ Creating new businesses by bolstering our business design capabilities
- ▶ Pursuing cross-organizational ties and strengthening cross-company partnerships

STRATEGY

03



Bolstering circular economy initiatives

- ▶ Building CE-based business models for all of our businesses
- ▶ Rolling out CE-compatible products by transitioning to alternative raw materials and fuels
- ▶ Developing and acquiring foundational technologies able to contribute to carbon neutrality

STRATEGY

04



Corporate transformation through DX

- ▶ Applying DX throughout our entire Group and all business domains
- ▶ Creating value by way of business-wide transformation spanning research, production, sales and SCs

STRATEGY

05



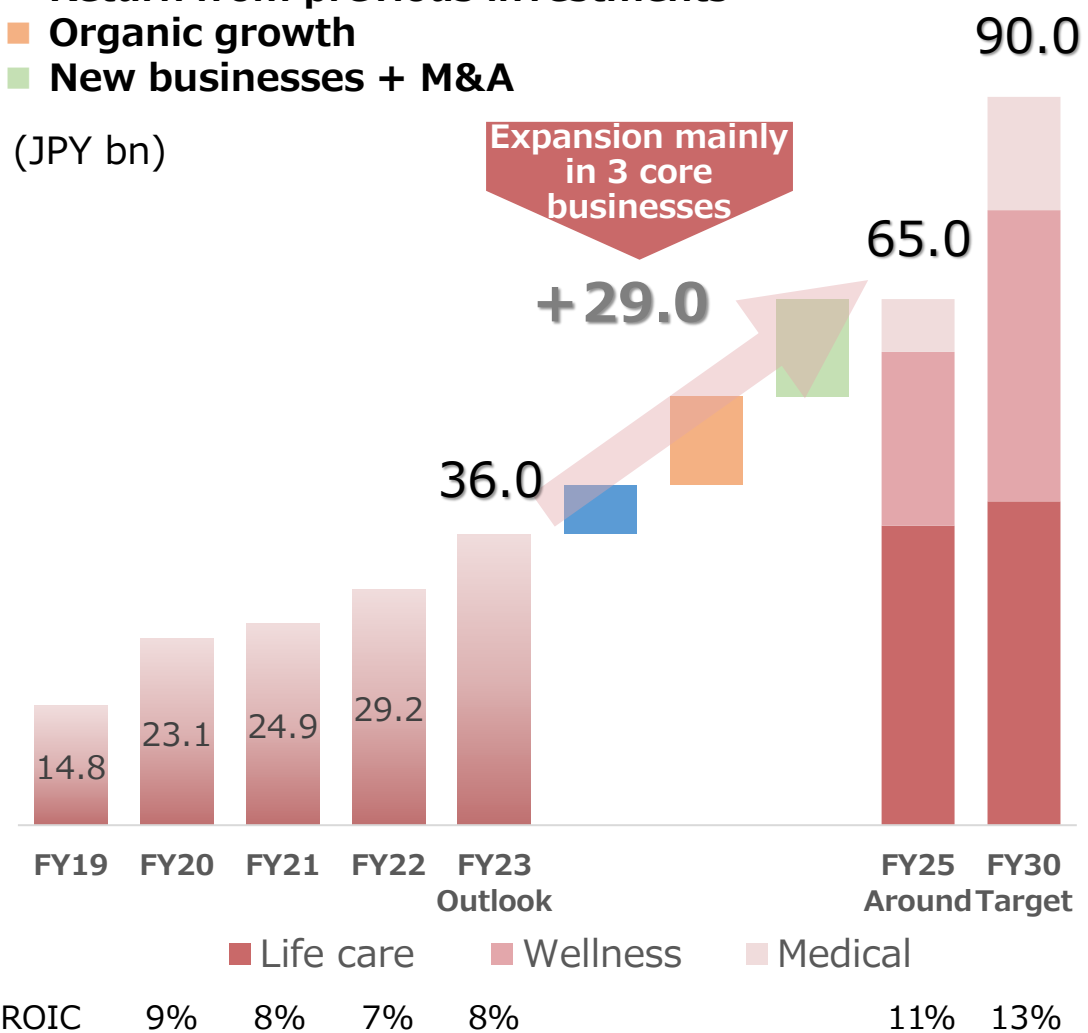
Management and business transformation

- ▶ Popularizing a committed, eager attitude
- ▶ Improving engagement to bolster our organizational strength and transform our corporate culture
- ▶ Combining safe, secure operations with improved competitiveness at all our bases around the world
- ▶ Building sustainable SCs



- Return from previous investments
- Organic growth
- New businesses + M&A

(JPY bn)



Rose Value™

FY23 **86%** → FY30 **85%**

Providing solutions that contribute to life, health and comfortable lifestyles as our first pillar of earnings

Our existing core businesses are expanding steadily amid stable market growth

Strategies for reaching our VISION 2030 targets

Further strengthening our existing businesses

Vision care:

Expanding business for lens materials and providing total solutions that combine materials with new technologies

Agrochemical products:

Pursuing overseas expansion for growth drivers and creating synergy with MCCLS

Oral care:

Bolstering business foundations in key markets (Europe, Japan, U.S.)

Underlining
 indicates matters to be explained in this presentation

Continually introducing new products and pursuing deeper collaboration between Group companies

Nonwovens:

Following establishment of JV, aiming to create and maximize synergies from integration without delay

Actively investing in wellness solutions and medical solutions to create new products and businesses

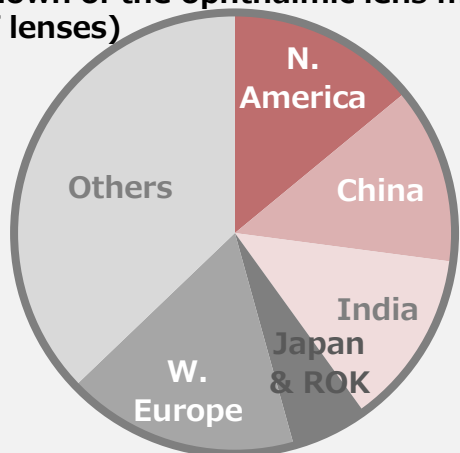


Business expansion of MR™ high-refractive-index lens material

Highly growing high-refractive-index lens market

Market growth rate
All lenses: 3%
High-refractive-index lenses: 6%

Breakdown of the ophthalmic lens market (no. of lenses)



Data: MCI survey, 2022

MR™ expansion in key markets

North America

Switching from PC*

Carried by major retailers & growing online retail chains

*Polycarbonate

China

Switching from acrylic

Holding regional seminars with the Optometric and Optical Association, etc.

India

Switching from glass

Increase in supply accompanying lens manufacturers' expansion of local production

Synergy creation in the lens processing sector

Joint development & sales of new products

Photochromic lens processing system

(launched September 2023)



Coating materials



CrystalChrome

On-demand production at optical labs

Inventory reduction

Productivity improvement



Coating equipment

Stepping up global expansion

Bolstering sales functions in Latin America & East Asia

Opened a branch office in India

Expansion of a stable supply system to support growth

Start of commercial operations at expanded plant (from December 2023)

Planning next capacity increase

(Refractive index 1.60/1.67/1.74)



Further enhancement of our global intellectual property network of patents & trademarks to sustain high quality

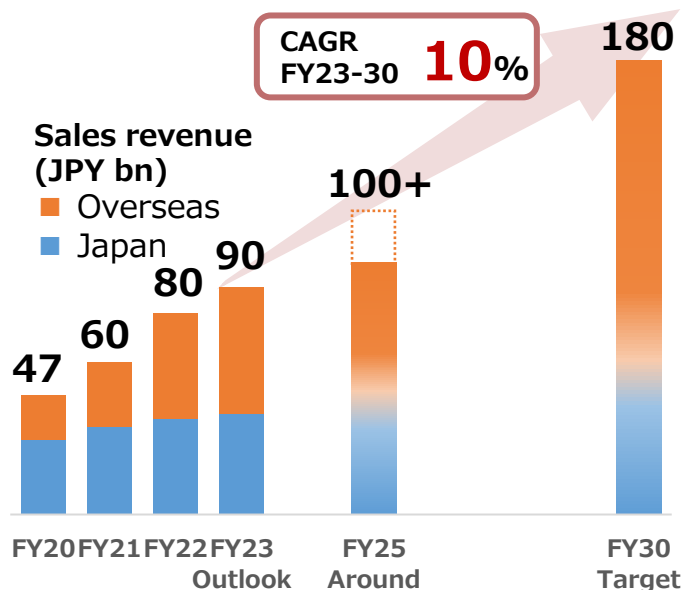
Further increase in value through promoting collaboration

Contribution to a wide range of vision care sectors, from lens materials to processing equipment



Expanding business by launching new agrochemicals to tap into key overseas market growth and replacement demand

Expansion exceeding market growth



India

Market scale **\$3.5B**

Market growth rate **4%**

FY22

Flupyrimin launched
TENE BENAL™ launched

Southeast Asia

Market scale **\$3B**

Market growth rate **2%**

FY21

TENE BENAL™ launched

Indonesia & Philippines

Brazil

Market scale **\$14B**

Market growth rate **4%**

FY19

Dinotefuran launched

Worldwide

Market scale **\$75B**

Market growth rate **2%**

Europe

Market scale **\$14B**

Market growth rate **2%**

Japan

Market scale **\$3B**

Market growth rate **-1%**

U.S.

