

# **MITSUBISHI MATERIALS CORPORATION**

**IR Meeting Handout**

**December, 2021**

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### 【Reference】

- 1. Revised Medium-Term Management Strategy (FY2021 - 2023)
- 2. Consolidated Financial Results for the Six Months Ended June 30, 2021
- 3. ESG Meeting

# Corporate Profile / Business Situation

# Corporate Profile

# Corporate Profile

Company Name : Mitsubishi Materials Corporation  
Head Office : 2-3, Marunouchi 3-chome, Chiyoda-ku,  
Tokyo 100-8117 Japan  
Chief Executive Officer : Naoki Ono  
Capital Stock : ¥119,457 million (as of Mar. 31, 2021)  
Year of Establishment : 1950  
Number of Employees : Consolidated 27,162 (as of Mar. 31, 2021)  
Non-consolidated 6,153 (as of Mar. 31, 2021)  
Consolidated Subsidiaries : 140 (as of Mar. 31, 2021)  
Affiliated company accounted for by the equity-method : 19 (as of Mar. 31, 2021)

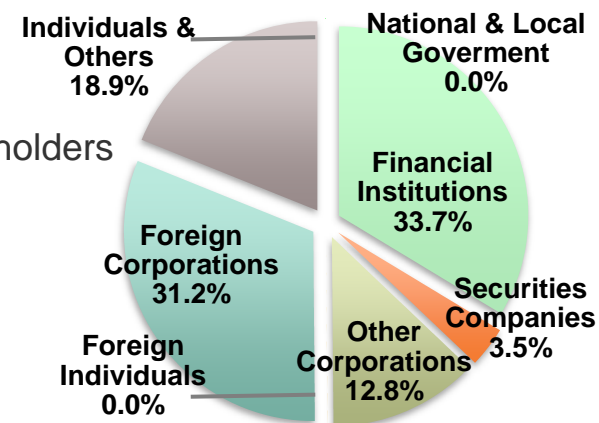


## Common Stock (Ticker symbol : 5711)

■ Shares of issued and Outstanding: 131 million  
Number of Unit Shareholders: 67,259  
Share Unit Number: 100

\*as of Mar. 31, 2021

■ Distribution of shareholders  
\*as of Mar. 31, 2021



# Business Structure

## Environment & Energy



- Renewable energy
- Environmental recycling

## Advanced Products

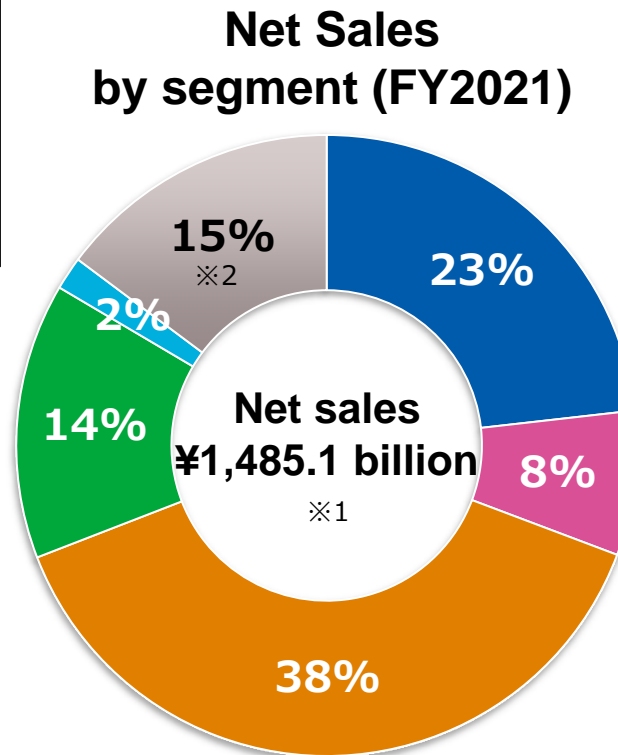


- Copper and copper alloy products
- Electronic materials & components

## Cement



- Cement
- Ready-mixed concrete
- Others



## Metalworking Solutions



- Cemented carbide products

## Metals



- Copper mining
- Copper smelting and refining

1 Sales to outside customers  
2 Others (Aluminum products, Engineering, etc.)

# Mission (Corporate Philosophy System)

## For People, Society and the Earth

We will become the leading business group committed to creating **a sustainable society** through materials innovation, with use of our unique and distinctive technologies, for People, Society and the Earth

### Create both social and economic values

**Contribute to build a prosperous society** by providing nonferrous metal materials, predominantly copper, and high value-added functional materials and products.

**Contribute to build a recycling-oriented society** by providing recyclable products and advanced technology-based waste recycling.

**Contribute to build a decarbonized society** by developing and promoting the use of renewable energies such as geothermal energy, and ensuring to consider the reduction of environmental impact in manufacturing.

### <Group-wide Policy>

- ◆ Optimization of business portfolio
- ◆ Comprehensive efforts to increase business competitiveness
  - > Manufacturing excellence, quality management, and digital transformation strategies
- ◆ Creation of new products and businesses
  - > R&D and marketing strategy



# Business Situation



# (Consolidated) Financial Goals

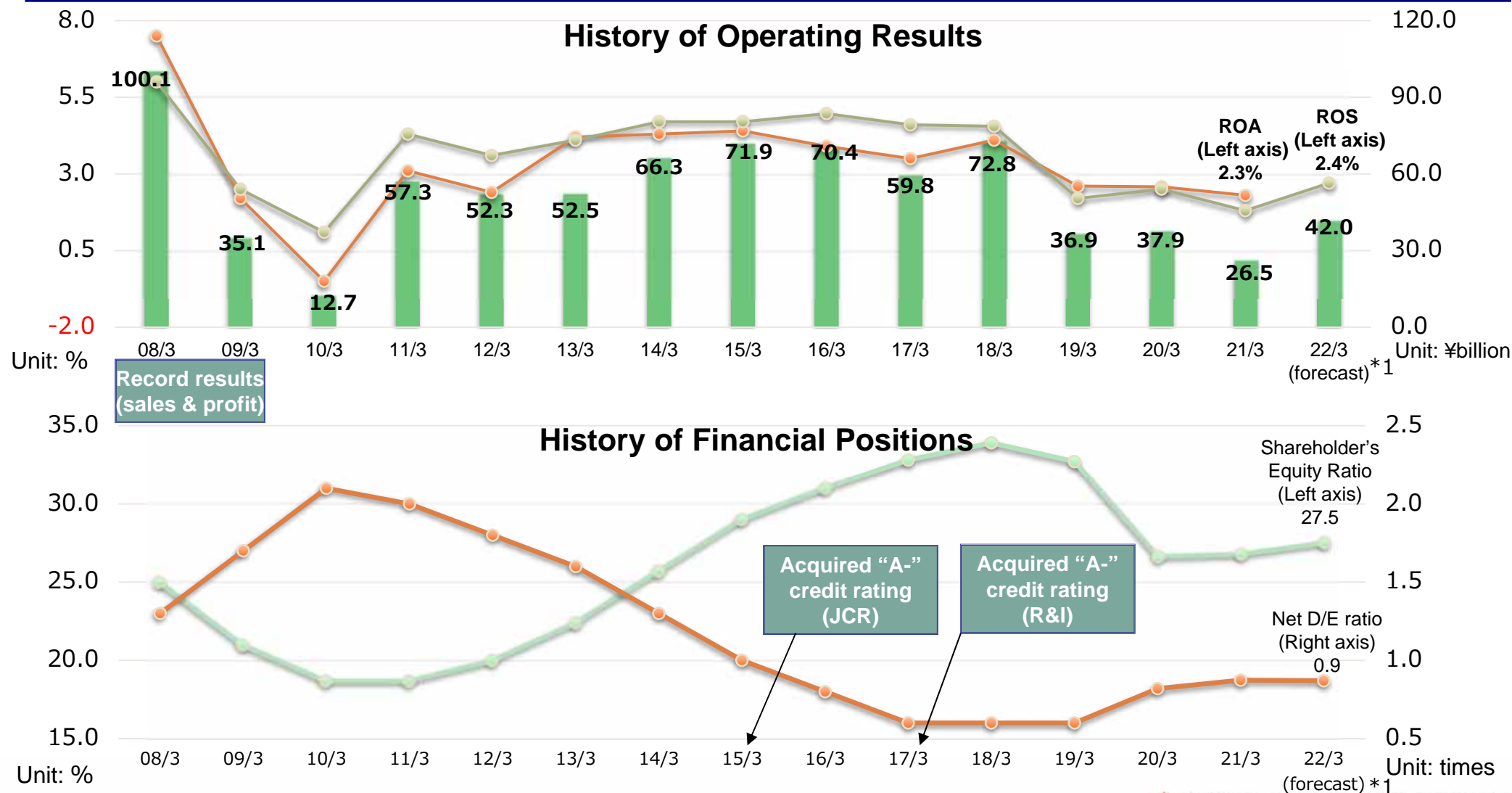
(Unit: million yen)

		FY2022 Forecast (Announced on November 9, 2021)	FY2023 Target (* 1) (Announced on May 14, 2021)
ROIC (%)		5.2	4.0
ROA (ordinary income to total assets) (%)		2.9	2.0
ROE (%)		6.7	6.0
PL	Net sales	17,600	14,100
	Net sales (excluding metal)	—	6,000
	Operating profit	420	290
	Ordinary income	590	380
BS	Total assets	20,000	18,200
	Net interest-bearing debt	4,800	3,600
	Shareholders' equity	5,500	5,600
Net D/E ratio (times)		0.9	1.0以下
Assumptions	Exchange rate (yen/\$)	110	110
	Exchange rate (yen/€)	130	130
	Copper price (¢ /lb)	426	330

\* 1 Assuming transition to equity method in cement business

# History of Operating Results

09/3-11/3: Following the Lehman shock, introduced comprehensive management measures to strengthen the corporate constitution  
 12/3-14/3: Medium-term Management Plan (Materials Premium 2013 - Aiming for New Creation)  
 Twin focus on growth strategy and enhancement of financial position  
 15/3-17/3: Medium-term Management Plan (Materials Premium 2016 - Challenge to become the world's leading business group)  
 Fortifying the foundation  
 18/3-20/3: Medium-term Management Strategy (- Transformation for Growth -)  
 21/3-23/3: **Medium-term Management Strategy with Value Creation Process**



\*1 Announced on November 9, 2021

## Consolidated Financial Results (Last 5 Years)

(unit : billion yen)

	FY2018 Result	FY2019 Result	FY2020 Result	FY2021 Result	FY2022 Forecast*
Net sales	1,599.5	1,662.9	1,516.1	1,485.1	<b>1,760.0</b>
Operating profit	72.8	36.8	37.9	26.5	<b>42.0</b>
Ordinary profit	79.6	50.6	49.6	44.5	<b>59.0</b>
Profit (loss) attributable to owners of parent	34.5	1.2	-72.8	24.4	<b>37.0</b>
Dividends per share (yen)	80 yen	80 yen	80 yen	50 yen	<b>80 yen</b> (including special dividend 30yen)
ROE (%)	5.3%	0.2%	-12.8%	4.6%	<b>6.7%</b>

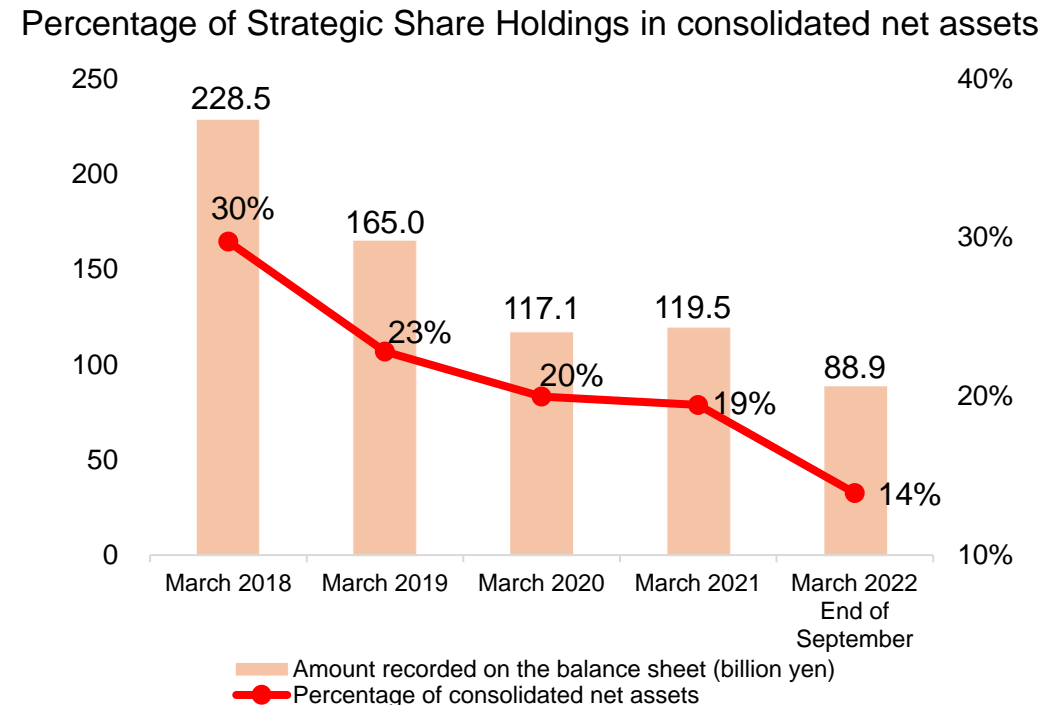
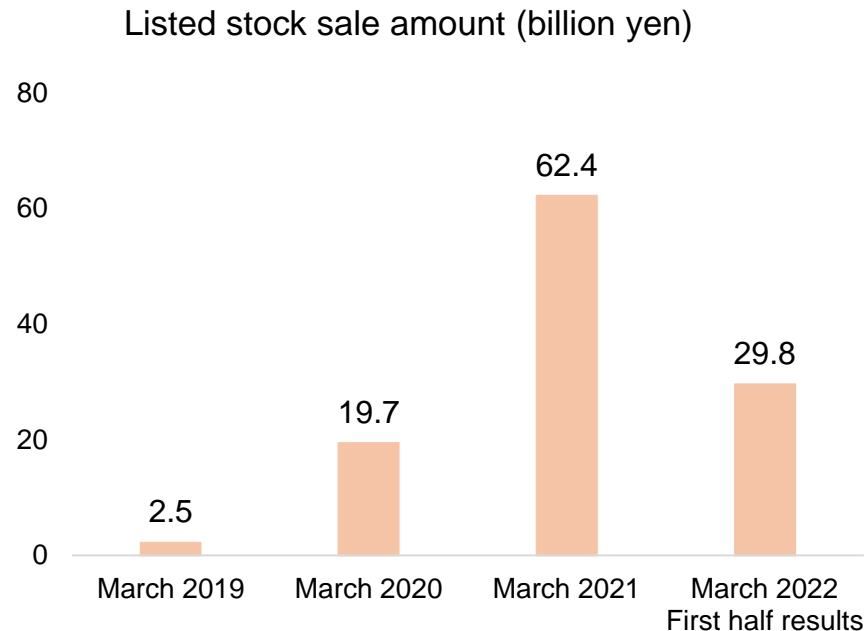
\* Announced on November 9, 2021

# Strategic Share Holdings

## Basic policy on Strategic Share Holdings (Article 7 of the Basic Policy on Corporate Governance)

- The Company shall not acquire or hold Strategic Share Holdings unless doing so is necessary for the purpose of its business strategy.
- With regard to the Strategic Share Holdings, appropriateness of such holdings shall be specifically reviewed and examined at a meeting of the Board of Directors on an annual basis. As a result of such reviews and examinations, the Company will reduce any Strategic Share Holdings if it is not deemed to be necessary to hold such holdings.

### Changes in Number of Strategic Share Holdings

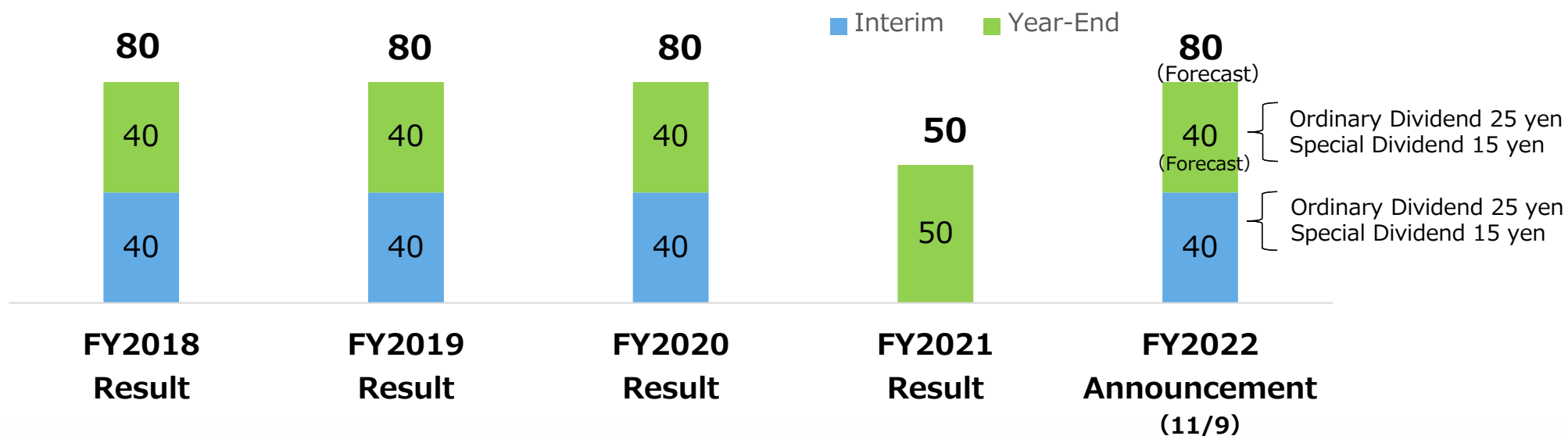


# Shareholder return Policy

## Shareholder return Policy

- The Company will set the minimum annual dividend amount for the period of FY2023 Strategy at 50 yen per share.
- By accelerating the sale of assets, among others, and making expeditious allocations of funds including share buybacks and additional dividends, the Company aims to return profits to its shareholders at the same level as the total amount of dividends initially planned during the period of FY2023 Strategy.

