

三菱マテリアル

MITSUBISHI MATERIALS

IR Meeting Handout

August, 2019

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○ **(FYI) Medium-Term Management Strategy**

(Announced on May 16, 2017) p47-58

* As of October 1, 2018, “Advanced Materials & Tools Company” changed its name to “Metalworking Solutions Business Company.”

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, 2019)
Year of Establishment : 1950
Number of Employees : Consolidated 28,426 (as of Mar. 31, 2019)
Non-consolidated 4,807 (as of Mar. 31, 2019)
Consolidated Subsidiaries : 152 (as of Mar. 31, 2019)
Affiliated company accounted for by the equity-method : 16 (as of Mar. 31, 2019)
(The group has established about 165 operating bases in about 30 countries.)



Common Stock (Ticker symbol : 5711)

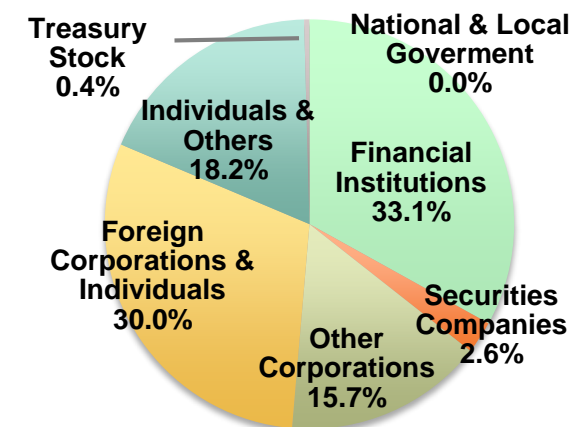
■ Shares of issued and Outstanding: 131 million
Number of Unit Shareholders: 70,630
Share Unit Number: 100

*as of March 31, 2019

The Company changed the number of unit shares and consolidated its common stock with an effective date of October 1, 2016.

- Change in the number of unit shares : 1,000 ⇒ 100
- Consolidation of shares : 10:1 ratio of its common stock

■ Distribution of shareholders *as of Mar. 31, 2019



Business Structure

Cement



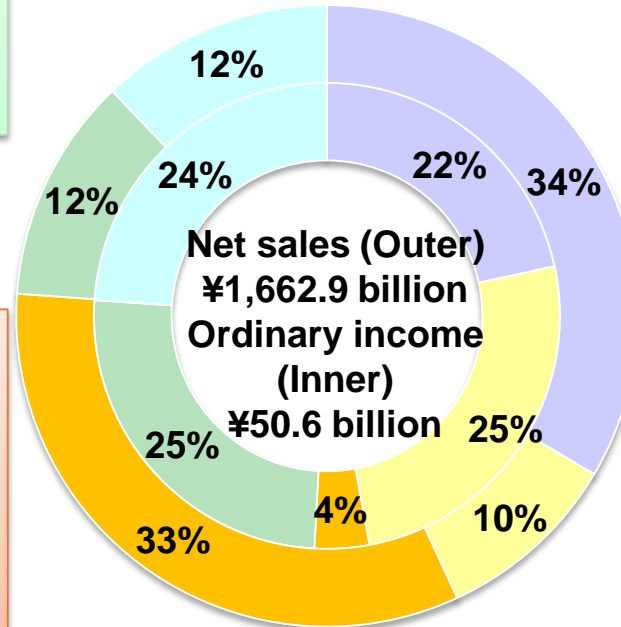
- Cement
- Aggregate
- Ready-mixed concrete
- Concrete products

Advanced Products



- Copper and copper alloy products
- Electronic materials & components
- Aluminum products

Financial Performance by segment (FY2019)



Metals



- Copper mining
- Copper smelting and refining

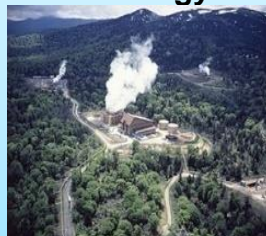
Metalworking Solutions



- Cemented carbide products
- Sintering parts, etc.

Others

Environment & Energy



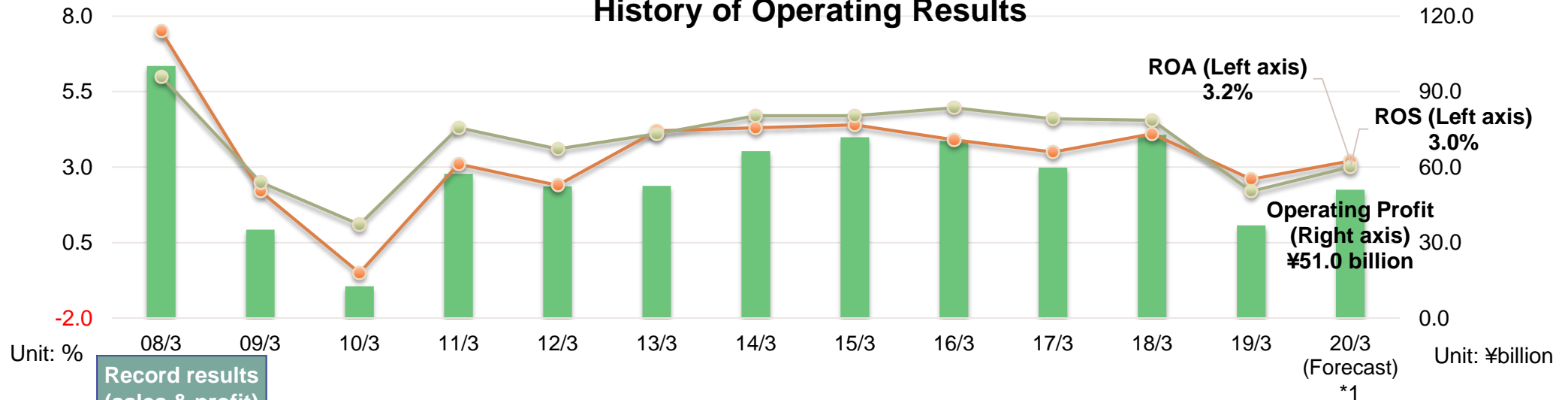
Others

- Engineering
- Others etc.

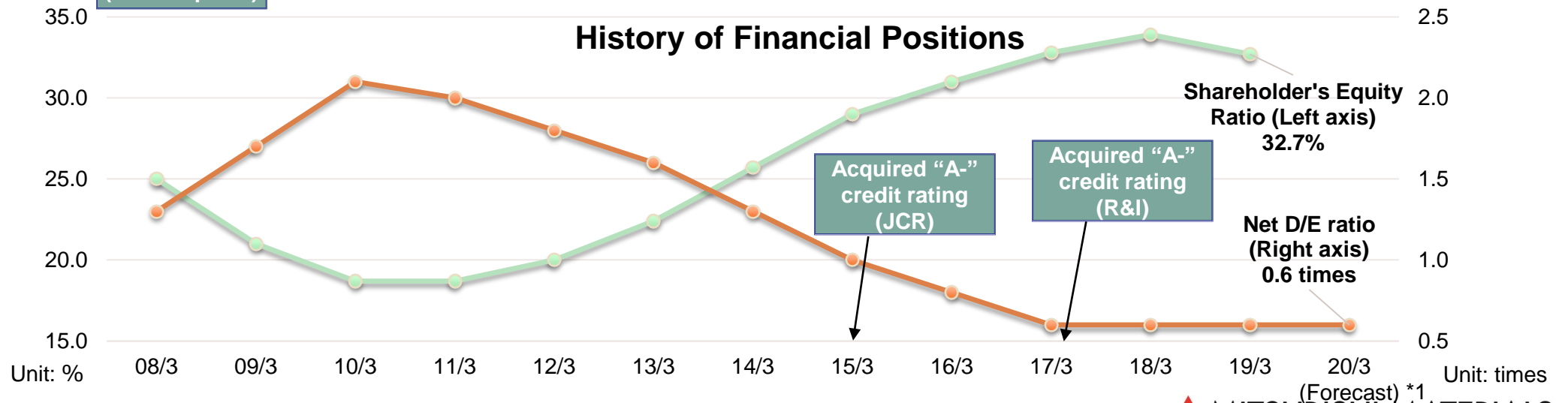
History of Operating Results

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 -)

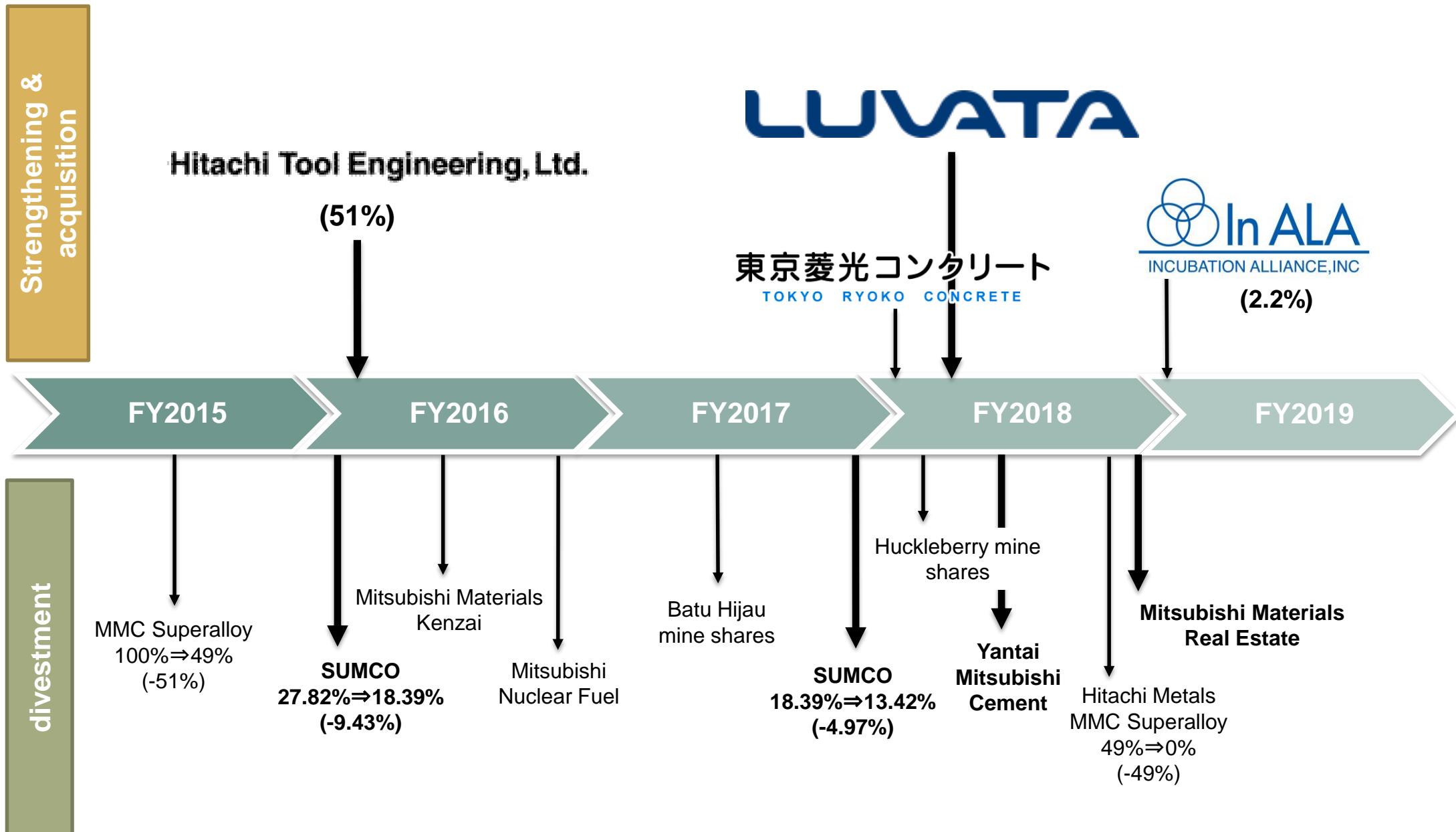
History of Operating Results



History of Financial Positions



History of Business Restructuring



History of Provision for Environmental Measures

Provision for environmental measures
at abandoned mines has completed in FY2019

Provision for environmental measures at
abandoned mines

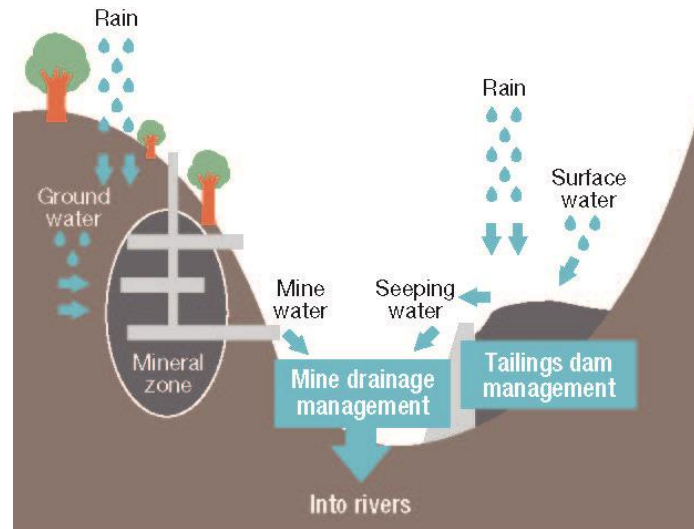
1. Tailings Dam Reinforcement

Construction work to design and implement stability measures at
the tailings dam

2. Countermeasure work to prevent mining-induced pollution

Measures for the prevention of dumping untreated water with a
focus on the reinforcement of water treatment capacity in
response to the changes in the natural environment in recent
years

Overview of Wastewater Treatment
in Abandoned Mines



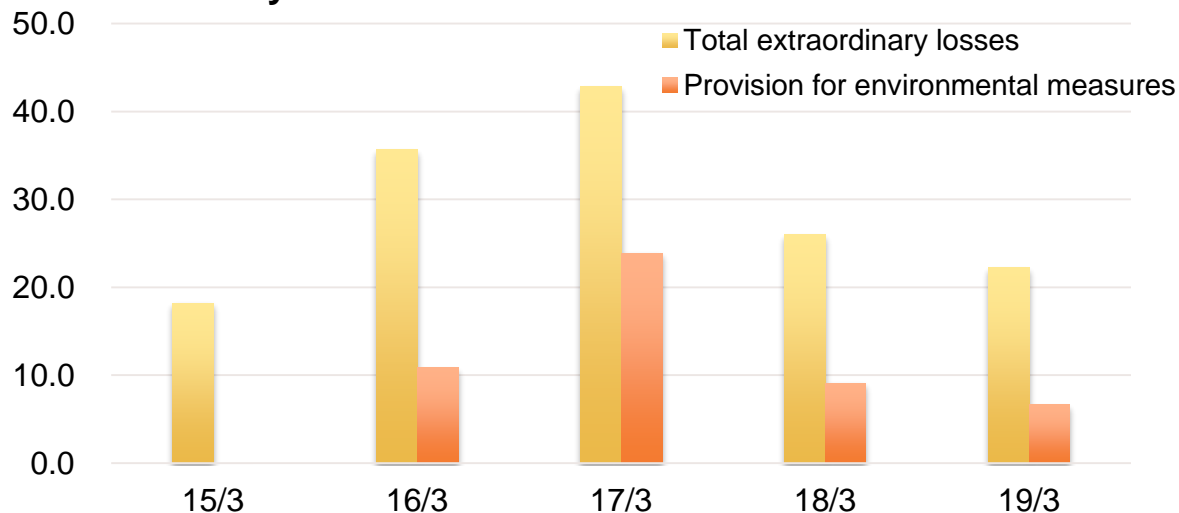
Reinforcement work on the Yotani
Mine Tailings Dam No.1



Contamination containment work at
Komagi Mine: membrane section
waterproofing

Unit: ¥billion

History of Provision for Environmental Measures



Results of Provision for Environmental Measures

FY2016 ¥10.8billion

Countermeasure work to prevent mining-induced pollution
Tailings Dam Reinforcement (2sites)

FY2017 ¥3.9billion

Tailings Dam Reinforcement (4sites)
Countermeasure work to prevent mining-induced pollution

FY2018 ¥9.1billion

Countermeasure work to prevent mining-induced pollution

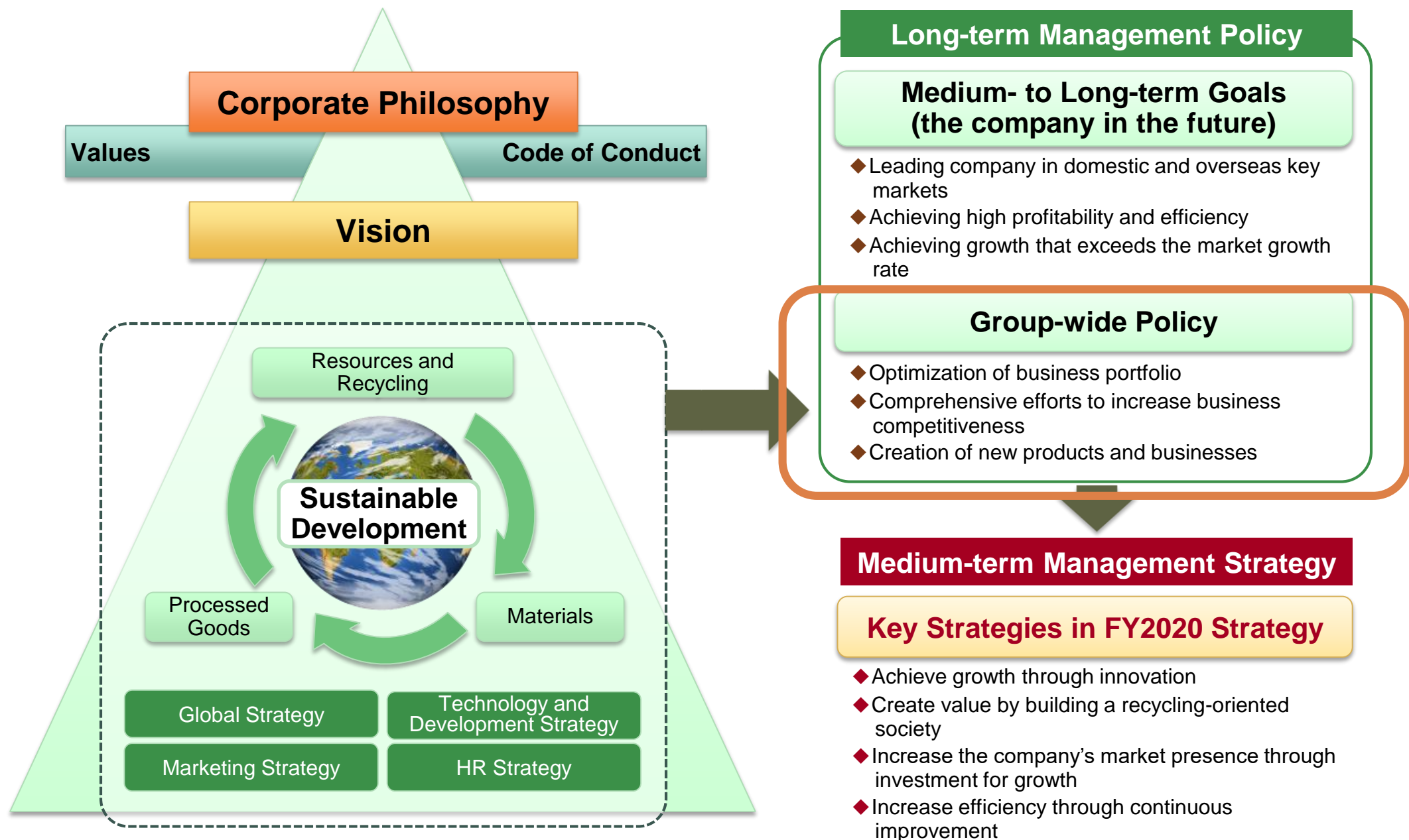
FY2019 ¥6.6billion

Tailings Dam Reinforcement (4sites)