Market scale **\$11B**

Market growth rate **0%**

*Market scale: actual figures for 2022. Market growth rate: forecast for 2022-2027
(Data: AgbioInvestor and estimates by MCI)

Expediting research into natural agrochemicals

Opened Mitsui Chemicals Crop & Life Solutions × Tohoku Uni. Co-creation Research Center for Biological Solutions



Purpose

To create new agrochemicals that leverage the secondary metabolite production systems of microorganisms and to establish the technology needed for commercial production methods

Period

October 1, 2023 – March 31, 2027



Graduate School of Pharmaceutical Sciences,
Tohoku University (Aobayama Campus)



Promoting portfolio transformation by bolstering industrial materials

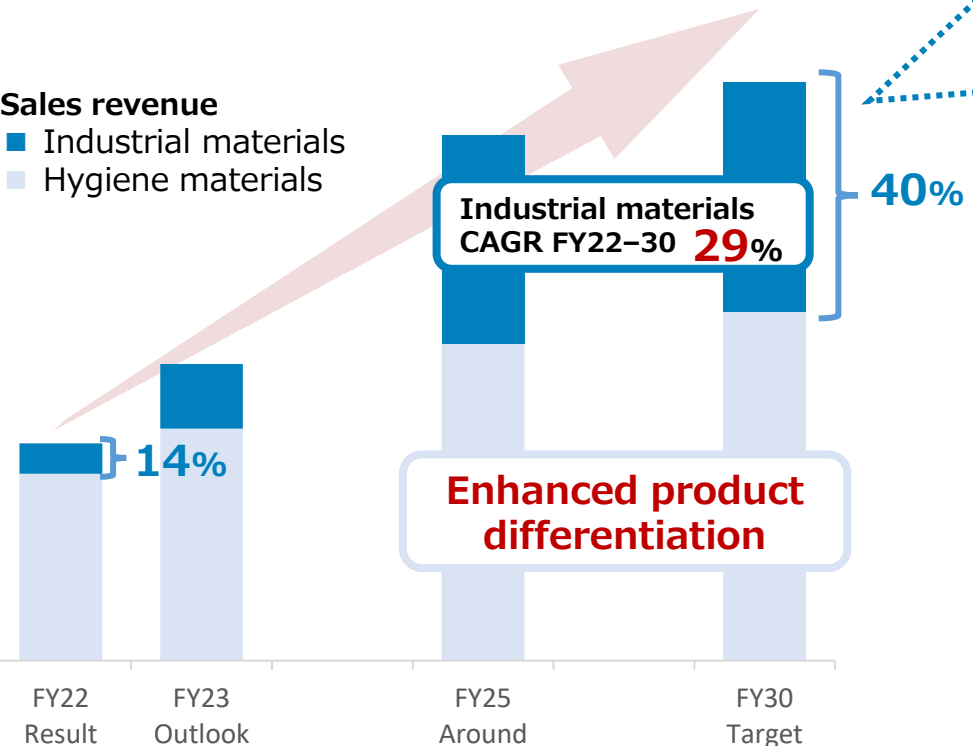
Mitsui Chemicals Asahi Life Materials established (October 2023)

Leveraging outstanding technical capabilities in an effort to meet social needs in tangible form as the world's leading nonwovens company



Mitsui Chemicals Asahi Life Materials

Sales revenue
■ Industrial materials
■ Hygiene materials



Increasing synergies by combining materials design & processing technology via greater post-merger technology integration



- Polyolefin materials design
- Resin formulation
- Spinning technology
 - Fine fibers
 - Precise filter performance
- Stretchable nonwovens
- Hollow-structure nonwovens



- Plant-based material (PLA)
- Spinning technology
 - Engineering plastics spinning
 - Nylon, PET
- Production technology
 - High-speed production
 - High yield
 - Addition of hydrophilic properties
- Network of secondary processing manufacturers
- Technology for lamination with other materials



Speeding up new product development

Healthcare-related components

- Medical gowns
- Drapes
- Antimicrobial nonwovens

Mobility-related components

- Automotive interior materials
 - Reducing weight to improve fuel economy
- Sound-absorbing material for railways & expressways

Semiconductor-related components

- Liquid filters for production processes
- Base material for shielding layer

Components for eco-friendly applications

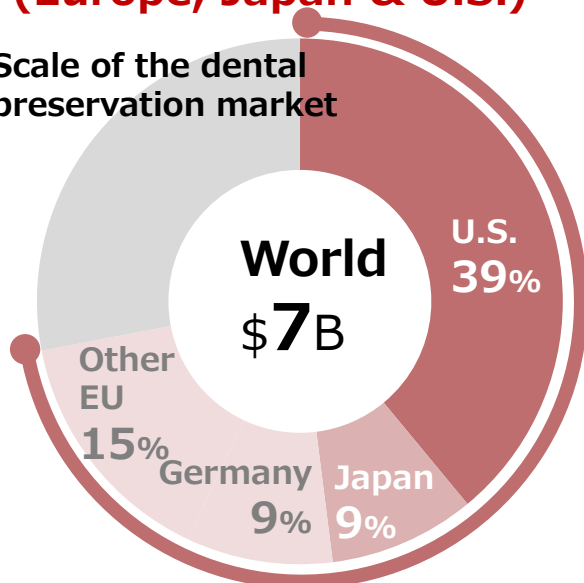
- Biodegradable nonwovens
 - For teabags, coffee filters, food packaging materials, etc.



Leveraging polymer science technologies and collaboration among Group companies to become a global leading company in the field of dental preservation

Expanding share in the top 3 markets (Europe, Japan & U.S.)

Scale of the dental preservation market



Total for top 3 markets
72%

Actual figures for 2022
(Data: MarketsandMarkets, iData)



Market share

Firm hold on top-group position

Complementary products to boost sales



Firm hold on No. 1 position in Germany
Moving to top group in other EU countries

Complementary products to boost sales



Moving from middle to top group in world's No. 1 market

Developing proprietary products & services to support growth

Focus sectors of dental preservation

Restoration composites
Dental cement
Denture materials
3D printer & printable materials



