

0→1 MAKE IT HAPPEN



VISION 2030
Business Strategy Presentation
Mobility Solutions

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June 14, 2023

- ▶ **Mobility Solutions Business Strategy for VISION 2030**
- ▶ **Overview of the Mobility Solutions Business**
- ▶ **Market Environment**
- ▶ **Growth Strategy in line with Expanding EV Demand**



**Mobility Solutions Business Strategy for
VISION 2030**

Ideal vision

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

Helping solve social challenges through materials

Materials business

Elastomers

Composite materials

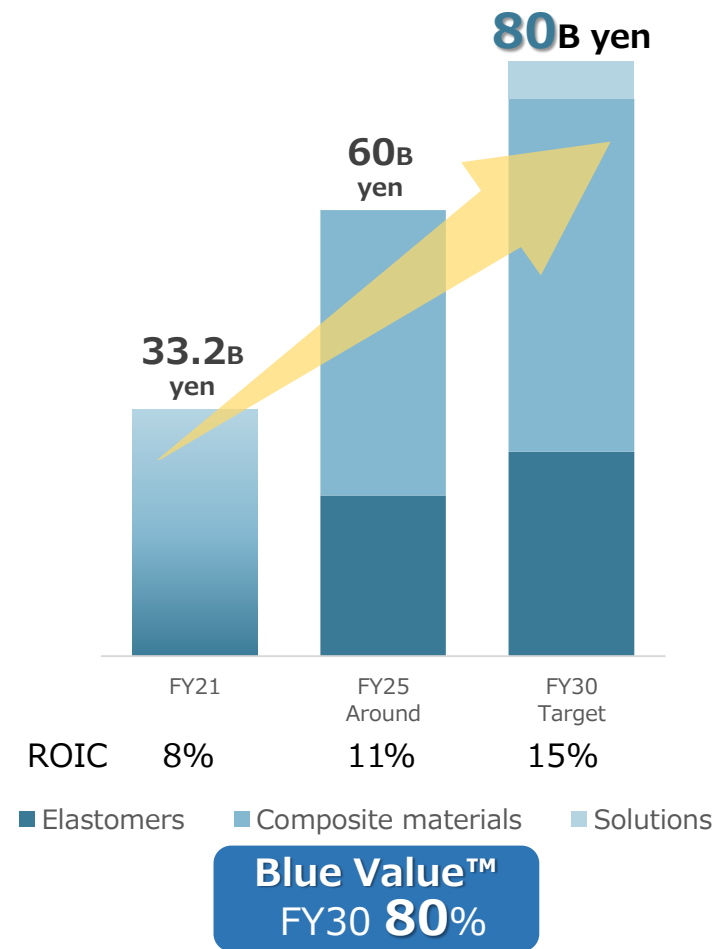


Offering solutions that combine materials with services

Solutions business

Business focused on offering modular components

Business based on providing services



Progress

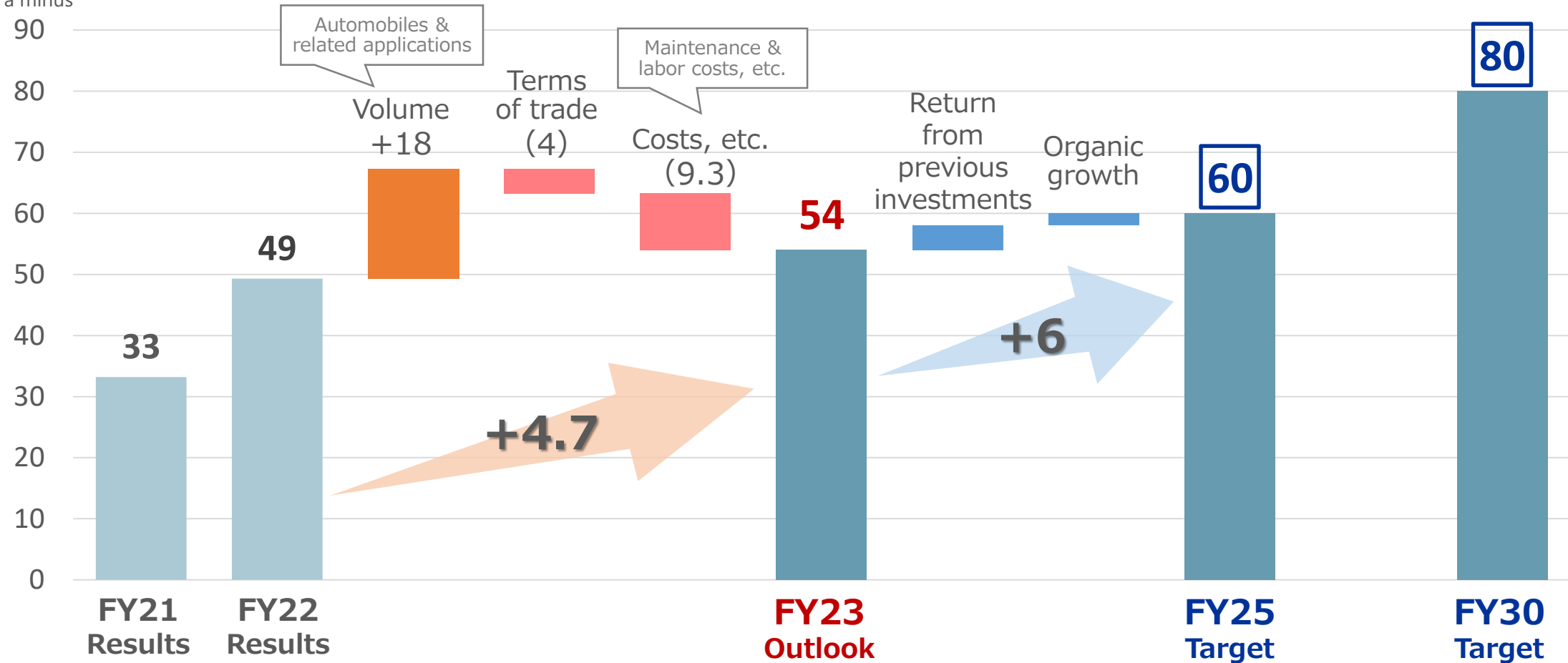
Toward our targets for 2030 and 2025, we are promoting our strategies for both “materials” and “solutions” businesses, and will enhance our initiatives quickly.