Total ¥50.4billion

Progress on the Medium-term Management Strategy

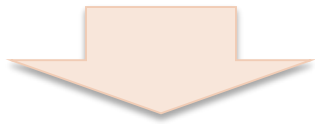
Overview of FY2020 Strategy



Progress on the Medium-Term Management Strategy

◆ Medium-Term Management Strategy

Review the growth strategy and investment plan for upcoming three years once a year



◆ Rolling Review of the Medium-Term Management Strategy (FY2020 Strategy)

Growth strategies: No major changes

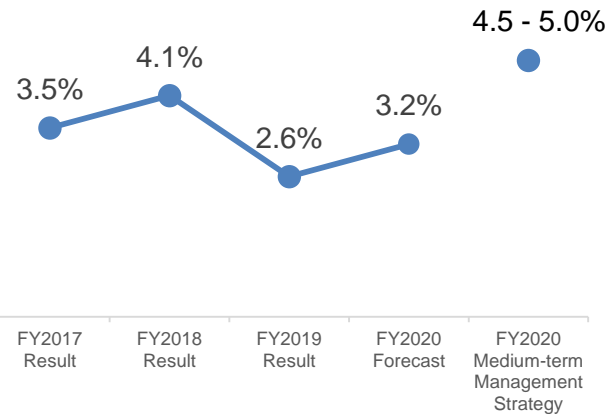
Investment plan: No major changes

◆ Optimization of business portfolio (October, 2018)

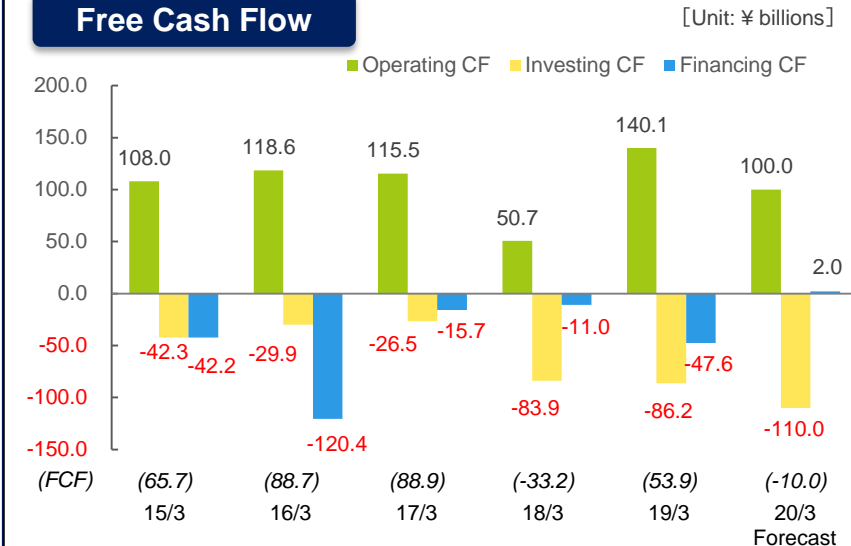
New establishment of the “Advanced Products Company”

- ⇒ Strengthening and growth of product manufacturing business
- ⇒ Creation of new products and businesses in product manufacturing business

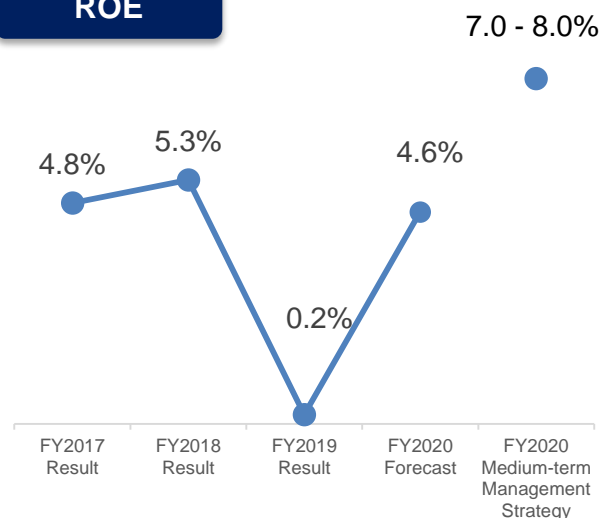
ROA



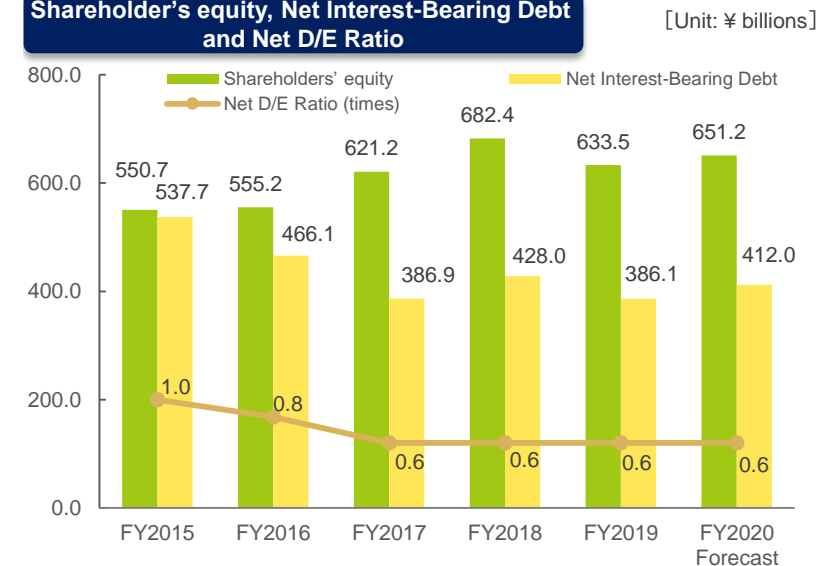
Free Cash Flow



ROE

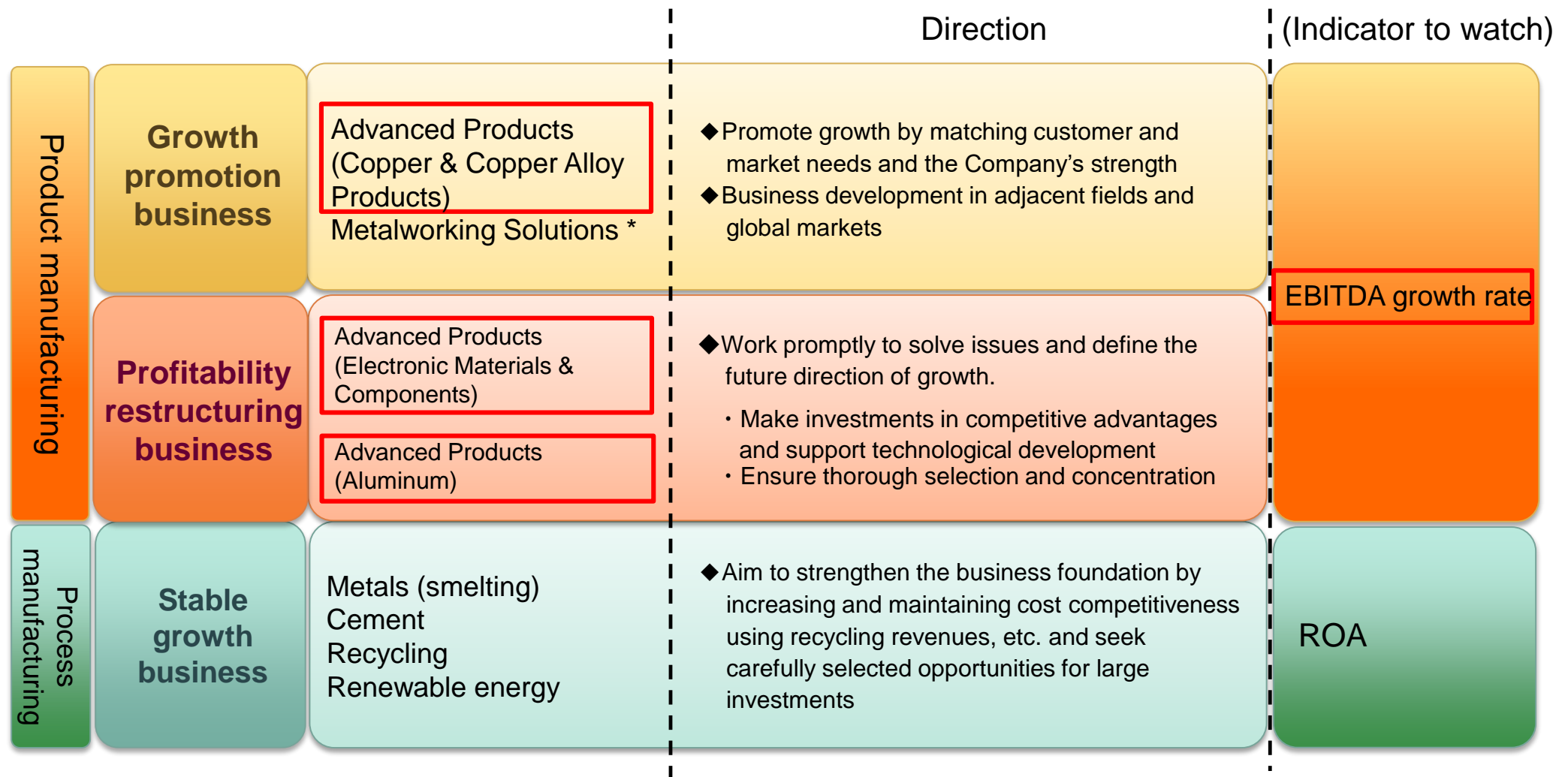


Shareholder's equity, Net Interest-Bearing Debt and Net D/E Ratio



Optimization of Business Portfolio

- ◆ To integrate three product manufacturing businesses and establish the Advanced Products Company in October, 2018
- ◆ Newly set a EBITDA growth rate as the most important indicator of the Advanced Products Company



* As of October 1, 2018, "Advanced Materials & Tools Company" has changed its name to "Metalworking Solutions Business Company."

Key Measures to Strengthen and Restructure the Business Since April 2017

Key Business Strengthening and Acquisition of Shares	
Advanced Products	<ul style="list-style-type: none"> • “Luvata Special Products Division” became a consolidated subsidiary through completion of the acquisition of shares • <u>Development of Flake-type thermistors for high-precision temperature control (the world’s smallest and with long-term reliability) of laser diodes for optical communication</u> • <u>To begin collaboration with Denka Company Limited for full-fledged mass-production of ceramic insulated circuit substrates with high thermal conductivity for eco-friendly vehicles</u> • <u>Joint development with Mitsubishi Shindoh Co., Ltd. regarding corrosion protective plating technology for the terminal connectors of aluminum wire harnesses which is expected to contribute for reducing the weight of automobiles</u> • <u>Development of two types of copper sintering bonding materials for next-generation power modules capable of solving problems that arise in conventional solder</u> • <u>Development of uniformity electrodeposition coating technology for highly heat-resistant and highly insulating resin for next-generation vehicles</u>
Metalworking Solutions Business	<ul style="list-style-type: none"> • “Central Japan Technical Center” was established • “TianJin LingYun tool Design Co.,LTD.” was relocated, and improved and expanded • Tungsten recycling capacity at Japan New Metals Co., Ltd. was increased 1.5 times • <u>“Machining Technology and Education Center in North America” was relocated, and improved and expanded</u>
Metals Business	<ul style="list-style-type: none"> • “MM Metal Recycling B.V.”, an E-Scrap sampling facility established in the Netherlands, went into operation
Cement Business	<ul style="list-style-type: none"> • <u>Capacity of waste plastic processing at Kyushu Plant increased 1.7 times</u>
Others Business	<ul style="list-style-type: none"> • “KitaKyushu Ash Recycle Systems Co., Ltd.”, which is engaged in the treatment of incineration fly ash, went into operation • <u>To begin the joint development of recycling technology of cobalt, nickel and other metals with Nippon Magnetic Dressing Co., LTD.</u> • <u>“New Energy Fujimino Co., Ltd.” was established for operating a business of producing biogas from food waste</u>
Common	<ul style="list-style-type: none"> • Investment to “Incubation Alliance, Inc.”, which is involved in the development and manufacture of new carbonaceous material “graphene” • <u>“New Business Development & Promotion Division” and “EV Material Development & Recycling Business Promotion Dept.” were established</u> • <u>Establishment of “MMC Innovation Investment Limited Partnership”, which will invest in venture companies that have material technologies</u>
Key Business Restructuring and Sales of Shares	
Metalworking Solutions Business	<ul style="list-style-type: none"> • All shares in “Hitachi Metals MMC Superalloy, Ltd.” were sold
Common	<ul style="list-style-type: none"> • All shares in “Mitsubishi Materials Real Estate Corporation” were sold

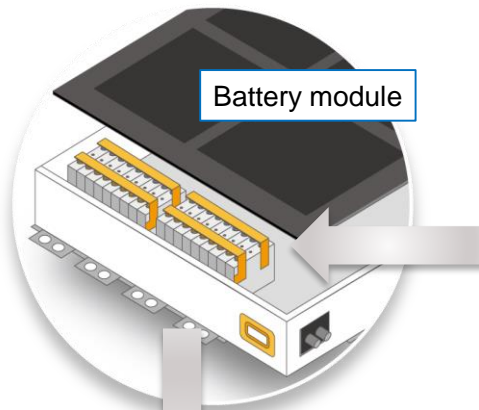
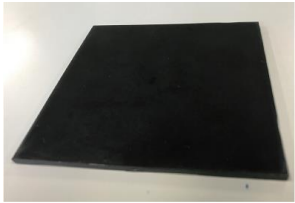
*Black: FY2018
*Red: FY2019

Creation of New Products and Businesses

From battery pack, materials for interior and exterior to recycling

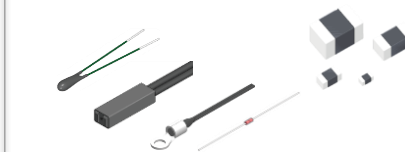
The Company provides unique products and recycle technology with the keywords "Manufacturing", "Use" and "Revival" that are indispensable for electric vehicles.

Battery pack top cover Flame retardant resins
【Advanced Products (Copper & Copper Alloy Products)】

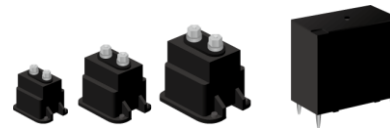


xEV Lithium-ion battery pack

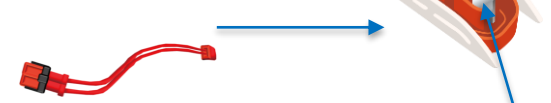
Electronic components
【Advanced Products (Electronic Materials & Components)】



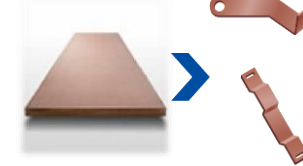
Spring and Contact for Power Relay
【Advanced Products (Copper & Copper Alloy Products)】



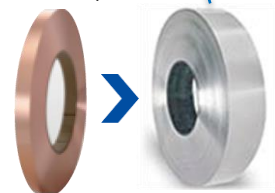
Copper materials for electrical connectors
【Advanced Products (Copper & Copper Alloy Products)】



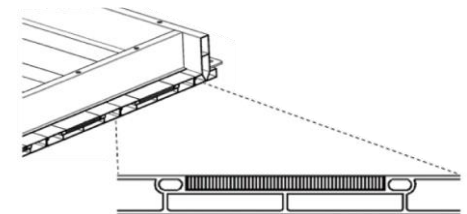
Bus bar
【Advanced Products (Copper & Copper Alloy Products)】



Tab lead
【Advanced Products (Copper & Copper Alloy Products)】



Battery pack floor case
【Advanced Products (Aluminum)】



Creation of New Products and Businesses

Battery module

Negative active materials coating on copper foil for current collector

Positive active materials coating on aluminum foil for current collector

Press winding to rolls

1st resistance welding
(electrode sheets + collector terminal)

Welding Electrode
(Copper material)

Welding Electrode
(Tungsten material)

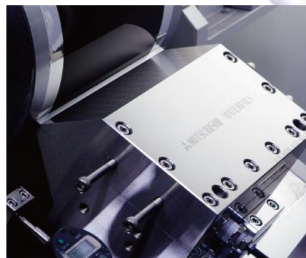
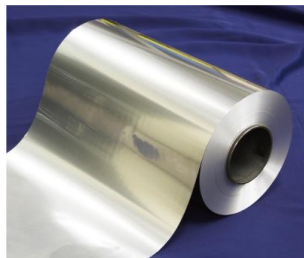
Collector terminal
(Copper material)

Electrode Sheet

2nd resistance welding
(output terminal + collector terminal)

Slot die
(Metalworking Solutions /
Cemented Carbide Products)

Aluminum foil products
(Advanced Products / Aluminum)



Ionic liquids
(Advanced Products /
Electronic Materials & Components)



Tungsten tri-oxide; WO₃ powder
(Metalworking Solutions /
Cemented Carbide Products)



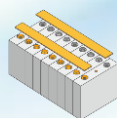
Cell cap
Output terminal

Collector terminal

Stack insertion to box

Cell cap welding
(seal) / Fill hole

Bus bar welding
(external connect)



<Recycling>

Recycling technology for Lithium-ion battery for xEV by solvent extraction process



Solvent extraction separator

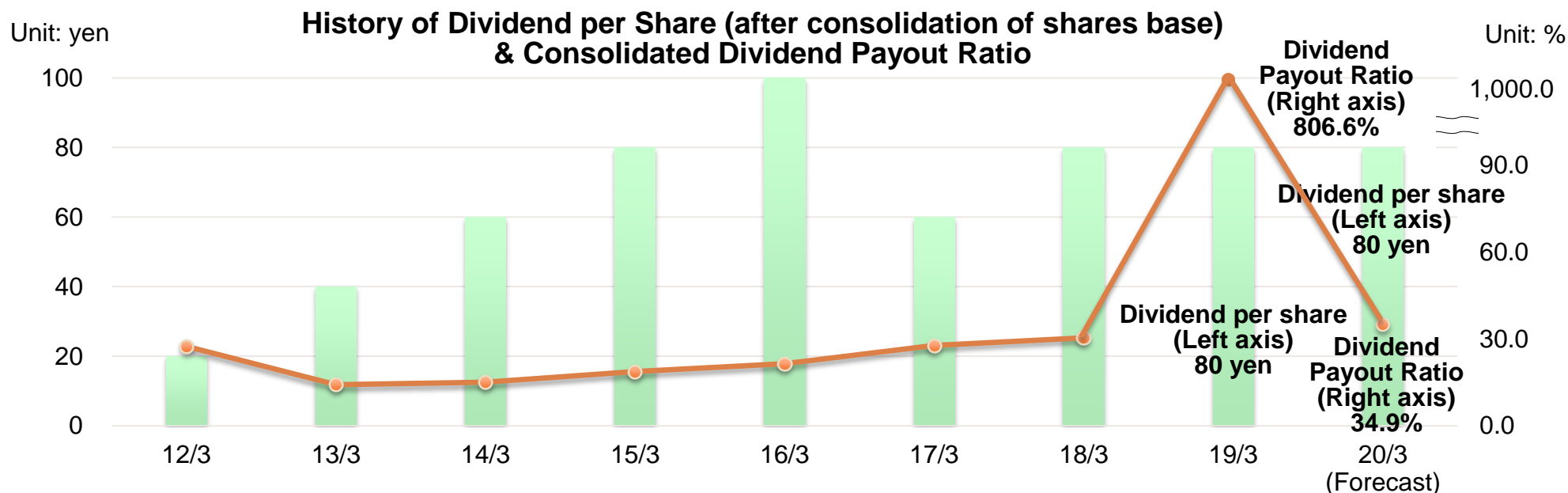


LiOH



CoSO₄

Shareholder Return



	17/3 (Results)	18/3 - 20/3
Dividend	60 yen/share *	80 yen/share

- ◆ While the Company's performance is changed, its policy is to maintain stable dividends, and annual dividends during the FY2018-2020 period will be **80 yen per share** (same as dividend in FY2018).
- ◆ If the consolidated dividend payout ratio is lower than 25%, however, the Company will temporarily increase the dividend or purchase treasury stock.