Provision of polymer science technology



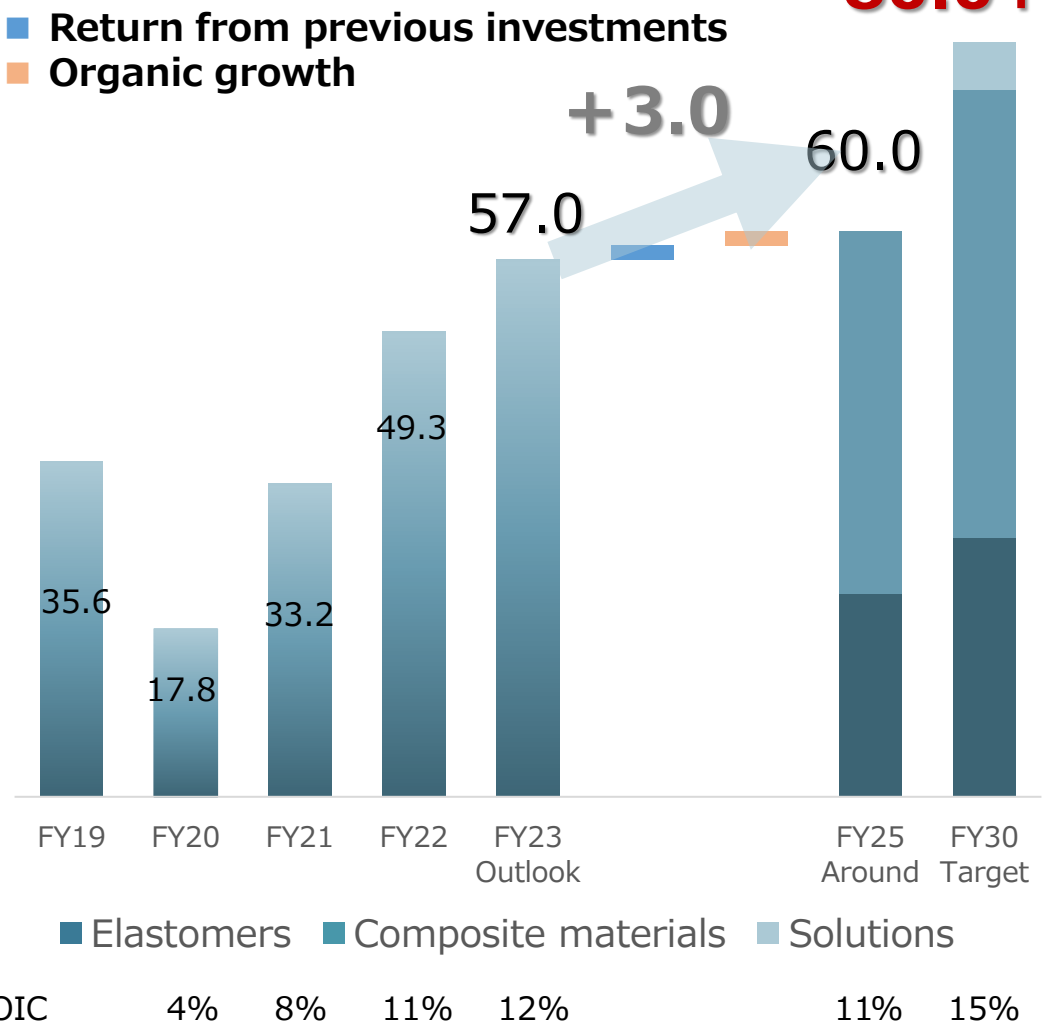
Provision of clinical knowledge & insights into customer needs



Restorative Material
(Low polymerization shrinkage resin)



(JPY bn)



Blue Value™
 FY23 49% → FY30 80%

Providing unique materials, features and services to help solve social challenges and let us achieve sustainable business growth

Despite slow growth in automotive production, our shift of focus to growth markets and differentiation is proceeding smoothly. We aim to **exceed our targets** in our materials business in particular.

Strategies for reaching our VISION 2030 targets

Pursuing expansion of our strong existing materials business

Speeding up our sales transition to a focus on growth markets* and differentiation

*Including renewable energy, automotive sustainability, eco-friendly packaging materials, etc.

Boosting earnings by increasing production capacity for differentiated brands

Strengthening our solutions business

Creating new business models

Underlining
 indicates matters to be explained in this presentation



Investing resources in line with strategies since VISION 2025 is delivering steady growth, with the prospect of exceeding our targets

Strategy

Global expansion based on local production for local consumption

- Intensively investing resources in segments (applications/regions) where we can establish a competitive advantage
- Boosting capacity based on local production for local consumption in close partnership with customers worldwide

Speeding up our transition to a focus on growth markets & differentiation

- Focusing on sectors where we can differentiate ourselves in markets that are growing as a result of social challenges
- Optimizing and making full use of our sites around the world

FY17-19

FY20

FY21

FY22

FY23

FY25

FY30

Elastomers

TAFMER™
in Singapore

TAFMER™
specialty grade
in Japan

LUCANT™
in Japan

TAFMER™
in Singapore & Japan

Next-generation
elastomers

80.0+

Composite materials

MILASTOMER™
in Japan & North America

MILASTOMER™
Acquired TPS business

PP compounds
in India, North America &
Mexico

Long glass fiber
reinforced PP
in Japan & North America

PP compounds
in Thailand &
the Netherlands

Long glass fiber
reinforced PP
in China

Acquired DIC Kako

17.8

ADMER™
in Japan

33.2

MILASTOMER™
in Japan

49.3

57.0

PP compounds
Post-consumer
recycled materials
in North America

60.0

Differentiated ADMER™ brands
PP compounds & other composite
materials at various locations

New composite materials

Demonstration facility for
microwave-based CF
production technology

Further growing material sales by
expanding our solutions business

Black type: Previously announced
Blue type: For future development/
strengthening

Speeding up development & supply of differentiated products in response to changing needs arising from social challenges, e.g. the shift to EVs



Providing a wide range of materials and development support with a precise grasp of changing needs

Automotive trends

Growing EV demand

Need for improved electric mileage
Exterior, doors, battery, etc.

- Lightweighting
- Improved aerodynamics



Existing OEMs

Emerging OEMs

Offering concepts for modular components
Offering differentiated materials & parts

Supporting product development
Offering differentiated materials and parts
Design, simulations, prototypes, etc.

Social challenges inspiring the spread of new forms of infrastructure

Social challenges

- Reducing CO₂
- Alleviating traffic congestion
- Autonomous driving & on-demand urban transportation
- Declining birthrate & aging population / Depopulation / Addressing labor shortages

Mobility of the future will transform approaches to transport

New transport systems

New logistics systems
Infrastructure inspection systems

Platform operators



Personal high-speed transportation systems



Drones

Infrastructure, systems & project planning



MDC: Mobility Development Center

Leveraging knowledge & track record cultivated in the auto sector

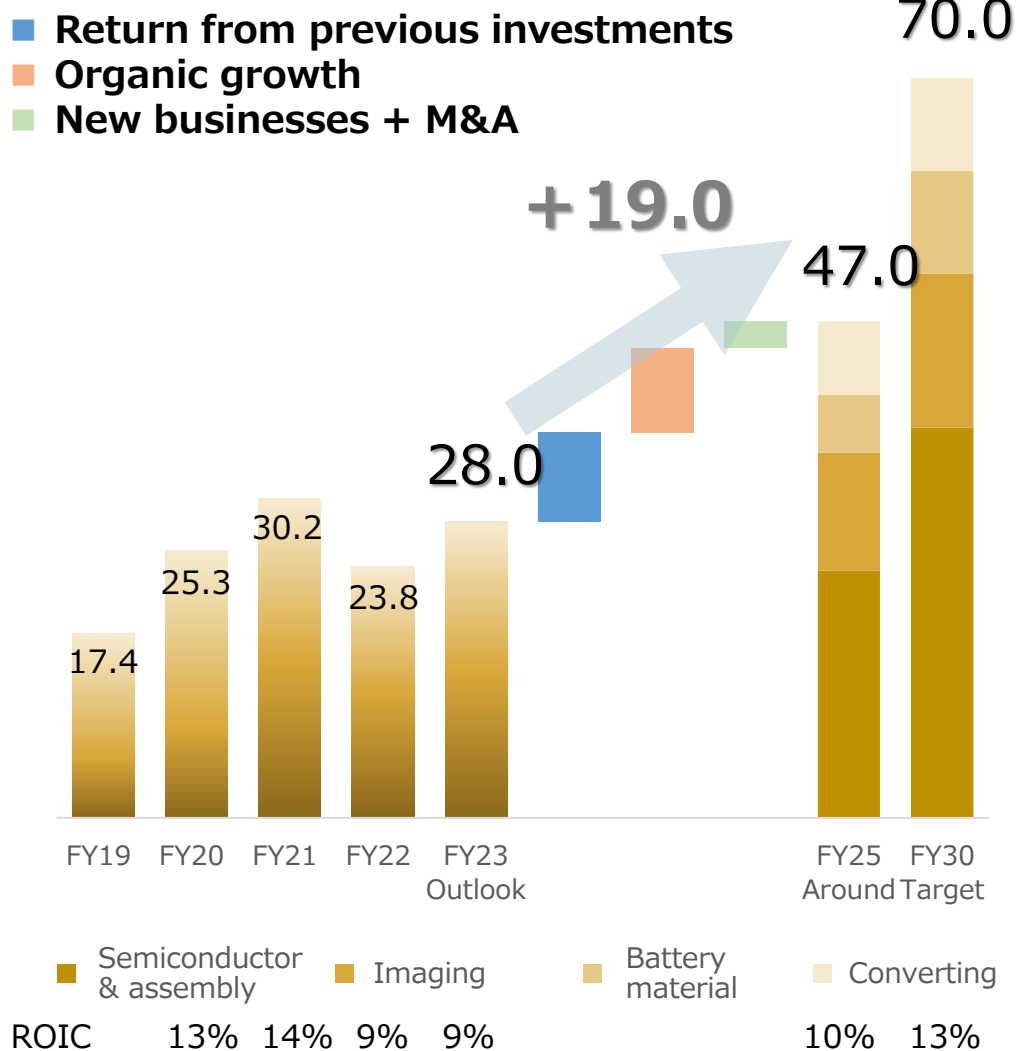
Supporting vehicle & airframe product development

Offering differentiated materials and parts
Design, simulations, prototypes, etc.