Overview of the Mobility Solutions Business

Growth of operating income before special items

() denotes a minus
(JPY bn)



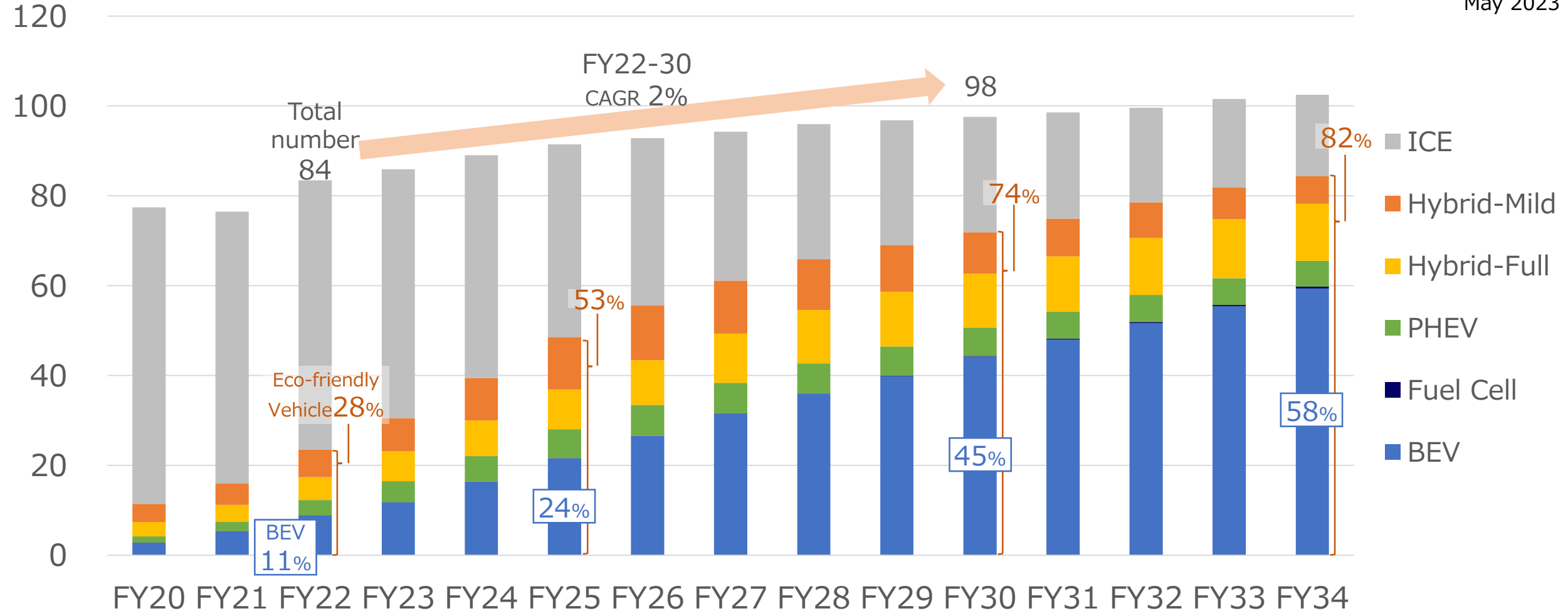
Through capturing high growth and high-value-added products' demand in automotive and related applications, we are achieving profit growth outpacing the increase of global automotive production in 2022–2023.



Market Environment

Source: : S&P Global Mobility
May 2023

Million vehicles

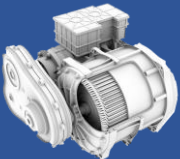
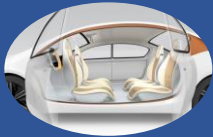


While the growth rate of total production is expected to slow over the long term, BEVs in particular are set for a surge in popularity.
***BEVs are expected to comprise about half of all production by 2030.**