* A consolidation of shares of the Company's common stock at a 10:1 ratio was executed, with an effective date of October 1, 2016. According to this, dividend per share for FY2012 to FY2017 are calculated on the assumption that the consolidation of its shares was conducted at the beginning of the FY2012.

Business Strategy & Overview by Segment

Advanced Products

Advanced Products Overview

Copper Processing

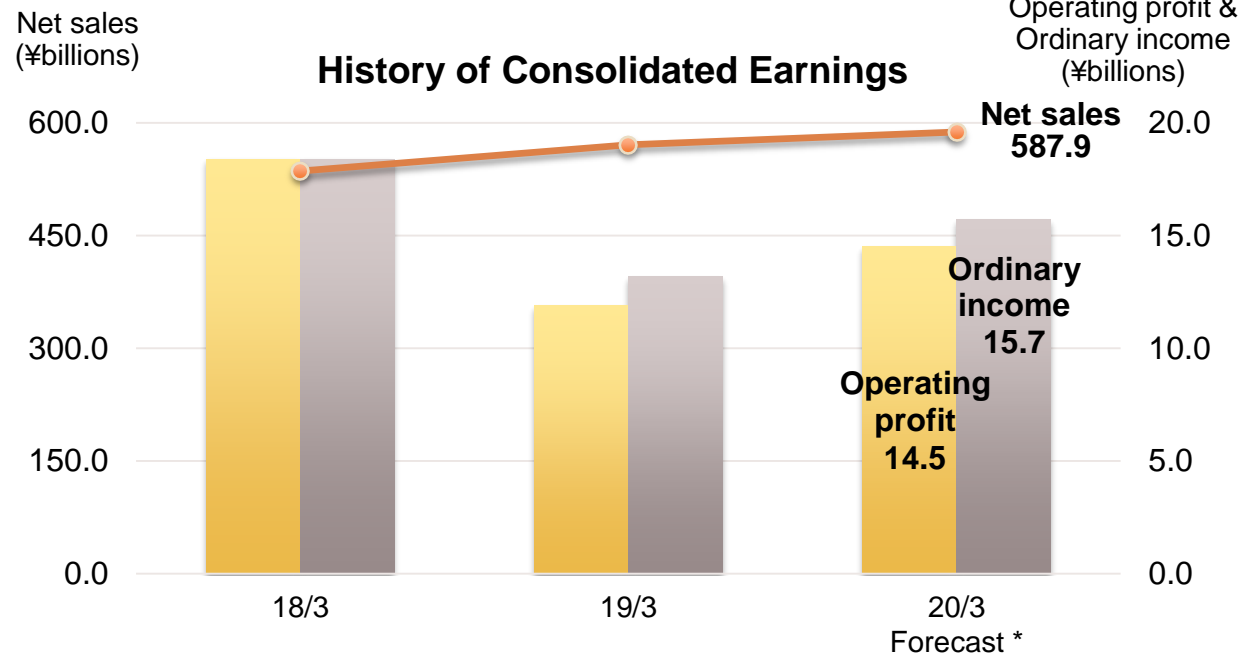
- **Mitsubishi Shindoh:** Expected to maintain solid sales of terminal materials for automobiles at the same level as the previous year and increase sales of electronic materials for semiconductors, MSP alloys, etc.
- **Luvata:** Expected to increase sales of welding-related products to North American, European, and Japanese automobile manufacturers and superconducting wires for MRI in China and other areas of Asia.

Electronic Materials & Components

- **Electronic Materials:** Sales of products such as insulated substrates with high thermal conductivity and solar heat-ray shielding for next-generation vehicles are expected to increase.
- **Electronic Components:** Sales of products such as electronic components for in-vehicle equipment and optical communication-related equipment are expected to increase.

Aluminum

- **Mitsubishi Aluminum:** Expected to increase sales of products such as heat exchanger sheet materials for automobiles through the stabilization of sheet production and foil products for lithium-ion battery cases.
- **Universal Can:** Plans to launch upsized aluminum bottle cans and expects a recovery in demand for aluminum bottle cans.



* Announced on May 13, 2019

Establishment of Advanced Products Company (October, 2018)

◆ Change of the organization

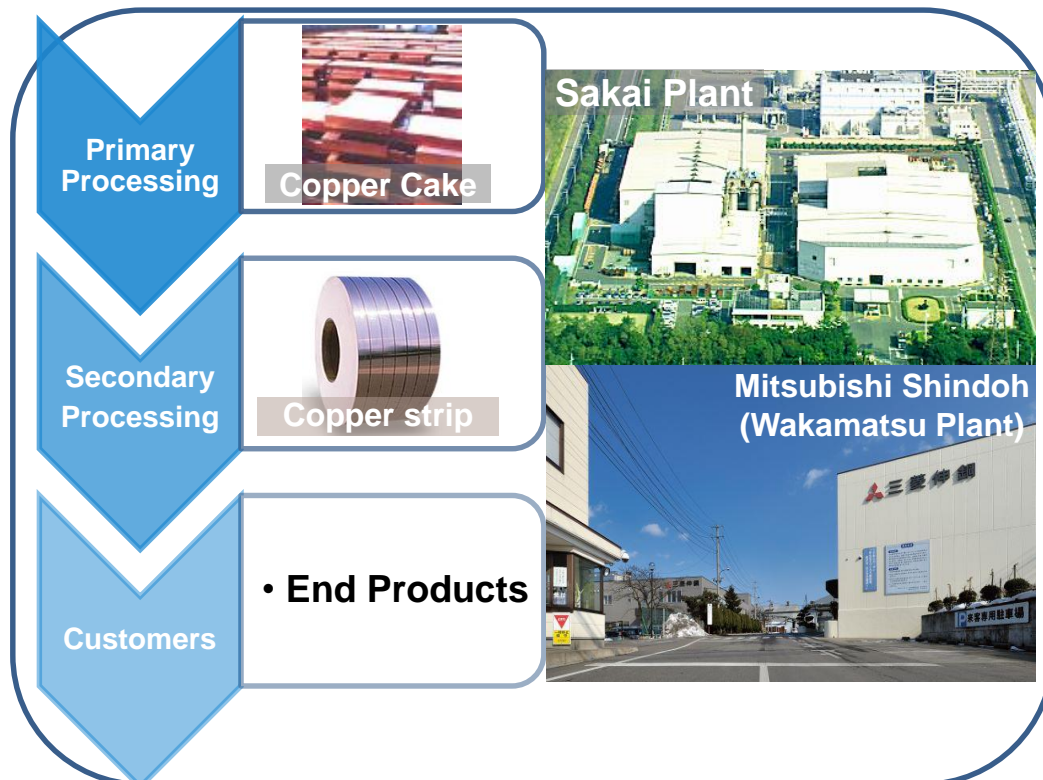
- To integrate three product manufacturing businesses and establish a new in-house company

◆ Purpose

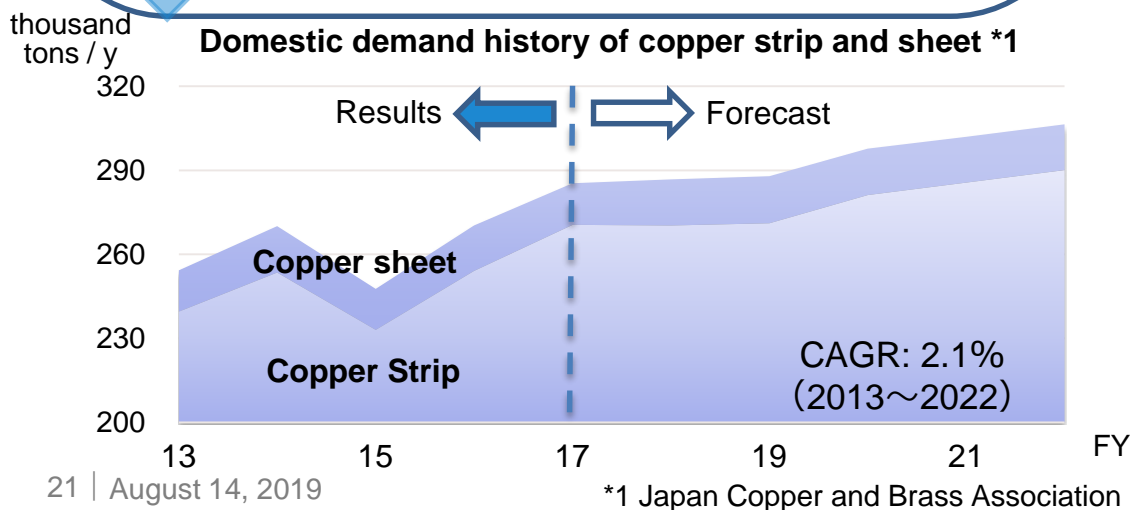
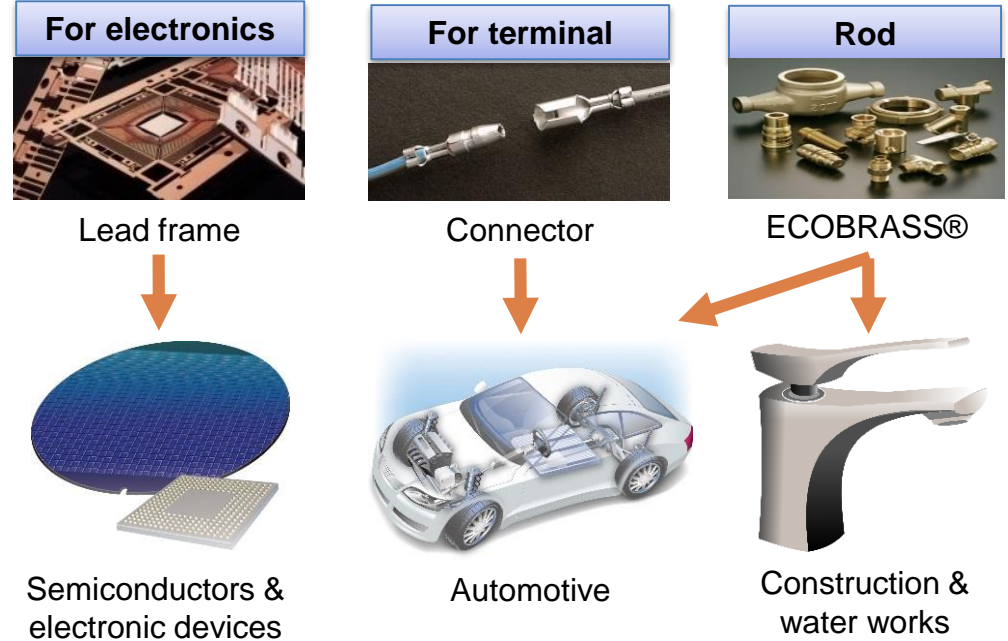
- To promote the creation of new products and businesses in product manufacturing business, establishing cross-functional organization to develop and strengthen target products and business from a long-term perspective
- Establishing the system to appropriately respond to customer needs and contribute to customers

Advanced Products - Copper & Copper Alloy (1) -

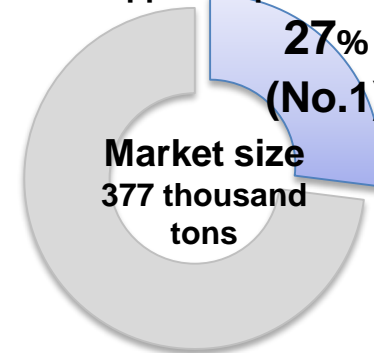
Operation system:
Supply of our copper strip to our group company



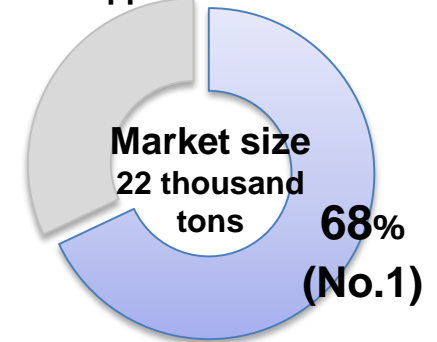
Application for main products of
Mitsubishi Shindoh



Domestic market share of
copper strip *2



Domestic market share of
copper sheet *2



*2 Weight base, Japan Copper and Brass Association (FY2018)

Advanced Products - Copper & Copper Alloy (2) -

Absorption-type Merger of Mitsubishi Shindoh

July, 2019 Announcement of the merger
April, 2020 Scheduled date of the merger

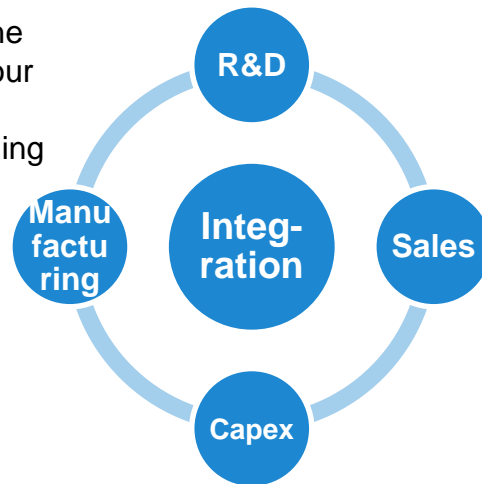
◆ Positions of Copper & Copper Alloy



◆ Purpose of the absorption-type merger

To integrate Mitsubishi Shindoh into the Company and cooperatively operate our management resources.

We will aim to become the global leading company in the industry of copper & copper alloy products by improving our presence globally and capturing new demand.



*CASE: Connected, Autonomous, Shared & Services, Electric

◆ Market Needs

Higher current & Higher voltage

Computerized control



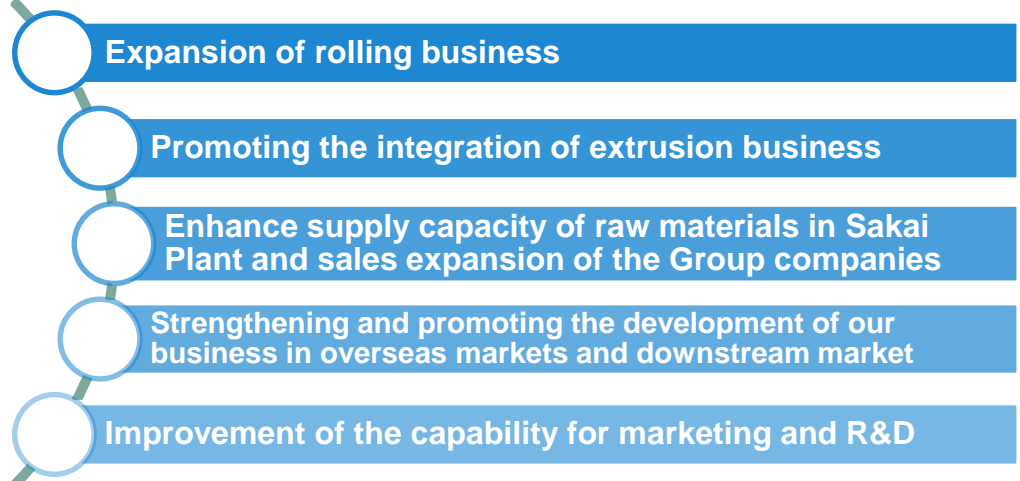
CASE *

Reduction of the environmental impact



◆ 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.



Advanced Products - Copper & Copper Alloy (3) -

Acquisition of Luvata SP Division

Sep., 2016: Conclusion of share sale and purchase agreement on acquisition of Luvata SP Division

May, 2017: Completed the transaction

LUVATA

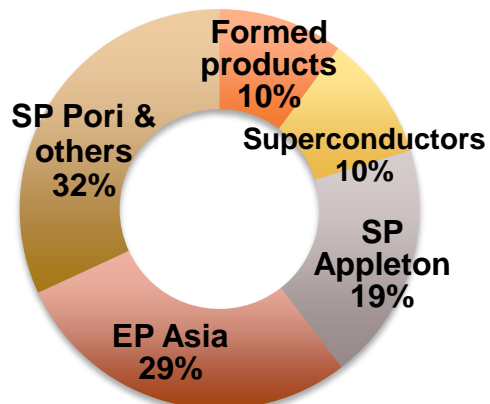
Company profile * FY ending Dec. 31, 2018

- Head Office: Pori, Finland
- Net sales: €625 million
- Operation (Manufactures & Sales):
12 entities, 7 countries
- Employees: 1,415

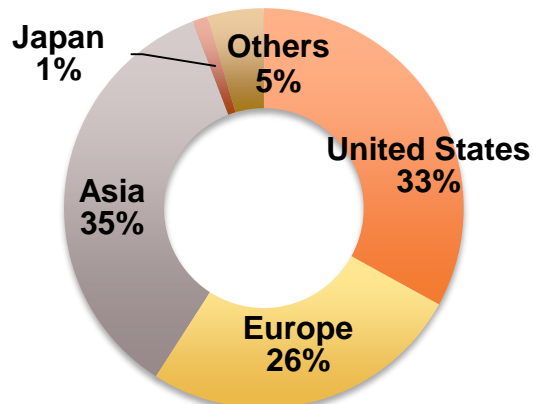


▲Copper Industrial Park in Pori

Sales ratio by Business Units



Sales ratio by Regions



Various products for targeted markets

Business Units

Products

End Markets

Formed Products

Welding Electrodes



Hollow Conductors



Busbar



Cooling Elements



Anodes



Photovoltaic



Superconducting Wires



Automotive



Infrastructure, Power & Energy and Others



Infrastructure, Power & Energy and Others



Health Care



SP Appleton / EP Asia / SP Pori & Others

Hollow Conductors (SP Pori)

Busbar (EP Asia, SP Pori)

Special Rods / Profiles (SP Pori)

Cooling Elements (SP Pori)

Battery Wire (SP Appleton)

Anodes (EP Asia, SP Pori)

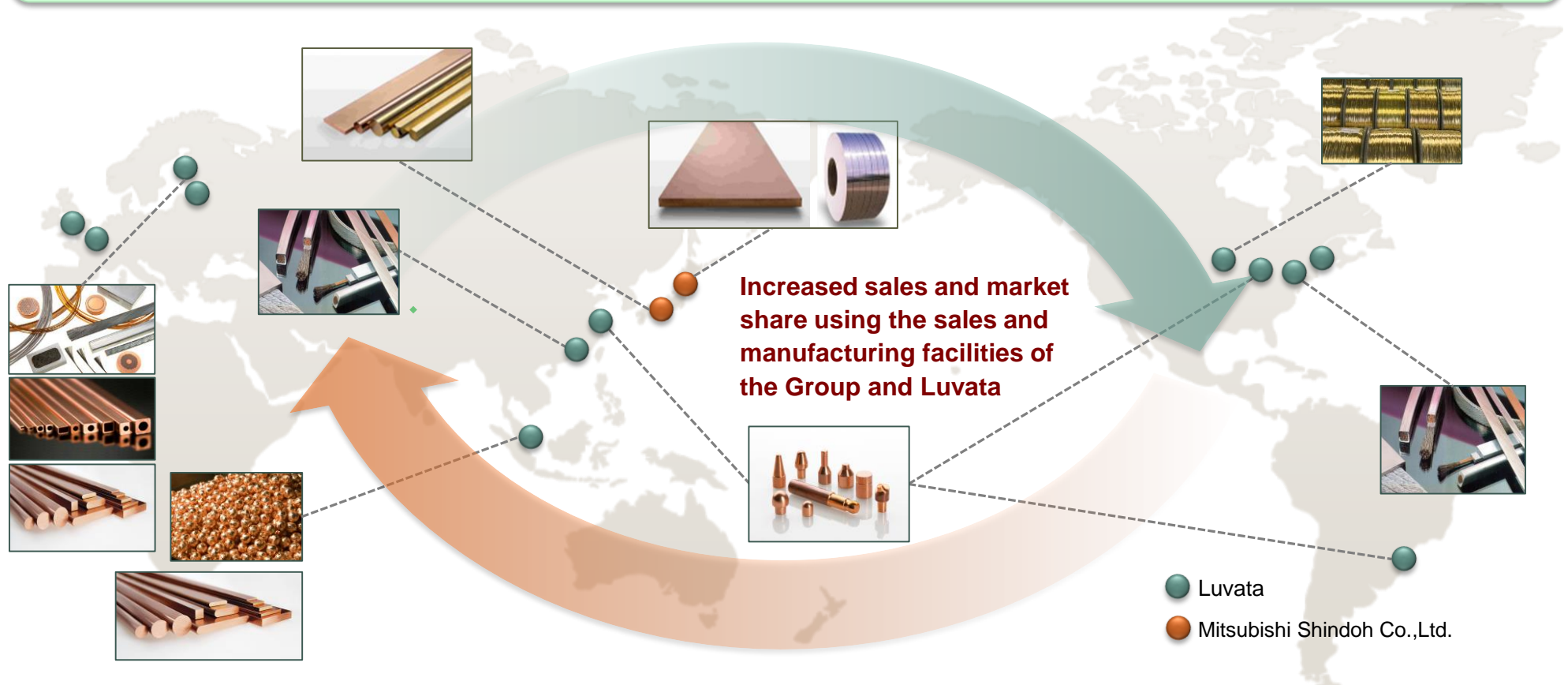
Photovoltaic (Formed Products, SP Appleton, EP Asia, SP Pori)