Collaboration



(JPY bn)

**Blue Value™**
 FY23 **38%** → FY30 **56%**
Rose Value™
 FY23 **51%** → FY30 **60%**

Creating and growing a “unique” ICT Solutions business to grow operations here into our third pillar of earnings

Continuing to boost capacity and develop products focused on new needs in the interests of medium- to long-term growth, despite sluggish markets for semiconductors, smartphones and the like

Strategies for reaching our VISION 2030 targets

Boosting our competitiveness in the areas of semiconductor & assembly solutions and imaging solutions

ICROS™ Tape: Expanding production capacity and augmenting our product portfolio in new areas

Pellicles: Reaching the No. 1 position by strengthening our EUV business and leveraging our acquisition of Asahi Kasei’s business

APEL™, etc.: Introducing new materials to capture the demand of the growing XR market

Addressing demand for eco-friendly products in the area of converting solutions

Strengthening both the ICT & PS* businesses via the Mitsui Chemicals Tohcello split *Packaging Solution

Underlining indicates matters to be explained in this presentation



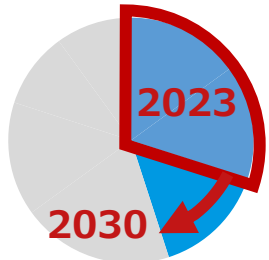
Helping to bring about more advanced exposure processes

Joint development of next-generation EUV pellicles involving 3 companies

Exposure

EUV pellicles Maintaining first-mover advantage

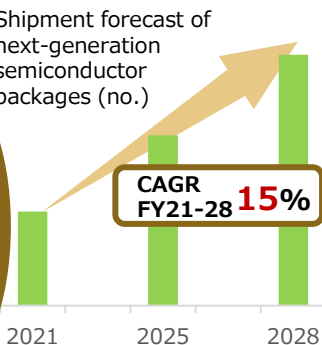
DUV pellicles



Leveraging tech integration synergies
Increasing ArF immersion lithography market share

DUV pellicle market forecast

Pellicles for 3D assemblies



Leveraging Mitsui Chemicals EMS's large pellicle technology

CAGR FY21-28 **15%**

Capturing growing demand in the 3D assembly sector, e.g. 2.5D/3D packages

Shipment forecast of next-generation semiconductor packages (no.)

Data: Fuji Chimera Research Institute, Inc.

Circuit transcription

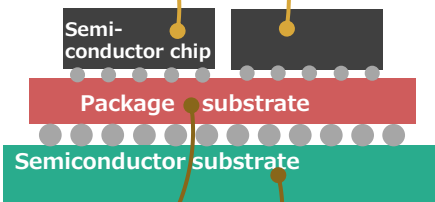


Illustration of semiconductor package

Circuit transcription for rewiring

Circuit transcription

Process optimization

>88% FY21

➔

Materials optimization

>90% FY22

➔

Materials innovation


>92% FY25

➔

>94% FY27

Aiming to commercialize CNT* film pellicles for cutting-edge lithography equipment

*Carbon nanotube



World-leading pellicle manufacturer

Ability to develop CNT film pellicle technology

ASML

World's only manufacturer of EUV lithography equipment

imec

International semiconductor research institution
The front runner of research in the field of CNT film pellicles

Securing a dominant position by being the first into cutting-edge markets



Pursuing swift & flexible execution of strategy, with a focus on strong core businesses

Semiconductors

Business environment

Medium- to long-term growth
Continuous technological innovation, e.g. miniaturization & multi-layer structures

Mitsui Chemicals Tohcello

ICT business

ICROS™ Tape

Growth in existing sectors
First to enter new sectors & establishment as de facto standard

SP-PET™

Growth in high-end sectors

Mitsui Chemicals ICT Materia

Strategy **Securing unparalleled competitiveness** by focusing on ICT business, pursuing Group-wide synergies & exploring potential new tie-ups

Flexible packaging materials

Business environment

Japan: Mature market
Asia: Ongoing growth

Growth in eco-friendly packaging

PS* business *Packaging Solution

Strengths

Wide-ranging product lineup & diverse array of differentiated product lines
Expansion into Asian markets

Stable supply of materials
Resin technology

MCI

SunTox

Strengths

Product lines aimed at everyday food items sold at convenience stores & supermarkets, etc.

Defines itself as a GPI* & focuses on flexible packaging materials

*General Packaging Industry

Rengo

RM TOHCELLO

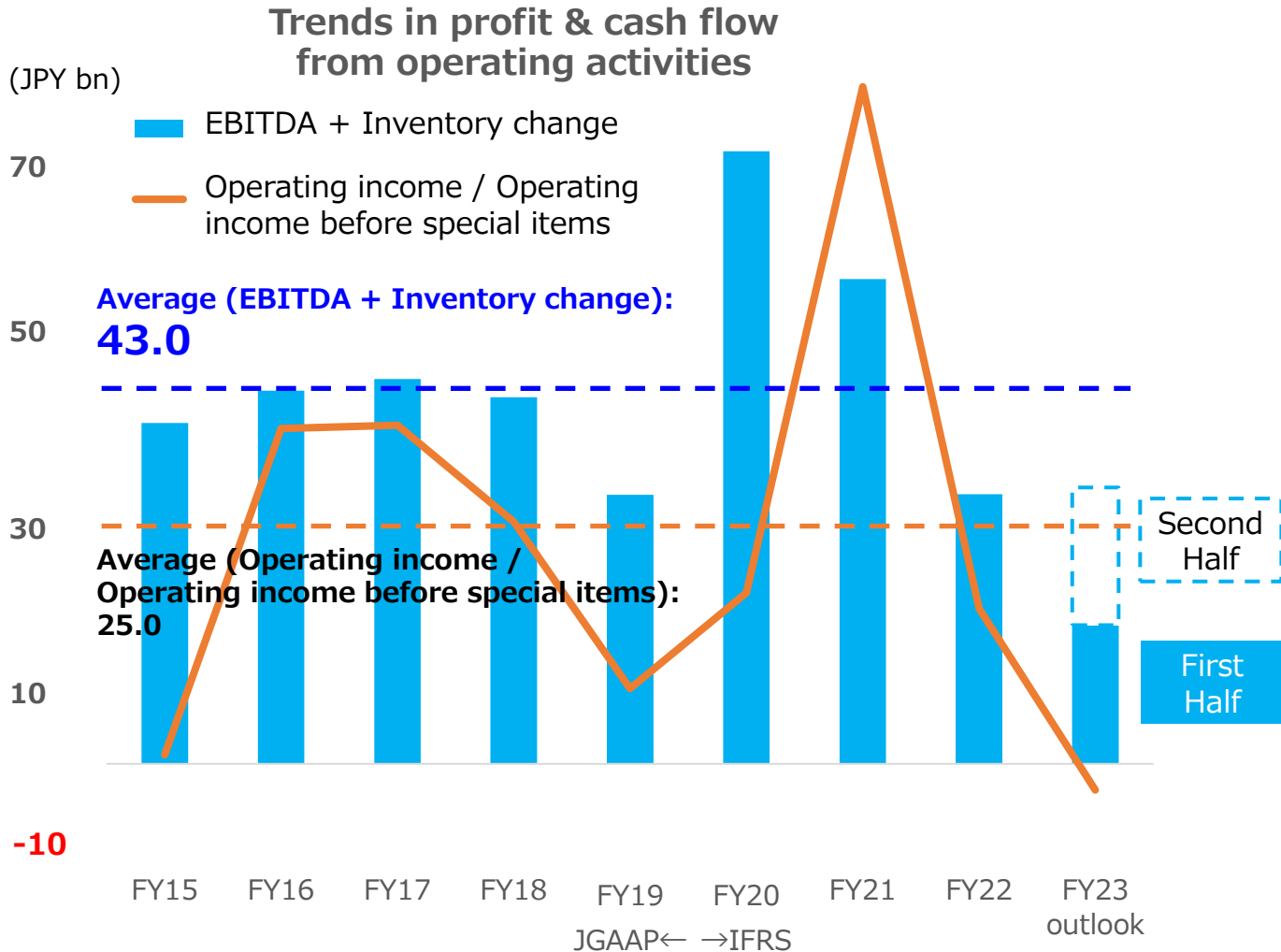
Strategy **Stabilizing the earnings base** through scale expansion in Japanese OPP/CPP market