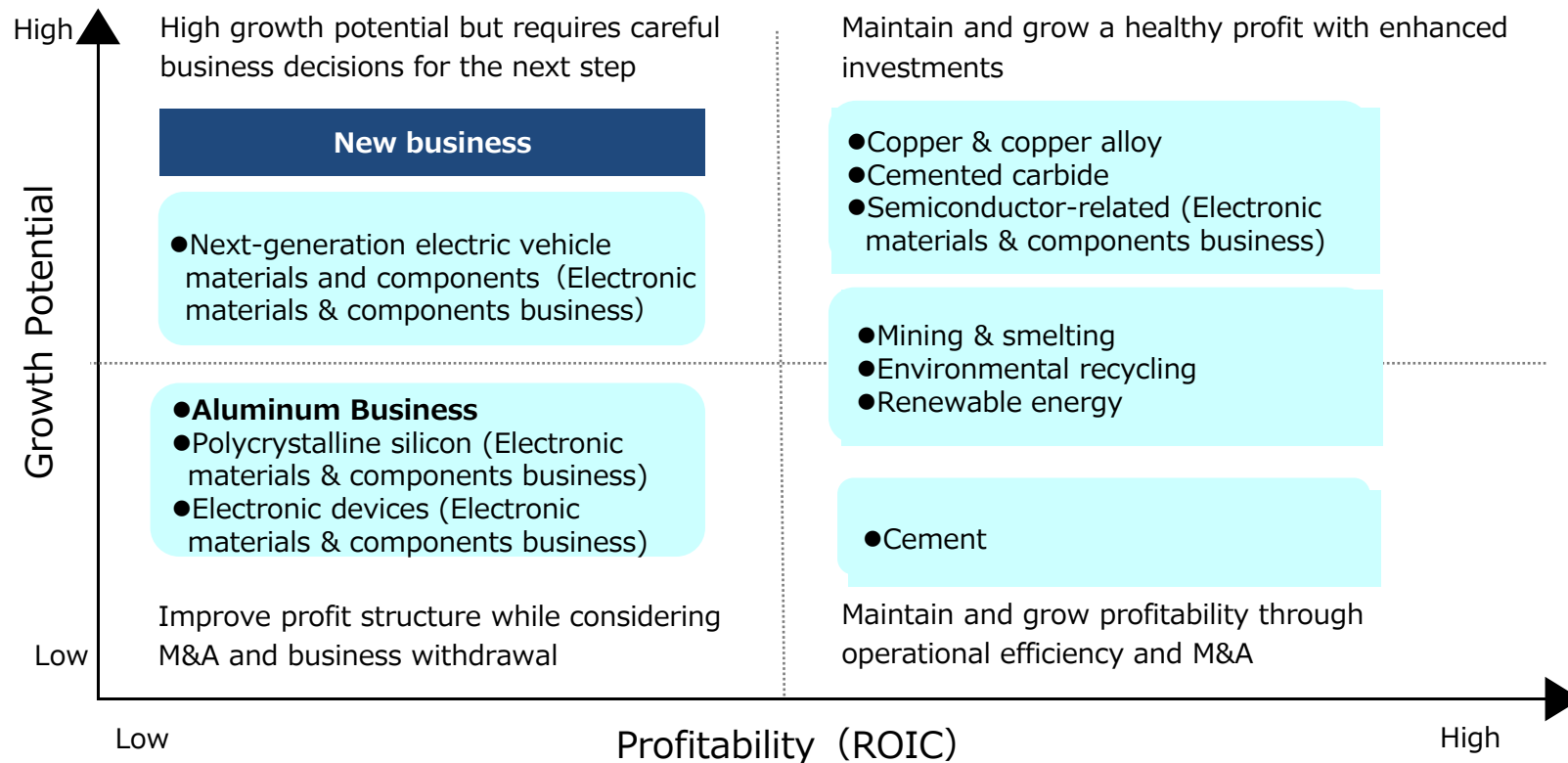
### Dividend per share (annual) (Unit : yen)



# Optimization of Business Portfolio (1)

## <Group-wide Policy> ➤ Optimization of Business Portfolio

- Comprehensive efforts to increase business competitiveness  
Manufacturing excellence, quality management and digital transformation strategies
- Creation of new products and businesses R&D and marketing strategy



## 【Characteristics of businesses that the company should take ownership of】

- Businesses that are consistent with the Group's vision and mission
- Businesses that are governable by the Group
- Businesses that are capable of earning a leadership role in a specific region or the world
- Businesses that can deliver stable returns over capital costs on a medium- to long-term basis

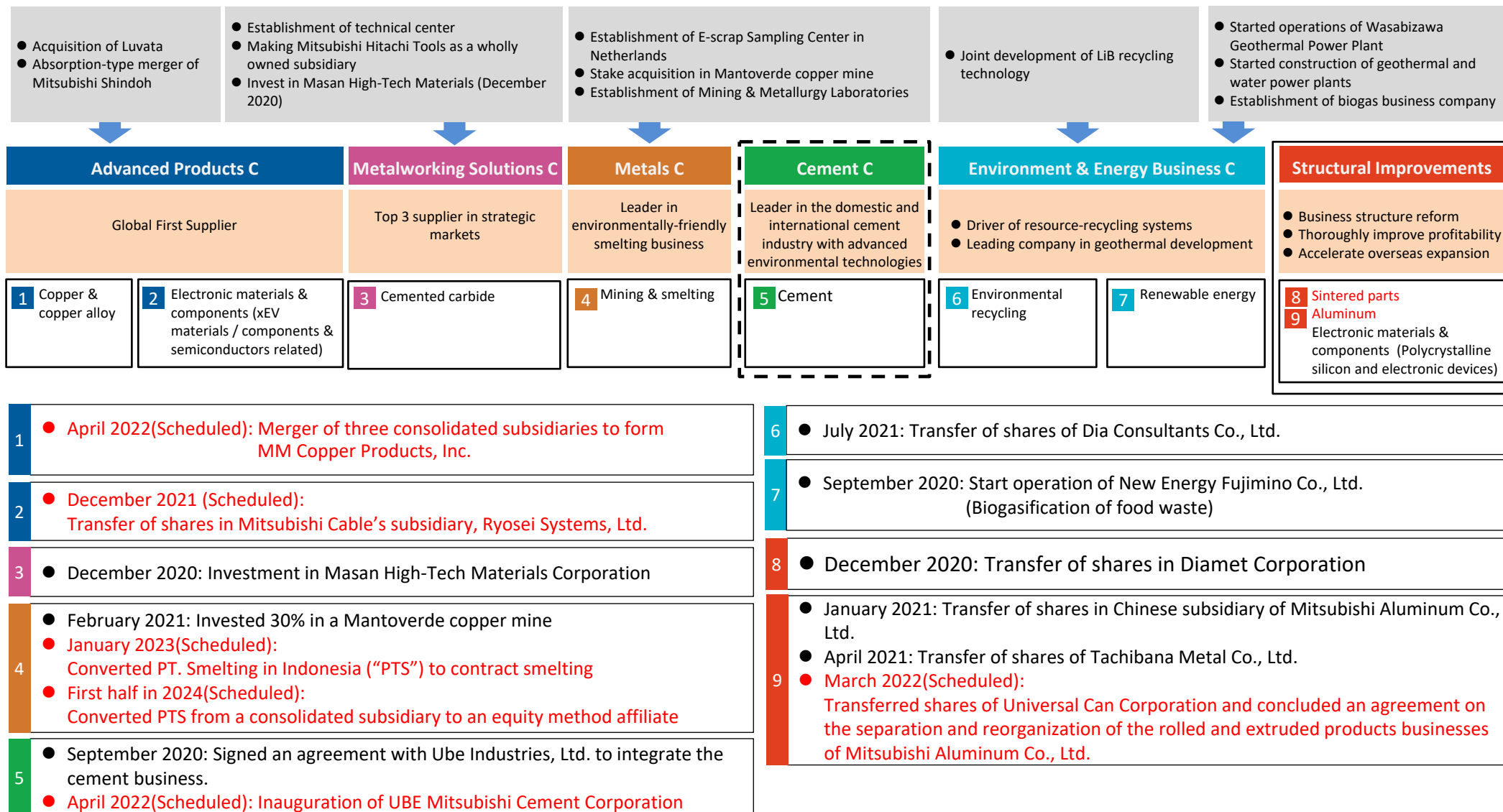
## 【Building business portfolio】

- Profitability and growth potential determine the business direction
- Profitability is measured by ROIC (spread)
- Growth potential is measured by EBITDA growth rate, etc.

# Optimization of Business Portfolio (2)

- <Group-wide Policy>
- Optimization of Business Portfolio
  - Comprehensive efforts to increase business competitiveness  
Manufacturing excellence, quality management and digital transformation strategies
  - Creation of new products and businesses R&D and marketing strategy

## Business Restructuring Activities





# MMDX\* : Goals and points by theme

\*MMDX: Mitsubishi Materials Digital Business Transformation

- <Group-wide Policy>
- Optimization of Business Portfolio
  - Comprehensive efforts to increase business competitiveness  
Manufacturing excellence, quality management and digital transformation strategies
  - Creation of new products and businesses R&D and marketing strategy

## ■ The Group's Vision of DX

Using digital technology to get closer to customers and innovate the workplace

## ■ List of Themes

Theme		Goals		Points
1. MI*: Digital customer interface 2. MI*: Utilize market information 3. Ability to propose solutions 4. Supply and demand management	Metalworking Solutions C	Product-type oriented business (1-9)	Business Restructuring	Business growth Catch up with competitors' efforts and create a foundation for global victory
				Strengthen customer contact and process collaboration Review all business processes with a focus on "shortening the distance between the Company and the customers"
				Business development, "For People, Society and the Earth" Contribute to a sustainable society
				Strengthen the Company's business by leveraging the strengths of the current business and by engaging the industry Establish a platform as a foundation
5. Strengthen customer contact 6. Integrated supply chain 7. Advance development and production data utilization 8. Revenue platform	Advanced Products C	Recycling-oriented business (10,11)	Manufacturing Innovation	SCQDE, Increase Field Capabilities, Increase product power
9. Commonality 10. Enforce E-scrap 11. Environmental recycling DX				Thoroughly streamline operations Advanced operations through the use of data
12. Safety & security 13. Maintenance 14. Procurement advancement 15. Central Research Institute DX				Advancement of business management to support CX Data-Driven Management Speedy decision making and execution based on data
16. ERP 17. Enhancement of business management 18. Data infrastructure and utilization				Ability to see ahead and capture the real Comprehensive utilization of existing data
19. Improve business efficiency 20. Talent management 21. Improve DX talent development and literacy	Core business/ Business management/ Data infrastructure (16-18)	Improve business efficiency (19)	CX	In the office and in manufacturing, it's easier to work and more focused on professional tasks
				Review business processes (standardization, sharing, externalization) and thorough automation
				Strengthen the talent pool for continuous development Good and healthy communication Culture of challenges
				Visualize talent and make evaluations transparent Fostering DX human resources Improve DX mindset and literacy
	Talent base (20,21)		Reform the personnel system	



# Creation of new products and businesses (1)

- <Group-wide Policy>
- Optimization of Business Portfolio
  - Comprehensive efforts to increase business competitiveness  
Manufacturing excellence, quality management and digital transformation strategies
  - **Creation of new products and businesses** R&D and marketing strategy

## Investment Results of “MMC Innovation Investment Business Limited Liability Partnership”

Through the MMC Innovation Investment Business Limited Liability Partnership, our corporate venture capital (CVC), the Company support technology start-up companies that have synergies with our company and accelerate collaboration.

FY2020



Started **development of copper nano-ink** with Elephantech as an evaluation partner, the Company aims to develop new copper products for circuit substrates and capture material supply opportunities

FY2021



Collaborate with Enecoat on the development of peripheral materials, etc., needed to improve the performance of perovskite solar cells and to make them lead-free, **aiming for opportunities to supply materials when perovskite solar cells become widely used**



Currently developing technology to reuse and recycle used in-vehicle LIBs. Promote the reuse business by exploring **reuse of used in-vehicle LIBs that have been recovered into stationary storage batteries** with Connexx.



By combining the Company's knowledge of the properties of non-ferrous metals and other materials with N's design technology, we will **develop unique products with new added value through additive manufacturing using our materials**

FY2022



Find synergy effects with Immunosens's life and healthcare related technologies and knowledge, and **apply the Company's knowledge of non-ferrous metals and other materials to the life and healthcare field.**



# Creation of new products and businesses (2)

- <Group-wide Policy>
- Optimization of Business Portfolio
  - Comprehensive efforts to increase business competitiveness
    - Manufacturing excellence, quality management and digital transformation strategies
  - Creation of new products and businesses R&D and marketing strategy

Development of new lightning protection components for xEV quick chargers



Appearance of DA53 series - lightning protection components for xEV quick chargers

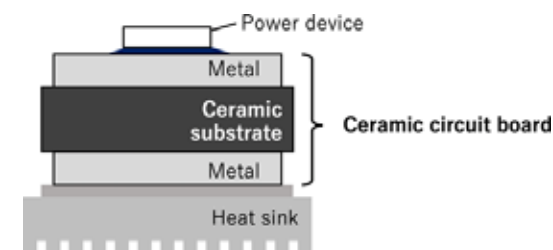
Developed "MOFC-HR" (\*), oxygen-free copper with the world highest level of strength and heat-resistance.

\*(Mitsubishi Oxygen Free Copper - Heat Resistance)



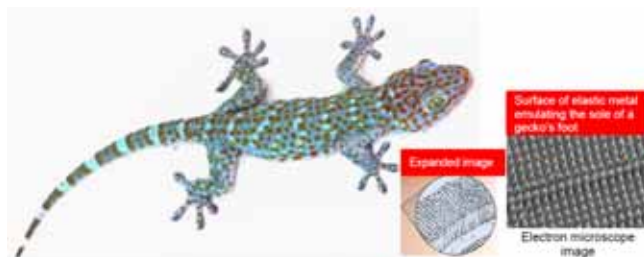
Newly developed MOFC-HR, ideal for high current busbar and terminals, etc., for xEVs appliances

Started joint development of New Ceramic Circuit Substrates with U-MAP, a venture company from Nagoya University



## Announcement of creation of new products and businesses in FY2022

Developed "Elastic Metal," an innovative new material with the flexibility of rubber



Selected for NEDO project as one of the carbon recycling technologies

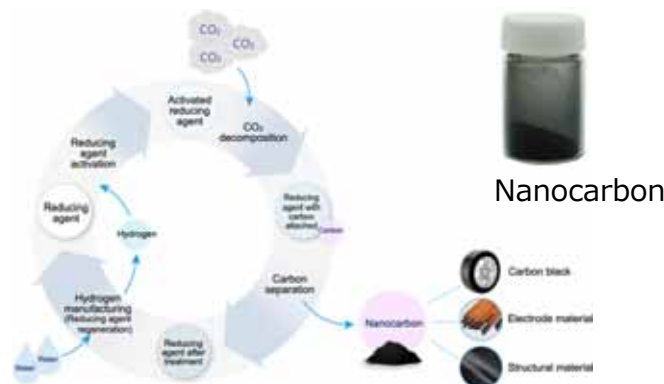


Image of the R&D theme in the project

Started joint research with Emulsion Flow Technologies Ltd. \* on metal recycling technology using the "emulsion-flow technique," which is an advanced solvent extraction method.



\* a venture that originated from the Japan Atomic Energy Agency (JAEA),

# Climate Change Initiatives

## Advanced Products

### Evaluation of carbon footprint (CFP) and utilization

- Evaluation of GHG emissions reduction through review of copper product processing at Wakamatsu Plant

Trial comparative calculation of a conventional precipitation-type process, which requires high-temperature, long-term heat treatment GHG emissions for the MSP1 copper alloy manufacturing process used in small in-vehicle terminals

## Metalworking Solutions

### Aiming for practically 100% renewable energy by FY2031

- Survey of energy usage at manufacturing locations, including overseas
- Establish an action plan for energy saving activities/introduction of renewable energy
- Establish a plan for energy saving improvement activities at domestic and overseas sales offices
- Promote switching to renewable energy (2022-)

## Metals

### Utilization of the Mitsubishi Process for continuous copper smelting to contribute to building a recycling-oriented society and climate change countermeasures

- The Mitsubishi Process for continuous copper smelting is a unique copper smelting technology that has achieved the industry's top environmental impact reduction performance
- Implementation of efficient recycling of E-Scrap such as copper, gold, silver, lead, tin and platinum
- Recovery and use of heat energy generated during E-Scrap processing and replacement, and replacement and reduction of fossil fuels

## Cement

### Carbon dioxide capture and utilization (CCU) technology development

- Carbon neutralization by CO<sub>2</sub> separation and recovery from cement flue gas and methanation
- Development of thermal energy utilization system



Separation and recovery test equipment

## Environment & Energy

### Selected for NEDO project as one of the carbon recycling technologies

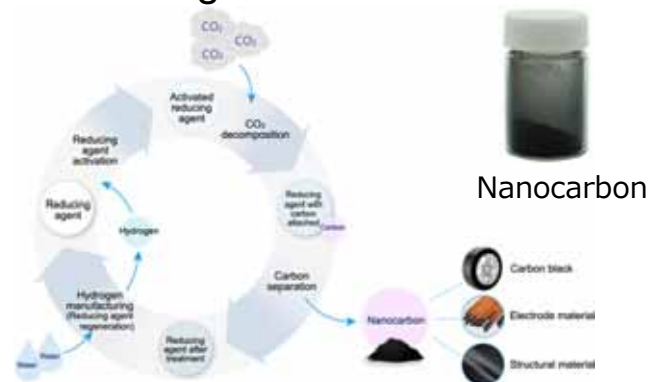










Image of the R&D theme in the project

# Business Strategy & Overview by Segment

# Advanced Products

# Growth Strategies / Major Products

Contribute to a sustainable and prosperous society by providing customers with indispensable Advanced Products as a Global First Supplier by refining and combining the Company's core competencies.