Other Products

Superconductors

Advanced Products - Copper & Copper Alloy (4) -

Priority measures: Synergy with Luvata



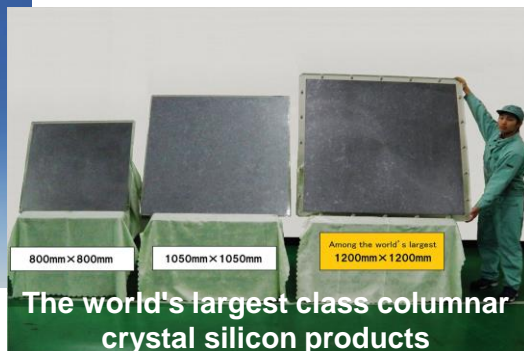
- ◆ Increased sales of copper & copper alloy products of the Group using the sales and manufacturing facilities of Luvata located mostly in North America and Europe
- ◆ Boost sales using the Company's domestic facilities for Luvata's products
 - ➡ Establish global sales and manufacturing systems using Luvata's facilities
 - ➡ Optimize product mix and increase market share with the cooperation of Luvata

Advanced Products - Electronic Materials & Components -

Operation system: Electronic Materials, Electronic Components, Polycrystalline Silicon

Electronic Materials & Chemical Products

Precision Silicon Products



Polycrystalline Silicon

Production Capacity
 Yokkaichi Plant: 2,200t
 MIPSA : 1,550t



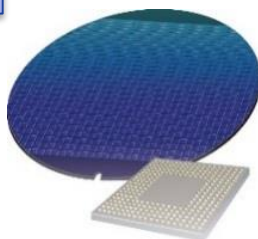
Monocrystalline Ingot,
 Silicon Wafer
 (SUMCO Corp.)
 Stake ratio approx. 13%



Semiconductor



▲11N Grade
 (99.999999999%)



Key Strategies: New products and sales expansion in the IoT - related market

◆ Antenna

Development of multiband antennas for mobile type small payment terminal. (April, 2019)



◆ Thermistor sensors

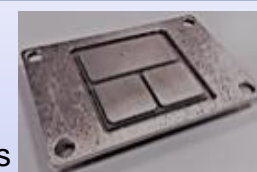
Increased market shares in the optical communication equipment market based on high reliability and compact-sizing as its strengths in FY2019.



Key Strategies: New products and sales expansion in the next-generation vehicle market

◆ Insulated substrates with high thermal conductivity

Expanded production capacity for heat sink-integrated substrate in FY2019. Strengthening the business plans to continue in FY2020.



◆ In-vehicle sensors

Plan to increase sales of thermistors and surge absorbers in FY2020.



◆ Solar heat-ray shielding

Achieved sales exceeded the previous year result in FY2019. Plan to increase sales in FY2020.



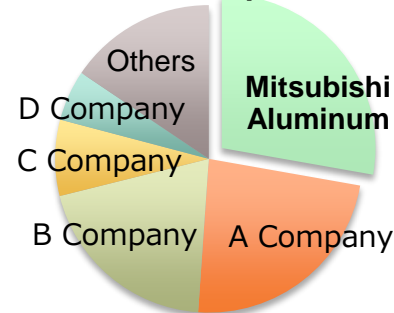
Advanced Products - Aluminum Products-

Mitsubishi Aluminum Company, Ltd.

Stake ratio: 90%

- Top-class market share of multi port flat aluminum tubes for automotive heat exchanger materials in the world.
- Shift to heat exchanger sheet materials for automobiles.
⇒ Increase facilities

W/W production share of extruded multi-port tube *1

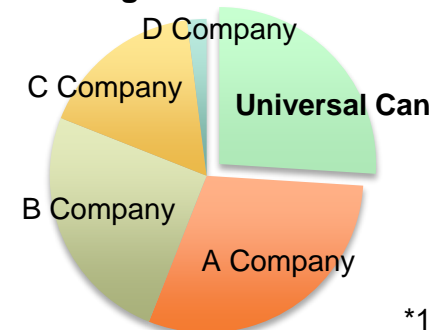


Universal Can Corporation

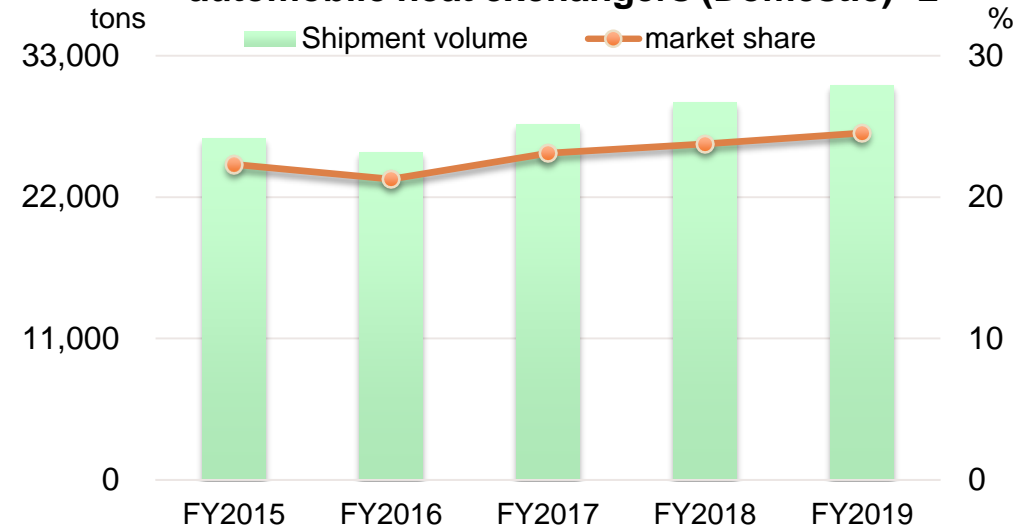
Stake ratio: 80%

- Top-class market share of beverage aluminum cans & bottles cans in Japan.
- Develop and launch bottle cans with weight saving & new shapes.
⇒ Establishing a new production line at Gifu Plant (Operation will be started in FY2020)
- Development overseas business ⇒ Considering development business in the Southeast Asian market, etc.

Domestic Aluminum Beverage Can Market *1

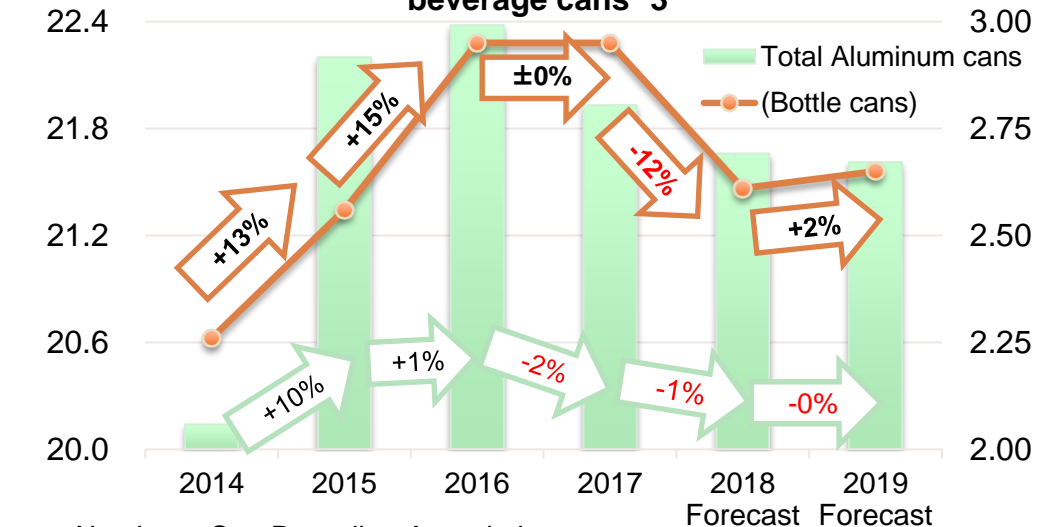


Trend of shipment volume and market share for automobile heat exchangers (Domestic) *2



*2 Japan Aluminum Association

Demand history for domestic aluminum beverage cans *3



*3 Japan Aluminum Can Recycling Association

*1 MMC's assumption

Metalworking Solutions Business *

* As of October 1, 2018, “Advanced Materials & Tools Company” has changed its name to “Metalworking Solutions Business Company.”

Metalworking Solutions Business Overview

Cemented Carbide Products

Main Products

Cutting tools for metal working industries (automotive & aerospace)

- Cutting tools (Insert, drills, and etc.)
- Wear Resistant Tools
- Rock Tools



Sintering Parts, etc.

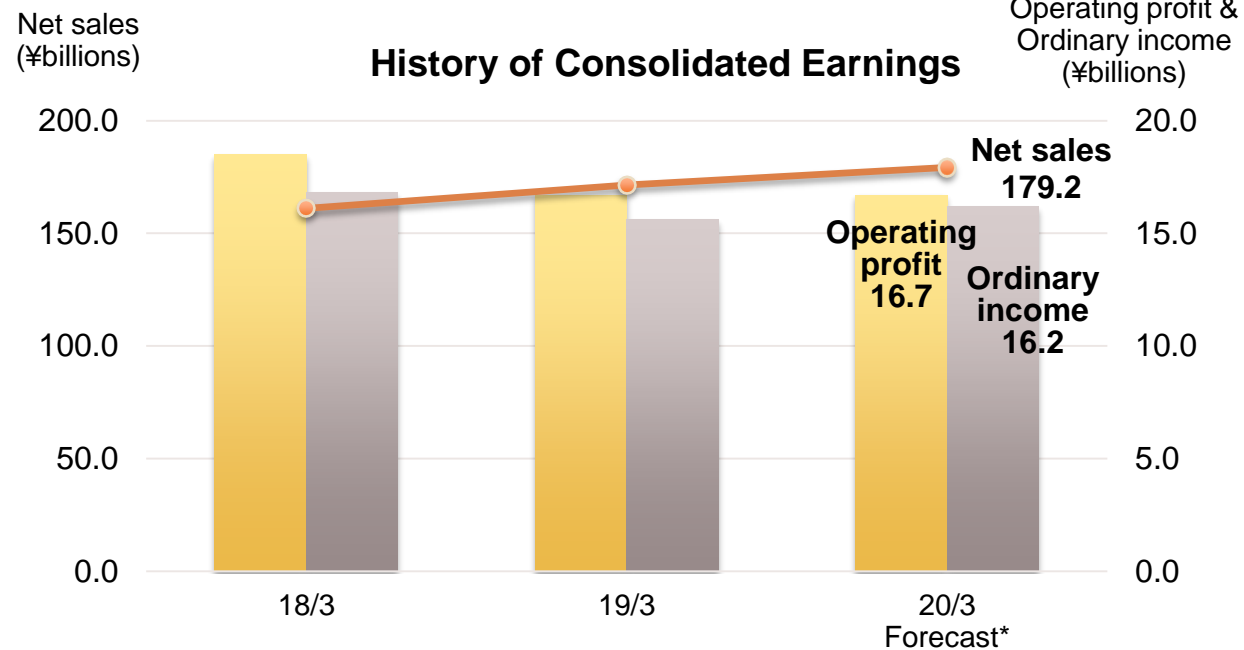
Main Products

Key components of automotive engines & transmissions

- Oil-retaining Bearing
- Parts for Variable Valve Units
- Transmission-related Parts



History of Consolidated Earnings



* Announced on May 13, 2019

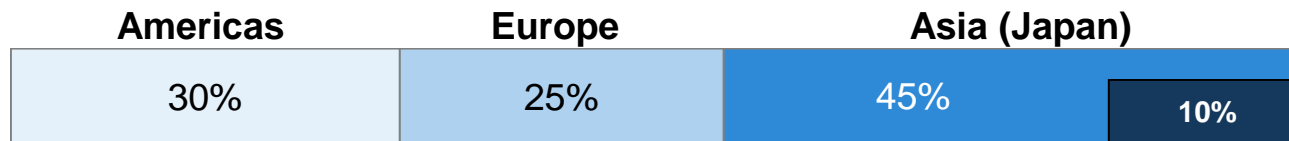
Demand and sales forecast (Cemented Carbide Products)

- Increase of sales according to reinforce and accelerate the key account strategy, expand sales to key industries - Automotive, Aerospace, Medical, and Mold & Die, and expenditures for sales expansion for the future are expected to the plan.

Metalworking Solutions Business ~Cemented Carbide Products (1)~

Market Size of Cemented carbide tools approx. ¥2,000.0 billions *

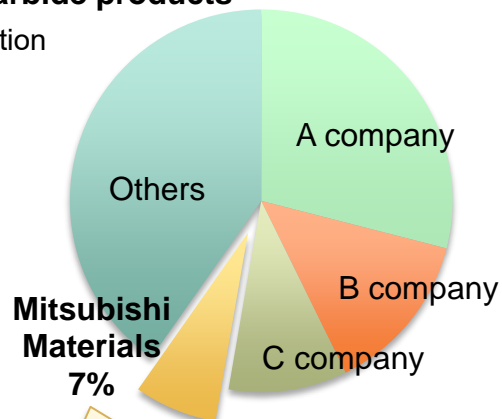
*2018, MMC's assumption



Market share: 4th grade in World Wide
Top share in Japan

Global market share of
cemented carbide products*

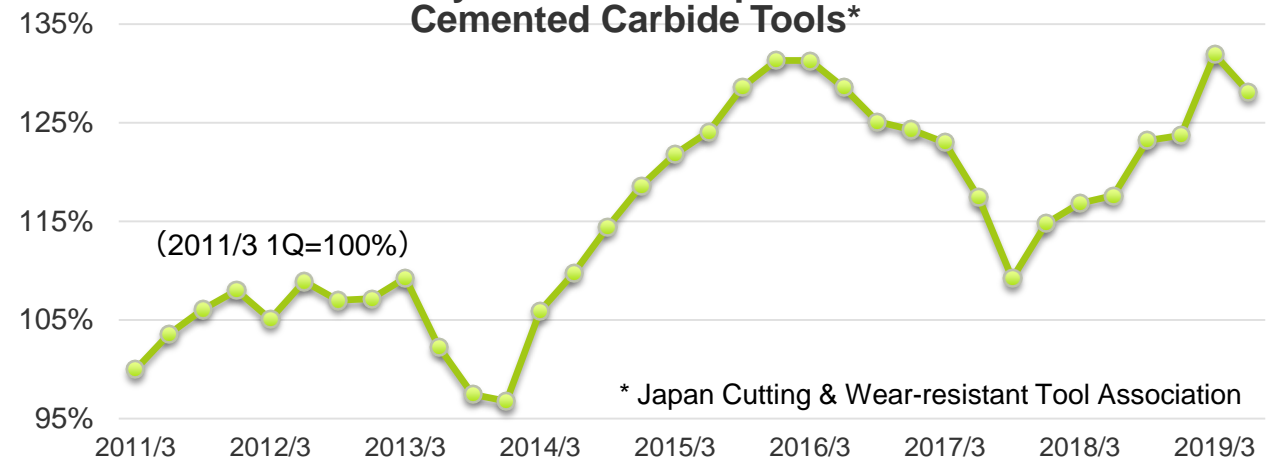
* MMC's assumption



Acquired Hitachi
Tool Engineering
(April, 2015)



History of value of shipments for
Cemented Carbide Tools*



Eliciting Synergies with Mitsubishi Hitachi Tool Engineering

◆ Major items where synergy will be generated

- R&D: Developing new products making the most of each other's strengths (MMC's materials technology, Mitsubishi Hitachi Tool Engineering's coating and forming technology)
- Production: Improving production efficiency by using each other's facilities (Elimination of bottlenecks, etc)
- Sales: Expanding sales globally mainly through mutual sales channels (United States and Southeast Asia)
- Other: Integrated purchasing of materials, integrating and sharing IT systems & logistics, etc.

◆ Expected effects of synergies (from FY2018 to FY2021)

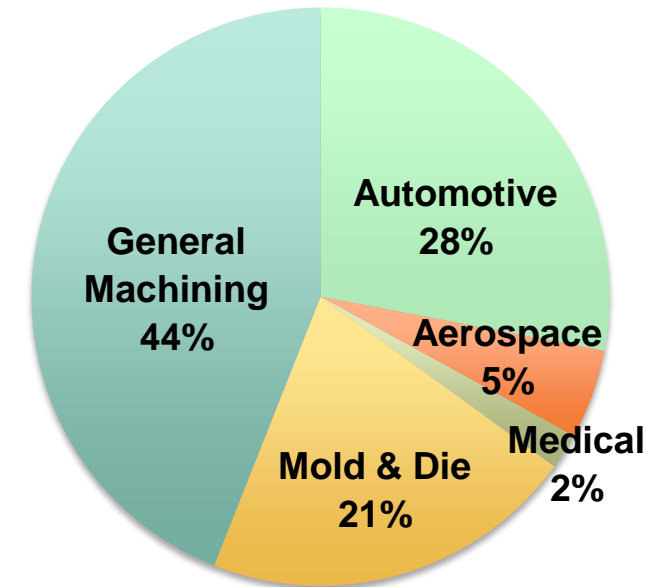
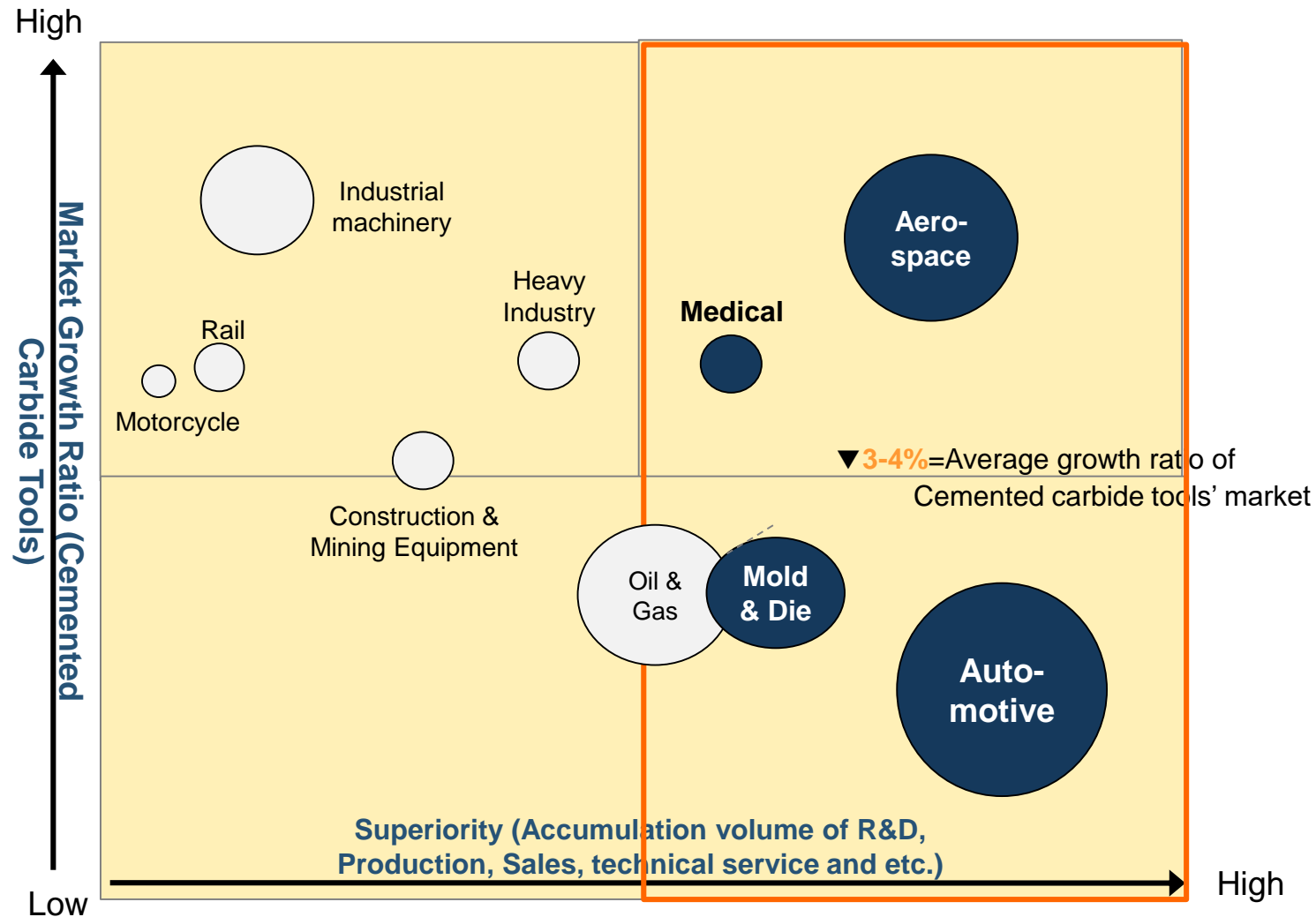
⇒ Effects of 0.5 to 1.0 billion yen annually are planned.