Creating higher added value through eco-friendly offerings and product differentiation

Tapping into Asian market growth

Reducing volatility and strengthening the business foundations by **accelerating the second phase of restructuring**

Stable cash flow ensured ⇔ **Profit still highly volatile**



	External environment	
PH (Japan)	Changes in Japanese market (Business withdrawal by clients)	<div style="border: 2px solid red; padding: 10px; text-align: center;"> <p>Second phase</p> <p>Promoting further restructuring to stabilize profit</p> </div>
PET (Japan)	Influx of products from abroad	
PE/PP	Stagnating Chinese economy Influx of products from abroad	
Crackers	Dwindling derivatives demand	
PTA (Japan)	Dwindling domestic demand	Shutdown completed August 2023
TDI (Japan)	Continued global oversupply	Downsizing July 2025

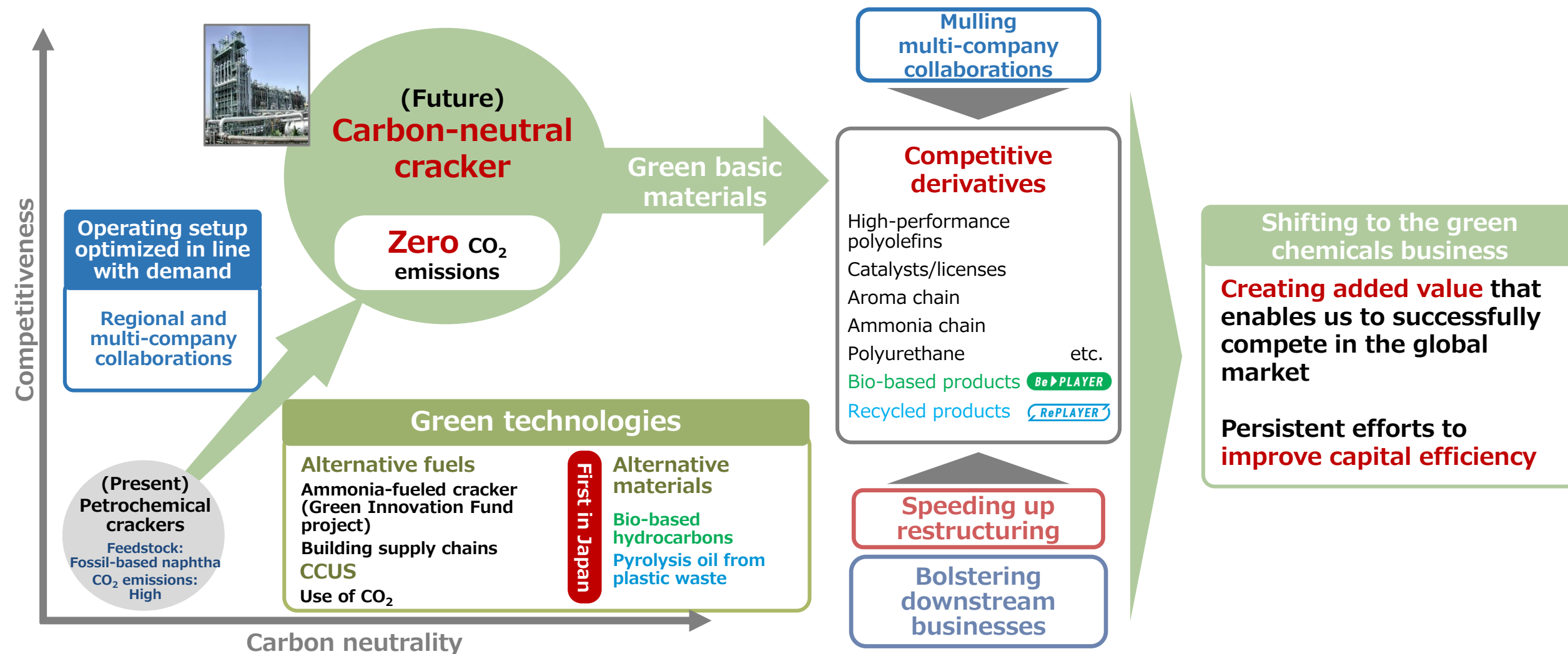


	FY13-17	FY18-22	FY23-25	Ideal state
	Securing stable earnings via restructuring	Reducing volatility	Improving capital efficiency (8% ROIC by FY30)	
PH	AC-based IPA production starts	Honshu Chemical Industry takeover bid	2023: AC-based IPA capacity boost Mulling efforts to bolster production of HQ	Highly capital-efficient PH chain
	Chiba BPA/PH plant closed	MPS share transfer	Mulling domestic downsizing ★	
PTA & PET	Indonesia PTA business share transfer	Thailand PTA & PET business partial share transfer	2023: Iwakuni-Ohtake PTA plant closed	Securing profit through optimal business structure
			2024: Iwakuni-Ohtake PET plant to close ★	
Polyurethane	Bio-PPG joint venture established	MCNS dissolved	2023: PPG LLP founded 2024: High-performance MDI plant to start up	High-profitability polyurethane business centered on high-performance MDI
	Kashima TDI plant closed Omuta MDI plant closed		2025: Omuta TDI plant to be downsized	
PP & PE	High-performance PE plant established in Singapore PP catalyst plant starts up		2024: High-performance PP plant to start up	Highly capital-efficient high-performance polyolefins business
	2 PE lines at Chiba closed 1 PP line at Chiba closed		2023: 1 PP line at Chiba closed Mulling optimization via multi-company collaborations ★	
Crackers	Chiba LLP founded Withdrawal from Keiyo Ethylene		Mulling reorganization & capacity optimization in line with demand ★	Competitive crackers



Transitioning to advanced chemical complexes – with a focus on regional and multi-company collaborations - while also speeding up the shift to the green chemicals business

Advanced chemical complex



Helping to reduce CO₂ by promoting the social implementation of bio-based products

Japanese Consumers' Co-operative Union food packaging

First time the Eco Mark has been awarded for food packaging using bio-based PP produced under the mass balance system

Added to the certification standards in February 2023



Adopted for five products as of November, **with rollout to additional products planned in due course**

Megloo reusable container sharing service

Reducing waste generated by takeaway meals from restaurants

Using bio-based materials in reusable containers

Support for Kaman, the company rolling out Megloo, via the Alliance to End Plastic Waste



Tableware designed by KUMA Kengo for the environmentally conscious brand hide k 1896

New material containing bio-based PP & wood flour produced from thinned wood

Made from **TRANSWOOD**, a new recyclable wood developed through the application of Toyota Auto Body's TABWD™ in a new form



Adopted by

The Okura Tokyo / Palace Hotel Tokyo / Imperial Hotel Tokyo

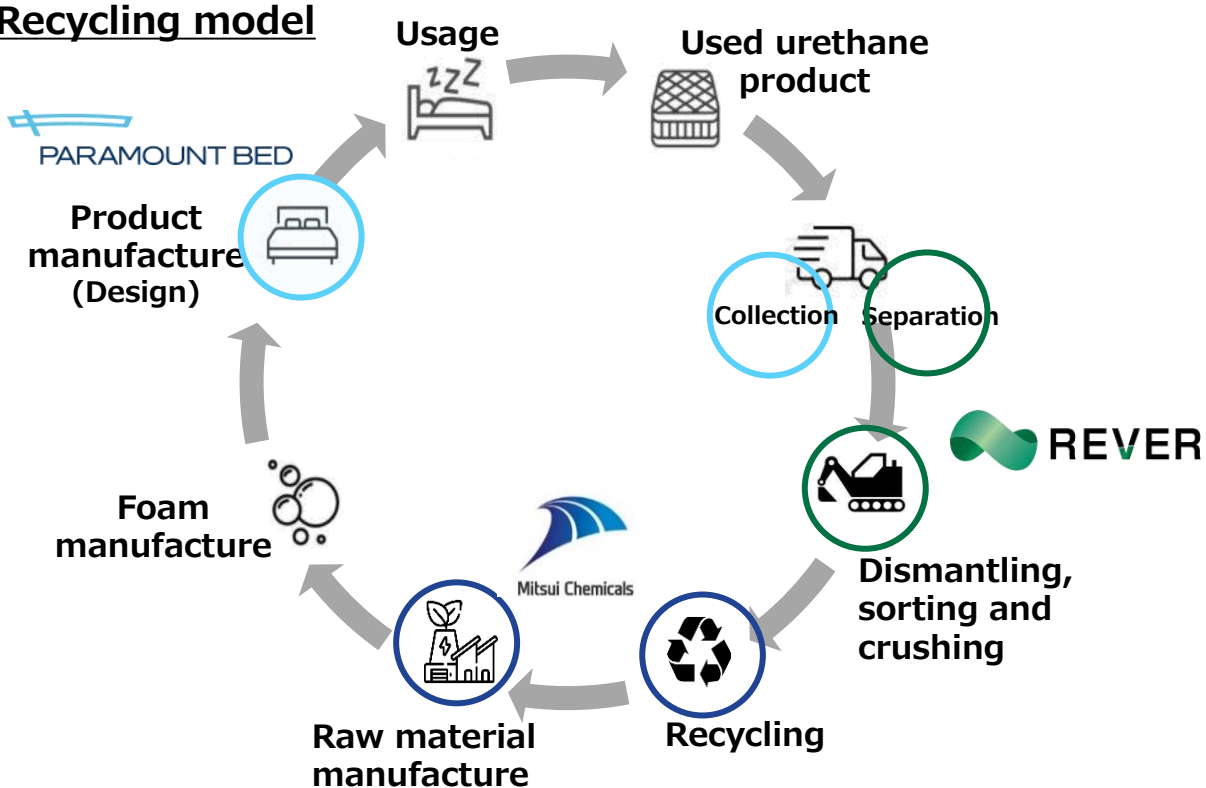
Rollout to additional clients planned in due course