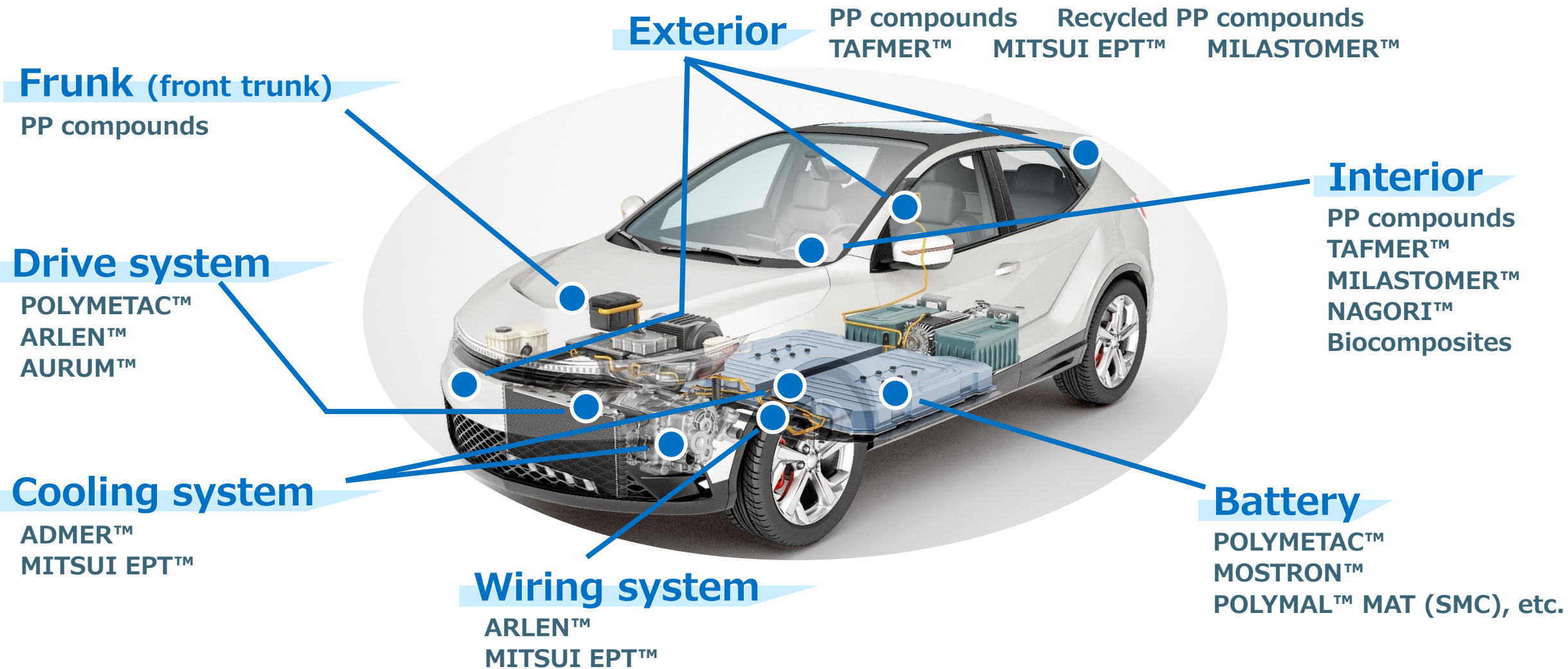


Growth Strategy in line with Expanding EV Demand

- (1) Changes resulting from shift to EVs**
- (2) Providing materials & solutions**
- (3) Supporting sustainability**
- (4) Initiatives for industry change**

		Exterior	Interior	Drive system	Battery	Wiring system
		Bumpers, liftgates, trunks, etc.	Instrument panels, seats, upholstery, etc.	Motors, inverters, cooling systems, etc.	Batteries, cases, cooling systems, etc.	Wire harnesses, connectors, busbars, etc.
Changes of powertrains (batteries, motors, etc.) 	Extended cruising range (improved electric mileage; increased battery capacity)	Lightweighting				
	Limiting heat generation while driving	Improved aerodynamics (design)			Improved aerodynamics (underbody)	
	Fast charging			Miniaturization	Increased capacity (increased size)	Space-saving High voltage
	Effective use of the engine compartment			Heat management	Heat management	High voltage
Higher added value in EVs 	More pleasant passenger cabins		Noise reduction Vibration absorption			
	Reduced environmental burden	Use of recycled/bio-based materials				
			Eco-friendly, animal-free leather			

New needs born from the shift to EVs are offering new opportunities for materials as well



Demand relating to engine parts (fuel tanks, etc.) decreases

We will continue to focus on developing materials and solutions that can capture EV-specific needs

As EVs become more widespread, supporting sustainability is increasingly important

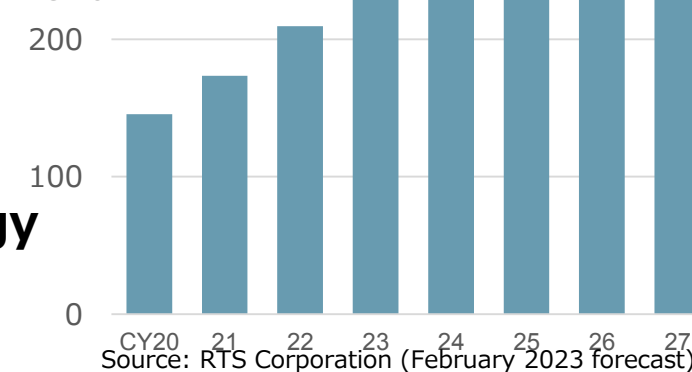


Encapsulant sheets for solar cells TAFMER™

- Increasing production capacity in view of the growing renewable energy market

**New plant in Singapore
 Construction to be completed in FY24**

(GW) Solar power market projections
 Market growth CY20-27 **CAGR 10%**



Internal & external parts for EVs Mechanically recycled PP compounds



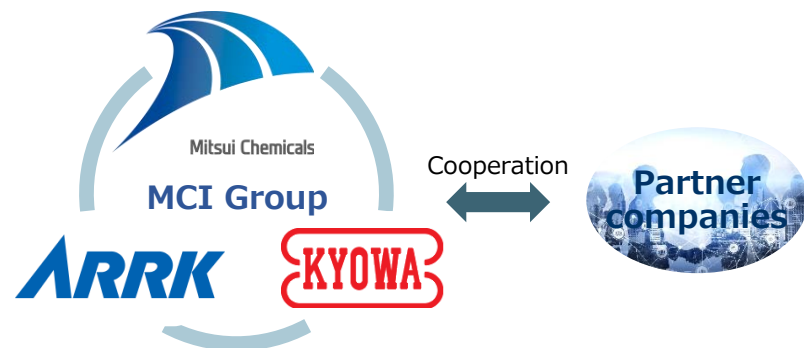
- Recycled material containing 30-50% post-consumer material

**Adopted and utilized in mass production by North America OEMs.
 Global rollout now being considered.**



Focusing on expanding and deploying measures that meet sustainability requirements

Responding to changes which is expected in the automotive industry's supply chain



- ◆ Development platforms for materials and solutions
- ◆ Deployment of global networks



For existing OEMs

- Supplying differentiated materials
- Proposing modular concepts

For startups

- Providing "One-stop development support" from design, evaluation to low-volume production

*Shift to EVs is opening the way for new players to enter into various mobility businesses

Focusing on providing not only materials supply and development proposals for existing OEMs but also support for startups

Strengthening and pursuing three approaches for an EV society

1 Providing materials & solutions **Quickly developing and offering competitive products and solutions**

2 Supporting sustainability **Pursuing efforts for sustainability to meet requirements from society and customers**

3 Initiatives for industry change **Focusing on both existing OEMs and startups**



Through steadily capturing the new business opportunities resulting from the shift to EVs, we'll continue to move forward to achieve our VISION 2030