Metalworking Solutions Business ~Cemented Carbide Products (2)~

Importance analysis of each industry *

*MMC's assumption
The size of circles represent market size.

MMC's sales ratio of demand by industry (FY2019)



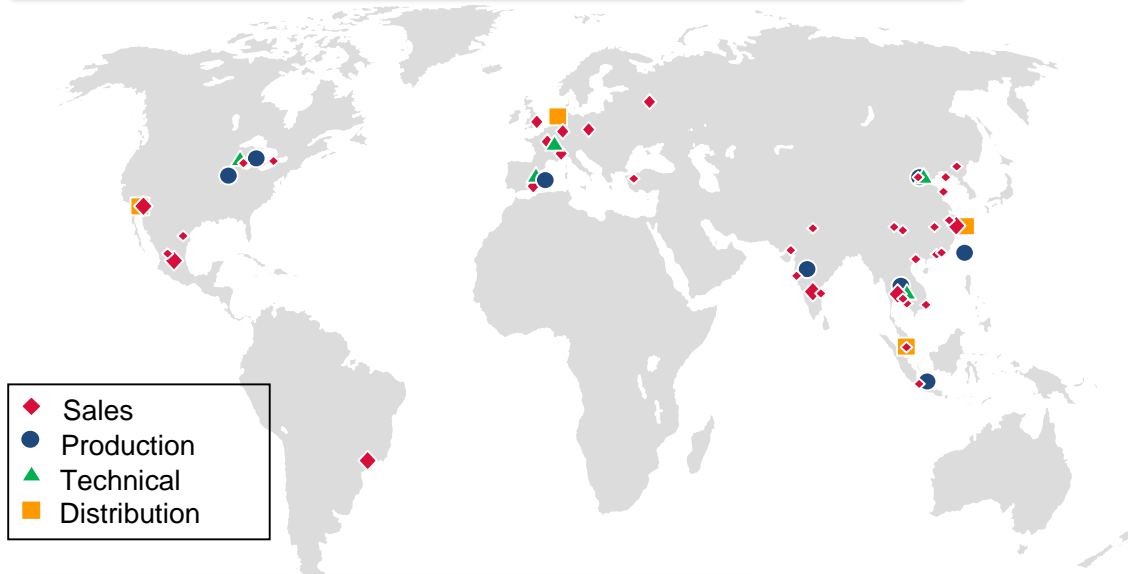
Metalworking Solutions Business

~Cemented Carbide Products (3)~

Expansion of sales & production networks

Cemented Carbide Tools network

- Sales sites: 38 ○ Production sites: 7
- Technical sites: 5 ○ Distribution sites: 4



- ◆ Sales
- Production
- ▲ Technical
- Distribution

FY2018 - 2020 Result

Technical sites:

- June 2017: Central Japan Technical Center
- Oct. 2017: Relocation and expansion of the technical center in Tianjin, China
- Oct. 2018: Relocation and improvement of the Machining Technology and Education Center in North America
- June 2019: New Machining Technology and Education Center in Stuttgart, Germany

Plan in the future

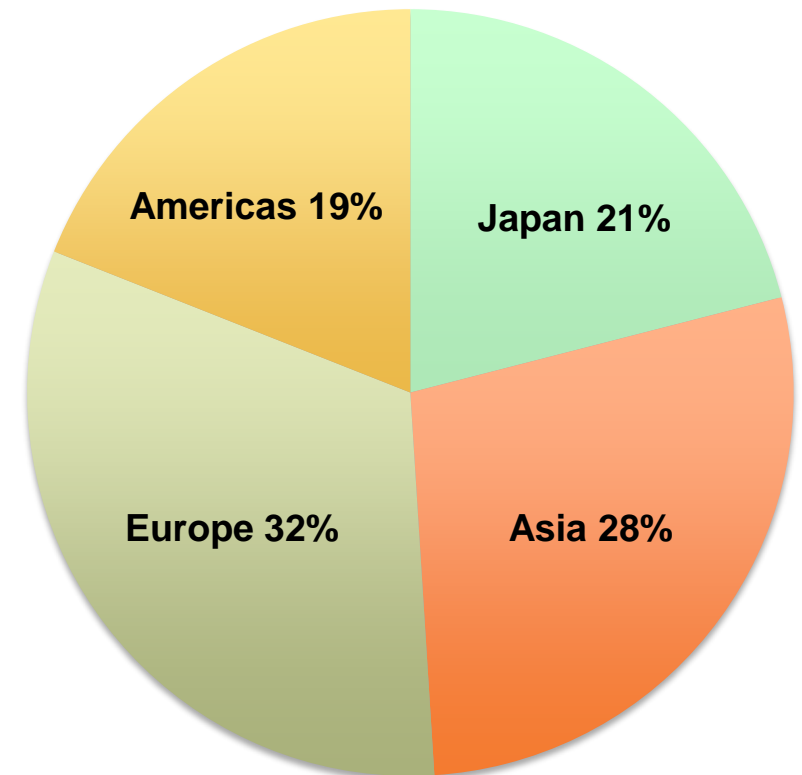
Technical sites:

Plan to establish new technical centers in India



▲ Exterior of Machining Technology and Education Center in Stuttgart, Germany

Sales ratio of Cemented Carbide Tools by area (FY2019)



Metalworking Solutions Business ~Cemented Carbide Products (4)~

◆ Expand technical center networks

MTEC North Carolina

(North Carolina, United States)
Relocated, improved and expanded
in 2018



MTEC Valencia

(Valencia, Spain)
Established in 2008



MTEC Stuttgart

(Stuttgart, Germany)
Newly Established in 2019



MTEC India

(Pune, India)
*Plan to establish



East Japan Technical Center

(Saitama, Japan)
Established in 2010



Central Japan Technical Center

(Gifu, Japan)
Established in 2017

MTEC Bangkok

(Bangkok, Thai)
Established in 2015



MTEC Tianjin

TianJin LingYun tool
Design Co.,LTD
(TianJin, China)
Relocated, improved
and expanded in 2017



Sharing
information

Utilizing mutual
facilities

Experiment
support

Metals Business

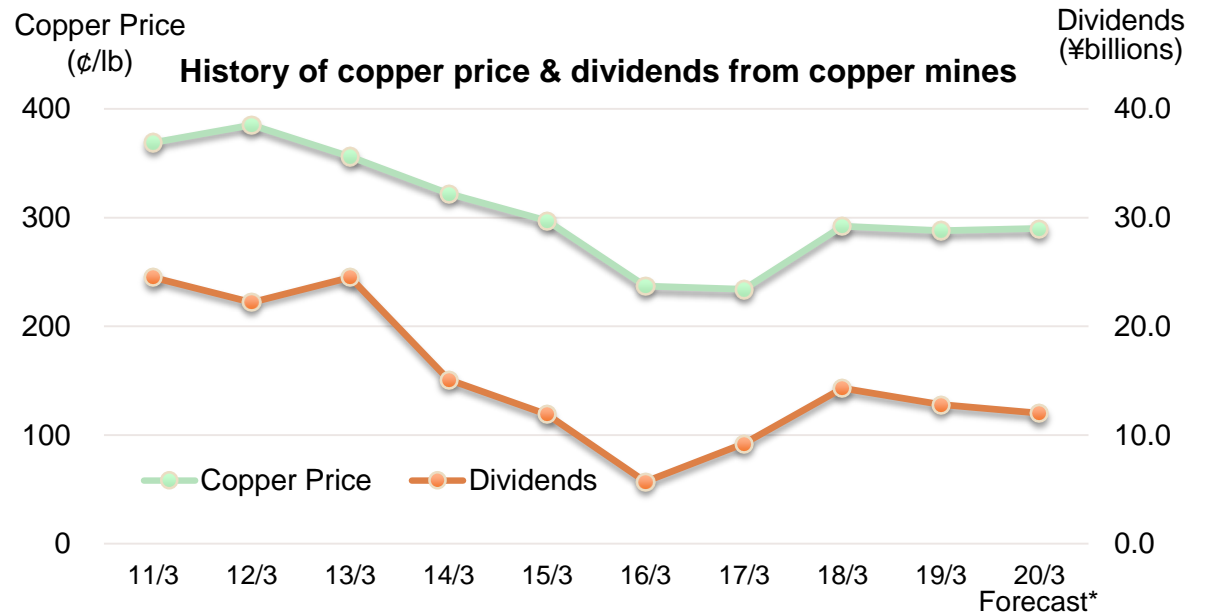
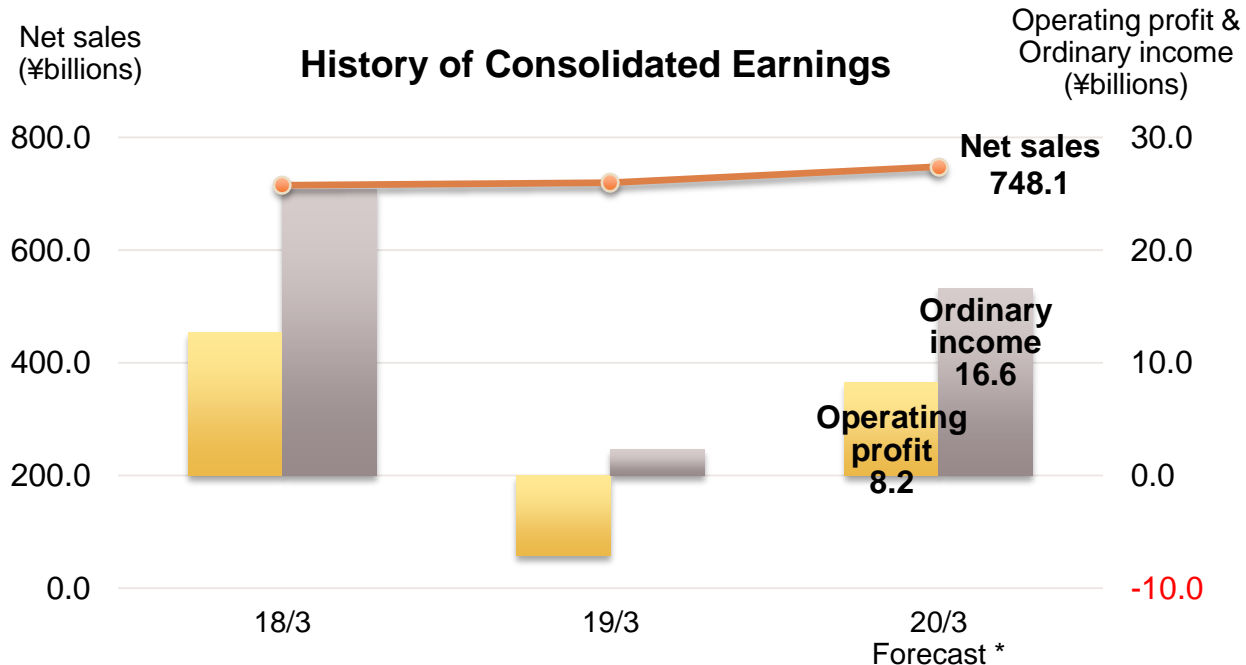
Metals Business Overview

Mining

- **FY2020 copper price outlook:** Average 290¢/lb
- **New mine development:** For the Zafranal area, focus on the task of acquiring environment licenses and permits after examining the feasibility study

Smelting

- **Smelting margin in FY2020:** YoY decrease
- **Recycling business:** Development foundation for increasing E-Scrap recycling

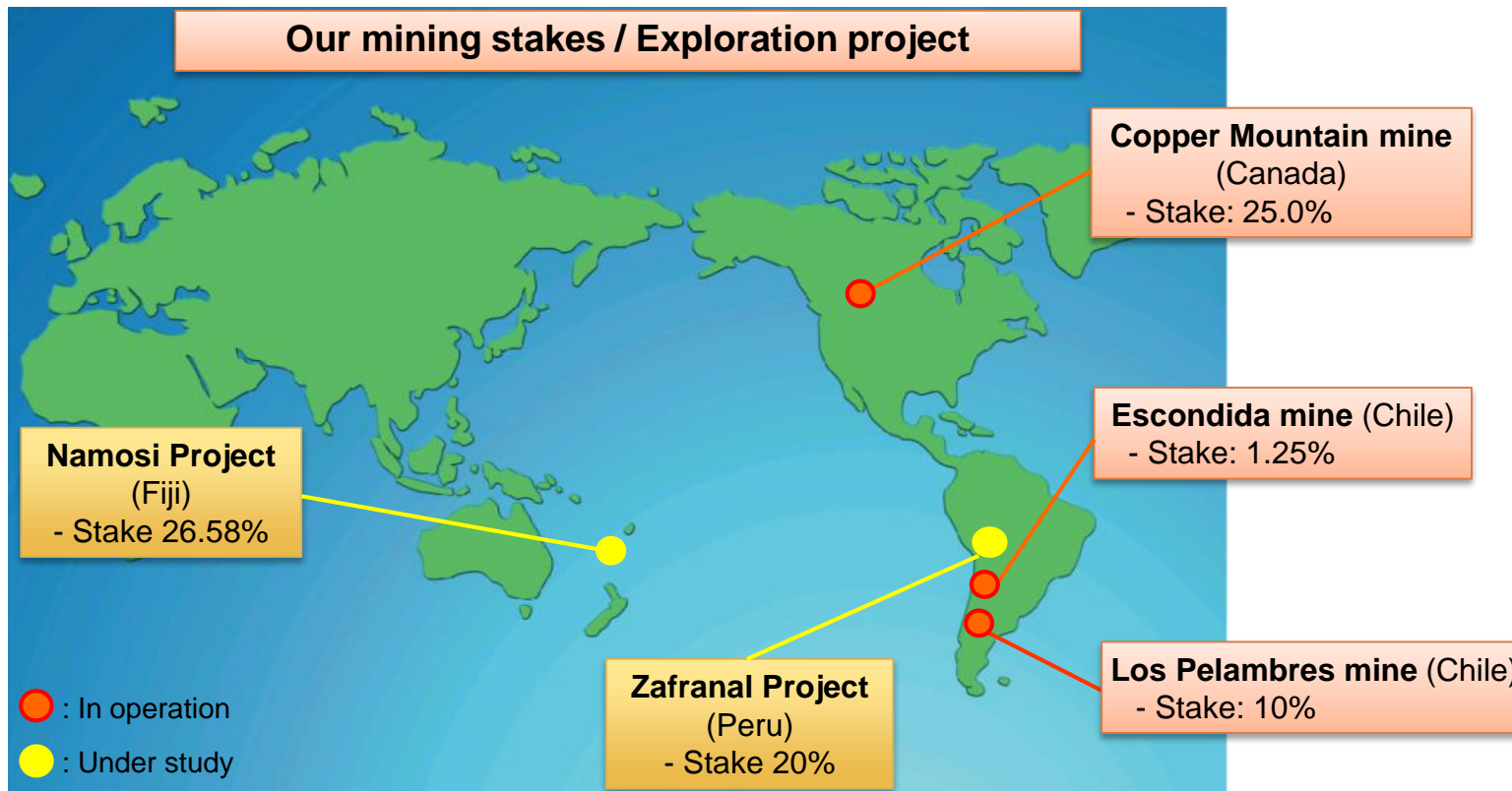


* Announced on May 13, 2019

Metals Business - Mining -

Long-term Target: Controlled volume ratio*
Approx. 30% ⇒ Approx. 50%

*Controlled volume ratio:
The ratio of the volume of ore according to mining interests plus the volume under off-take agreements.