Chemical recycling of polyurethane mattresses

Adopted for the Ministry of the Environment's FY2023
**Program to Promote Establishment of Decarbonized
and Circular Economy**
(Aiming for development by 2025)

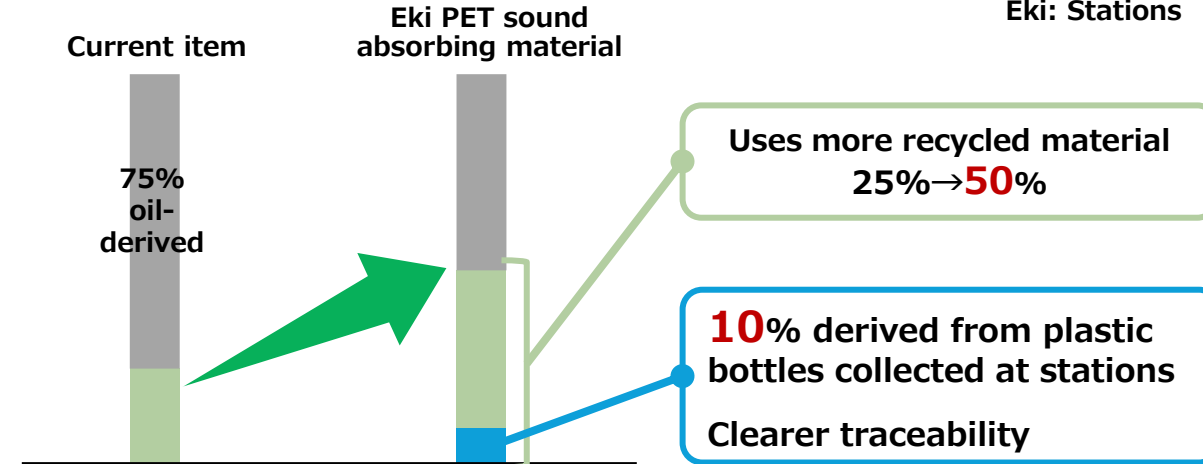
Recycling model



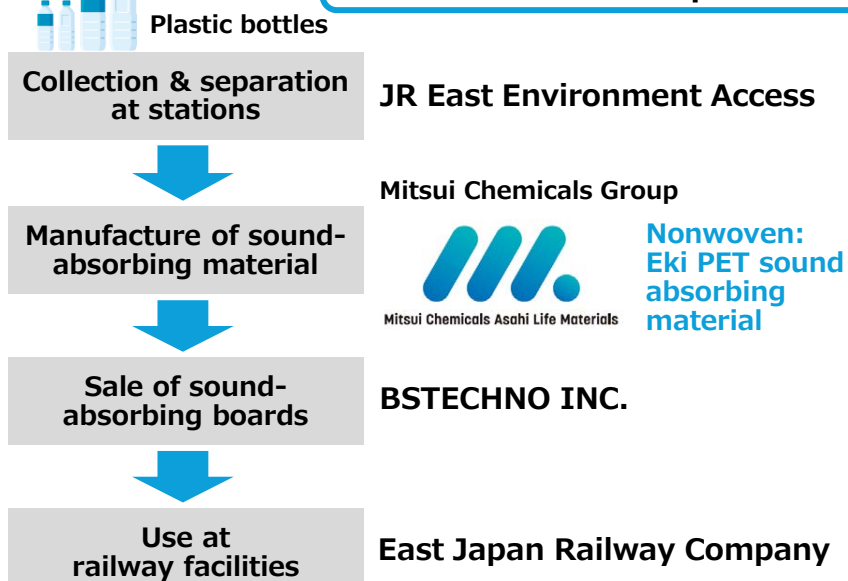
Aiming to reduce industrial waste in the form of used mattresses by establishing low-carbon chemical recycling technology and a recycling system that includes collection

Development of Eki* PET sound absorbing material

Eki: Stations



Developed via collaboration
between four companies



To be installed
along the Tohoku
Shinkansen line
(from December 2023)



Planned locations
for use



Success in existing technology improvement & innovative technology development at MCI-CNRC Speeding up efforts toward social implementation

Synthesis of ethanol from CO₂ using a metallic nanocube catalyst

Professor YAMAUCHI Miho &
Associate Professor KOBAYASHI Hirokazu
(patent pending)

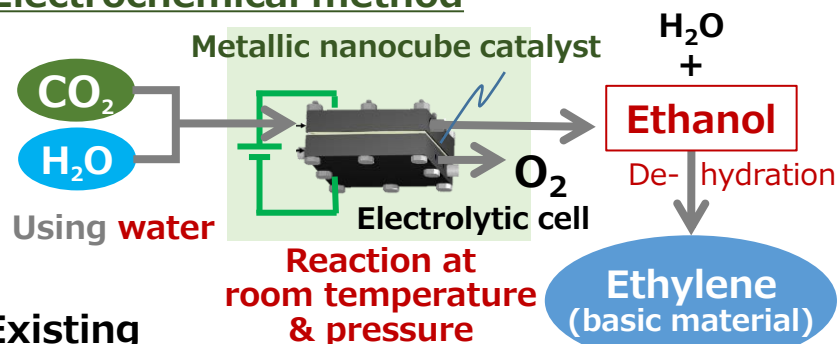
Synthesis of hydrogen & ammonia using a biophotocatalyst

Team led by Professor ISHIHARA Tatsumi
(article published in an international journal)

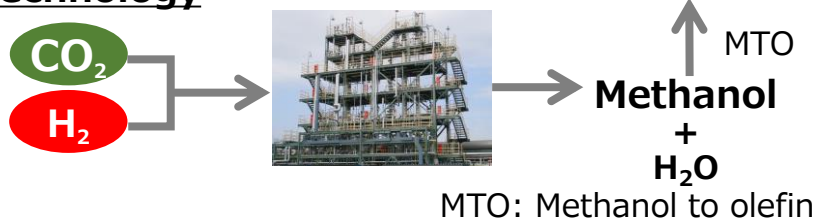
Synthesis of formate as a hydrogen carrier using plasma membrane enzymes

Team led by Associate Professor YOON Ki-Seok
(article published in an international journal)