Business criteria	Value proposition	Products & services	Social value	Mission
<b>Next-generation vehicle</b> (Including other transportation equipment)	<ul style="list-style-type: none"> <li>Energy saving</li> <li>Safety &amp; Security</li> <li>Convenience &amp; comfort</li> <li>Environmental load reduction</li> <li>Reduce Carbon dioxide, decarbonization</li> <li>Quietness</li> </ul>	<ul style="list-style-type: none"> <li><u>Copper strips for automotive terminals</u></li> <li><u>Copper bars and busbars</u></li> <li><u>EcoBrass/GloBrass</u></li> <li>Thermistor sensor</li> <li>Insulated heat dissipation components</li> <li>Interlayer films for heat shielding</li> <li>Plating</li> </ul>	<ul style="list-style-type: none"> <li>Requests for Advanced Mobility</li> <li>Efficient use of energy resources</li> <li>Request to reduce CO2 emissions</li> </ul>	<p>Contribute to build a prosperous society</p> <p>Contribute to the establishment of a recycling-oriented society</p> <p>Contribute to the establishment a decarbonized society</p>
<b>Semiconductors</b> <b>Semiconductor manufacturing equipment</b> <b>electronics</b>	<ul style="list-style-type: none"> <li>Energy saving</li> <li>High efficiency and high performance</li> <li>Safety &amp; Security</li> <li>Reduce Carbon dioxide</li> <li>Convenience &amp; comfort</li> </ul>	<ul style="list-style-type: none"> <li><u>Lead frame</u></li> <li><u>Copper strips for heat spreaders</u></li> <li><u>Copper bars and busbars</u></li> <li><u>Silicon Processed Goods</u></li> <li><u>Columnar crystal silicon</u></li> <li>Thermistor sensor · <u>Seals</u></li> </ul>	<ul style="list-style-type: none"> <li>Efficient use of energy resources</li> <li>Request to reduce CO2 emissions</li> </ul>	  
<b>Infrastructure</b> <b>Industrial Machinery</b> <b>Medical equipment, etc.</b>	<ul style="list-style-type: none"> <li>Convenience &amp; comfort</li> <li>High efficiency and high performance</li> <li>Energy saving clean</li> <li>Reduce Carbon dioxide, decarbonization</li> </ul>	<ul style="list-style-type: none"> <li><u>EcoBrass/GloBrass</u></li> <li>Pneumatic seals</li> <li><u>Superconducting wire</u></li> </ul>	<ul style="list-style-type: none"> <li>Production and business processes Request for Automation</li> <li>Efficient use of energy resources</li> <li>Request to reduce CO2 emissions</li> </ul>	    

## Automotive (incl. Transport Equipment)



Inverter



Terminal/Connector  
\*Customer's product



Solar Heat-ray Shielding Products



Heat radiating parts



Copper rod / Bus bar



Copper Hollow Conductors



Electrode material for welding

## Semiconductor/Electronic



Columnar Crystal Silicon



Lead Frame



Polycrystalline Silicon



Surge Absorber



Silicon Products



Low α Solder

## Infrastructure / industrial machinery / medical equipment, etc.



Trolley Wire



Superconductors



Copper Balls



ECO BRASS



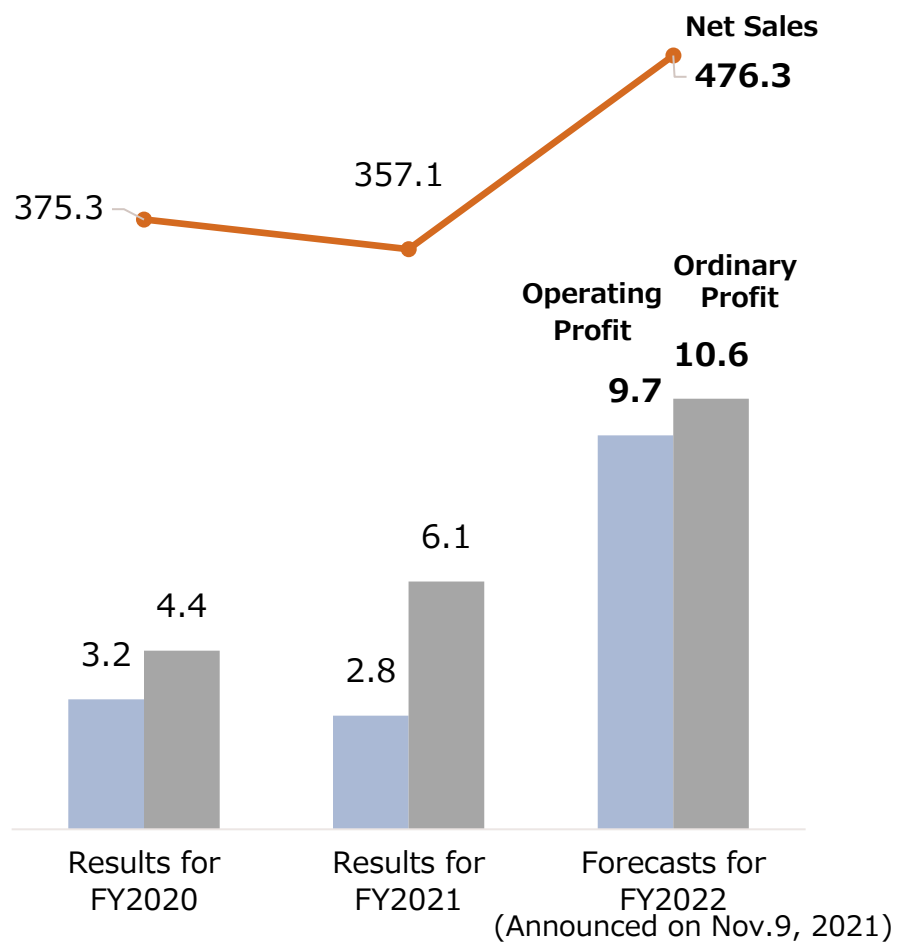
Customised Profiles



# Advanced Products

## Consolidated Earnings

Unit: billion yen

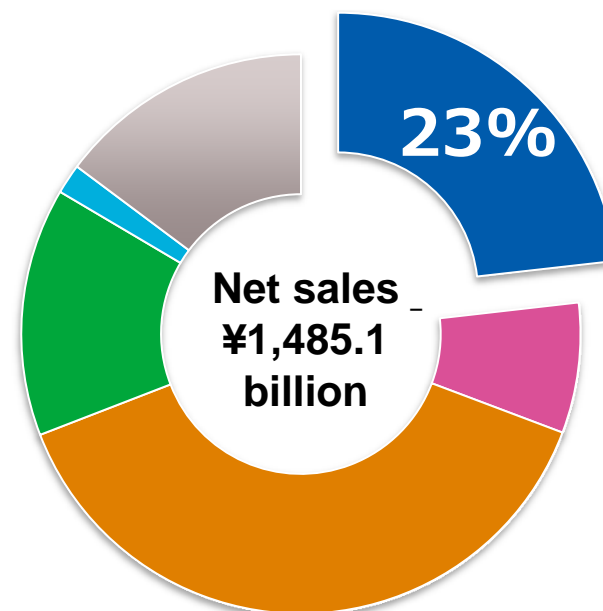


## Ratio of Net Sales by Business

### Advanced Products



- Copper and copper alloy products
- Electronic materials & components



\*Sales to outside customers (Year ended March 31, 2021)



## Global First Supplier

### Long-term Strategy

- Create new businesses and products through the sophistication and integration of our core competencies  
(e.g. production and development of oxygen-free copper, oxygen-free copper base alloys, and functional materials as well as technical capabilities such as bonding different metals, etc.)
- Accelerate marketing activities to replicate successful practice

#### Specific Measures of the FY2023 Strategy

- Assign key account managers acting cross-sectionally
- Enhance information analysis by digital marketing such as the employment of AI or IoT
- Share product roadmaps with customers (co-creation capabilities)
- Develop new products through collaboration with Central Research Institute
- Fortify production capabilities such as establishing a mass production system and improving productivity
- Pursue opportunities to execute M&A or business alliances

#### Projected Achievements at the End of FY2023

In our main business fields※, we will have:

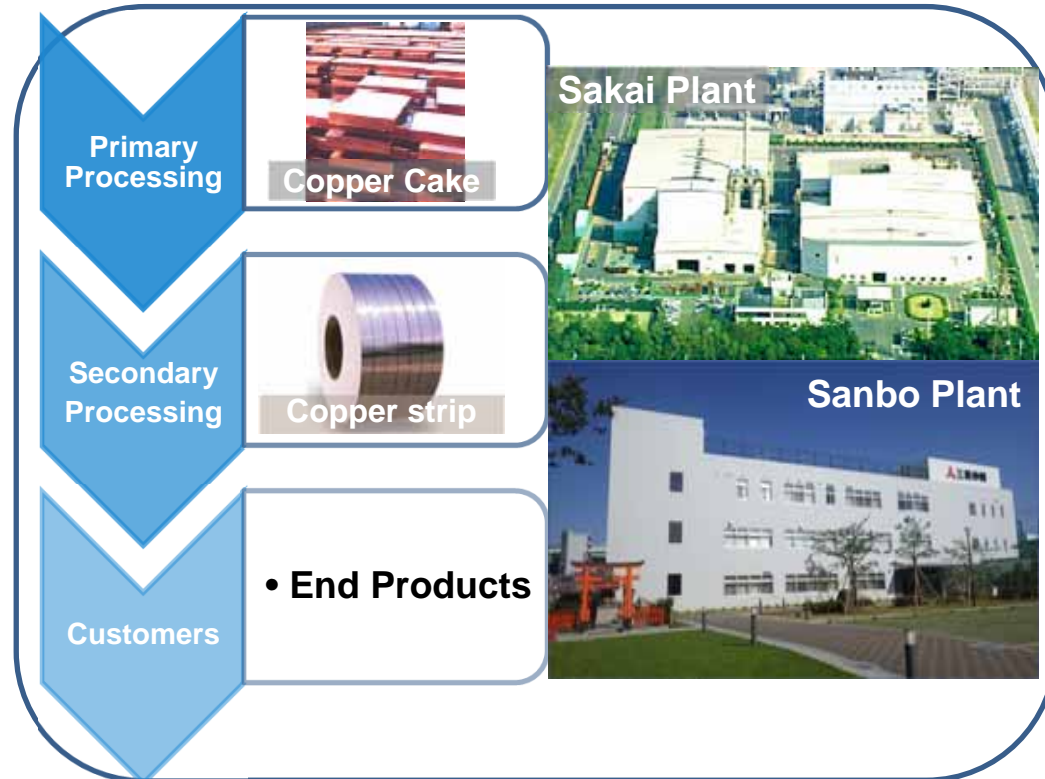
- Earned customers' trust
- Released new products by integrating our technical capabilities
- Generated new applications of our products

※ Next-generation vehicles, semiconductors/electronics, industrial machinery/infrastructure

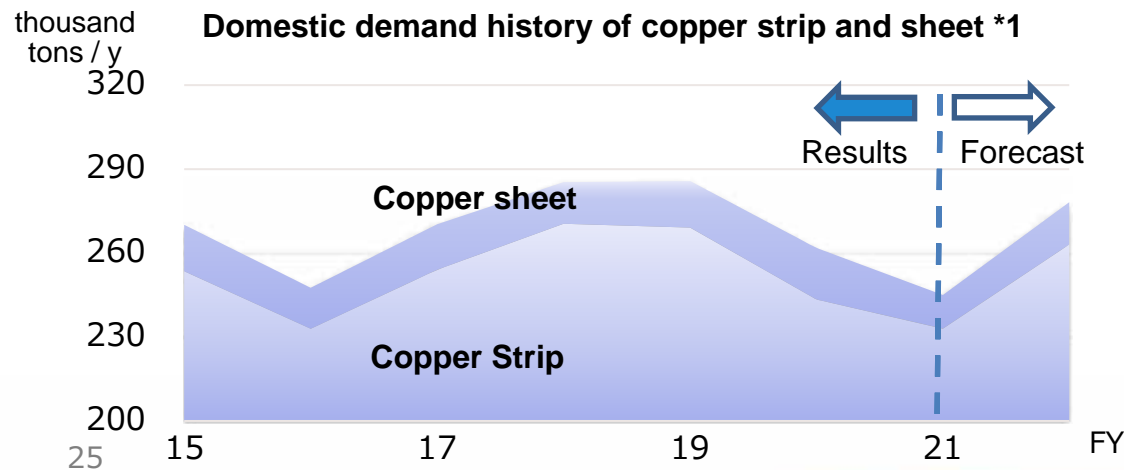
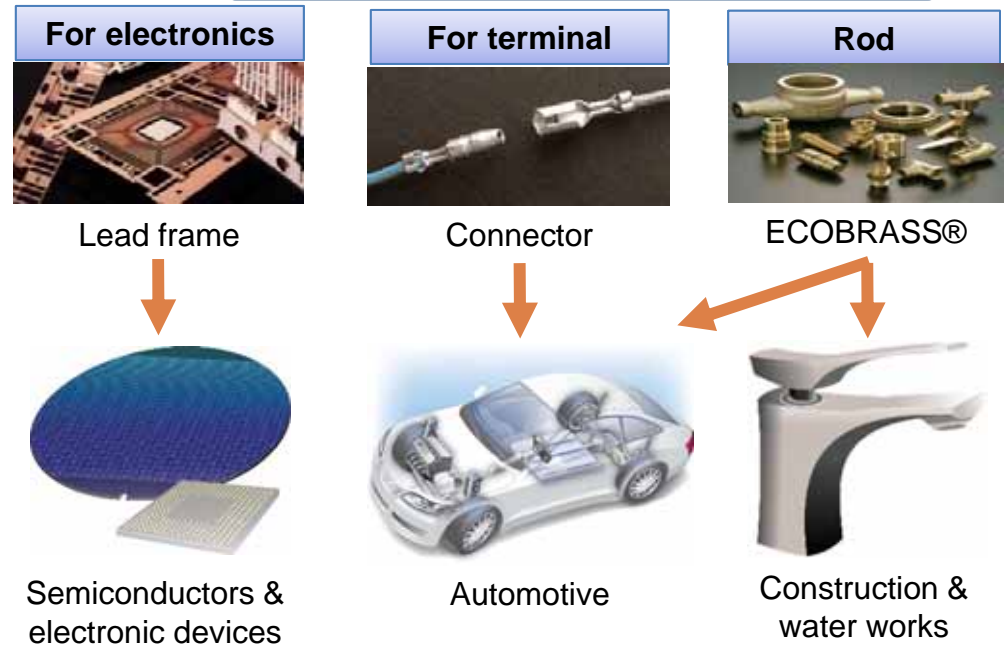


# Advanced Products - Copper & Copper Alloy (1) -

## Processing the copper materials from our copper smelter into various shapes

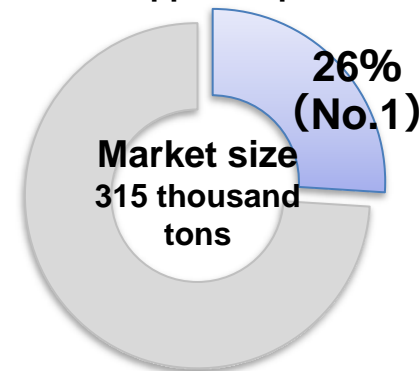


## Application for main products

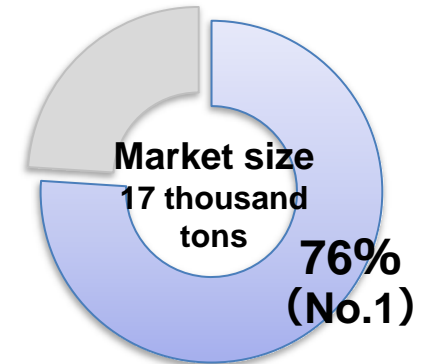


\*1 Japan Copper and Brass Association

Domestic market share of copper strip \*2



Domestic market share of copper sheet \*2



\*2 Japan Copper and Brass Association (FY2021)

# Advanced Products - Copper & Copper Alloy (2) -



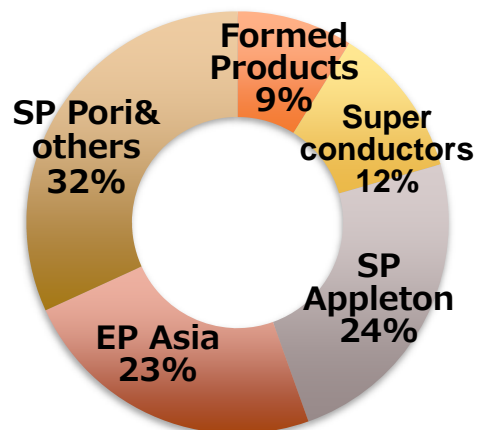
## Company profile \* FY ended Dec. 31, 2020

- Head Office: Pori, Finland
- Net sales: €512 million
- Operation (Manufactures & Sales):  
12 entities, 7 countries
- Employees: 1,315

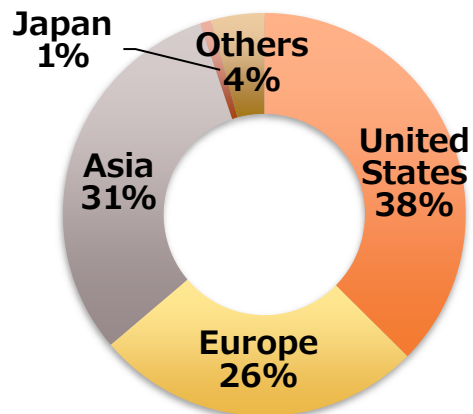


▲ Copper Industrial Park in Pori

## Sales ratio by Business Units



## Sales ratio by Resions



## Various products for targeted markets

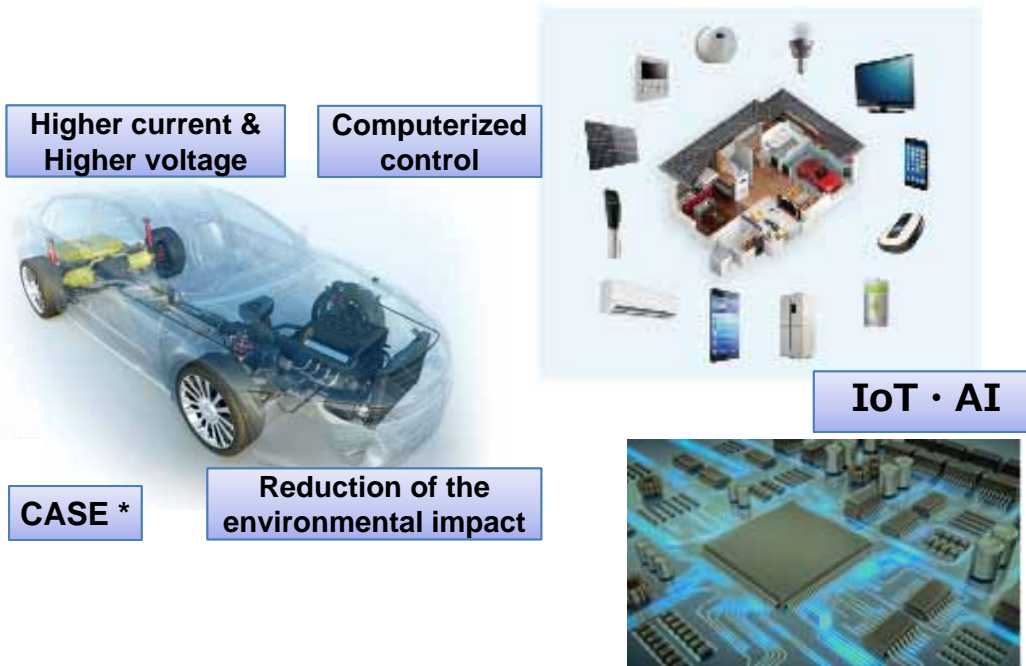


## Aiming to become a global leader in the Copper & Copper Alloy Business

### ◆ Market Needs

Oxygen-free copper, which is our strength, is a necessary material for high current and high voltage.

We expect that our Copper & Copper Alloy products' demand is to increase as the automobile industry supports CASE and IoT etc.

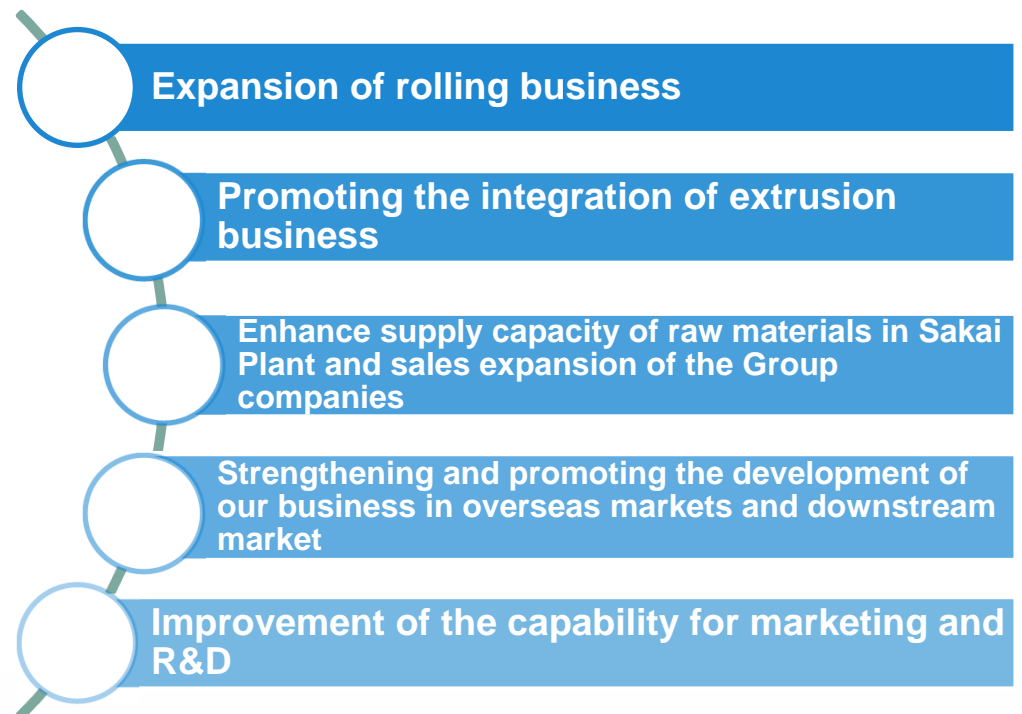


※CASE…Connected, Autonomous, Shared & Services, Electric

### ◆ Strategic Investment

Planning capex of approx. ¥30.0 billion in total from FY2021 to 2027.