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

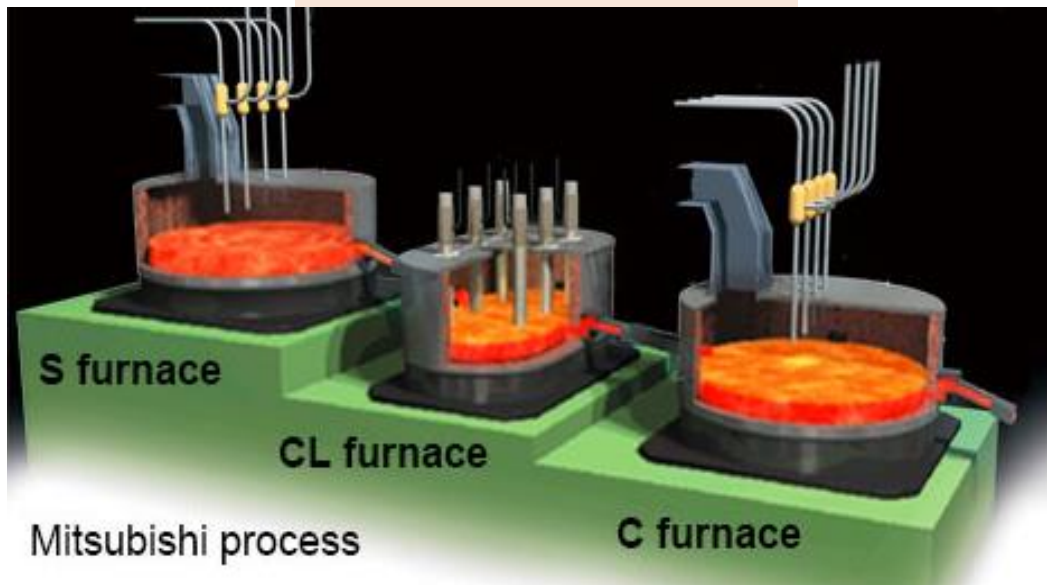


Copper: 300,000 tons / year
E-Scrap: 40,000 tons / year

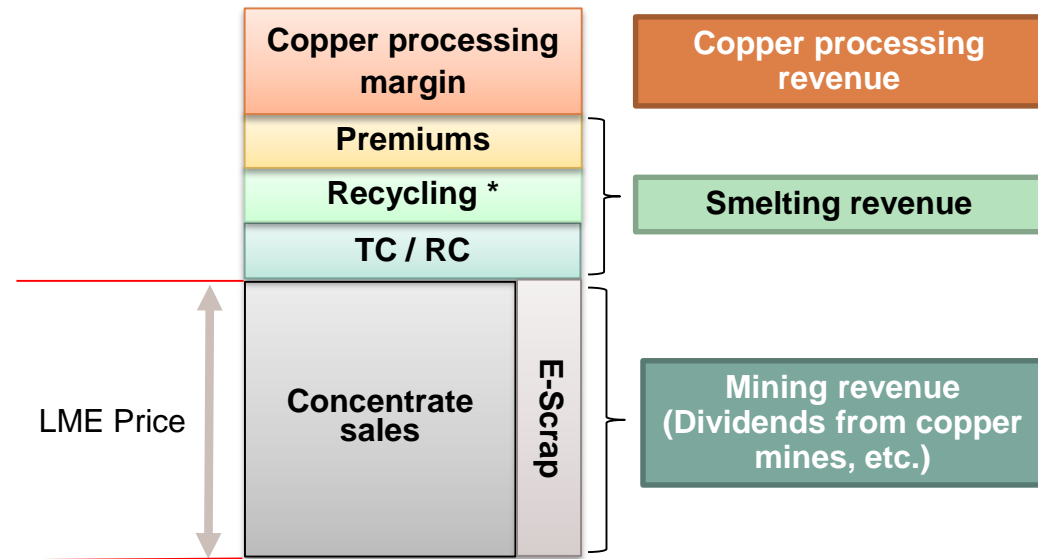
PT Smelting



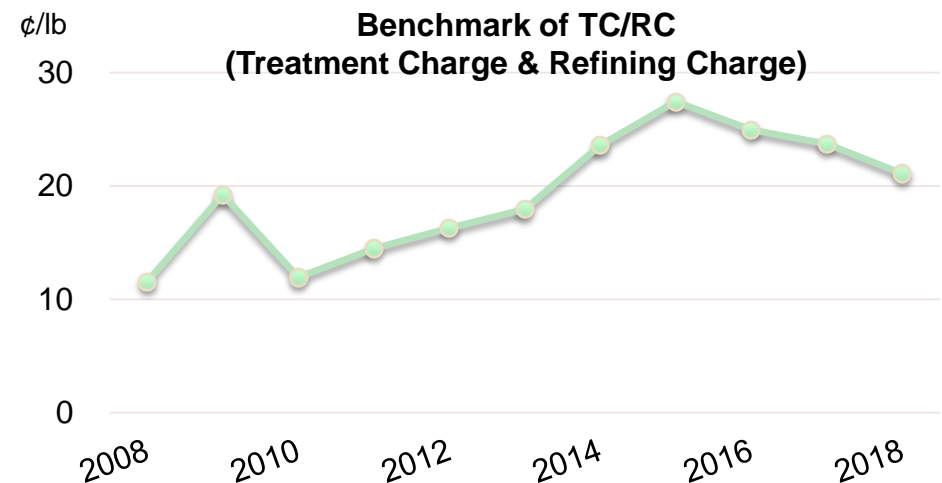
Copper: 300,000 tons / year



**Metals Business
(Income breakdown image)**



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



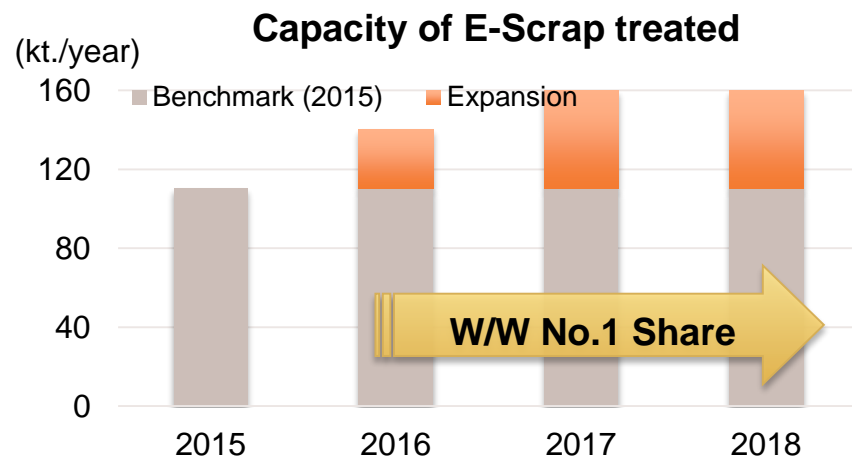
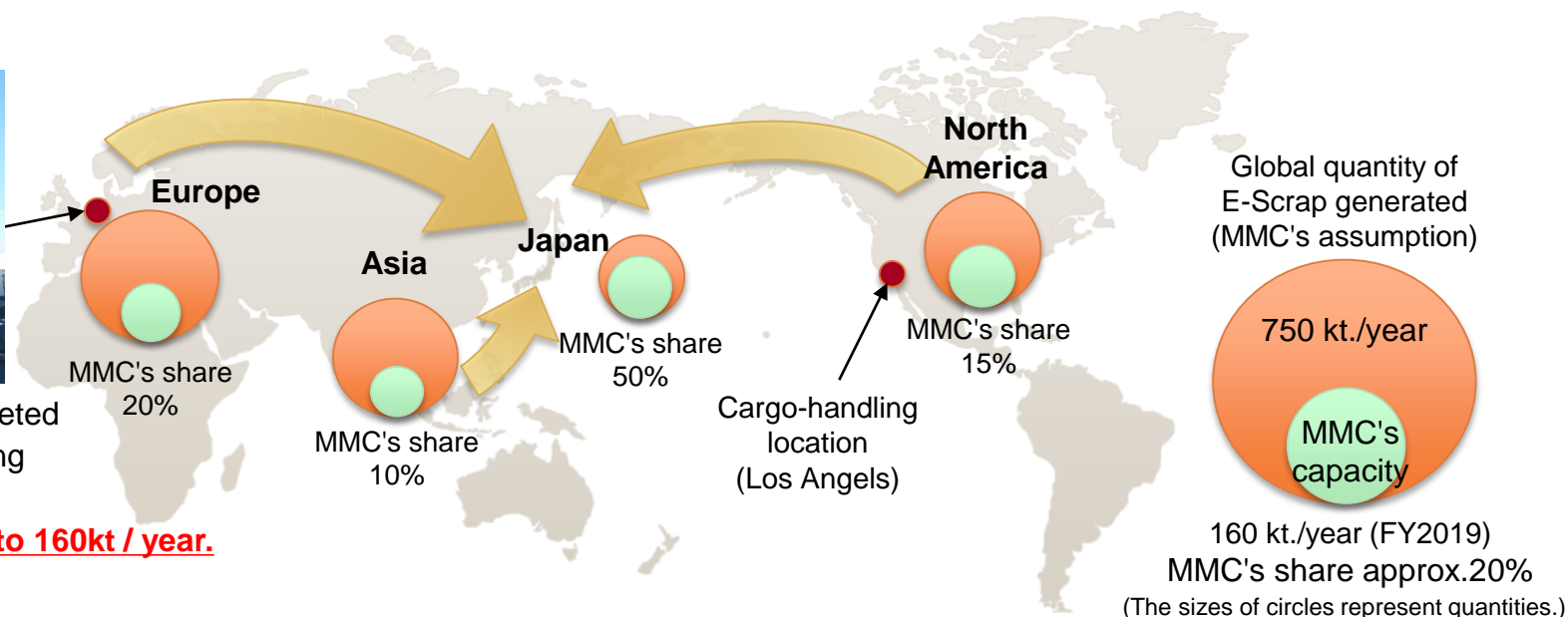
Metals Business - Smelting (2) -

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)

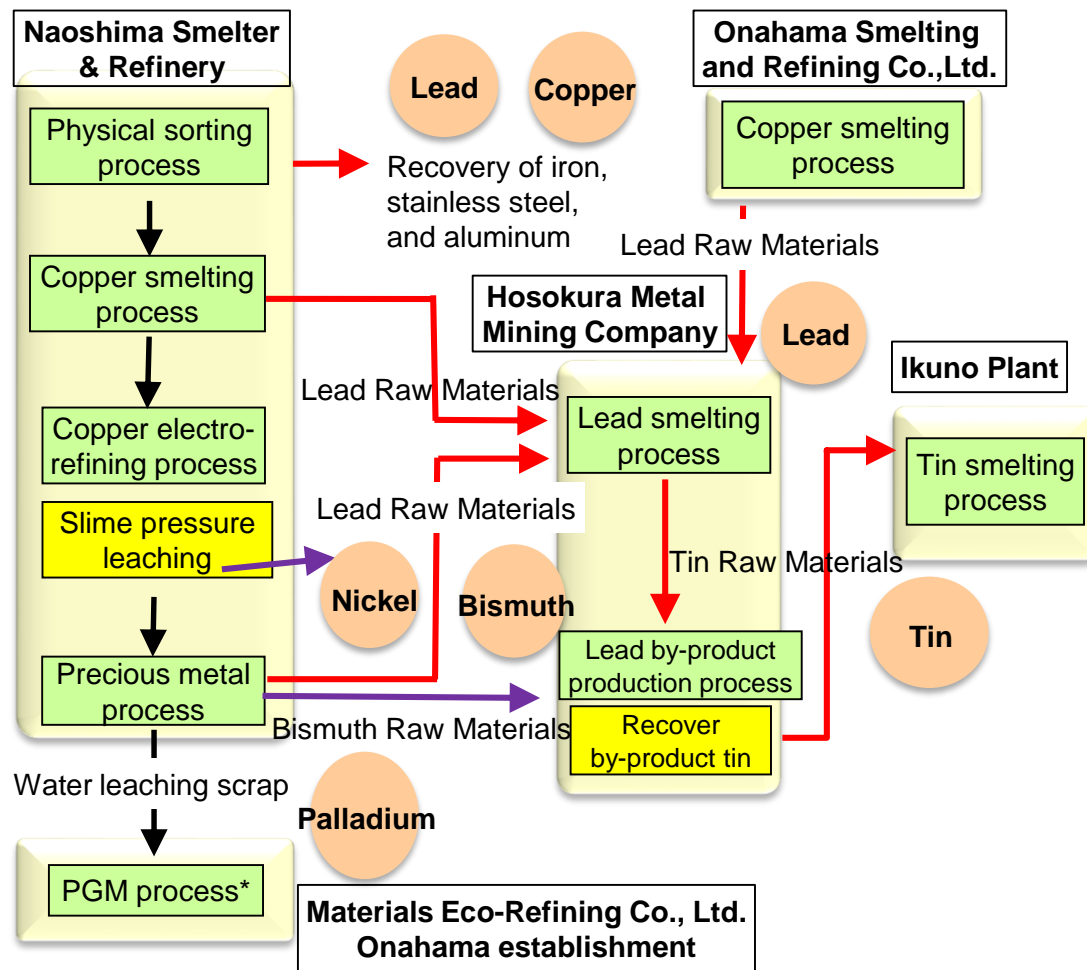
Metals Business - Smelting (3) -

◆ Development foundation for increasing E-Scrap recycling

An increase in E-Scrap recycling resulted in growth in the load of impurities, which has begun to cause troubles. The Company positions the FY2020 as a “willful slowdown” and will actively undertake the sorting and recycling of impurities contained in E-Scrap and smelting metals from them utilizing the strength of smelter network in the Group.

Through this measures, troubles will be reduced. Furthermore, E-Scrap recycling will be also stabilized by acquiring a new income source, and we will expand processing amount in the future.

Items	FY2019	FY2020
Concentrate lead raw materials generated at two copper smelters, Naoshima and Onahama (increase the recovery of copper in lead raw materials)	Commence the concentration of lead raw materials generated at copper smelters.	Increase the amount of lead recovered from lead raw materials generated at copper smelters
Introduce the pressure leaching process at Naoshima Smelter & Refinery (increase in amount of nickel recovered from slime, production of bismuth raw materials)	Developing business plan	Plan to start construction (Plan to be completed in FY2021)
Recover tin raw materials from intermediate products generated at Hosokura Metal Mining Company and produce tin at Ikuno Plant	Conducting pilot test Developing business plan	Plan to start and complete construction (operation will be started in FY2021)
Increasing capacity of processing palladium at Onahama establishment of Materials Eco-Refining Co., Ltd.	Increase production line Plan to complete construction	Establish a system for increasing capacity of processing



* PGM: platinum-group metals

Cement Business

Cement Business Overview

Main Products

- Cement
- Aggregate
- Ready-mixed concrete
- Concrete products

Production Capacity

Japan

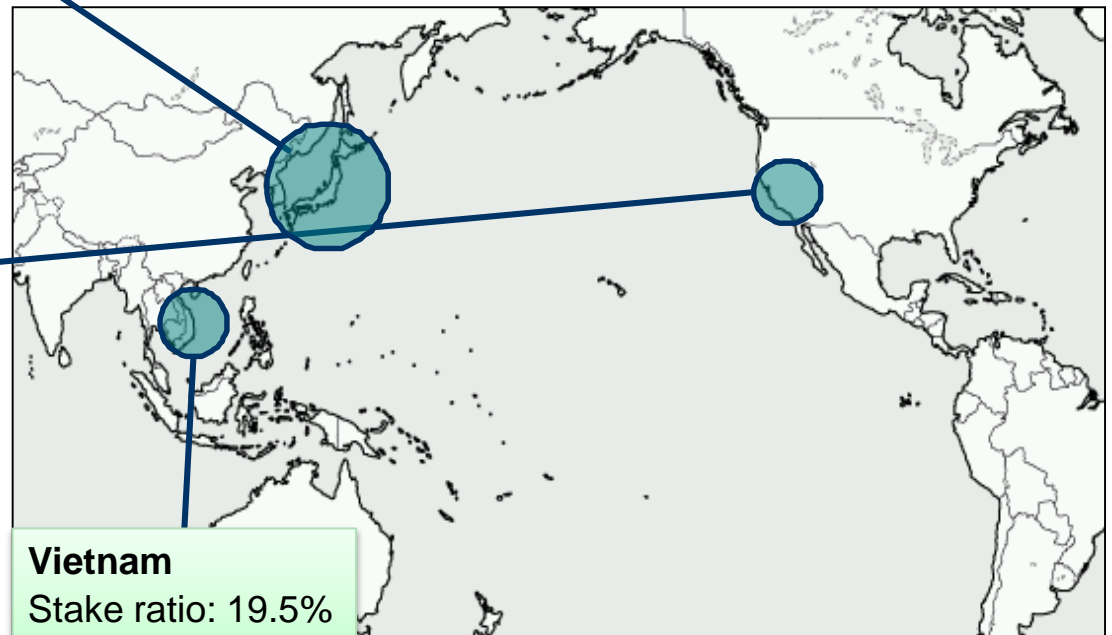
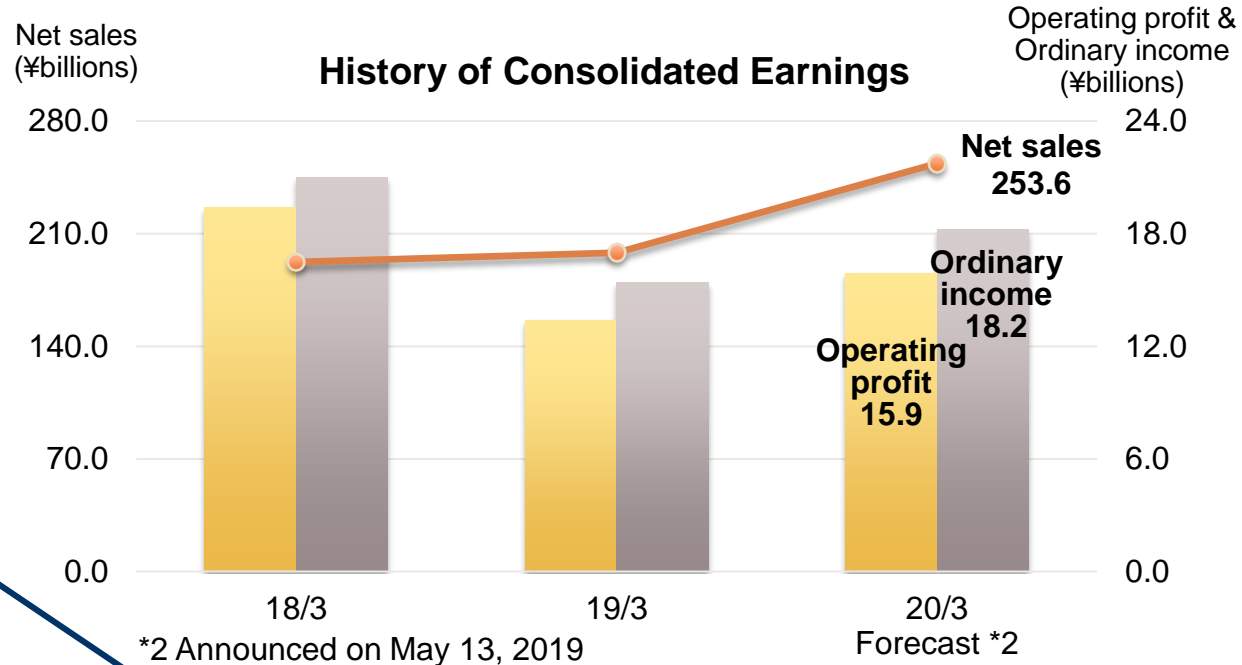
- Mitsubishi Materials (Production)
Plant: Kyushu, Yokozoe, Iwate and Aomori
Total production capacity (clinker):
Approx. 8.5 million tons / year
- Ube-Mitsubishi Cement (Sales)

California, USA

- Mitsubishi Cement (Production & Sales)
Total production capacity:
Approx. 1.6 million metric tons / year
- MCC Development
(Ready-mixed concrete & aggregate)
Ready-mixed concrete (RRM) : 53 plants
Aggregate quarry (RRM) : 12 locations

* RRM: Robertson's Ready Mix, Ltd.

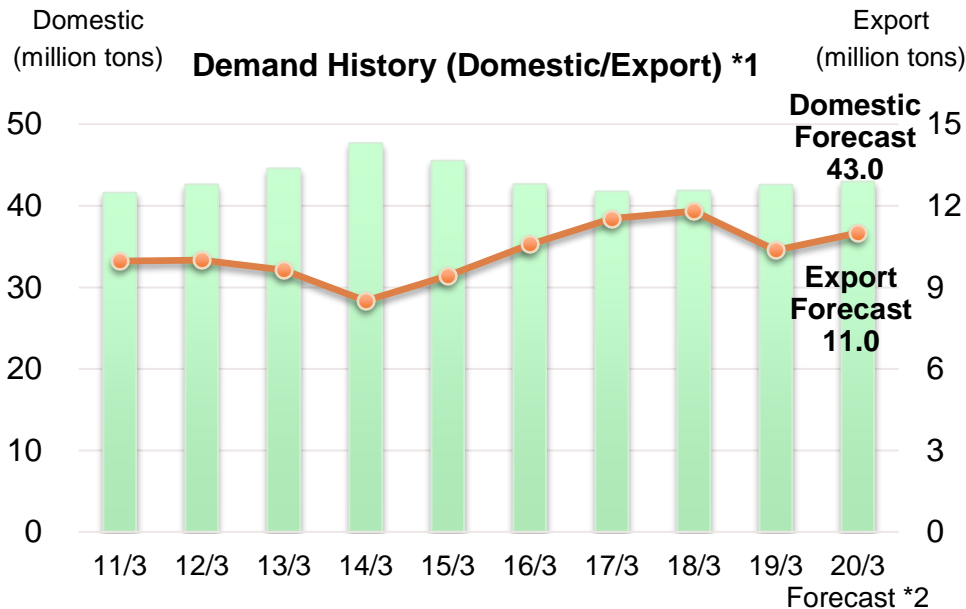
*1 As of April 1, 2019, the coal-related business in the "Others business" changed to the "Cement business."