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Mitsui Chemicals
Group

VISION 2030
Business Strategy Presentation
ICT Solutions

HIRAHARA Akio

平原 彰男

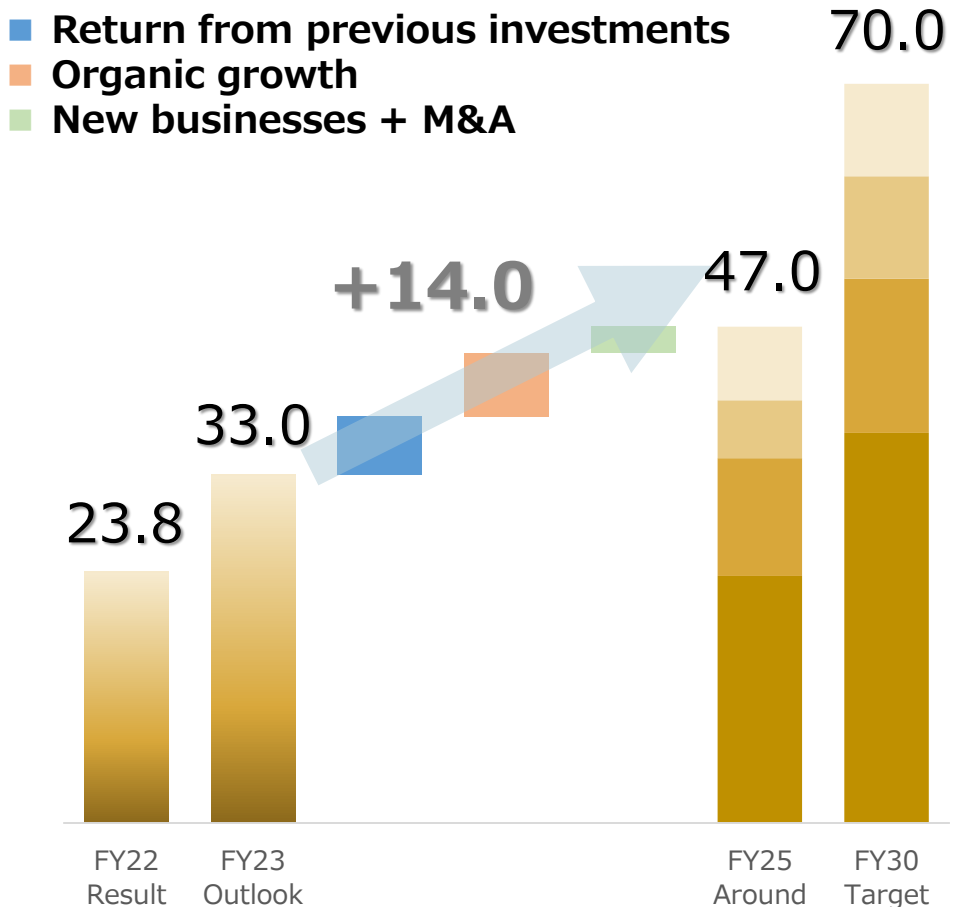
Senior Managing Executive Officer

Business Sector President, ICT Solutions Business Sector

June 14, 2022

1 Our Targets for 2030

(JPY bn)



■ Semiconductor & assembly
 ■ Imaging
 ■ Battery material
 ■ Converting

ROIC 9% 10%

10% 13%

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

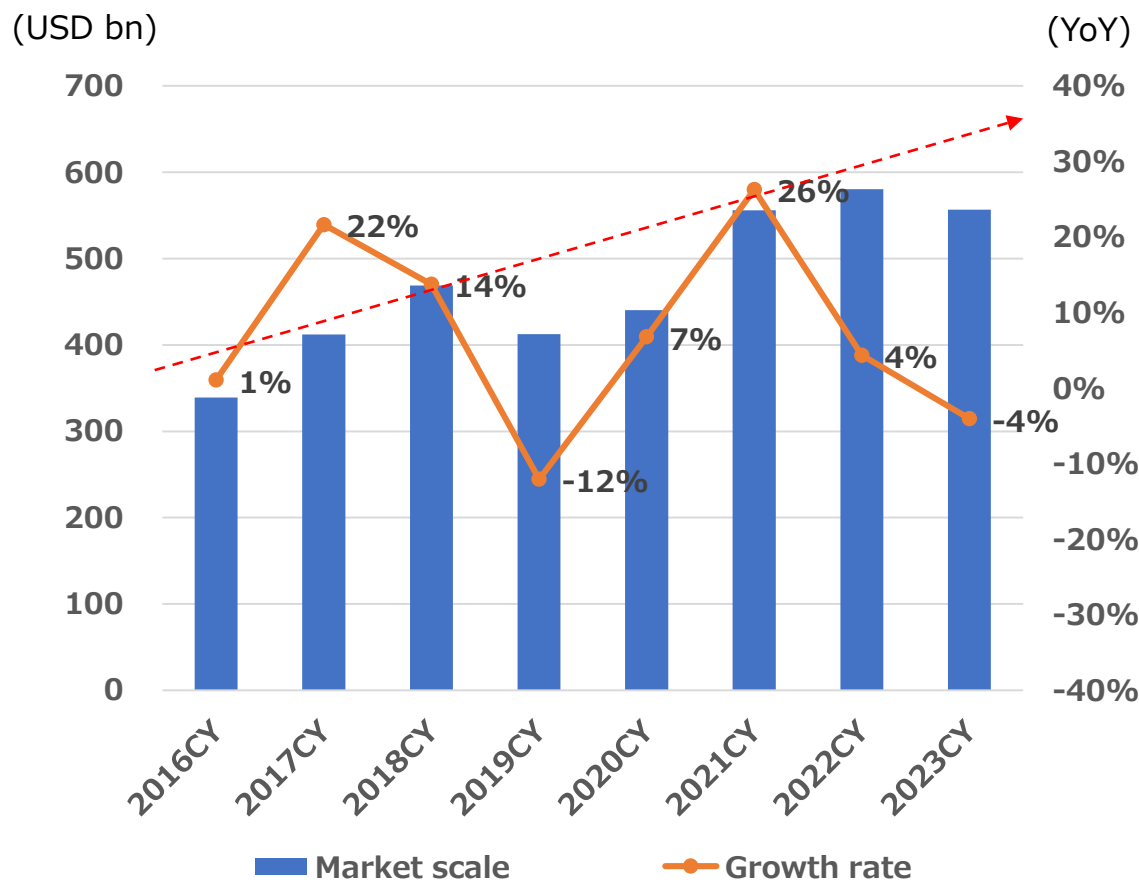
Strengthening our PUD*/POD** supply network