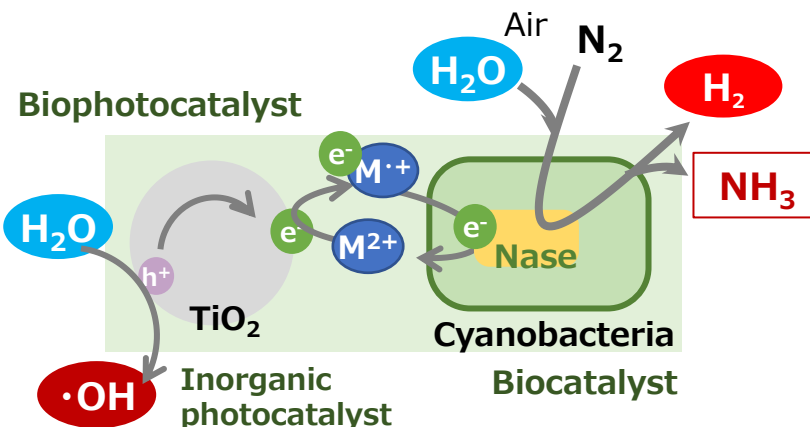
Electrochemical method



Existing technology

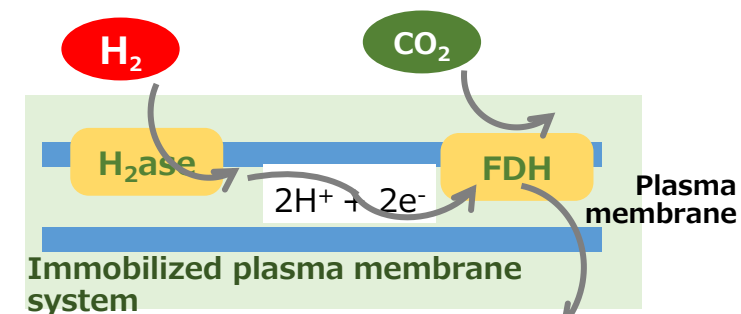


Succeeded in achieving highly energy-efficient ethanol synthesis using an electrochemical technique



M: Electron mediator
Nase: Nitrogen reductase

Succeeded in achieving highly efficient synthesis from water and nitrogen in air by combining a photocatalyst with a biocatalyst



Derived from novel *Citrobacter*
H₂ase: Hydrogenase
FDH: Formate dehydrogenase

Succeeded in achieving highly efficient formate synthesis by constructing a system for immobilizing plasma membranes

Challenges

- ✓ Further improving reaction rates & reaction efficiency
- ✓ Designing reaction modules suited to commercialization & demonstrating long-term stable operation



NAGORI™ selected for a new shaver housing

Panasonic Corporation: LAMDASH PALM IN
(launched September 2023)



Texture similar to ceramic or natural stone
Mineral-derived antibacterial and antiviral properties*

(*Awarded SIAA marks by the Society of Industrial Technology for Antimicrobial Articles)

What is NAGORI™?

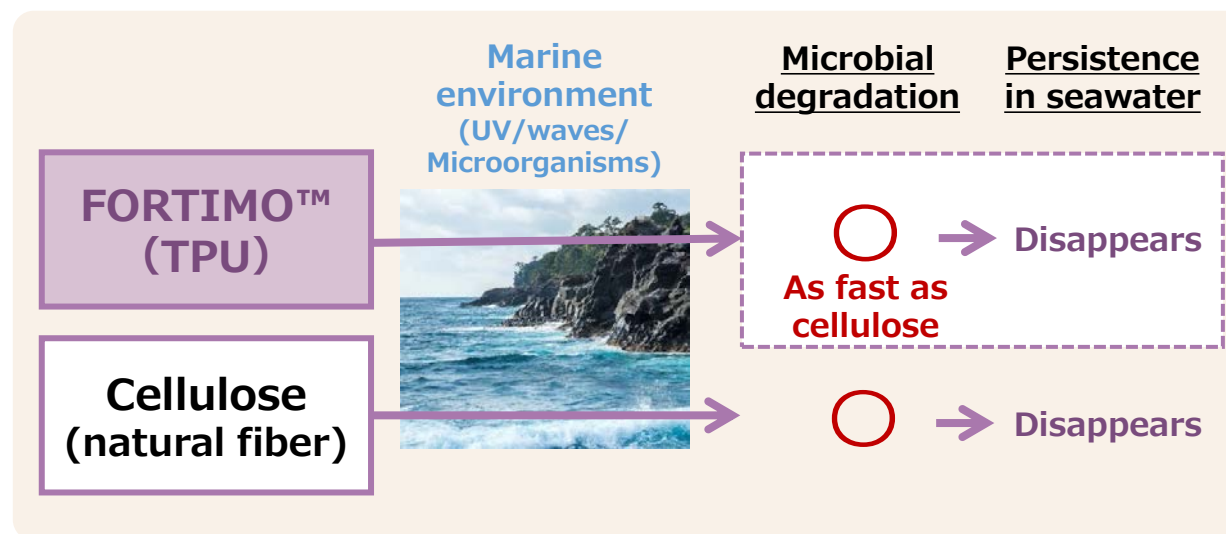
A new composite material made with up to 75% mineral components from seawater

Aimed at mitigating looming marine environmental issues and also at encouraging future use of brine discarded in the seawater desalination process

Development of marine-degradable polyurethane

A specific grade of FORTIMO™-based thermoplastic polyurethane elastomer (TPU) confirmed to demonstrate marine degradability at least equivalent to cellulose*

Shedding light on marine degradability mechanisms and developing brands, applications and markets





Increasing the quantity & quality of candidate projects to create the next generation of core businesses

① Identifying new business candidates

② Monitoring based on our own transparent & fair indicators

Help desk @ R&D Center

Co-creation based on researchers' ideas

Business contest

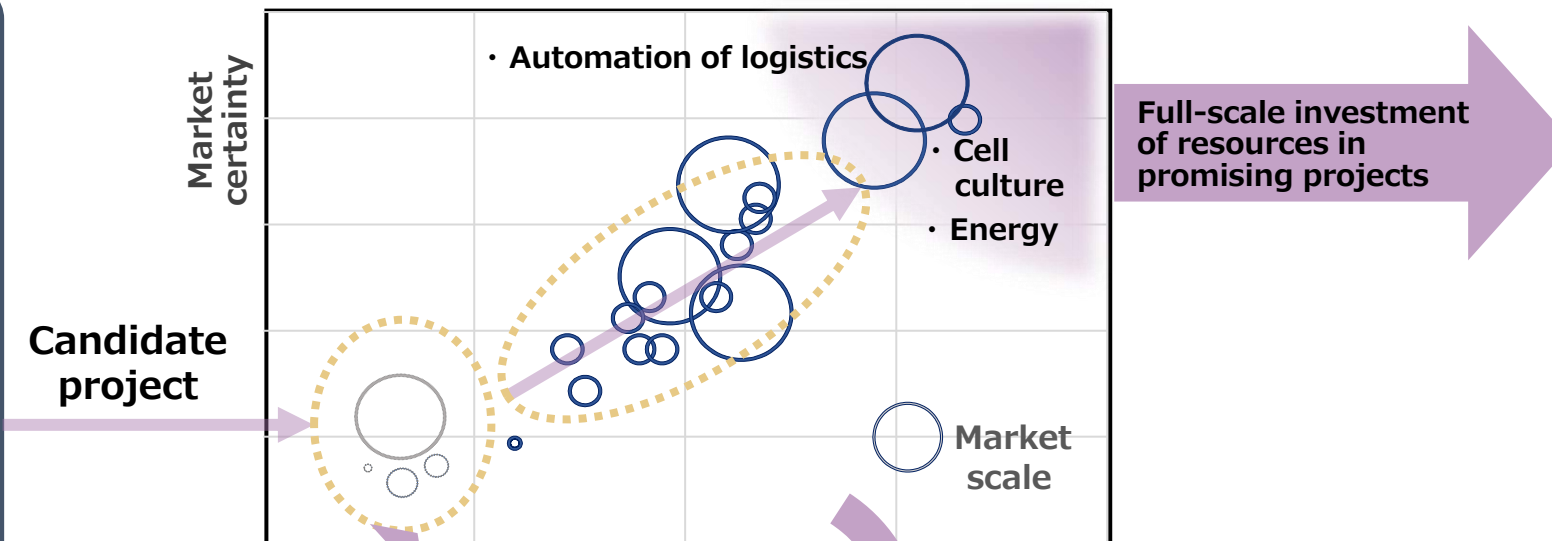
Using suggestions from domestic & overseas affiliates to identify **region-specific** social challenges and ideas that leverage **each company's distinctive features**

New Business Incubation Center (NBIC) provides support to improve the quality of ideas

CVC

321 FORCE
Future of Research & Clever Execution

Tapping into external resources to acquire the seeds of future business endeavors