Cement Business - Japan -

Fortifying the domestic foundation for competitiveness

*1 Japan Cement Association



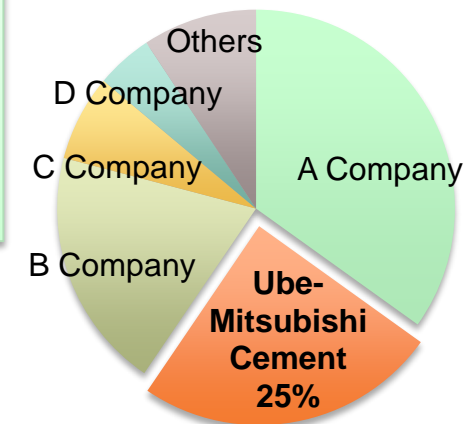
Outlook for demand in Japan

- ◆ FY2019 Result: 42.59 million tons
- FY2020 Forecast (JCA): 43.00 million tons
- FY2020 Forecast (MMC): 42.50 million tons
- ◆ Announced raising the cement prices on Dec., 2017 - More than ¥1,000 / ton (from the shipment of April, 2018)
- To continue the sales price optimizations of cement in FY2020

Export environment

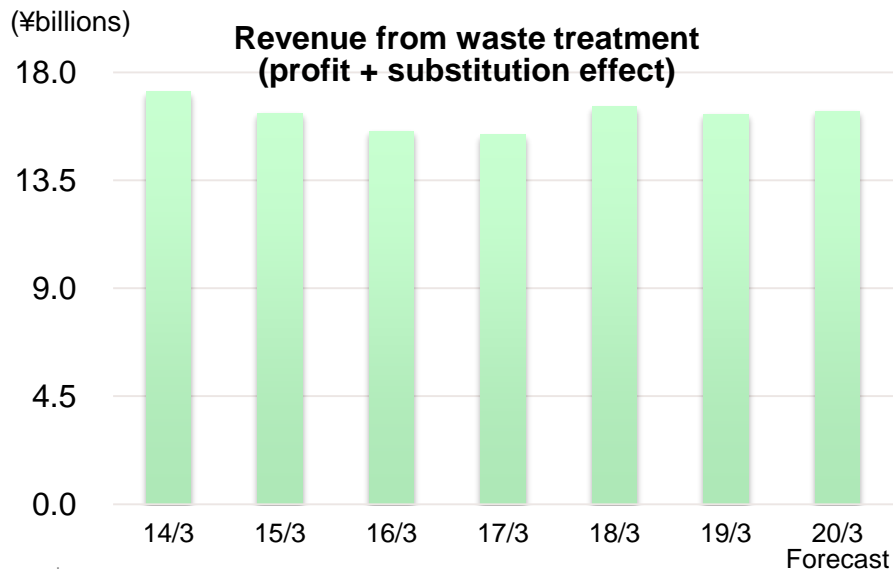
- ◆ Outlook for FY2020
- For Asia: Steady growth
- For Oceania: Steady growth
- Total amount : YoY increase

Domestic Market Share*



*MMC's assumption

Recycling business



*2 As of May 13, 2019

Waste processing

Process the waste in cement manufacturing process
Rising processing prices and expand the difficult-to-treat waste

◆ Coal ash:

Trying to secure the quantity by taking various measures.

◆ Waste plastic:

Capacity at Kyushu Plant increased 1.7 times. (operations began in February, 2018)

◆ Fly ash treatment:

KitaKyushu Ash Recycle Systems Co., Ltd. that plays role in the treatment of fly ash and cement recycling system started operation in April, 2018.

◆ Waste related natural disasters:

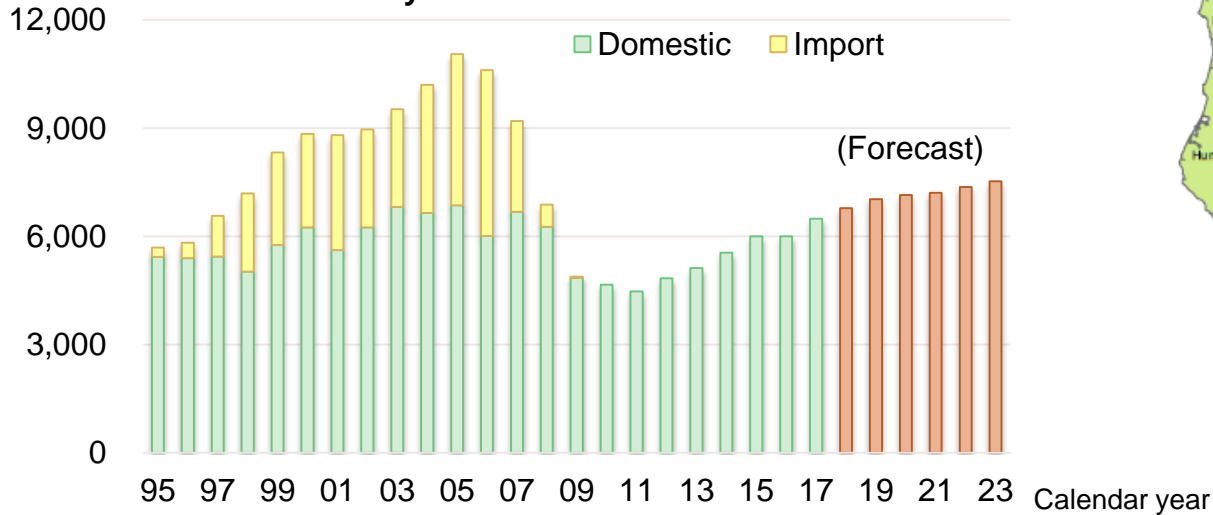
Making maximum efforts to accept waste related natural disasters such as earthquakes and torrential rains.

Cement Business - United States (1) -

Demand environment in the U.S.

(thousand Mt)

Demand history for cement in Southern California*

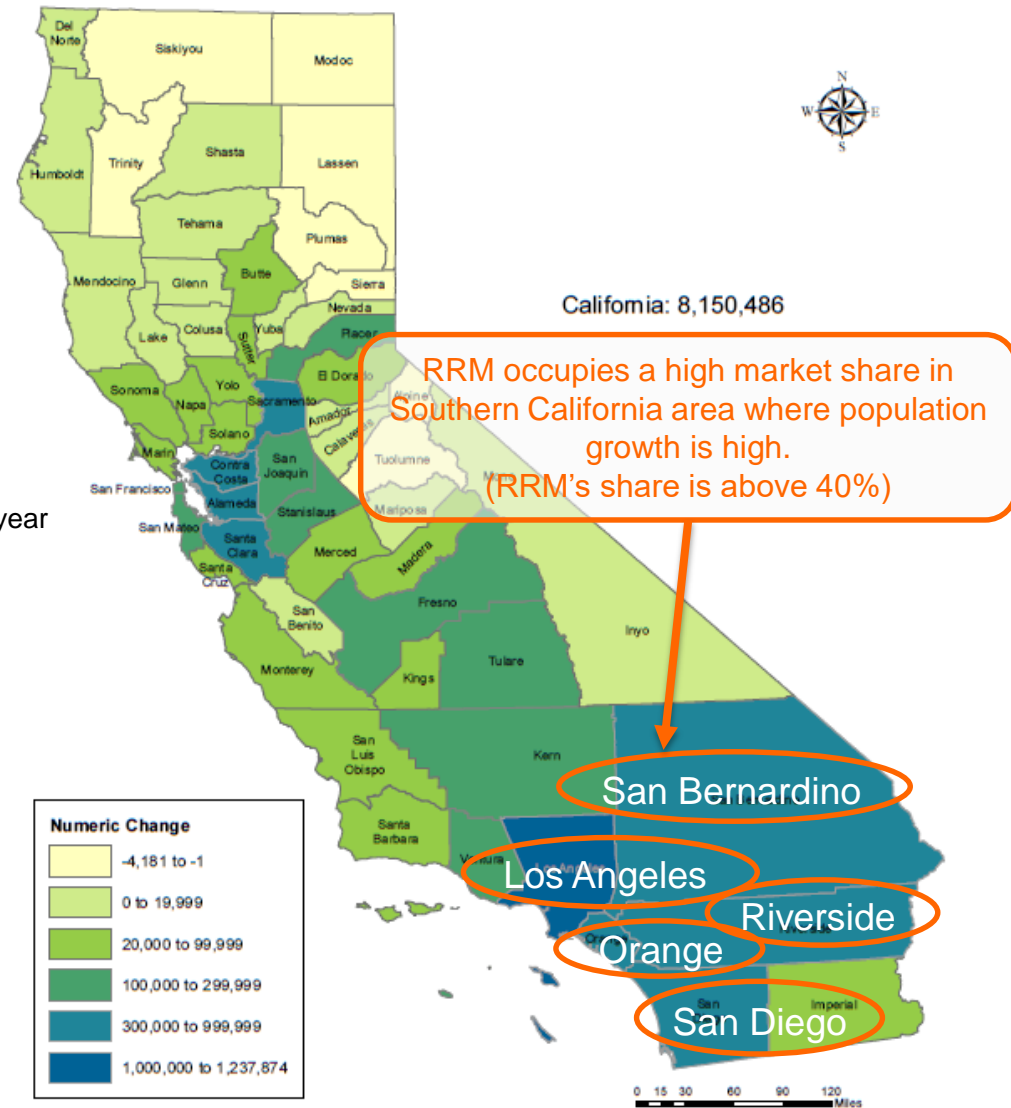


*PCA2018-2019 Winter Forecast



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

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



Source: California Department of Finance

MITSUBISHI MATERIALS

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

Expansion of ready-mixed concrete business area (north and east LA), 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

- ◆ Maximize profit throughout the value chains

Area with high import dependence

- ◆ Increase synergy with plants in Japan

Emerging market

◆ **Upstream business (manufacturing and sales of cement)**

- More differentiating elements than downstream business (ready-mixed concrete, etc)

◆ **Waterfront location**





- Export is available in case of change in supply-demand balance

Others Business

Other Business

Efforts in environment and recycling

Play a part in the development of a recycling-oriented society by creating and expanding a recycling business that uses the characteristics and functions of the material industry without relying on landfill disposal, and that is trusted by stakeholders.

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



Automobile recycling



"E-waste" (used electronics and electrical products)
Recycling process of refrigerators







Fly ash treatment:
KitaKyushu Ash Recycle Systems Co., Ltd. began operations (April, 2018)



Biogas:
New Energy Fujimino Co., Ltd." was established (May, 2018)

Efforts in renewable energy business

Expand the renewable energy business based on the management resources developed by the Company and provide a stable supply of low environmental-load energies to contribute to the development of a sustainable society.

-  Geothermal energy
() In the exploration stage
-  Hydroelectric
-  Mega solar



Hydroelectric: Moriyoshi Dam, Akita Pref.
Komatagawa New Power Plant started construction (May, 2019)



Mega solar: Fukui Photovoltaic Power Plant, Fukui, Fukui Pref.

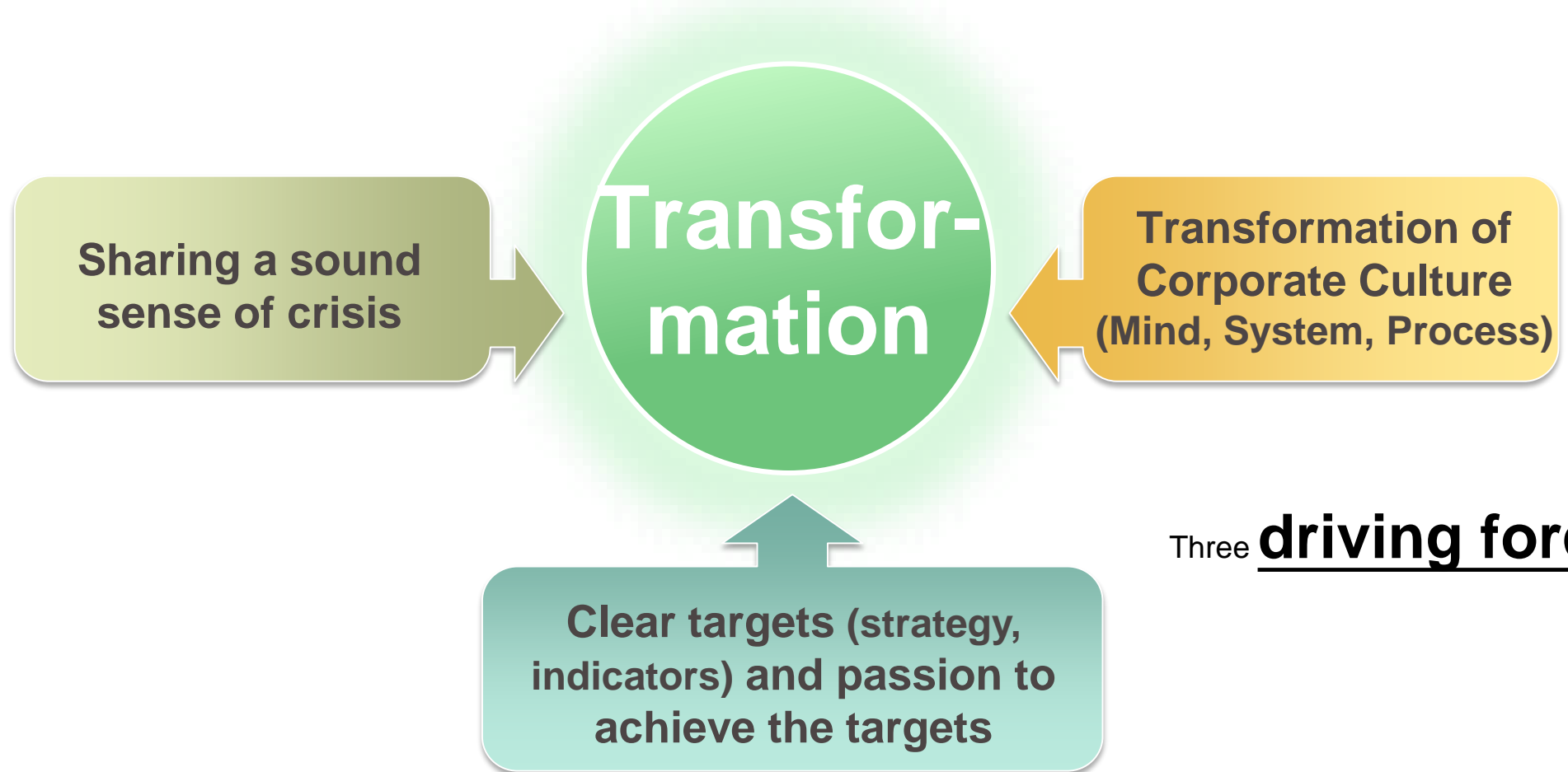


Geothermal power:
Wasabizawa Geothermal Power Plant began in operation (May, 2019)

(FYI) Medium-Term Management Strategy (Announced on May 16, 2017)

Transformation for Growth

Undertake a range of **“Transformations”** to achieve the sustainable development of the Mitsubishi Materials Group

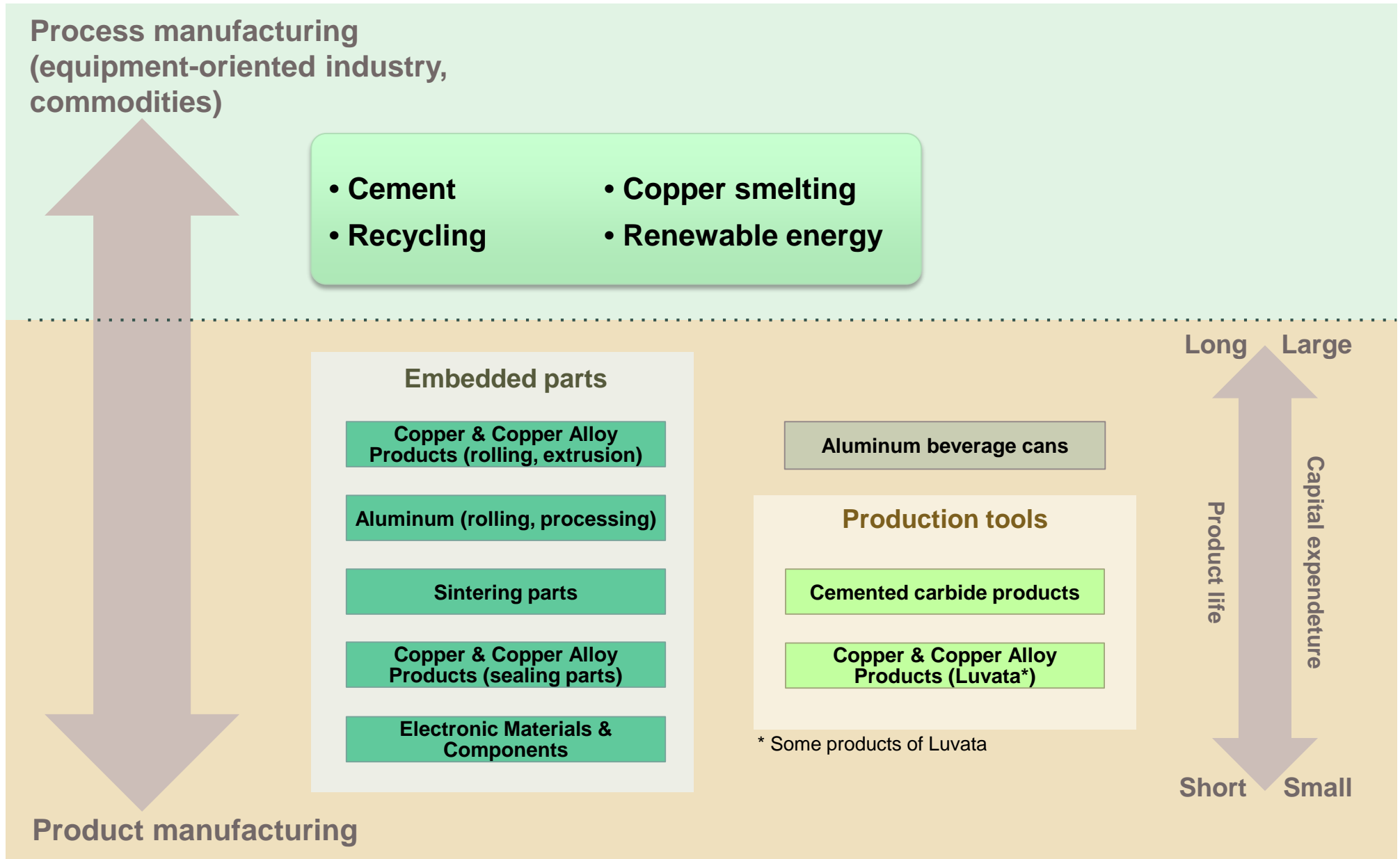


Three **driving forces**

Perception of External Environment (10 years from now)

Japan	Overseas
<ul style="list-style-type: none">◆ Super-aged society◆ Infrastructure development for disaster prevention and reduction◆ Hollowing out of domestic market due to progress of globalization◆ Increasing environmental consciousness (increase in EVs, recycling needs, etc.)◆ Super-advanced information society based on AI and IoT (accelerated speed of change)	<ul style="list-style-type: none">◆ Change in international order◆ Increase in protectionism◆ Slowdown in the growth of emerging BRICS economies◆ Increase in the need for infrastructure development due to growing population◆ Increasing environmental consciousness (increase in EVs, recycling needs, etc.)◆ Super-advanced information society based on AI and IoT (accelerated speed of change)