* Polyurethane dispersions / For monomaterial packaging

** Polyolefin dispersions / Heat-sealable coatings to be used on paper-based packaging

Medium-term growth in the semiconductor market

Global semiconductor market scale



Source: WSTS (figures for 2022 and 2023 are estimates)

Contributing to the advance of CASE

Connected: More advanced communications and 5G/6G-compatible materials

Gigafreq™ Resins for high frequency printed circuit board material

Autonomous: Materials relating to autonomous driving technology

APEL™ Resins for automotive camera lenses

Electric: LiB materials

HI-ZEX MILLION™ Resins for separators

BONRON™ Heat resistant coating for separators

MILLET™ Electrolyte

Semiconductors: Improvements & production increases

MITSUI PELLICLE™ Dust cover for photomasks

ICROS™ Tape Tape for the semiconductor manufacturing process

Following our plans for development & increased production capacity in pursuit of market recovery & expansion

Expanding the business by responding to technological innovation and diverse customer needs

Establishment of Mitsui Chemicals EMS (July 2023)

AsahiKASEI X Mitsui Chemicals

Aiming to be the world's No. 1 diversified pellicle manufacturer

- Top supply capability worldwide
- World's most advanced product technology & process development capability
- Industry No. 1 for sales, purchasing and logistics networks

EUV

Using first-mover advantage to expand our business and maintain our leading position

DUV(ArF immersion lithography)

Capturing the No. 1 position via acquisition of Asahi Kasei's business

FPD

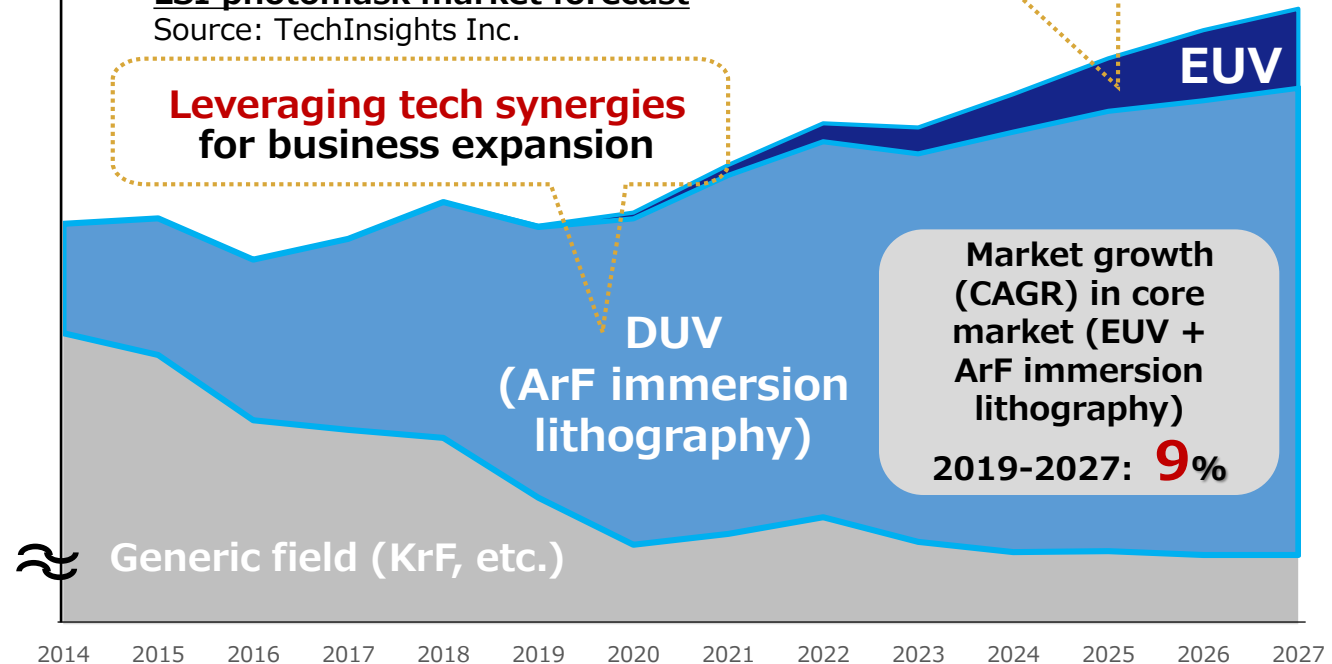
Maintaining the top market share held by Asahi Kasei's business