Next-gen core business

③ Refinement process to cultivate projects

Intensive debate

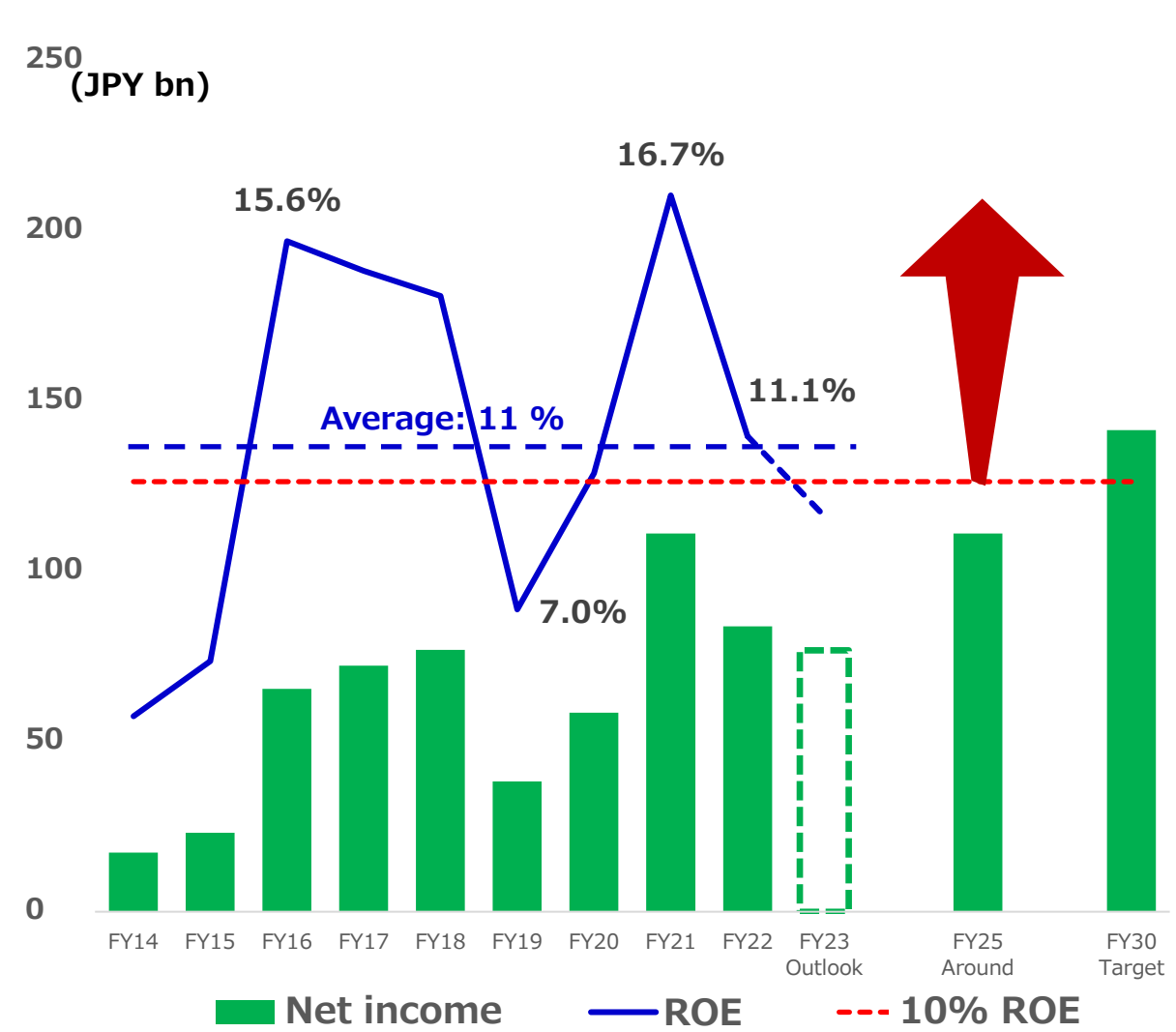
Project tryout

"Sparring practice" in the market

Verification of concept
Customer evaluation
Startup collaboration

Thoroughly exploring business model & strategic certainty in order to cultivate and improve quality of projects

Seeking to increase our P/B ratio by raising the level of ROE (under consideration), accelerating profit growth in growth domains, promoting the second phase of restructuring, shifting to the green chemicals business and more



Accelerating business portfolio transformation	<ul style="list-style-type: none"> ✓ Accelerating profit growth in growth domains ✓ Managing business portfolio by reviewing ROIC & profit growth potential of each business
Improving capital efficiency in B&GM	<ul style="list-style-type: none"> ✓ Promoting second phase of restructuring to reduce volatility and adopt an asset-light structure ✓ Transitioning to advanced chemical complexes and shifting to the green chemicals business ✓ Strengthening regional and multi-company collaborations to accelerate the shift
Enhancing cash generation capabilities	<ul style="list-style-type: none"> ✓ Improving cash flow from operating activities via increased earnings and an improved cash conversion cycle
Capital policy	<ul style="list-style-type: none"> ✓ Further boosting shareholder returns in line with the rise in profit levels
Reducing capital costs	<ul style="list-style-type: none"> ✓ Improving management quality through dialogue with stakeholders ✓ Improving quality of investor relations activities <p>Won first place in the Award for Excellence in Corporate Disclosure for 3rd consecutive year & 7th time overall</p>

	FY22 Results	FY23 Outlook	FY25 Around	FY30 Target
Operating income before special items (B yen)	114	112	200	250
Net income attributable to owners of the parent (B yen)	83	76	110	140
ROE	11.1%	9.2%	10% or more	10% or more
ROIC*1	5.4%	4.7%	7.0% or more	8.0% or more
NET D/E	0.77	0.73	0.8 or less	0.8 or less

*1) ROIC (return on invested capital) = NOPAT/invested capital

Contributing to a sustainable society

Material topics	KPIs	FY22 Results	FY23 Target	FY30 Target
<ul style="list-style-type: none"> Climate change Circular economy Health and livelihood Highly livable communities Food security Product design based on full life-cycle considerations 	Blue Value™ products sales revenue ratio	•22%	•24%	•40%
	Rose Value™ products sales revenue ratio	•21%	•25%	•40%
	GHG emissions reduction rate (Scopes 1 and 2) *compared to FY13	•27%	•26%	•40%

Prerequisites for business continuity

Material topics	KPIs	FY22 Results	FY23 Target	FY30 Target
• Safety	Incidence of major accidents & serious occupational injuries	•Zero	•Zero	• Zero (over the course of VISION 2030)
• Respect for human rights	Response to human rights risks	<ul style="list-style-type: none"> Revised & announced Human Rights Policy Implemented human rights due diligence 	<ul style="list-style-type: none"> Implementation of human rights due diligence Establishment of internal structure for addressing human right risks 	• Identification & correction of risks by setting up a human rights due diligence system for all of or bases, both domestic and abroad
• Risk & compliance management	Incidence of major legal and regulatory violations	•Zero	•Zero	• Zero (over the course of VISION 2030)
• Product quality	Incidence of PL accidents & serious product quality incidents	•Zero	•Zero	• Zero (over the course of VISION 2030)
• Stable production	Introduction of advanced technologies Implementation of advanced production technology centered on AI/IoT	•12 instances	•10 instances	•100 instances (Over FY21~30)

Abilities essential to business continuity

Material topics	KPIs	FY22 Results	FY23 Target	FY30 Target
• Corporate culture	Improvement of employee engagement Engagement score	• Implementation rate for improvement plans from our FY21 survey : 100%	• 36% or more	• 50%
• Human capital	Key talent management Successor coverage rate for critical positions	• 211%	• 235% or more	• 250%
	Diversity • (MCI) Number of executive officers with diverse backgrounds (women, non-Japanese, mid-career hires) • (MCI) Ratio of women in management positions (manager-level or above)	• Diversity rate of future executives: 17.8% • 5%	• Diversity rate of future executives: 20% or more • 7% or more	• 10 or more (including at least 3 women) • 15%
	Health-focused management • (MCI) Average rate of lifestyle-related disease • (MCI) Frequency of absences from work due to mental health disorders	• 9.5% • 0.51	• Less than 9.25% • Less than 0.47	• 8.0% • 0.25
• Digital transformation	Training of DX specialists Number of data scientists	• 34	• 83	• 165 (by FY25)
• Innovation	Pipeline expansion • Number of development themes in the latter half of our Stage Gate System	• Launched CVC operations • Stage 1 themes registered: 38	• Stage 1 themes registered: 30 or more	• Double or more (vs. FY20)
	Value creation for beyond 2030 Number of new areas of development at our Frontier Technology Center	• 3 candidates	• 3 or more candidates	3 or more areas
• Partnerships	Sustainable procurement ratio	• Engaged in communications with partners to solidify our efforts in this area Improvement request meetings: 9 companies	• Promotion of sustainable procurement Opinion exchange held with partners to build shared vision: 12 or more companies	• 80%

A blue sky with white clouds and a sunburst effect, with a large blue arrow pointing right.

A global solutions company that
leads change and contributes to a sustainable future

Chemistry for Sustainable World



Mitsui Chemicals

Challenge Diversity One Team

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