To increase our production capacity by about 30% from the current level, mainly for automobile-related products in which strong demand is expected.



# **Metalworking Solutions Business**



# Overview of the Cemented carbide business

- Net Sales 133.7 billion yen, operating profit 12.8 billion yen (full year forecast for the fiscal year ending March 2022, announced on November 9, 2021)
- 80% of net sales is from cemented carbide cutting tools

## Cutting tools

## Construction tools, wear-resistant tools, tool materials

### Mitsubishi Materials (MMC)



### MOLDINO

(Mainly tools for molding)

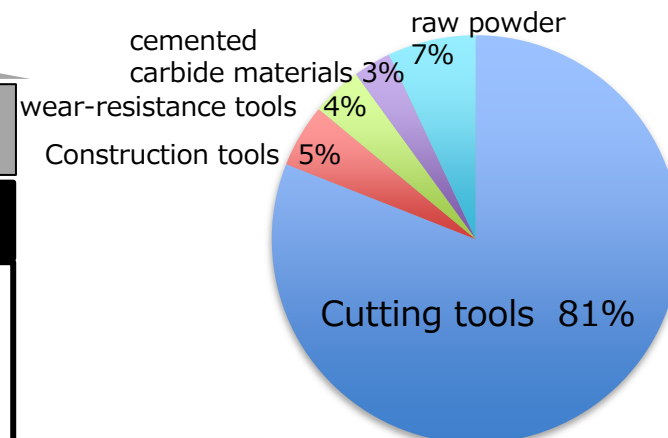


### MMC Ryotec



- In 2000 : Acquired Shinko Kobelco Tool Co., Ltd. (currently Akashi Seisakusho, Ltd.) from Kobe Steel, Ltd.
- In 2015: Acquired Hitachi Tool Engineering, Ltd. (currently Moldino Tool Engineering, Ltd.) from Hitachi Metals, Ltd.

Net sales composition ratio (FY2021)



- ◆ Other cemented carbide tools manufacturers
- ◆ Reduce dependence on China through recycling
- ◆ Demand from new markets such as LIBs and memory area

## Raw material powder

### Japan New Metals Co., Ltd.

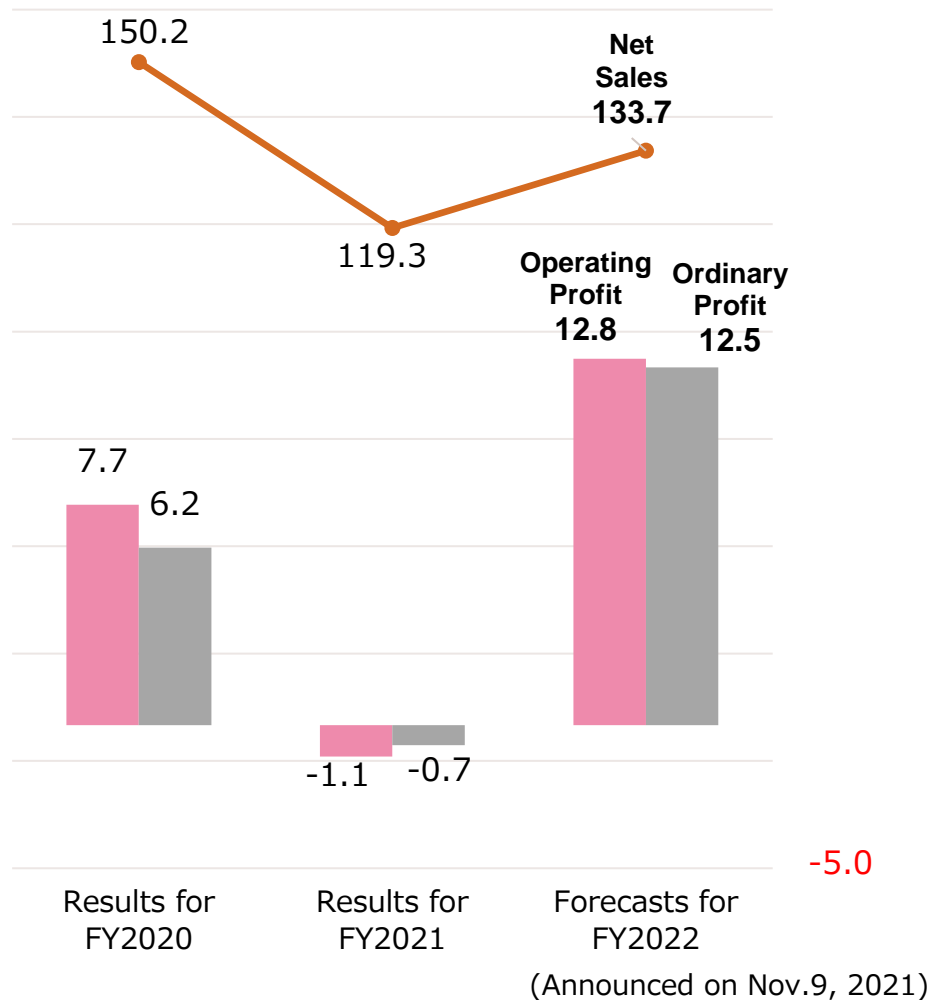
Tungsten powder, advanced metal powder, etc.



# Metalworking Solutions Business

## Consolidated Earnings

Unit: billion yen



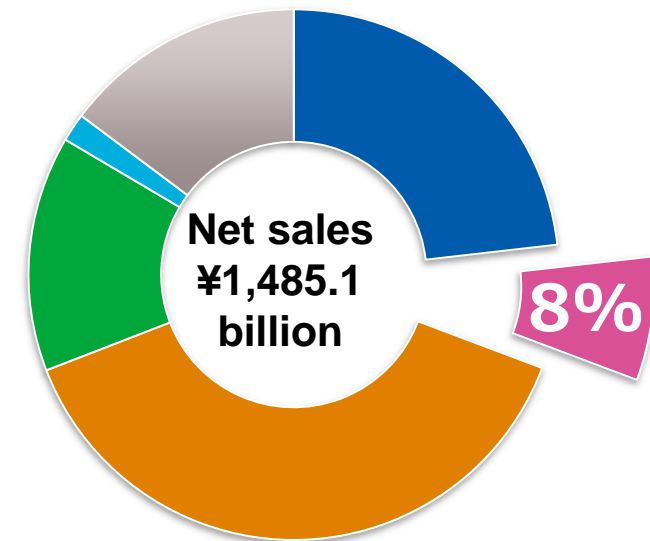
※FY20、FY21(until Dec.) : Including Sintered products  
FY22 : Not including Sintered products

## Ratio of Net Sales by Business

### Metalworking Solutions



- Cemented carbide products



\*Sales to outside customers (Year ended March 31, 2021)



## Top 3 supplier in strategic markets

### Long-term Strategy

- Promote clean manufacturing
- Provide high-efficiency products with advanced technology
- Expand advanced metal powder business in electronic devices

### Specific Measures of the FY2023 Strategy

- Increase recycling rate in our tool recovery system and utilize renewable energy
- Provide high efficiency tools and digital solutions
- Transition to smart factory and optimization of logistics and supply chain
- Expand advanced metal powder business to rechargeable battery market

### Projected Achievement at the End of FY2023

- Establishment of a competitive global business base capable of expanding in strategic markets using digital technologies

# Cemented carbide cutting tools market (1)

- The market size of cemented carbide cutting tools is forecasted to expand to approx. 2.06 trillion yen per year in 2030
- Aim for a global market share of 10% or more

## Demand for cemented carbide cutting tools by area in 2030

(unit : billion yen) ※According to the Company's estimation

Japan	Europe	North America	China	Others
160	400	490	550	460
8%	19%	24%	27%	22%

Market share:  
4th in the world, 1st in Japan

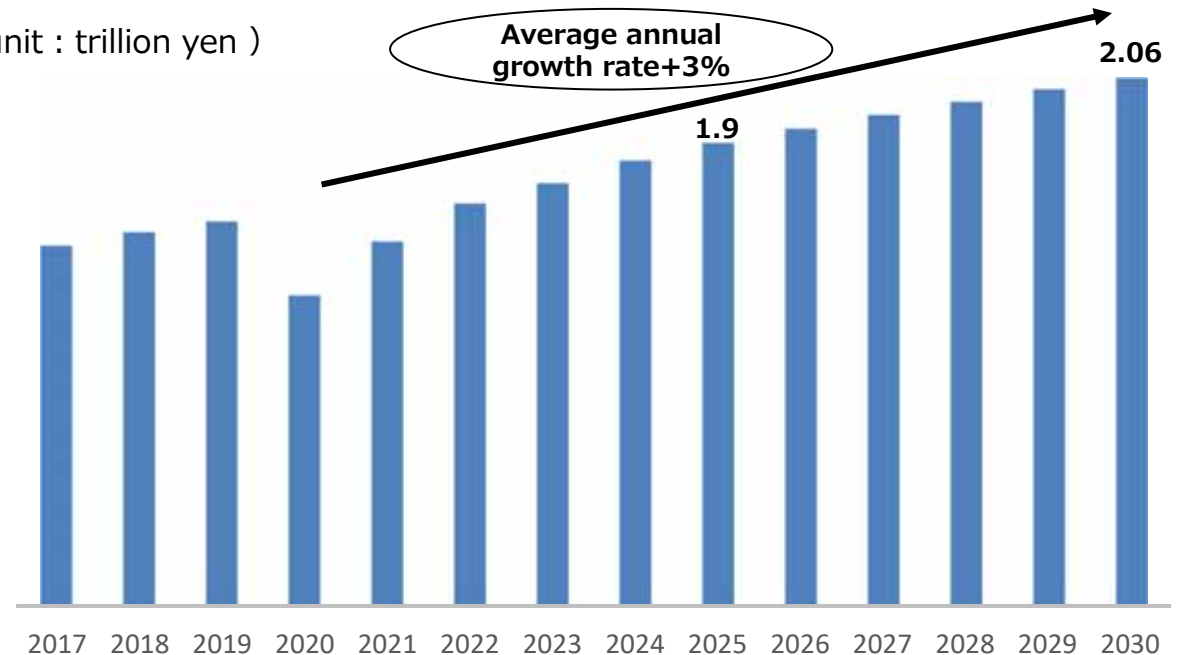
## Global market share (2020)



※According to the Company's estimation

## Forecast of the market scale of cemented carbide cutting tools

(unit : trillion yen )



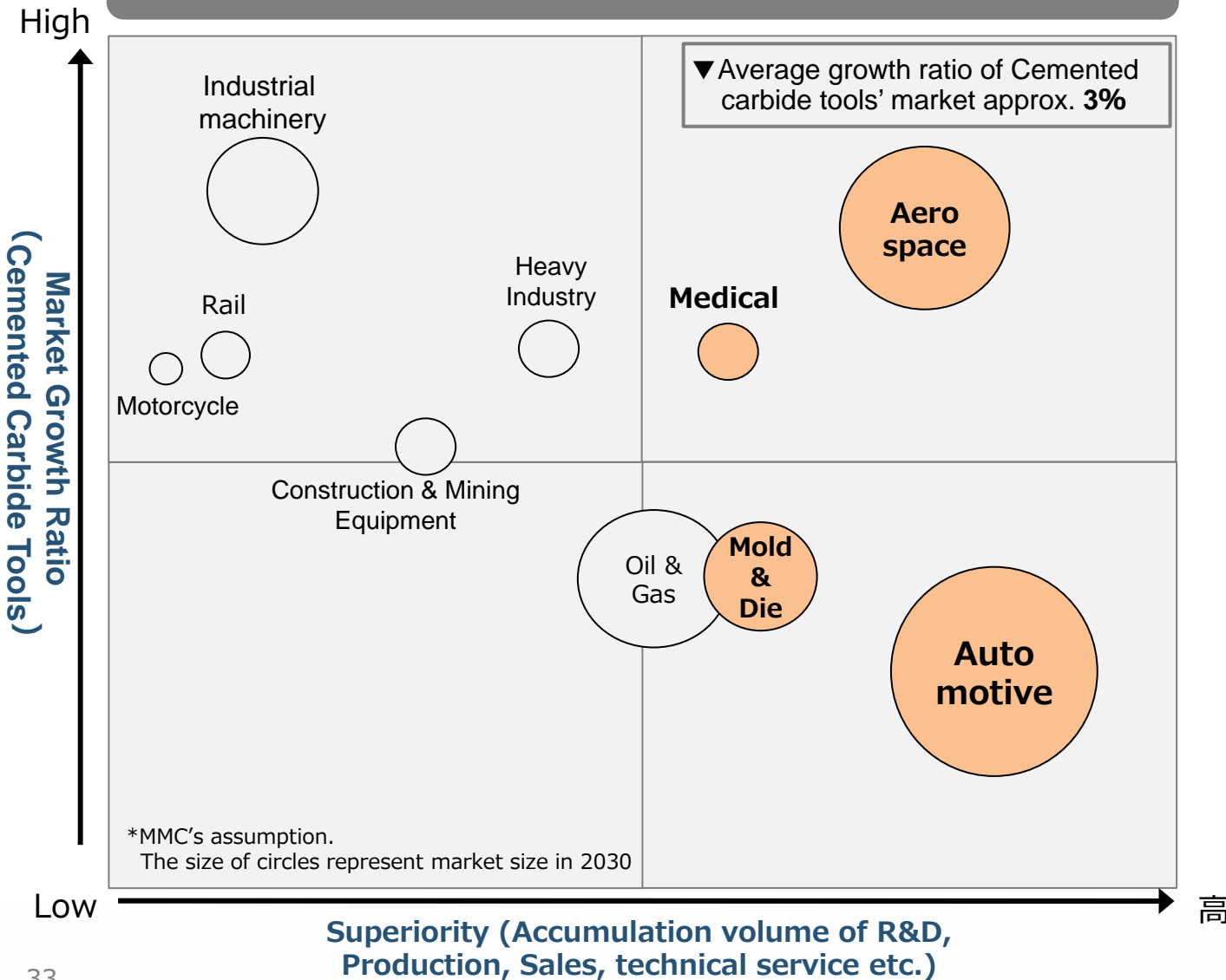
※According to the Company's estimation



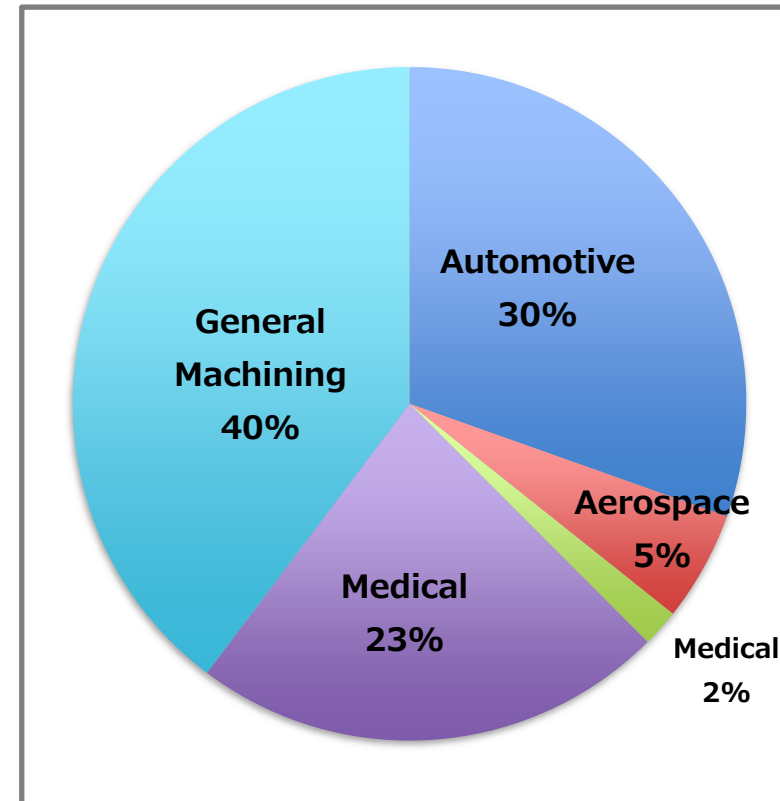
# Cemented carbide cutting tools market (2)

- Focus on “Automobile”, “Aerospace”, “Medical”, and “Molding” markets based on the market sizes and growth potential

## Analysis of the attractiveness of each industry



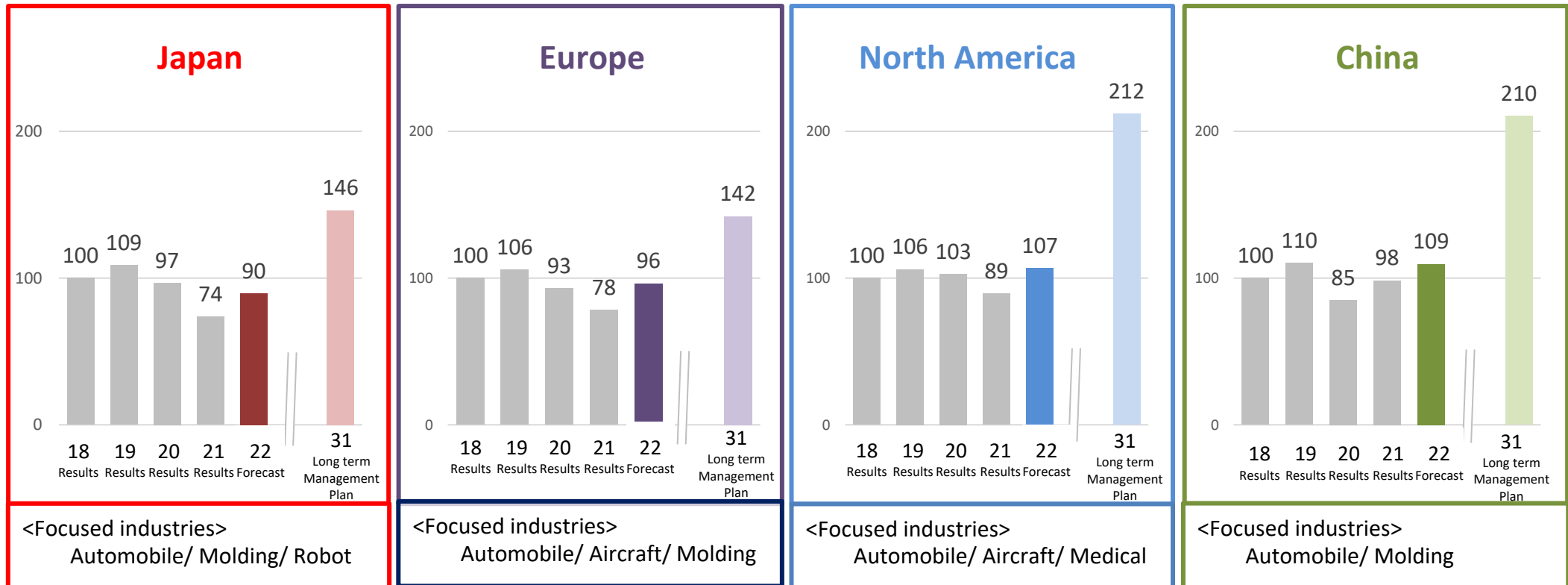
## MMC's sales ratio of demand by industry (FY2021)



# Sales plans and initiatives by area

- Provide optimal products, services, and solutions based on key account strategies as a main axis

\*Index based on FY2018 results as 100



## Major Initiatives

- Strengthen sales capabilities by improving the efficiency and sophistication of sales activities through the use of digital technology
- Expansion of solution proposal menu by utilizing the Technical Center (MTEC)
- Strengthen local services such as regrinding and recoating of shaft tools
- Market development in new fields such as robots, semiconductors, and sensor components