Improved EUV transmittance helps improve customer productivity

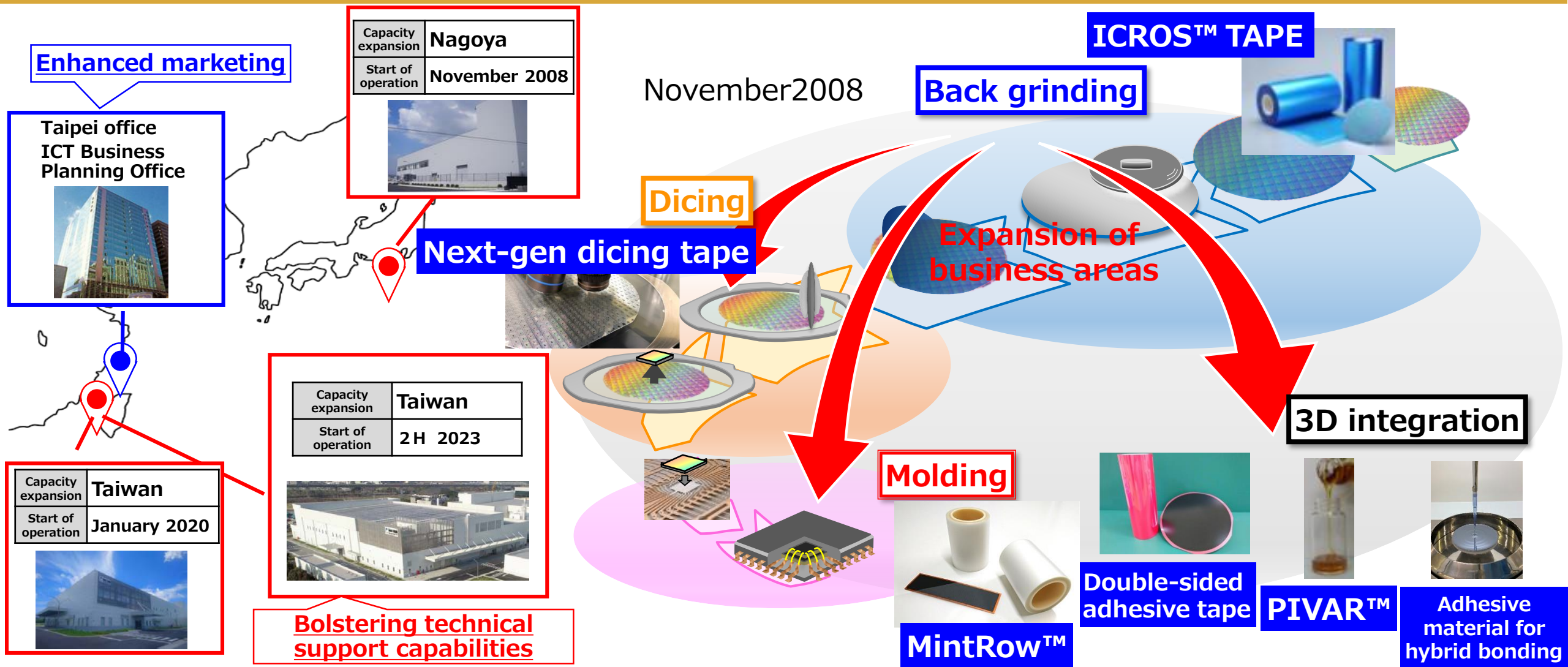


Volume

LSI photomask market forecast
Source: TechInsights Inc.



Pursuing further growth via enhanced marketing and increased supply capacity



Expanding our business scope from primarily the wafer backgrinding process to other processes

Forging ahead with product development to help bring about more advanced semiconductors

Miniaturization & 3D designs
("More Moore")

Front-end

Film formation

Developed a manufacturing process for **higher silane**

Used higher-density Si bonding to **improve deposition accuracy/performance**
Developed **low-temperature process**



Cleaning

Anthraquinone capacity boost

(from April 2025)

Catalyst used in hydrogen peroxide production



 Yamamoto Chemicals Inc.

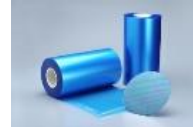
Thinning and 3D designs ("More than Moore")

Back-end

Wafer processing

ICROS™ Tape

Capacity boost (from 2H/FY2023)



Backgrinding tape

Technology development

Functional dicing tape

Thermal release adhesive tape

Portfolio expansion in new areas

Participating in IMEC's co-creation program

Belgian semiconductor research institution
(from April 2023)



Speeding up R&D of **organic materials** for **cutting-edge next-gen semiconductor manufacturing processes**

Higher speeds and lower power consumption

Assembly

Packages

CONNECTEC JAPAN

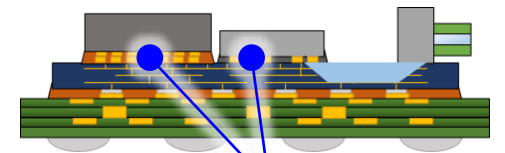
Cutting-edge assembly technology



Mitsui Chemicals

Materials technology

Assembly materials for next-generation semiconductor packages
(3D assembly/co-packaged optics technology)



Low-temperature bonding material for hybrid bonding

Business growth in new applications where high growth is expected

Adding functionality to enable a wider range of applications

- Improved transparency
- Improved birefringence



Smartphone camera lenses

- High refractive index
- Low birefringence
- Low water absorption



XR lenses

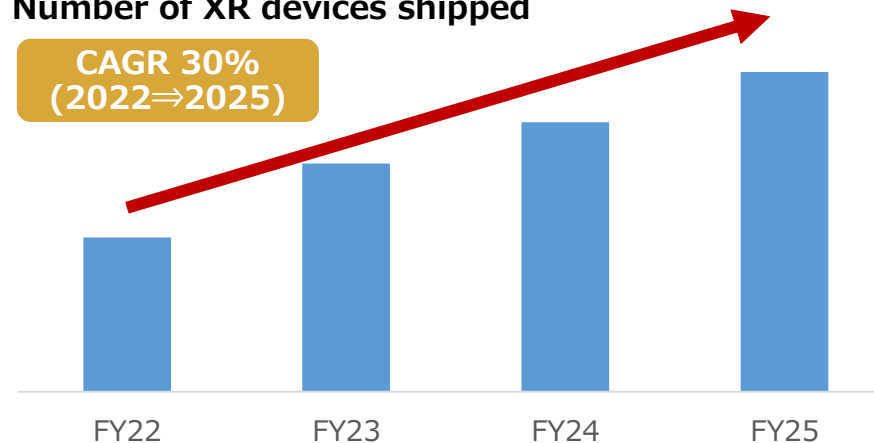


automotive camera lenses

- Heat resistance
- Improved long-term reliability

Number of XR devices shipped

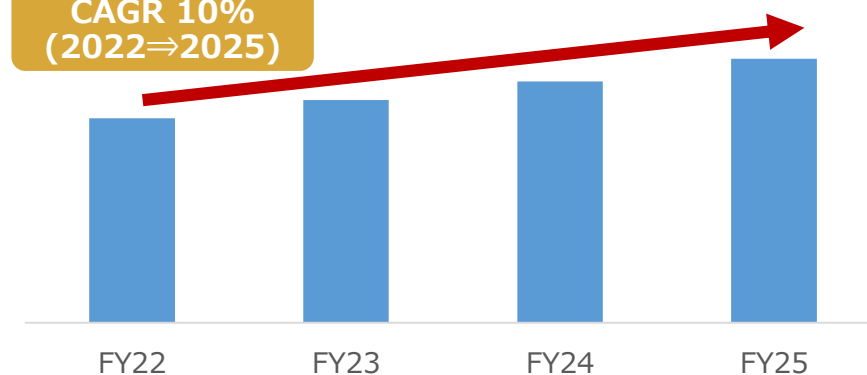
CAGR 30%
(2022⇒2025)