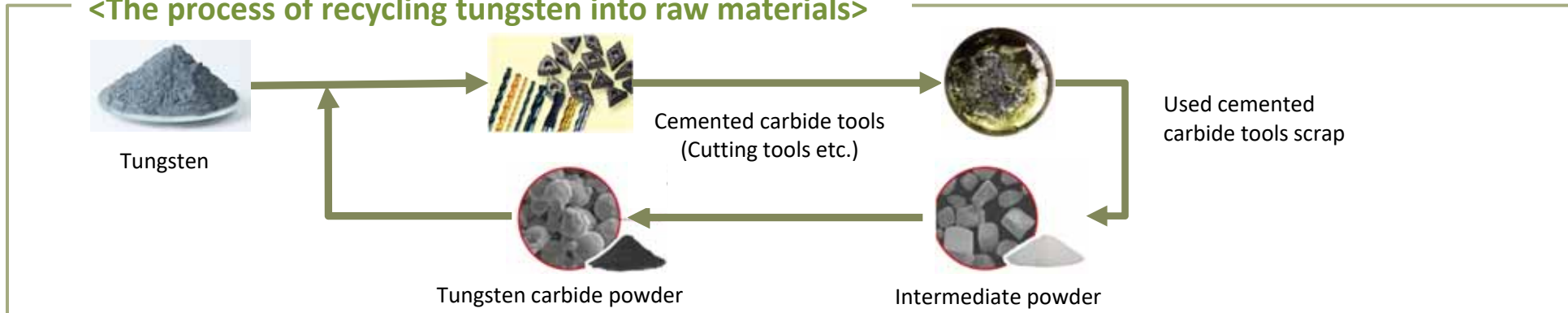
# Promote clean manufacturing

- Aim to achieve a recycling rate of 80% or higher by expanding the process of recovery to recycling of cemented carbide scrap globally

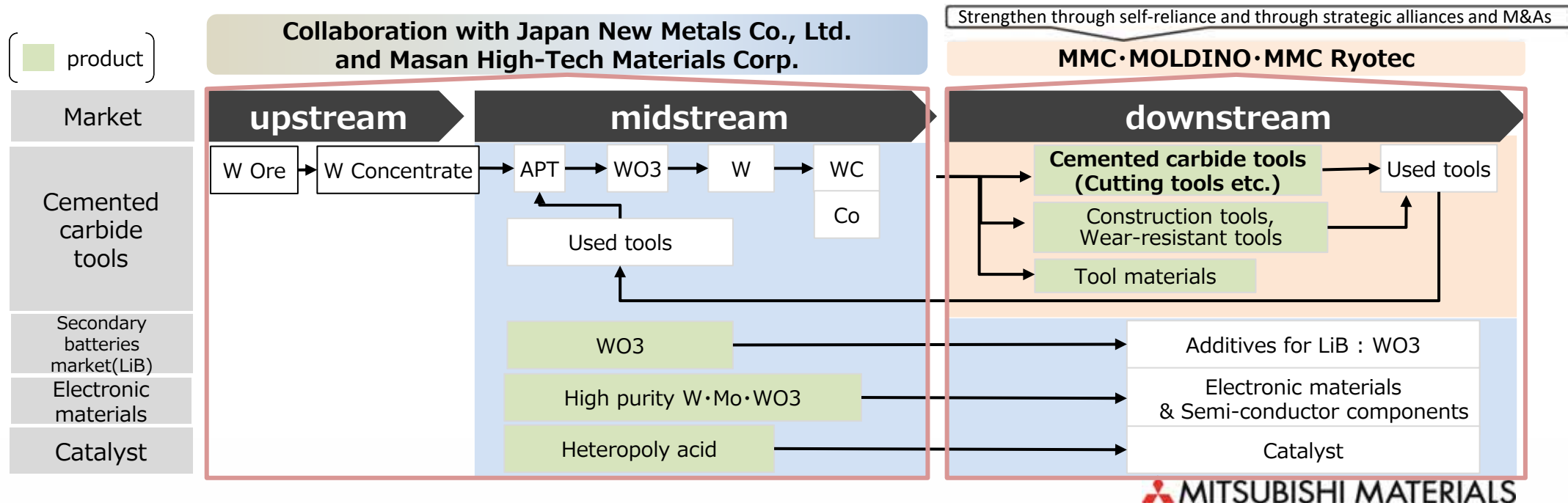
Initiative

- Actual recycling rate in the first half of FY2022: 39% (vs. FY2023 Strategy Target: 35%)
- Investing in Masan High-Tech Materials (Vietnam) and considering recycling collaboration

## <The process of recycling tungsten into raw materials>



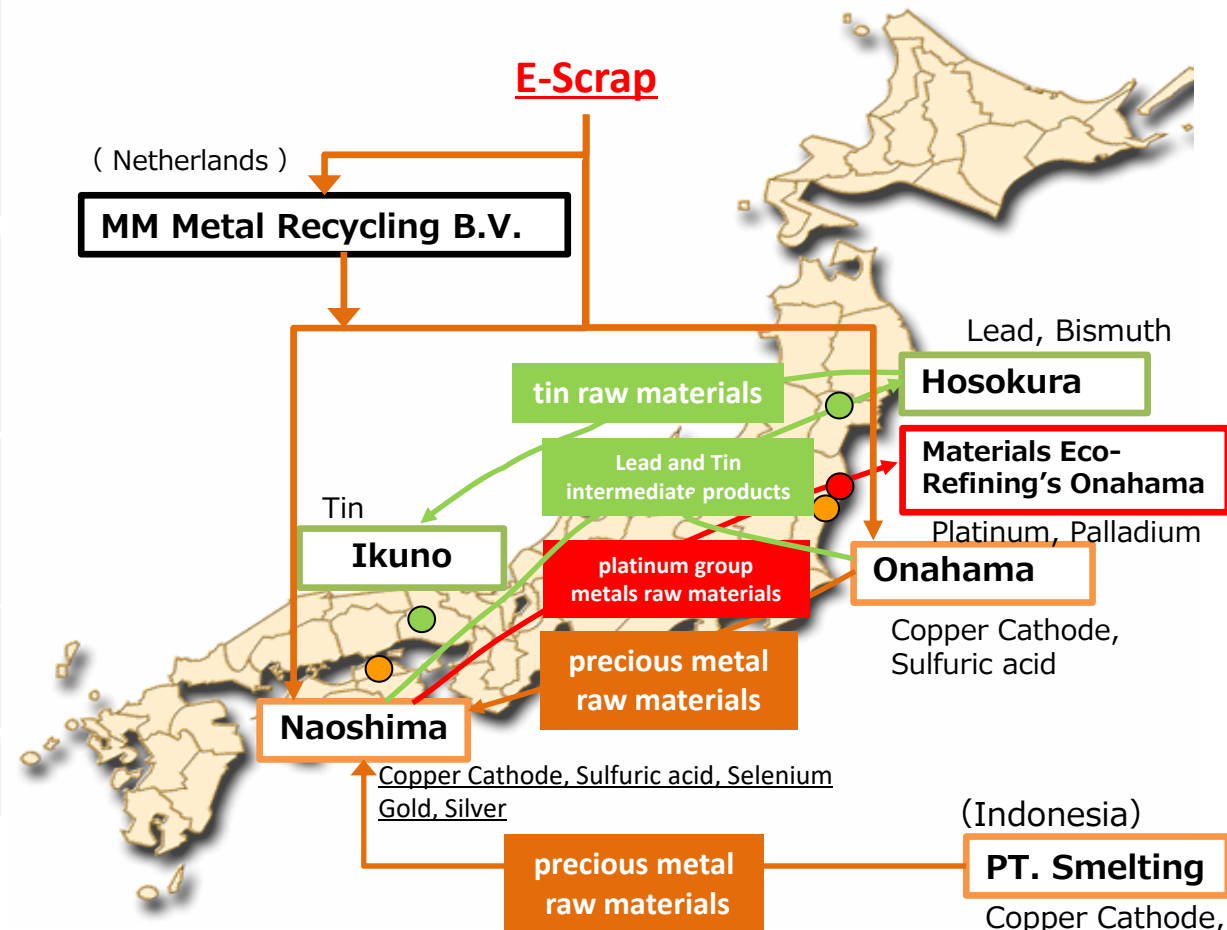
- Develop business in upstream to downstream areas and focus on downstream areas



# Metals Business

# Major Products, etc.

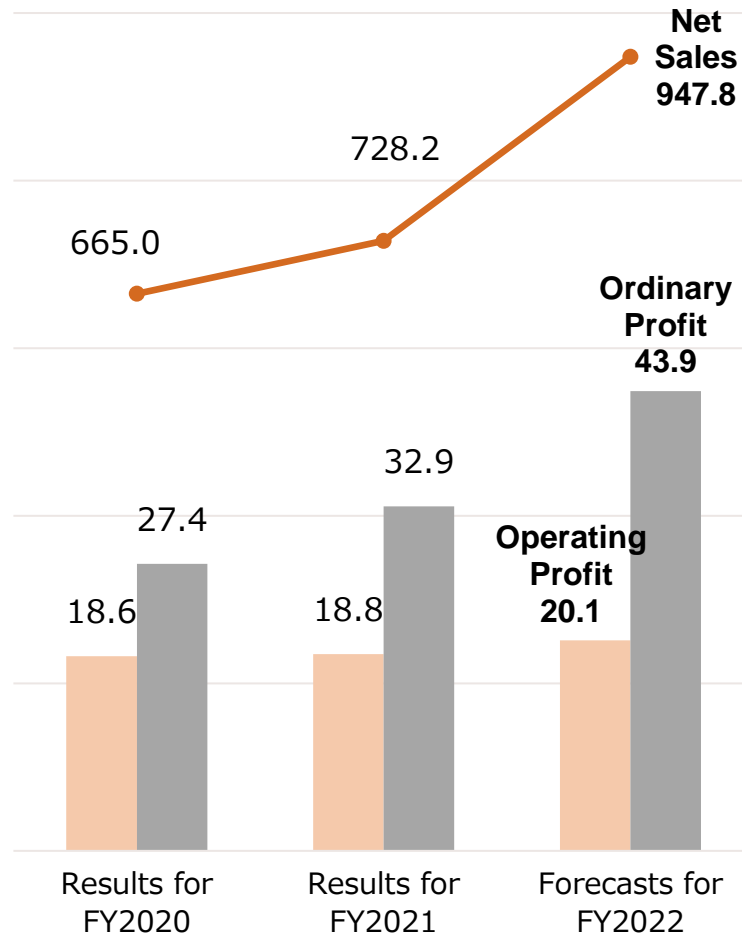
Business Location	Processing Raw materials	Major Products
<b>Naoshima Smelter &amp; Refinery</b>	<ul style="list-style-type: none"> <li>• Copper concentrates</li> <li>• E-Scrap</li> <li>• Copper scrap</li> <li>• Other Scrap</li> <li>• slime</li> </ul>	<ul style="list-style-type: none"> <li>• Copper Cathode</li> <li>• Sulfuric acid</li> <li>• Selenium</li> <li>• Gold</li> <li>• Silver</li> </ul>
<b>Onahama Smelter and Refinery</b> (Onahama Smelting & Refining Co., Ltd.)	<ul style="list-style-type: none"> <li>• Copper concentrates</li> <li>• E-Scrap</li> <li>• Copper scrap</li> <li>• Other Scrap</li> </ul>	<ul style="list-style-type: none"> <li>• Copper Cathode</li> <li>• Sulfuric acid</li> </ul>
<b>PT. Smelting (Indonesia)</b>	<ul style="list-style-type: none"> <li>• Copper concentrates</li> <li>• Copper scrap</li> </ul>	<ul style="list-style-type: none"> <li>• Copper Cathode</li> <li>• Sulfuric acid</li> </ul>
<b>Hosokura Metal Mining Co., Ltd.</b>	<ul style="list-style-type: none"> <li>• Lead battery</li> </ul>	<ul style="list-style-type: none"> <li>• Lead</li> <li>• Bismuth</li> </ul>
<b>Ikuno Plant</b>	<ul style="list-style-type: none"> <li>• Tin Scrap</li> </ul>	<ul style="list-style-type: none"> <li>• Tin</li> </ul>
<b>Onahama establishment</b> (Materials Eco-Refining Co., Ltd.,)	(in-house raw materials)	<ul style="list-style-type: none"> <li>• Platinum</li> <li>• Palladium</li> </ul>
<b>MM Metal Recycling B.V.</b> (Netherlands)	<ul style="list-style-type: none"> <li>• E-Scrap</li> </ul>	(in-house raw materials)



# Metals Business

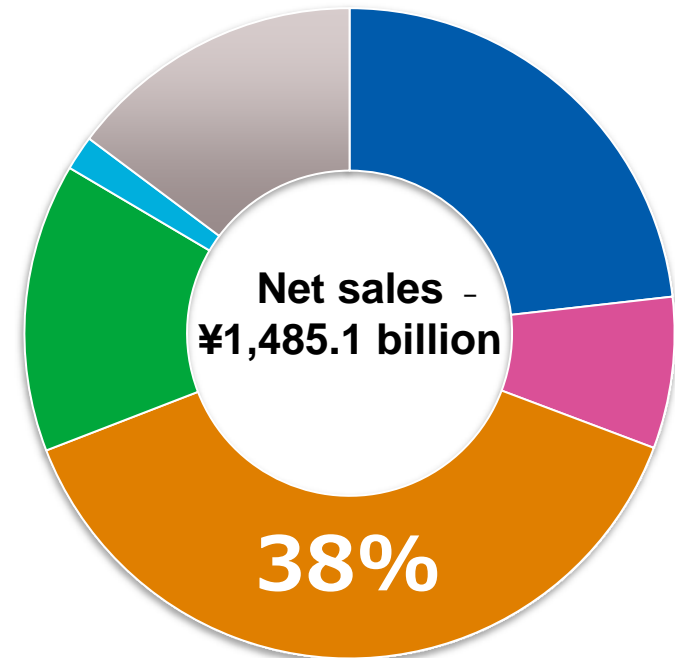
## Consolidated Earnings

Unit: billion yen



(Announced on Nov.9, 2021)

## Ratio of Net Sales by Business



\*Sales to outside customers (Year ended March 31, 2021)



## Leader in environmentally-friendly mining & smelting business

### Long-term Strategy

#### **Stable supply and recycling of nonferrous metal materials, predominantly copper**

- Creation of a sustainable raw material portfolio consisting of clean copper concentrate and E-Scrap
- Promotion of recycling
- Response to climate change

#### **Specific Measures of the FY2023 Strategy**

- Secure clean copper concentrate by investing in new mines
- Develop impurity removal technology in copper concentrate
- Optimize valuable metal material flow
- Reduce fossil fuels

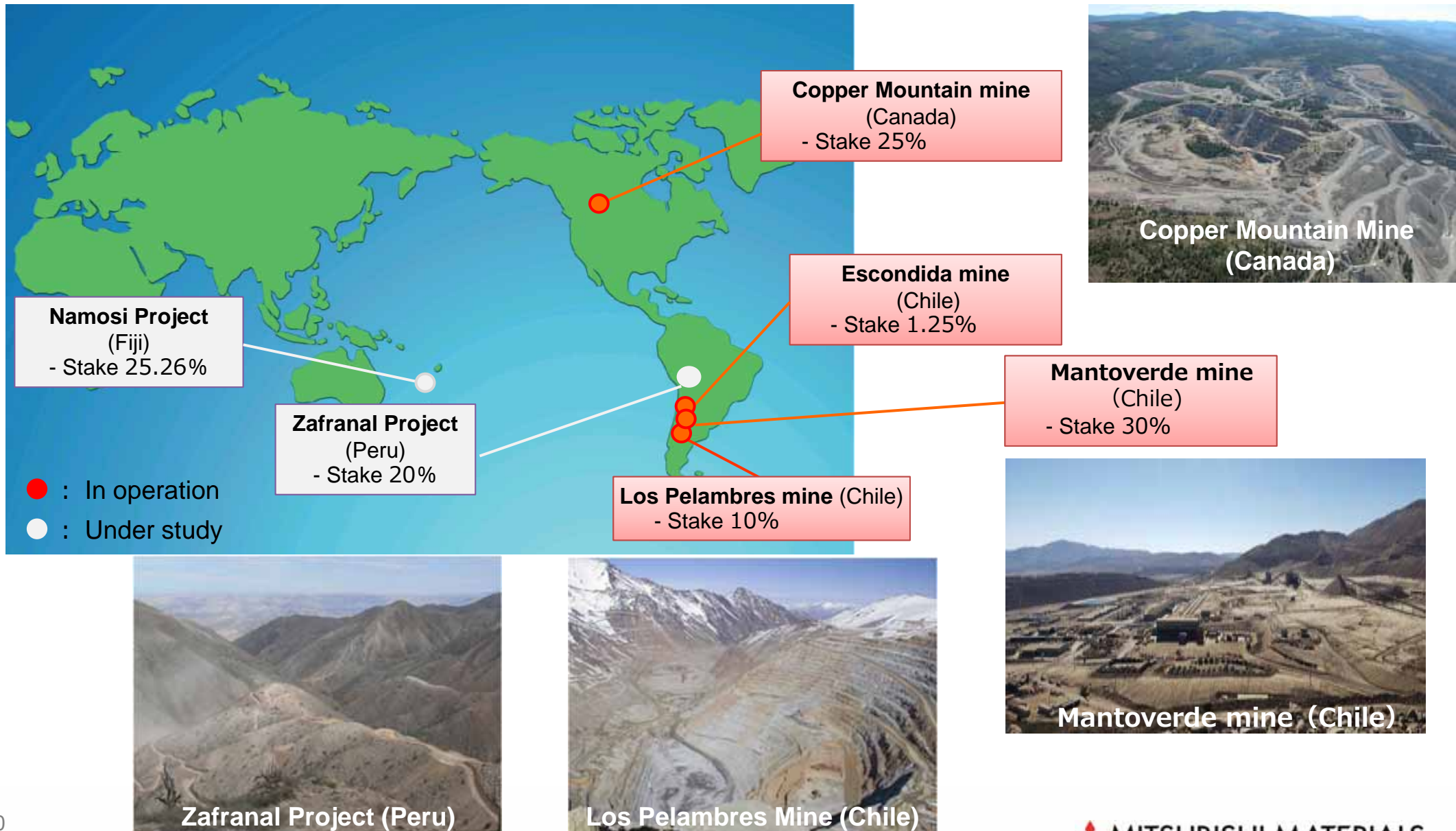
#### **Projected Achievement at the End of FY2023**

- Optimization of valuable metal material flow derived from E-Scrap
- Reduction of smelter CO<sub>2</sub> emissions by 5%



# Outline of Mining Business

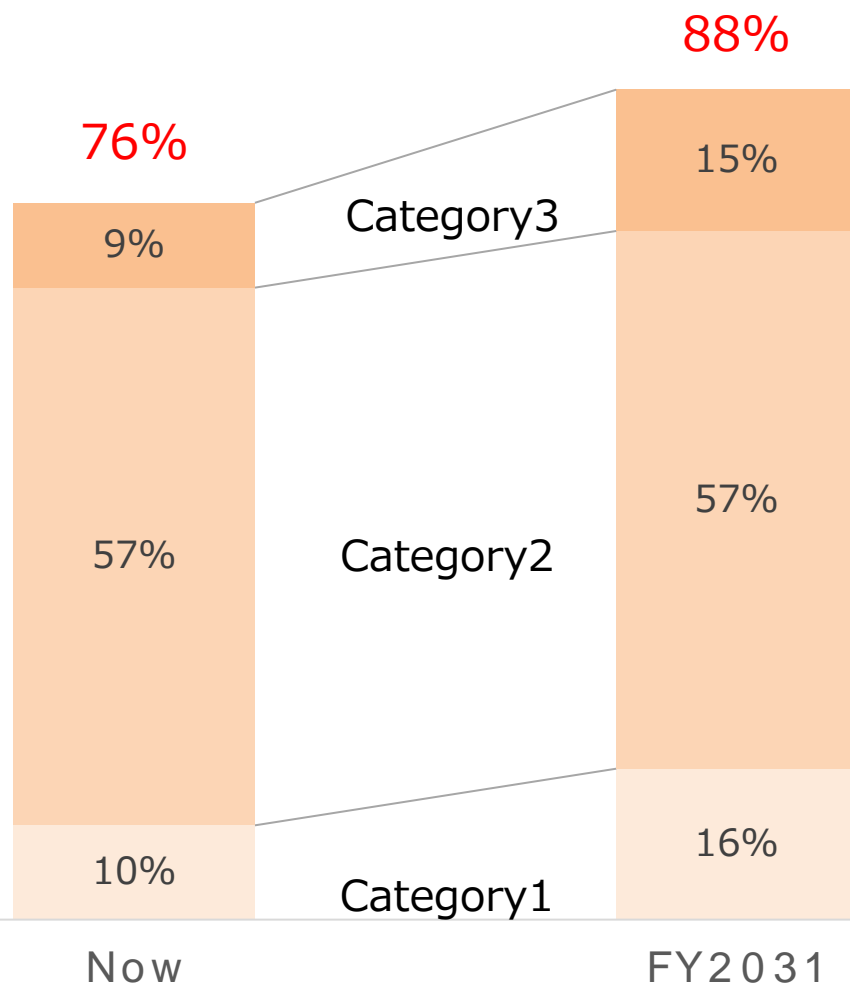
## Our mining stakes / Exploration project





# Long –term Strategy

## Improve the ratio<sup>\*1</sup> of stable raw-material procurement



### Ratio of Stable raw-material procurement Total +12%

**Category1** copper concentrate under off-take<sup>\*2</sup> **+6%**

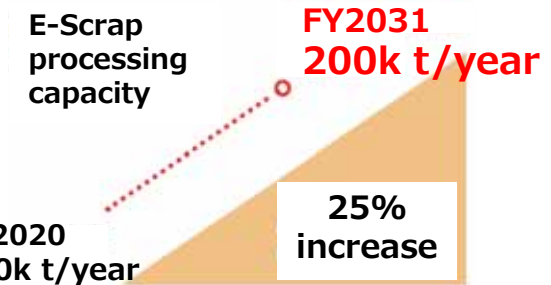
Will be in operation : Mantoverde、Zafranal

**Category2** copper concentrate long-term contract **±0%**

Maintaining good relationships with mining companies

**Category3** E-Scrap **+6%**

Increase Processing E-Scrap



- Independent of external environment
- Sustainable

Creation of a raw material portfolio

<sup>\*1</sup> Amount of copper contained with stable raw-material procurement divided by amount of total copper production

<sup>\*2</sup> Long-term takeover rights linked to mine investment interests

# Specific measures: Mantoverde sulfide ore project



## Overview

- Location: Atacama region, northern Chile
- Shareholder composition :
  - Mantos Copper 69.99%
  - MMC 30%
  - Minority individual shareholders 0.01%
- Life of mine : until 2041 (18 years)
- Ore reserve: 5.7 million tons  
(minable ore amount of 2.1 million tons) \* Metal content

## Attractiveness

1. High quality copper concentrate with few impurities, abundant reserve volume
2. It has SX-EW experience and has acquired licenses and permits. Shortening of time to start operation of sulfide ore is possible
3. Reduced CAPEX by utilizing existing infrastructure
4. Management team with extensive experience from major resource companies
5. Good relationship with local community

## History / Schedule

1. February 2020 Signed the share subscription agreement
2. February 2021 Formal participation upon signing of PF contract
3. 2023~2024 and thereafter Start of production

# Metals Business - Smelting (1) -

**Operation system: Total 3 smelter  
(2 in Japan, and 1 in Indonesia)**

Naoshima Smelter & Refinery



Copper: 230,000 tons / year  
E-Scrap: 120,000 tons / year

Onahama Smelting & Refining

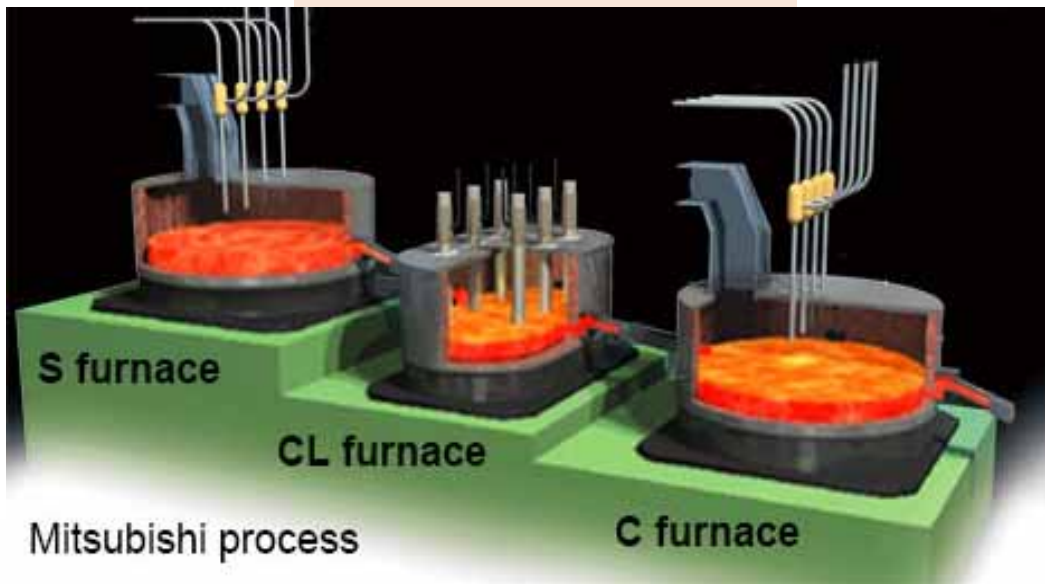


Copper: 300,000 tons / year  
E-Scrap: 40,000 tons / year

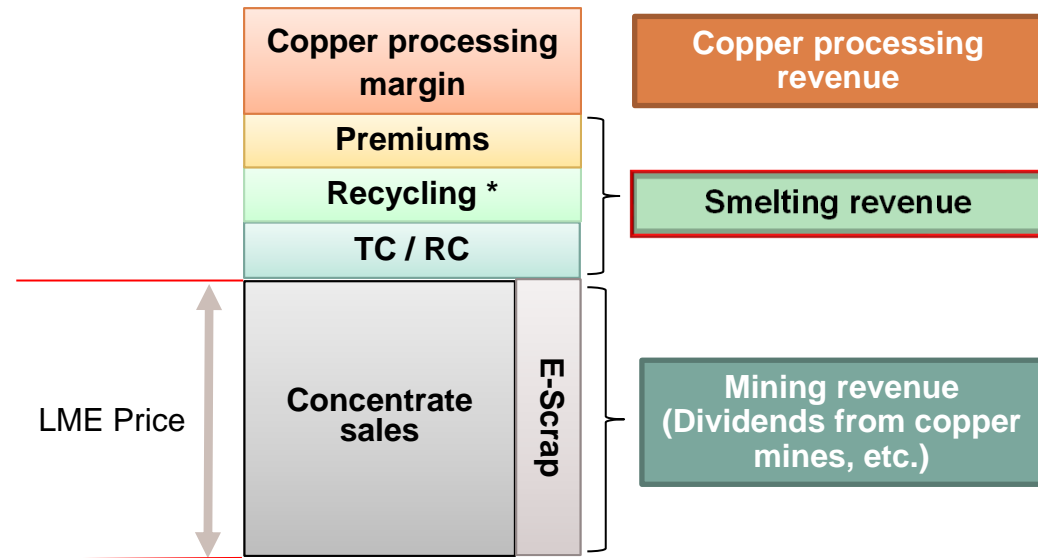
PT Smelting



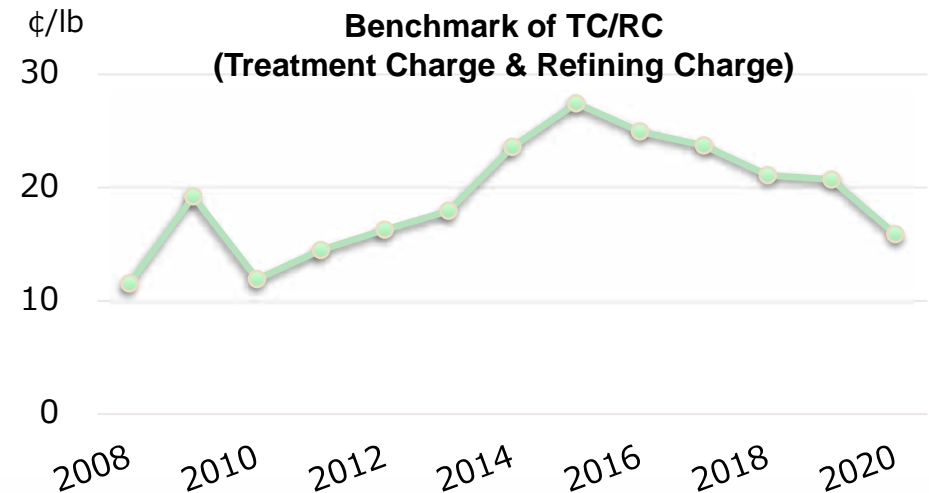
Copper: 300,000 tons / year



**Metals Business  
(Income breakdown image)**



\* Consist of the treatment charge and the profit of free metal income difference, etc.



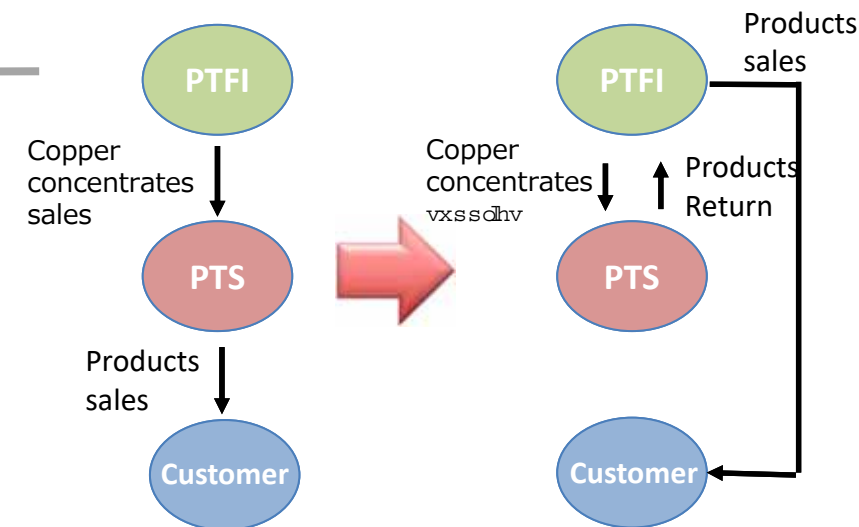
# Optimization of PT. Smelting

## 1 Expansion work

- 30% increase in copper concentrates smelting capacity
- Expansion construction work was financed by PT. Freeport Indonesia (“PTFI”) → After work completion, the loan will be converted to new stocks of PT. Smelting (“PTS”) in Indonesia
- After conversion, PTFI will be the major shareholder and PTS in Indonesia will change from a consolidated subsidiary to an equity method affiliate

## 2 Change in operation method

- From trading to contract smelting scheme
- Ownership of copper, gold and silver will belong to PTFI
- The Company will continue to be involved in PTS operations even after the transition to contract smelting



## 3 Impact on business performance

- Current fiscal year: No impact on business performance
- In or after 2023, net sales will decrease, but the impact on operating profit (loss) and ordinary profit (loss) will be minimal.



# Specific Measures: Optimization of material flow

## Material grid

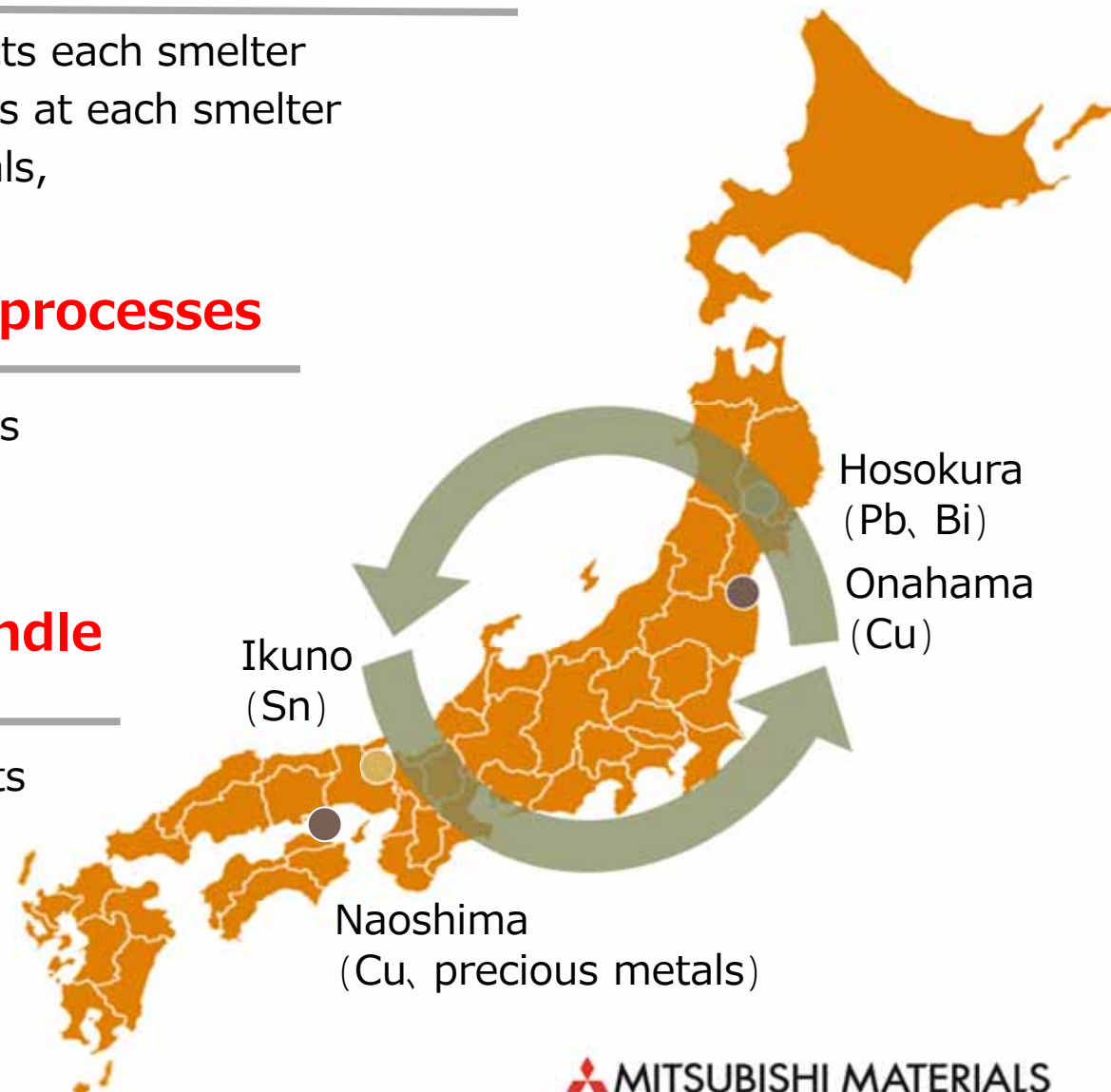
- Optimization of material flow that connects each smelter
- Strengthening recovery of valuable metals at each smelter  
→Effective recycling of Cu, precious metals, and trace components in E-Scrap

## Improvement of precious metal processes

- Improvement of precious metal processes  
→Improvement of yield of Au and Ag

## E-Scrap infrastructure which handle increased processing volume

- Understand the E-Scrap Input Constraints
- Optimizing the Processing Process



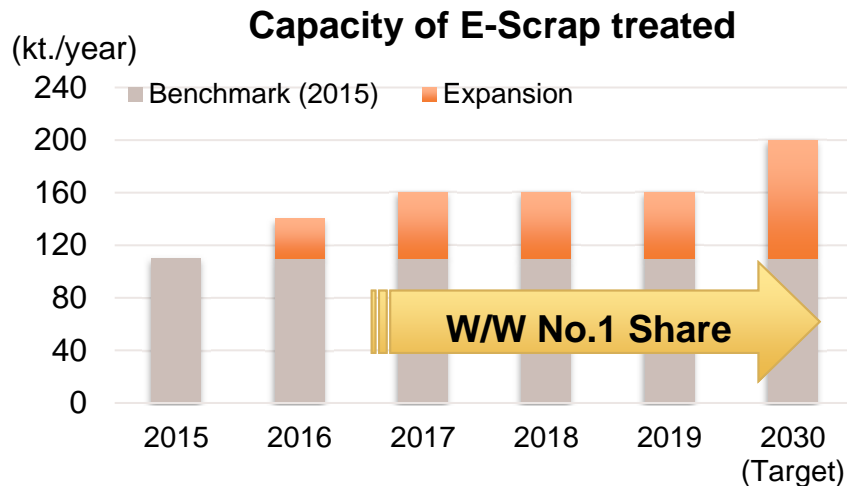
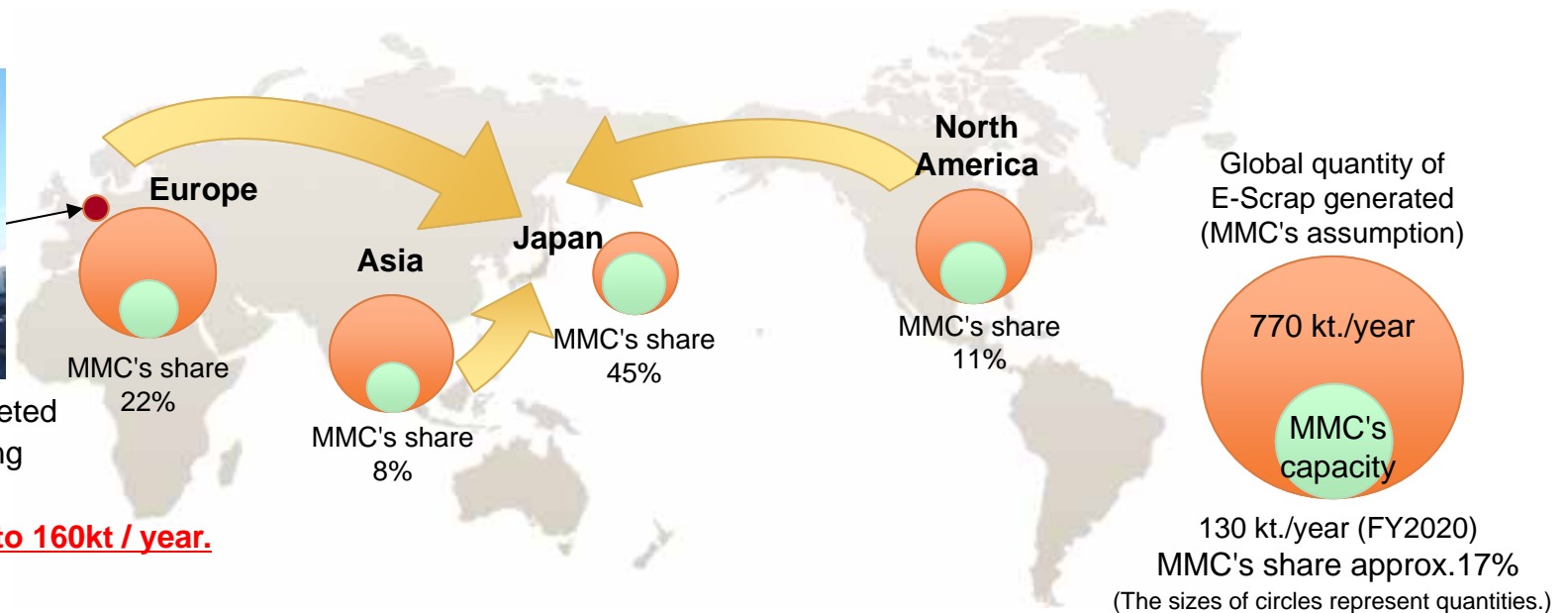
# Metals Business - Smelting (2) -

## Priority measures: Increasing E-Scrap recycling



MM Metal Recycling B.V. completed to establish the E-Scrap sampling facility in May, 2018.