Source: IDC

Number of automotive camera lens modules shipped

CAGR 10%
(2022⇒2025)



Source: TOKYO SHOKO RESEARCH

Giving existing brands new functionality to allow for their adoption in XR devices and automotive cameras

Speeding up development of materials for EV applications

Electrolytes

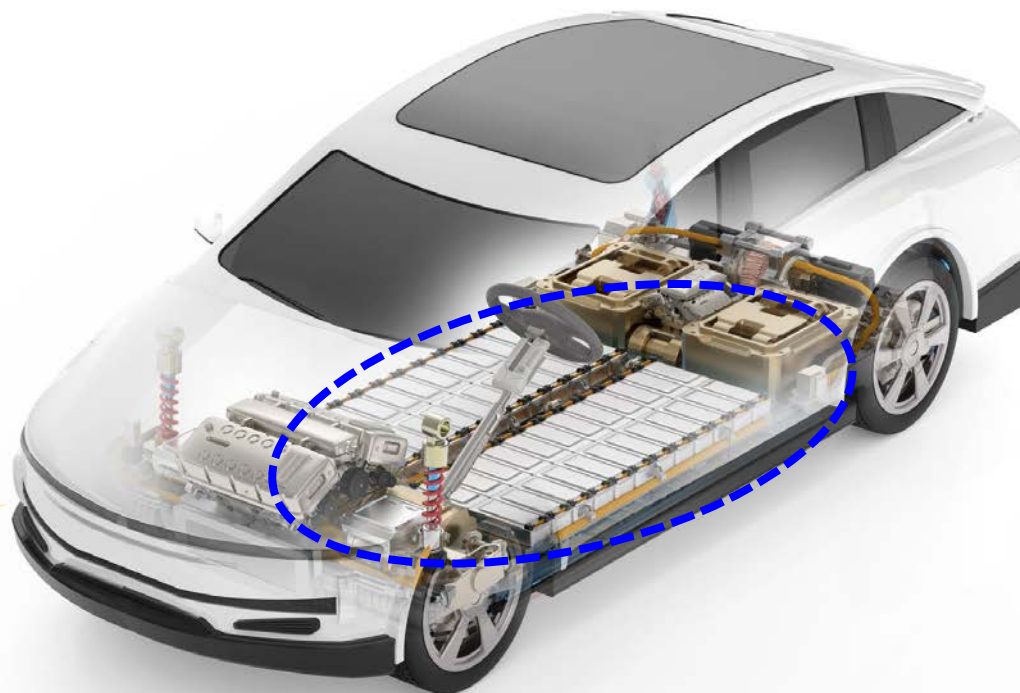
MILLET™**Electrolyte**

Compatible with next-gen
high-capacity batteries

Cell packages

UNISTOLE™**Adhesive for pouch**

Highly adhesive and workable



Separators

HI-ZEX MILLION™**Resins for separators**

A separator substrate
material with high strength
and precision

BONRON™**Heat resistant coating
for separators**

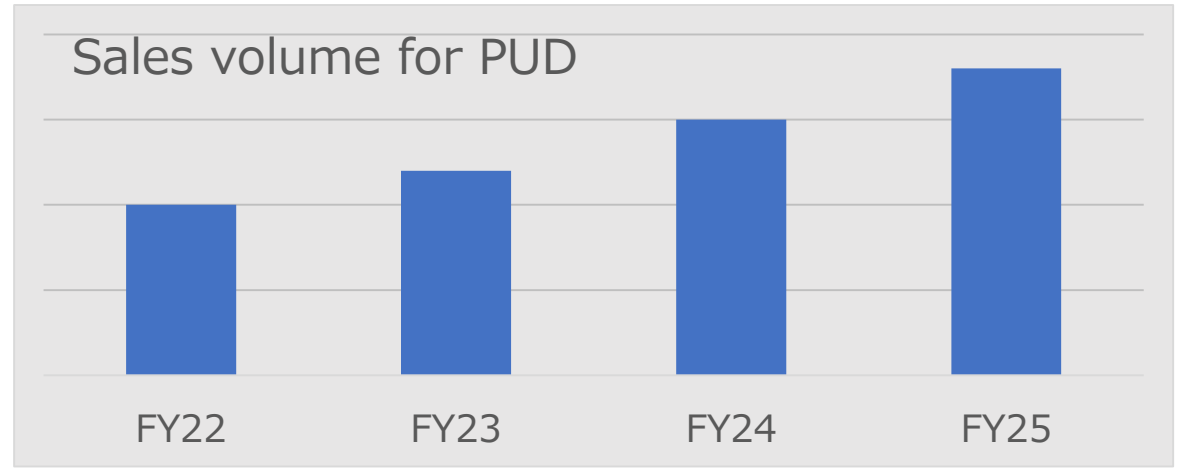
Ceramic coating binder

Providing materials and solutions in line with changes to battery technology

Eco-Friendly Packaging Materials

Rising needs and growing demand for sustainability

Focusing our global production network* toward performance improvements for functional materials and coatings



TAKELAC™ WPB

PUD*: Rising demand for barrier coatings to be used on monomaterial packaging

*Polyurethane dispersions

Example of use with monomaterial barrier-coated packaging:

—	Aluminum deposition:	<0.1μm
█	PUD:	0.1μm
█	Film (BOPP):	16μm

Reducing thickness to help meet European guidelines*

*PP, PE > 90%

CHEMIPEARL™ S

POD*: Rising demand for heat-sealable coatings usable amid the shift to paper-based packaging

*Polyolefin dispersions

Example of use with paper cups:

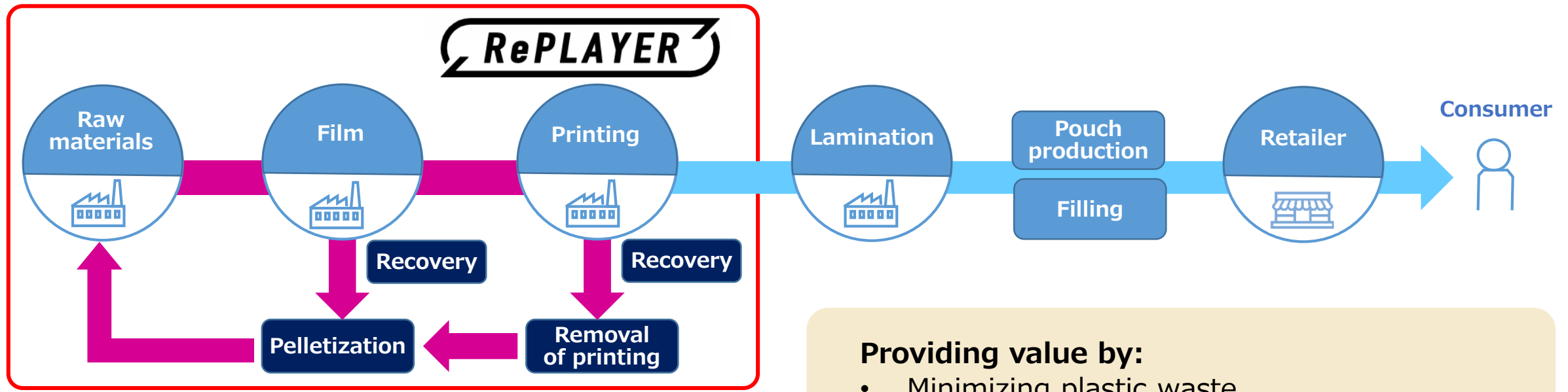
█	POD:	5μm
█	Paper:	80μm



Compared to PE laminate (15μm), PODs allow for thinner films, helping to minimize plastic use

Building a business model that allows materials to be horizontally recycled into food packaging

Recovering plastic film scraps that are currently treated as waste from the film-making and printing processes, and turning these scraps into pellets that **can be used to produce food packaging**



Recovering and recycling rolls of monolayer PP and PE film for use with food



Roll of plain product



Roll of printed product

- Providing value by:**
- Minimizing plastic waste
 - Minimizing the use of fossil resources
 - Supplying high-quality, recyclable, recycled materials for use in food packaging

Enhancing collaborative efforts with film manufacturers and converters in pursuit of material recycling for packaging materials

Consolidating our R&D capabilities in the field of ICT to establish a new facility for co-creation with customers

Innovative Solutions Center for Information & Communication Technology (Opened in fiscal 2022)

Consolidating our products and technologies relating to the field of ICT

Technology for molecular design & synthesis



Technologies for evaluating compatibility with customer processes



ICT research building in Nagoya (Opened in fiscal 2023)

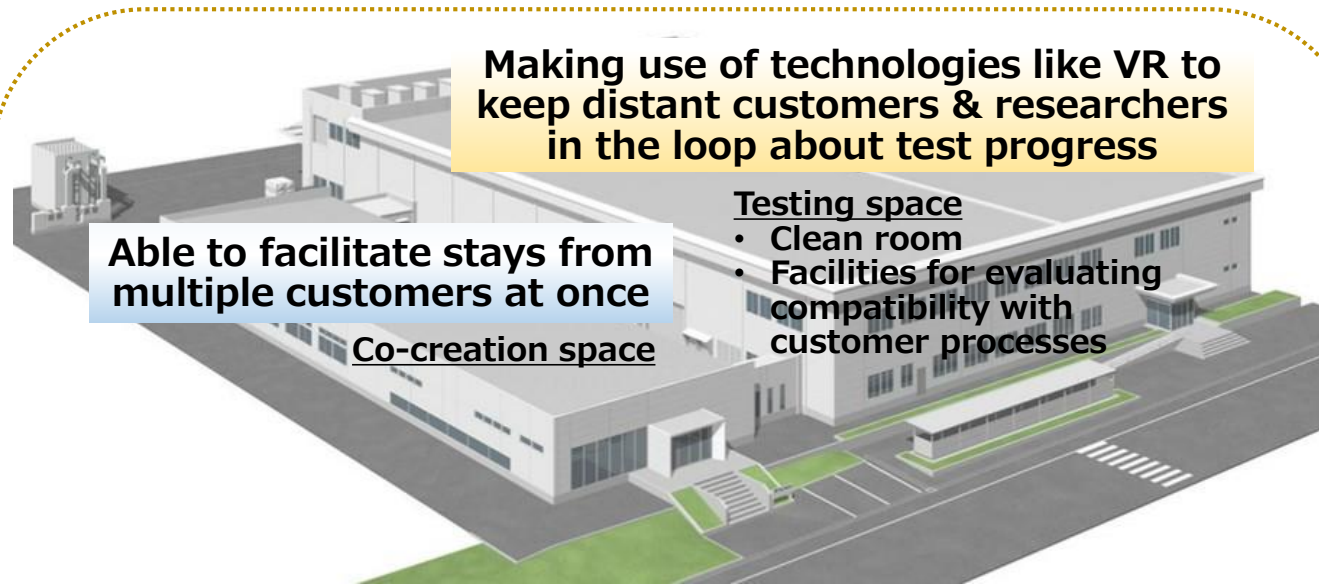
Making use of technologies like VR to keep distant customers & researchers in the loop about test progress

Able to facilitate stays from multiple customers at once

Co-creation space

Testing space

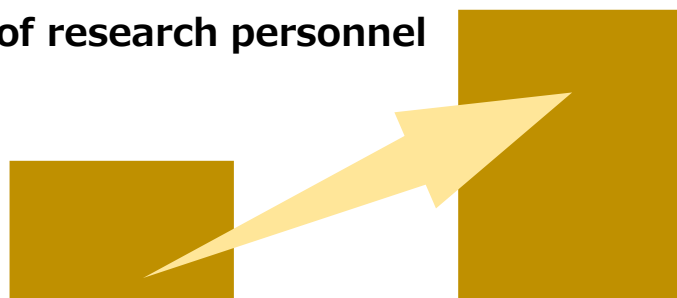
- Clean room
- Facilities for evaluating compatibility with customer processes



Bringing together evaluation facilities that are the same as those run by customers



Number of research personnel



FY22

FY23

Strengthening relationships with customers by speeding up development and proposing solutions



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

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Chemistry for Sustainable World



Mitsui Chemicals

Challenge Diversity One Team

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