**Capacity has increased 20kt, to 160kt / year.**



**Naoshima Smelter & Refinery**  
Increase in receiving, sampling, analysis, and treatment capacities (from 2016)



**Onahama Smelting & Refining Co., Ltd.**  
Increase in capacity +3kt./year (from 2018)

# E-Scrap enhancement

## 1 Acceptance enhancement

- Increase acceptance capacity of MM Metal Recycling B.V. to **48,000 tons/year**
- Securely capture **the growth of the E-Scrap market** in the European region

## 2 Process enhancement

- **Optimize material flow** between smelters
- **Efficiently recover metals** from E-Scrap (copper, gold, silver, lead, tin, PGM, etc.)

## 3 Collection enhancement

- Introduce **a new platform** to **Improve customer satisfaction**

In December 2021, we will provide a new e-scrap trading platform.

**MEX : Mitsubishi Materials E-Scrap EXchange**



As face-to-face meetings decrease due to corona disasters, it is increasingly important to always have contact with customers. There is an urgent need to create a new system that does not make us feel the physical distance.

**MEX connects our customers with us and makes us a closer partner.**

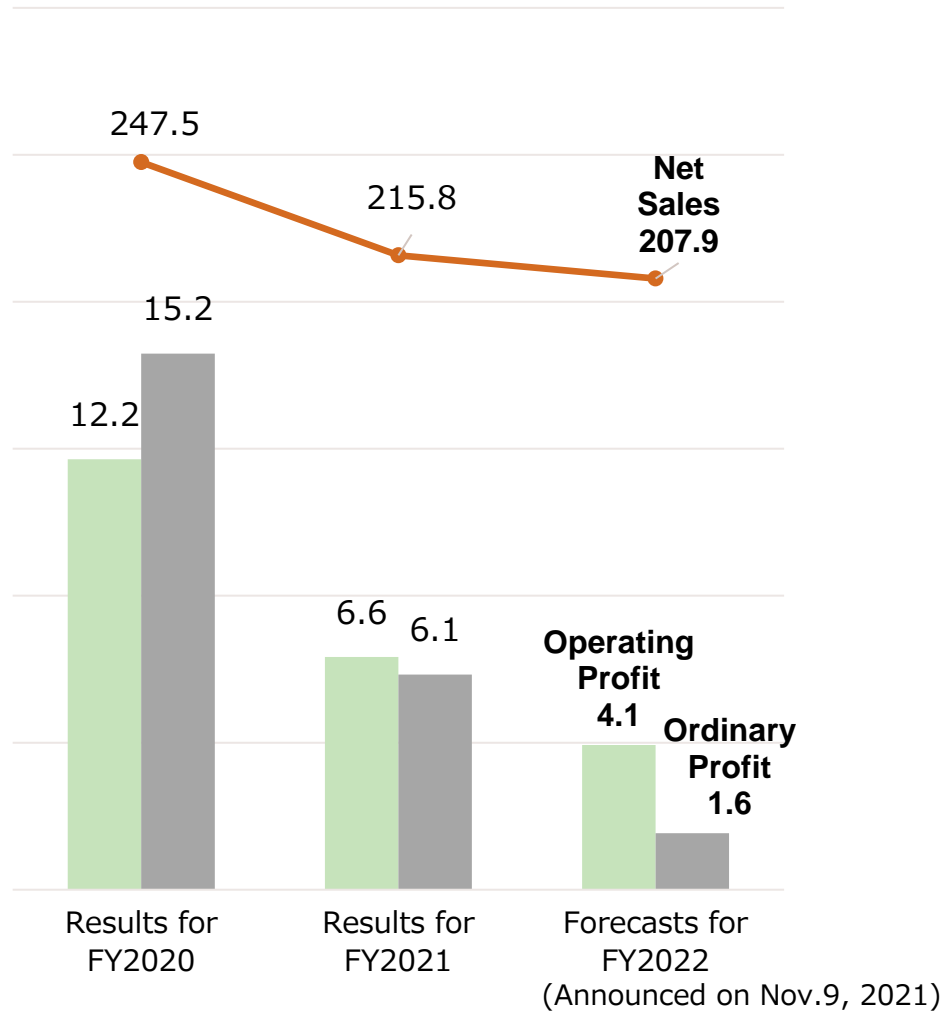


# Cement Business

# Cement Business

## Consolidated Earnings

Unit: billion yen

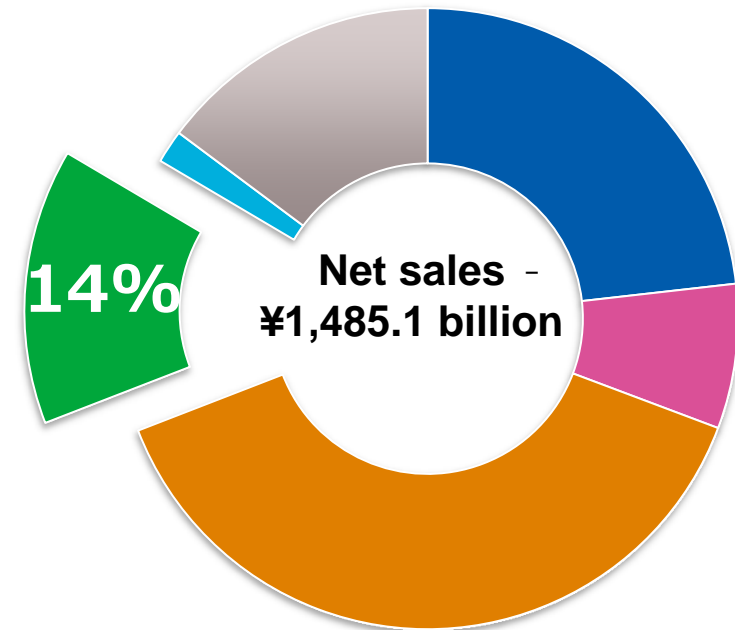


## Ratio of Net Sales by Business

### Cement



- Cement
- Ready-mixed concrete
- Others



\*Sales to outside customers (Year ended March 31, 2021)



## **Leader in the domestic and international cement industry with advanced environmental technologies**

### **Long-term Strategy**

- Stable supply of basic building materials for social infrastructure and disaster prevention infrastructure
- Sophistication of waste disposal
- Response to climate change by reducing CO<sub>2</sub>
- Construction of a resilient domestic business foundation through business restructuring and business growth in overseas markets

### **Specific Measures of the FY2023 Strategy**

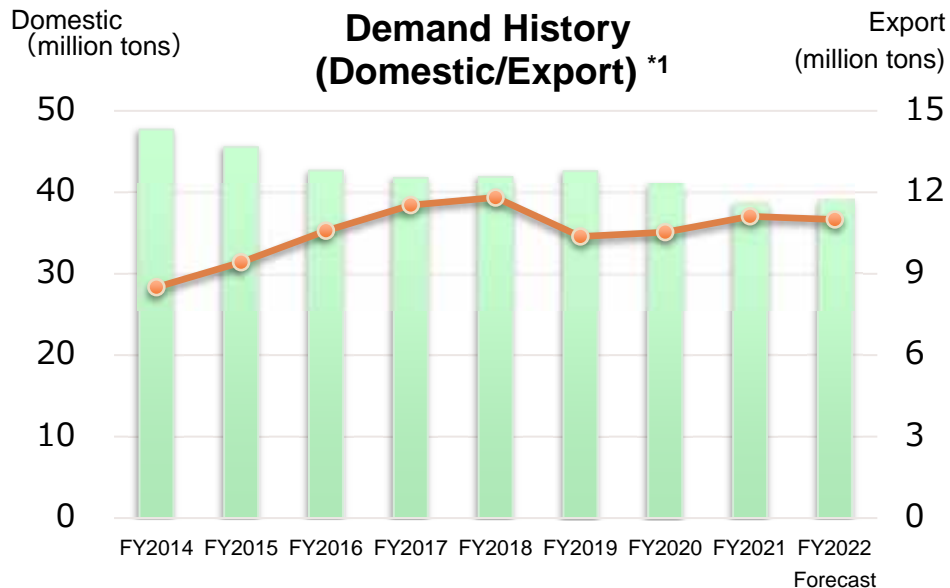
- Improve and optimize production system through domestic business restructuring
- Expand capabilities in waste plastic processing and installation of chlorine dust cleaning equipment
- Introduce low-temperature burning technology and develop CO<sub>2</sub> reduction, capture, and recycling technologies
- Expand US business and develop new overseas bases

### **Projected Achievement at the End of FY2023**

- Domestic business restructuring
- Optimized production systems and promotion of overall business efficiency

# Cement Business - Japan -

## Fortifying the domestic foundation for competitiveness



### Demand in Japan

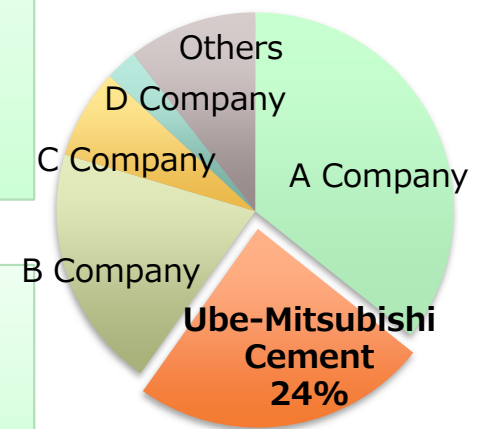
- ◆ FY2021 Result 38.67million tons
- FY2022 Forecast\*1 39.00million tons
- ◆ Announced raising the cement prices on December, 2017 - More than ¥1,000/ton (from the shipment of April, 2018)
- To continue the sales price optimizations of cement in FY2022

\*1 Japan Cement Association

### Export environment

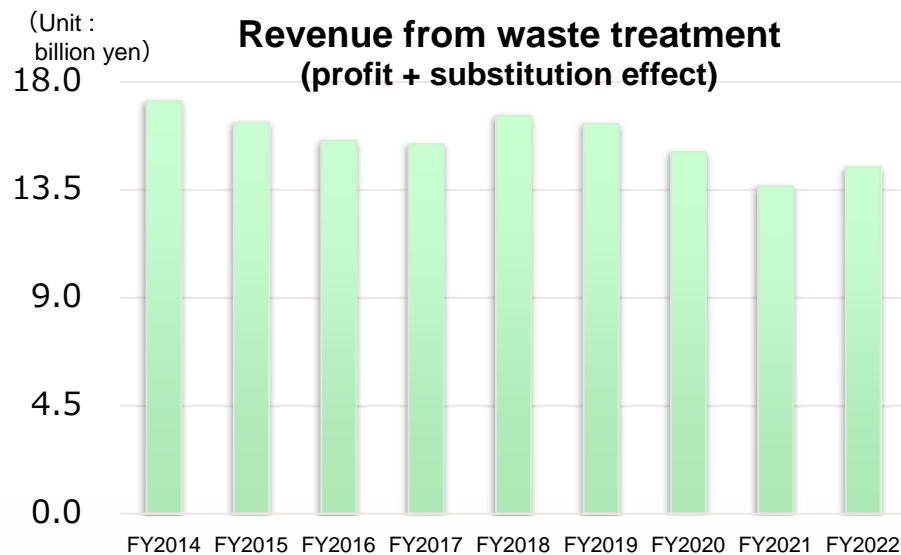
- ◆ Outlook for FY2022\* For Asia and Oceania:
- About the same level as in the previous fiscal year.

## Domestic Market Share\*



\*MMC's assumption

## Recycling business

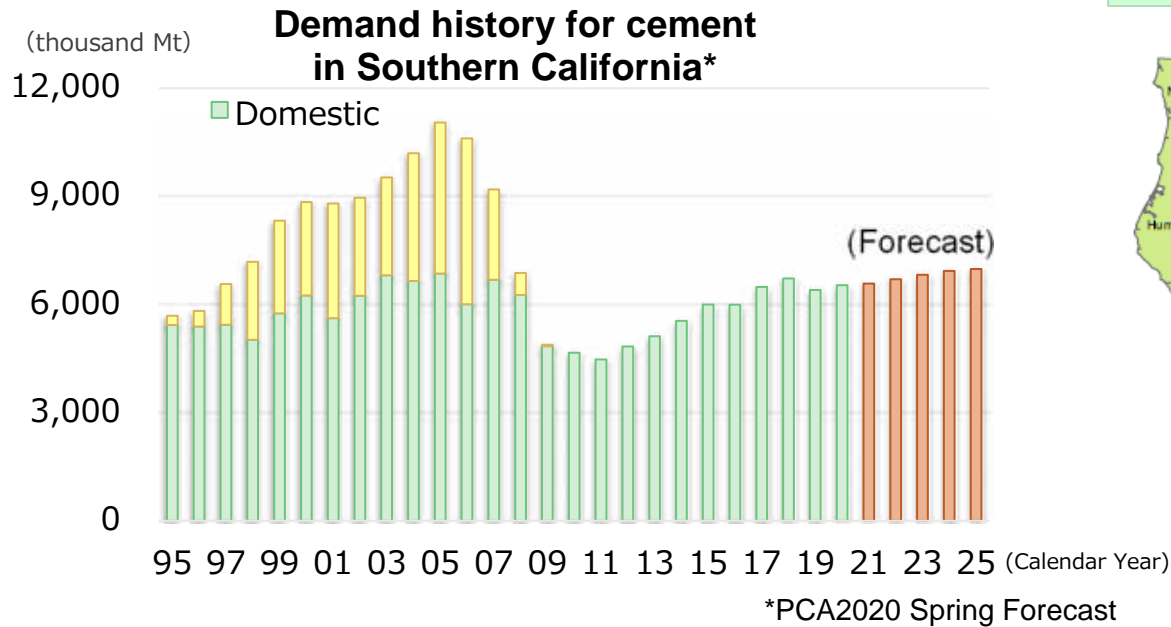


### Waste processing:

- ◆ **Coal ash:**  
Capacity at Kyushu Plant increased 3.2 times. (Operations began in August, 2018)
- ◆ **Waste plastic:**  
Expansion work is being carried out to increase the processing capacity of the Kyushu Plant by 1.3 times. (Operations will begin in August, 2022)
- ◆ **Recycled oil :**  
A receiving facility is under construction at the Kyushu Plant and we plan to receive recycled oil of 28,800kl/year. (Operations will begin in December, 2021)
- ◆ **Waste related natural disasters:**  
Making maximum efforts to accept waste related natural disasters such as earthquakes and torrential rains.

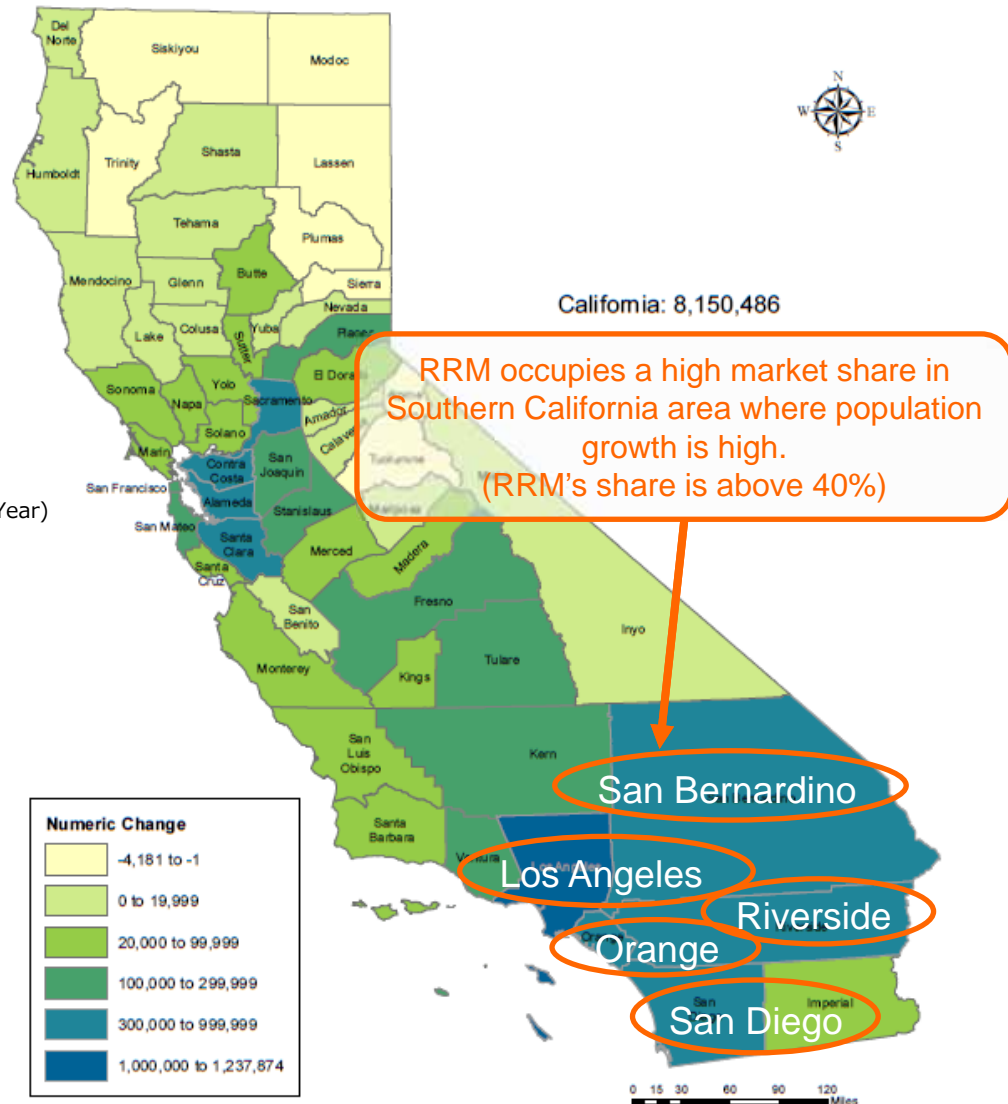
# Cement Business - United States (1) -

## Demand environment in the U.S.



▲ Ready-mixed concrete plant of Robertson's Ready Mix, Ltd.

## California Projected Population Growth (2010 to 2035, Numeric change)



Source: California Department of Finance

# Cement Business - United States (2) -

## Priority measures: Expansion of the US business and development of new business bases

Expansion of the US business, improvement of vertical value chains

Cement manufacturing and supply (import terminals)



Cushenbury Plant

Long Beach import terminal

Cement supply and sales

Ready-mixed concrete and aggregate business



Ready-mixed concrete plant

Aggregate quarries

Three measures

Cement manufacturing

Increased cost competitiveness

Stable operation through renovation, energy cost reduction, and recycling expansion achieved through renovation

Cement supply

Expansion of supply system

Accommodation to demand for cement-concrete admixture (LBT\* expansion and new SDT\* facilities)

Ready-mixed concrete business

Expansion of revenue foundation

Strengthening existing businesses, entering new markets aggregate quarries development and enhancement

\* LBT: Long Beach Terminal \* SDT: San Diego Terminal

Southern California



Development of new bases

(Overseas) Consider the Business acquisition

**Area where a vertical integration model can be built**

- ◆ Targets advanced and/or equivalent countries e.g. Australia

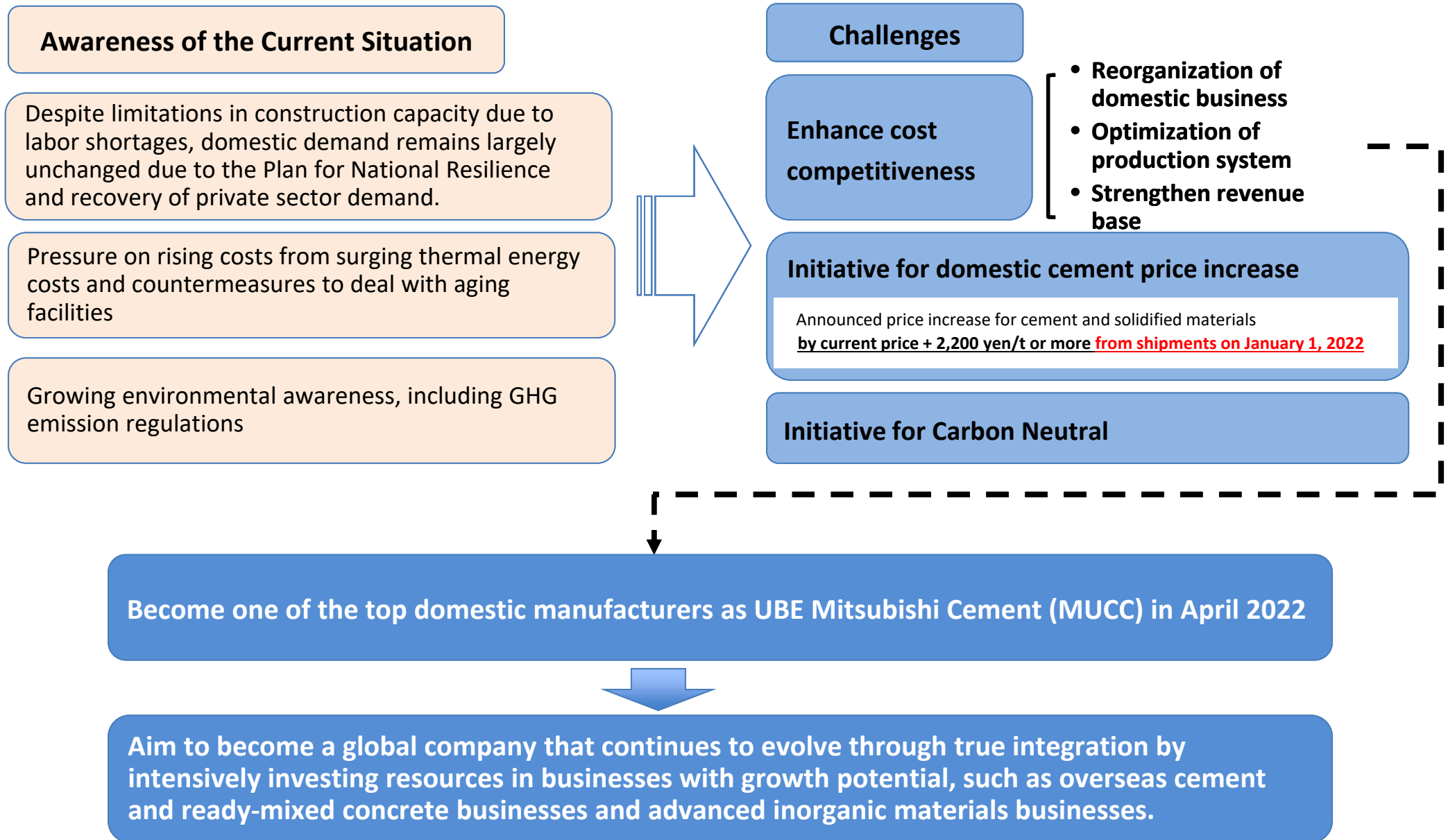
Develop and secure human resources

**Develop and secure manager**

- ◆ Increase the number of people who involved in overseas business



# Current Awareness and Challenges in the Domestic Business Environment



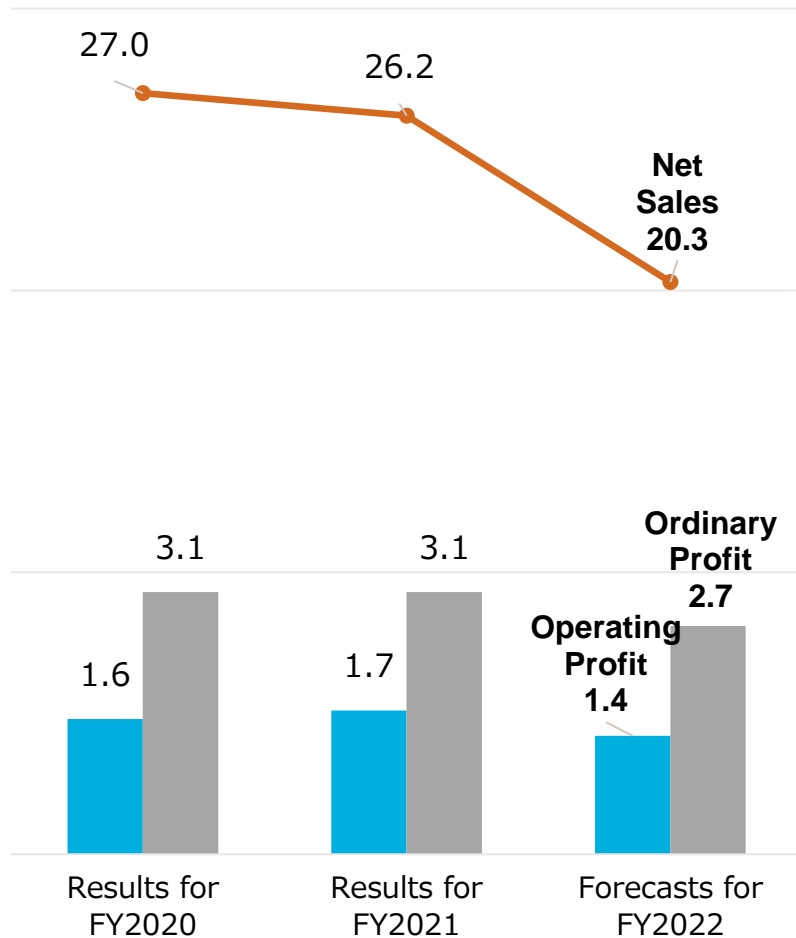


# Environment & Energy Business

# Environment & Energy Business

## Consolidated Earnings

Unit: billion yen



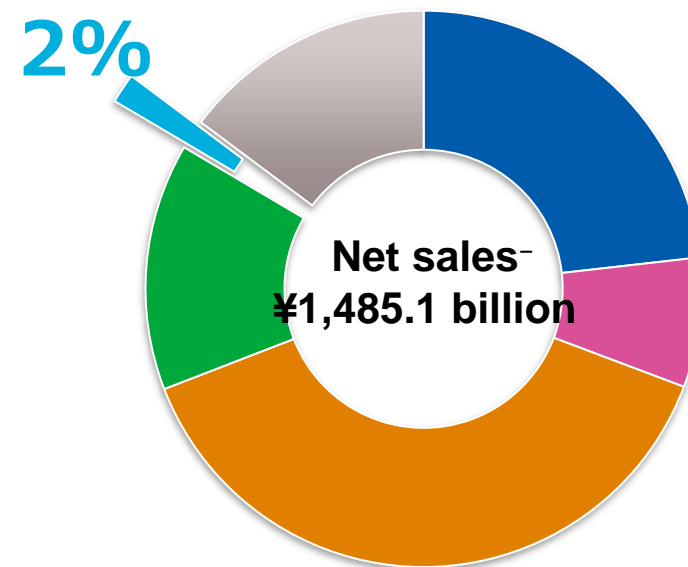
(Announced on Nov.9, 2021)

## Ratio of Net Sales by Business

### Environment & Energy



- Renewable energy
- Environmental recycling



\*Sales to outside customers (Year ended March 31, 2021)



**(Environmental recycling) Driving force of resource-recycling systems**  
**(Renewable energy) Leading company in geothermal development**

## Long-term Strategy

- Provision of a safe recycling system with thorough traceability, etc.
- Decarbonization by expanding renewable energy business

### Specific Measures of the FY2023 Strategy

- Expand home appliance recycling business, advancement of automation, and improvement of added value of recovered products
- Demonstrate LiB recycling technology and solar panel recycling technology
- Secure stable plant operations in fly ash recycling business and biogasification business
- Complete Komatagawa new hydroelectric power plant, construction of Appi geothermal power plant, survey of new geothermal sites, and survey of new small hydropower

### Projected Achievement at the End of FY2023

- Establishment of a stable business base for the environmental recycling business
- Expansion and stable operations of renewable energy plants and search for new geothermal sites and new small hydropower

# Environment Business

●	"E-waste" (used electronics and electrical products)
●	Automobile recycling
●	Fly ash treatment
●	Biogas

## Chube Eco Technology



## Hokkaido Eco Recycle System

## East Japan Recycling System



## Green Cycle

## Panasonic Eco Technology Kanto

## Kansai Recycling Sysyems

## New Energy Fujimino



## KitaKyushu Ash Recycle Systems



## MARC Corporation

※Bold underline : Consolidated subsidiaries

# Energy Business

●	Geothermal energy
▲	Hydroelectric
■	Mega solar

※Each value shows equipment capacity(kW)



## Komonomori Region

Resource Survey (2021-2025)

\* JOGMEC subsidized project

⇒Determination of expected output and operation start-up date

⇒Construction of Komonomori district power plant

⇒Continue development of new geothermal area

### Hydroelectric Power Plant

Nagtata	721kW
Ikari	1,873kW
Ooyu	956kW
Komatagawa No.1	5,720kW
Komatagawa No.2	1,750kW
Komatagawa No.4	6,808kW

**Appi**  
(Under Construction)  
14,900kW

**Komatagawa New Power Plant**  
(Under Construction)  
10,326kW

**Wasabizawa**  
46,199kW

**Torigoe**  
1,990kW

**Fukui**  
1,990kW

**Makabe**  
1,990kW

**Yabuki**  
6,544kW

**Irigama**  
6,930kW

入釜太陽光発電所

**Omuma**  
9,500kW

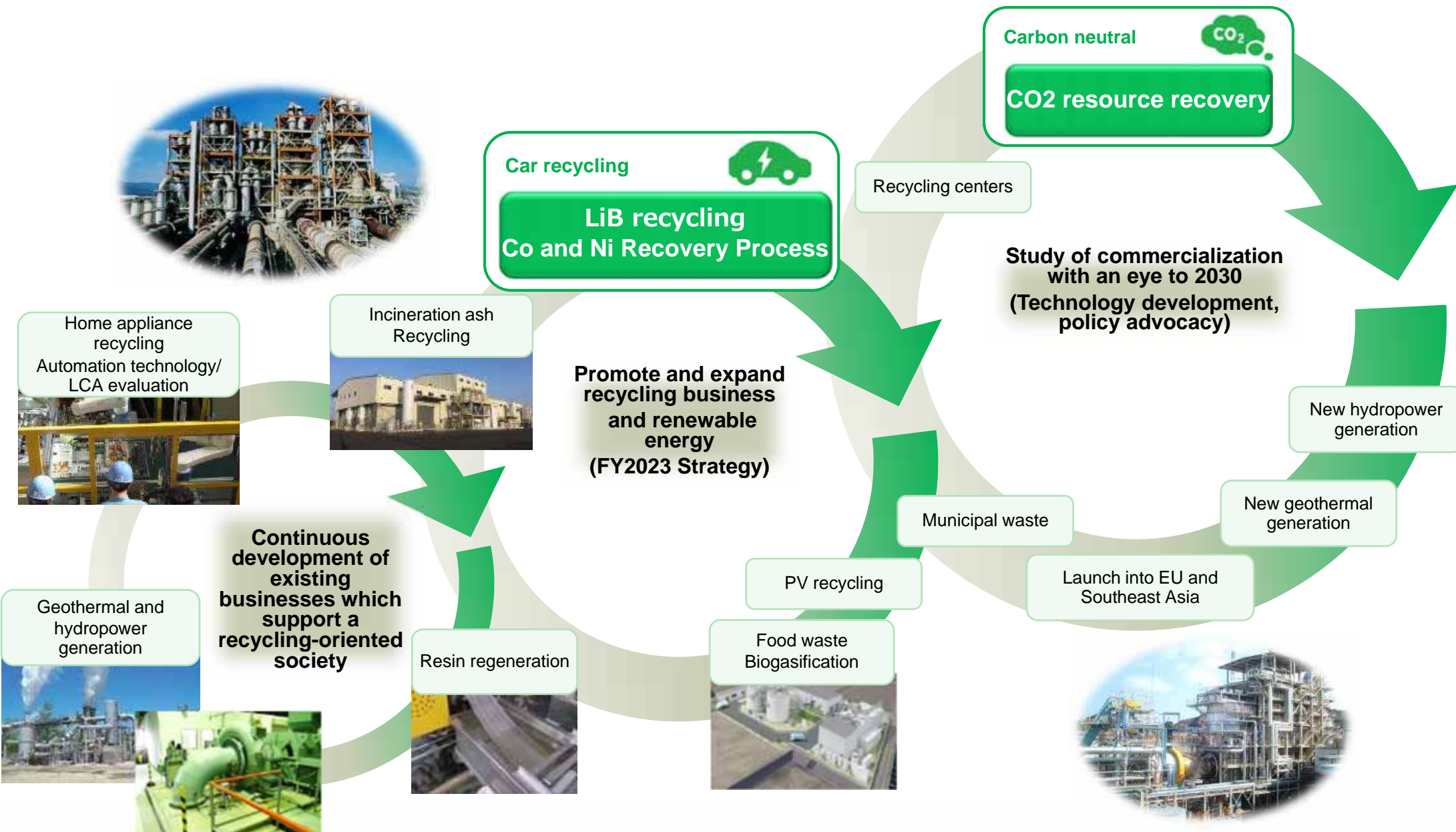


**Sumikawa**  
50,000kW



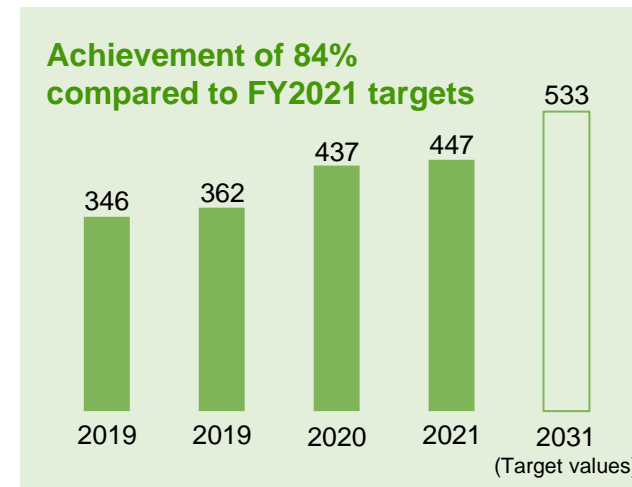
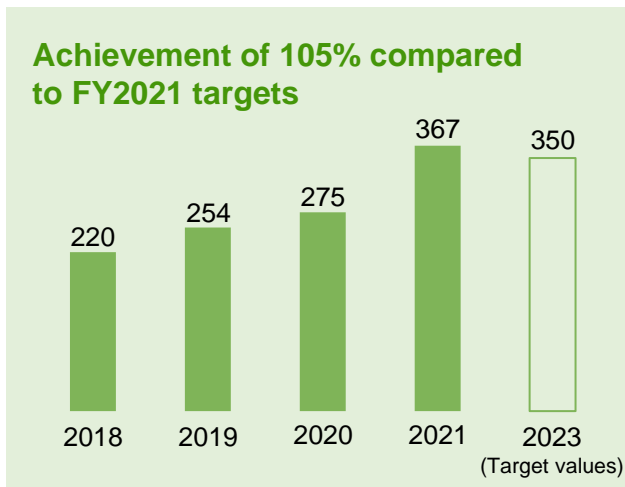
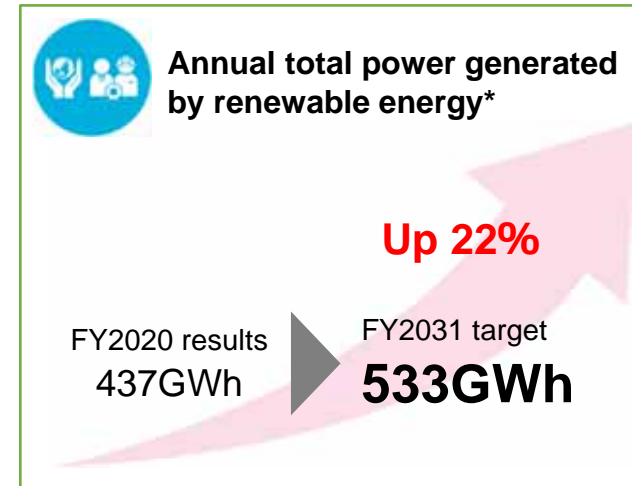
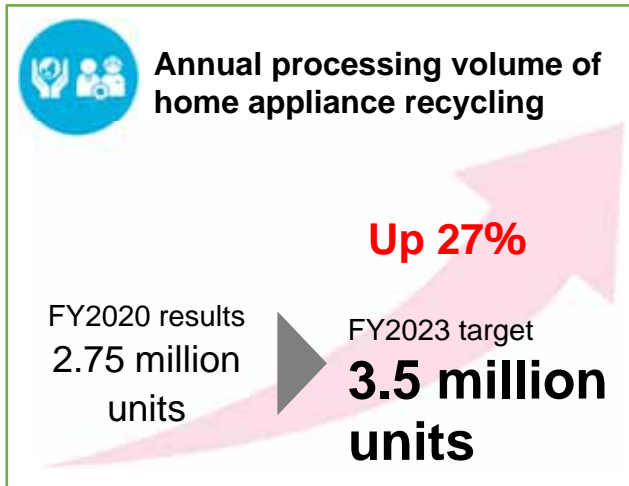


# Goals of the Environment & Energy Business



# Initiatives to Build a Recycling-oriented Society (circular economy)

## Contribution goals for a sustainable Society



\*The definition of renewable energy generated has been revised to be the generated volume of each business multiplied by our ownership share.

\*Total amount of steam supplied to geothermal power plants (converted to the amount of generated power) and the amount of power transmitted (amount of power sold) other than steam supply.



**For further information, please contact at:**

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URL: <https://www.mmc.co.jp/corporate/ja/index.html>

These projected performance figures are based on information available to the Company's management as of the day for releasing this material.

There are many uncertain or risk factors inherent in projections, and there might be cases in which actual results materially differ from projections of this material.

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