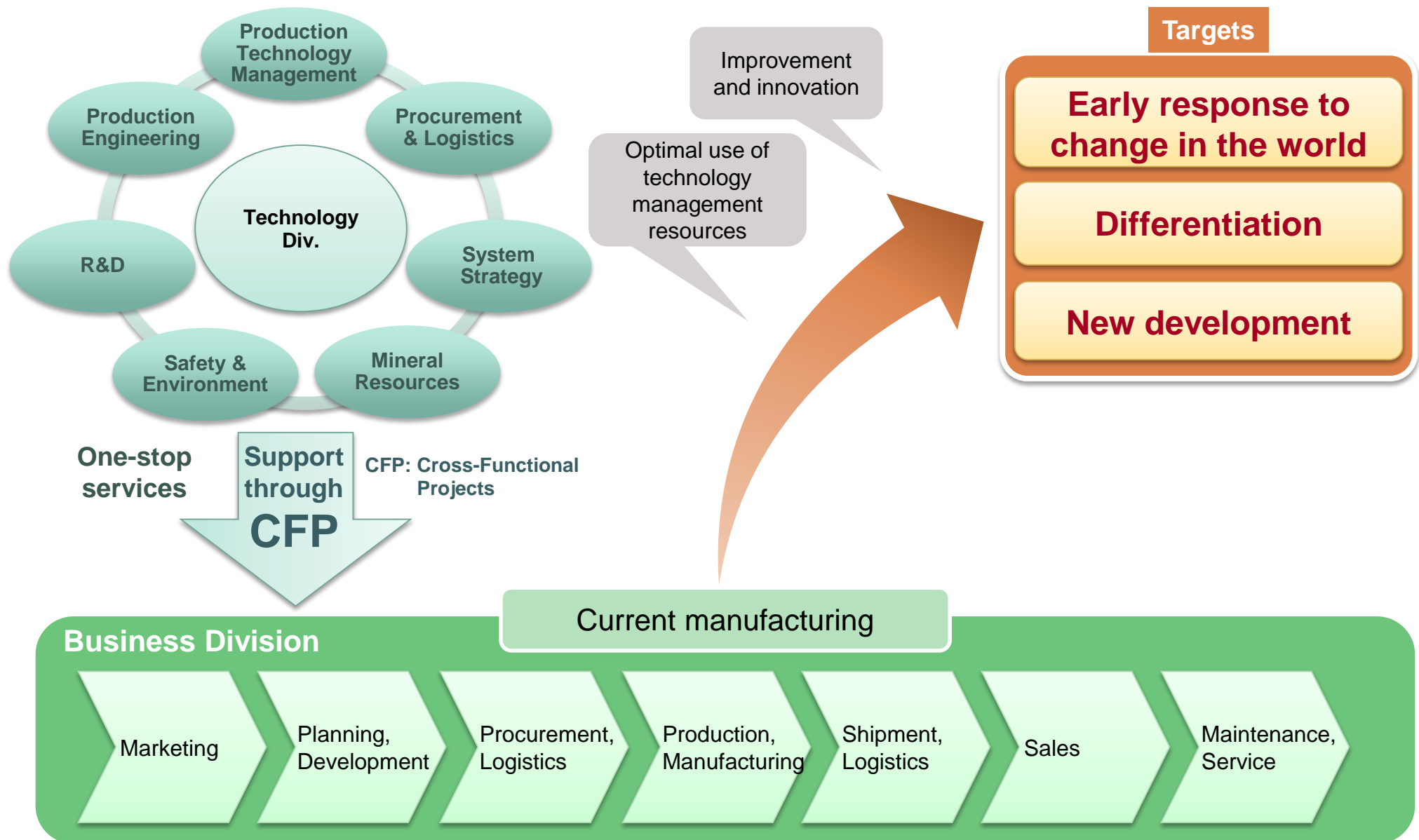
Group-wide Policy: Optimization of Business Portfolio (1)



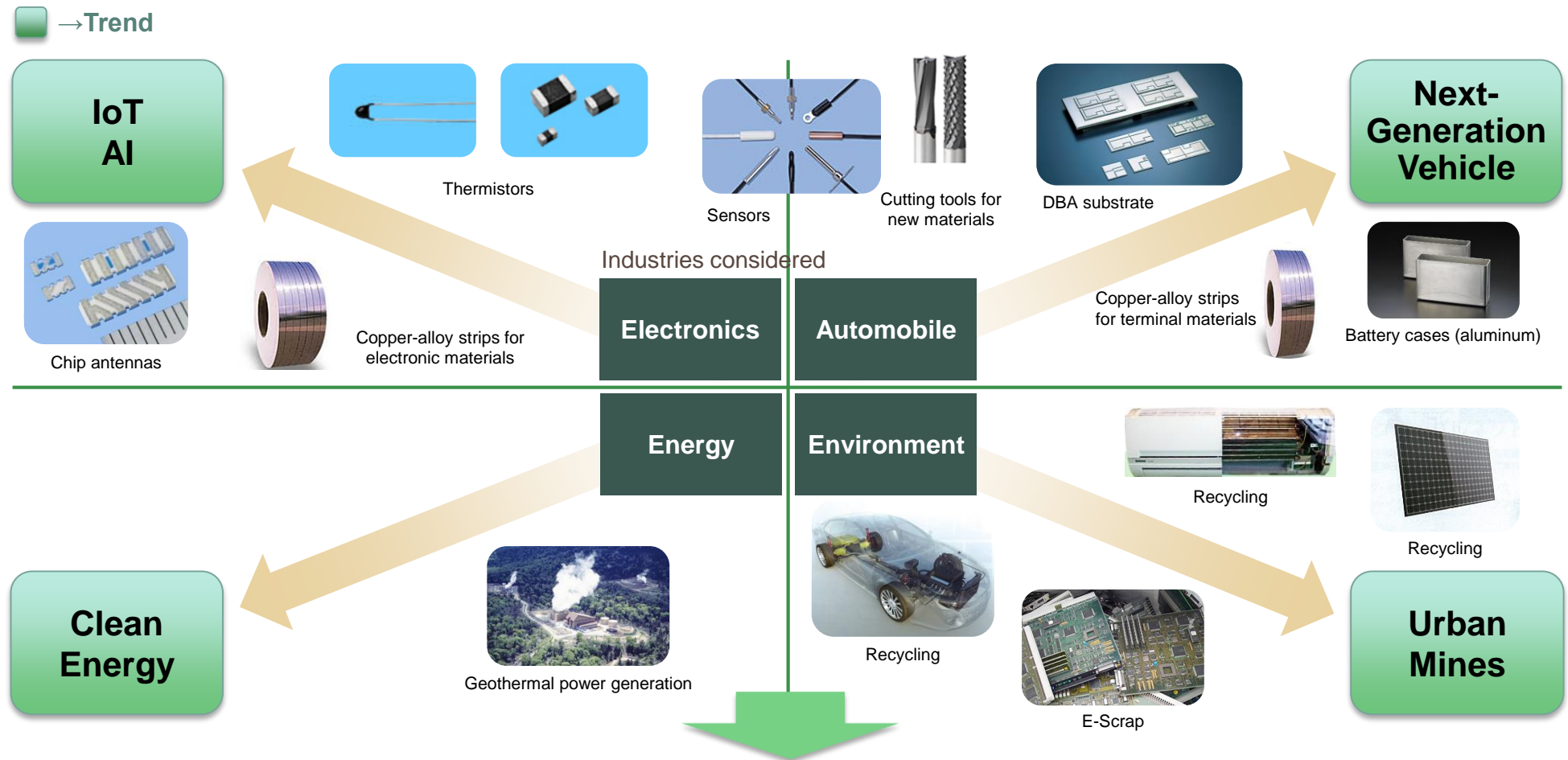
Group-wide Policy: Optimization of Business Portfolio (2)

		Direction	(Indicator to watch)
Stable growth business	Cement Metals (smelting) Recycling Renewable energy	<ul style="list-style-type: none"> ◆ Aim to strengthen the business foundation by increasing and maintaining cost competitiveness using recycling revenues, etc. and seek carefully selected opportunities for large investments 	ROA
Growth promotion business	Metals (Copper & Copper Alloy Products) Advanced Materials & Tools	<ul style="list-style-type: none"> ◆ Promote growth by matching customer and market needs and the Company's strength ◆ Business development in adjacent fields and global markets 	EBITDA growth rate
Profitability restructuring business	Electronic Materials & Components Aluminum	<ul style="list-style-type: none"> ◆ Work promptly to solve issues and define the future direction of growth. <ul style="list-style-type: none"> • Make investments in competitive advantages and support technological development • Ensure thorough selection and concentration 	ROS comparison with competitors

Group-wide Policy: Comprehensive Efforts to Increase Business Competitiveness



Group-wide Policy: Creation of New Products and Business



Needs that the Company should meet	Potential new products and businesses
Next-generation vehicle, IoT and AI	Solutions for the shift of automobiles to EVs and the needs of automatic driving Heat management materials Sensors, antenna modules, and etc.
Building a rich, sustainable society	Recycling, renewable energy, businesses related to hydrogen-energy society, and etc.

Group-wide: Investment Strategy

- ◆ Strengthen the businesses by utilizing operating cash flow and revenue from sale of assets
- ◆ If there is any other favorable large investment for growth, however, the Company will positively implement such an investment as far as keeping Net D/E ratio of 1.0 time or lower

FY2018 – 2020 Cumulative Cash Flow

Cash in		
Operating CF		240.0
Investing CF	Sale of assets	60.0
Total		300.0

Sales of share in SUMCO Corporation (moved forward in the previous period)	26.0
	326.0

¥ billions

Cash out		
Investing CF	Investment for growth	150.0
	Investment for maintenance and upgrading	170.0
	Subtotal	320.0
Financing CF	Dividend, etc ^{*1}	46.0
Total		366.0

Acquisition of Luvata (carry-over from FY2017)	-40.0
	326.0

280.0

FY2018 – 2020 Cumulative Investment Plan

Total amount of investment 280.0 ^{*2}							
Maintenance/upgrading 170.0				Growth strategy 110.0 ^{*2}			
Cement 22%		Metals ^{*2} 33%		Advanced Materials & Tools 21%		4 %	8 %
						7 %	5 %

^{*1} Total amounts of dividend payment from MMC and dividend payment to non-controlling interests from consolidated subsidiary

^{*2} Excludes the cost of acquiring Luvata (Approx. 40 billion yen) carried forward from the previous period.

Electronic Materials & Components
Aluminum
Environment & Energy
Common investment

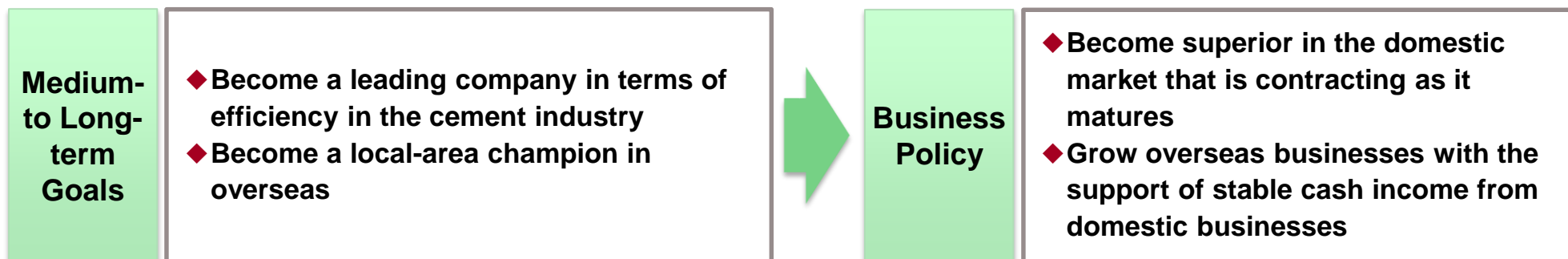
Group-wide: Provisional Financial Calculations

(¥ billions)

		Results for FY2017	Provisional Financial Calculations for FY2020	Remarks
Income statement	Consolidated net sales	1,304.0	1,620.0~1,840.0	[Principal reasons of changes, ordinary income base] Market conditions 12.0 Investment effect 15.0 Metal prices 3.0~7.0 Foreign exchange -6.0~8.0 Other -6.0 Total 18.1~36.1
	Consolidated net sales (excl. metals costs)	757.1	870.0~910.0	
	Consolidated ordinary income	63.9	82.0~100.0	
Balance sheet	Total assets	1,896.9	1,950.0	
	Net interest-bearing debt	386.9	450.0	
	Shareholders' equity	621.2	640.0	
ROA (ordinary income to total assets) (%)		3.5	4.5~5.0	
ROE (%)		4.8	7.0~8.0	
Net D/E ratio (times)		0.6	0.7	
Assumptions (*)	Exchange rate USD (yen/\$)	108	100~120	[Sensitivity] ◆ Exchange rate 1 yen/\$ (yen depreciation) 0.7 billion yen ◆ Copper price (LME) +10 ¢/lb 2.2 billion yen (Ordinary income)
	Exchange rate EUR (yen/€)	119	120	
	Copper price (LME) (¢/lb)	234	250~270	

* Median used for BS

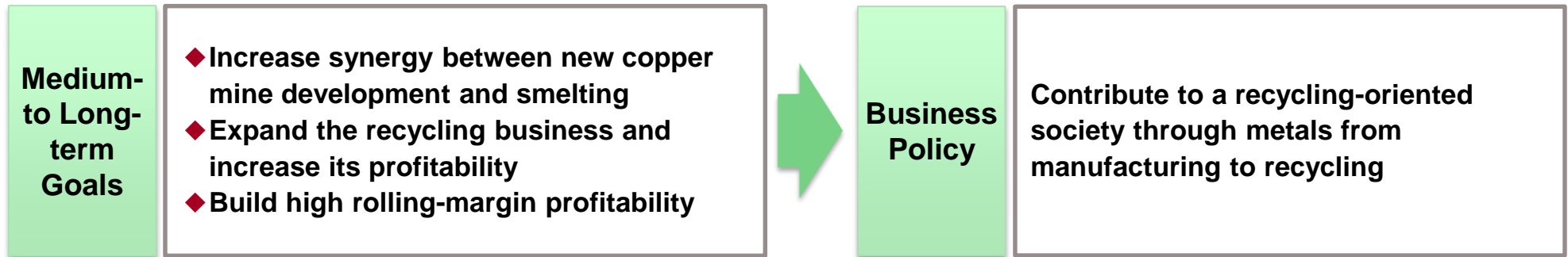
Cement Business Strategy



Key strategies

Achieve growth through innovation	Create value by building a recycling-oriented society	Increase the company's market presence through investment for growth	Increase efficiency through continuous improvement
◆ R&D and Innovation <ul style="list-style-type: none"> - Develop technology to reuse waste for cement manufacturing - Enhance concrete technology - Reduce CO₂ 	◆ Expand the environmental business <ul style="list-style-type: none"> - Develop new business in growth segment - Increase the alternative thermal energy rate 	◆ Fortifying the domestic foundation for competitiveness <ul style="list-style-type: none"> - Kyushu Plant: increase global competitiveness - Downstream business: fortifying the sales foundation in Tokyo metropolitan area, etc. ◆ Expand the US business <ul style="list-style-type: none"> - Expand the ready-mixed concrete business - Establish and reinforce MCC terminals ◆ Develop new overseas business bases	◆ Improve domestic and the US cement manufacturing technology <ul style="list-style-type: none"> - Establish a stable operation system - Reduce costs - Thoroughly conserve energy - Increase workplace capability

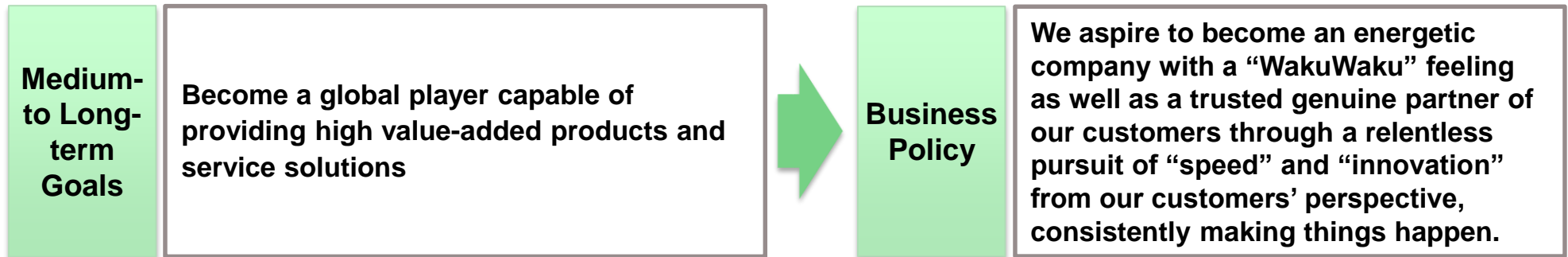
Metals Business Strategy



Key strategies

	Achieve growth through innovation	Create value by building a recycling-oriented society	Increase the company's market presence through investment for growth	Increase efficiency through continuous improvement
Mining			◆ Develop new projects	◆ Improve the system of improving and making decisions on existing projects
Smelting		◆ Increase E-Scrap recycling		◆ Increase process efficiency ◆ Optimize the smelting business
Copper & Copper Alloy Products	◆ Sell products meeting customer needs - Increase sales of terminal materials and new alloys - Develop high-performance plating	◆ Promote alloy recycling	◆ Create synergy with Luvata - Make use of synergy effects - Establish global sales system ◆ Expand sealing materials business	◆ Fortify the manufacturing system of rolling business ◆ Strengthen cost competitiveness of extrusion business

Advanced Materials & Tools Business Strategy

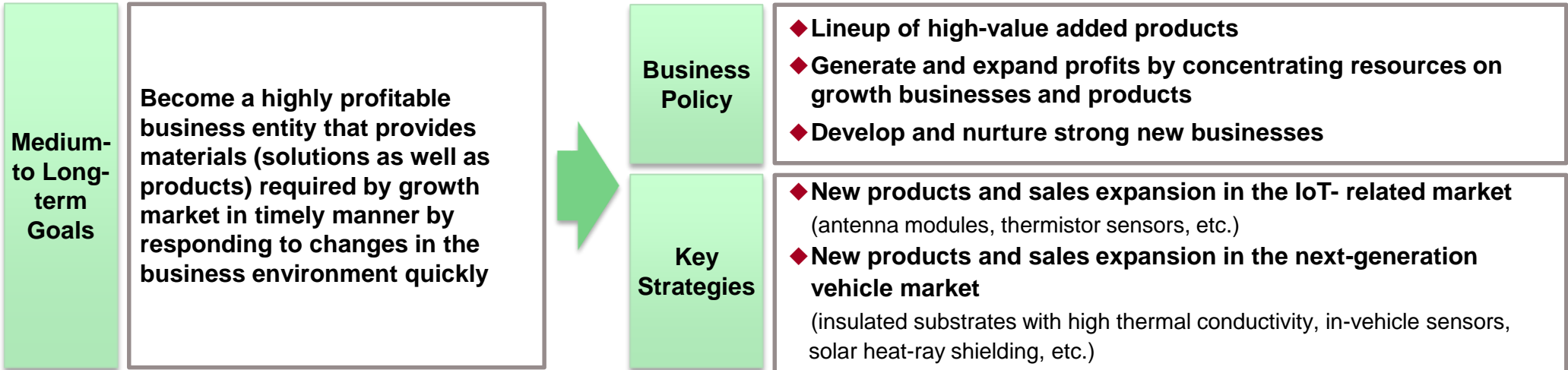


Key strategies

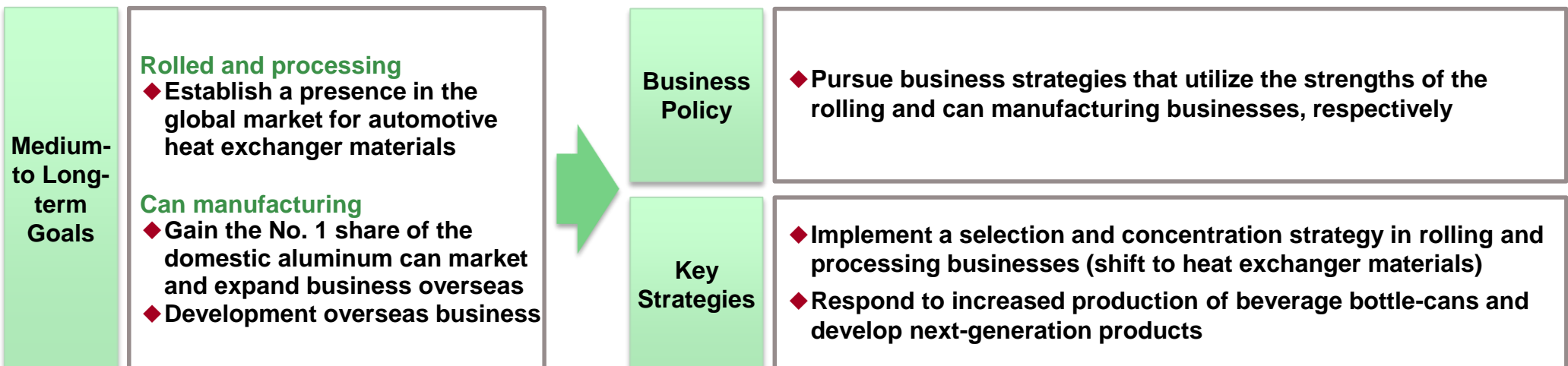
Achieve growth through innovation	Create value by building a recycling-oriented society	Increase the company's market presence through investment for growth	Increase efficiency through continuous improvement
<ul style="list-style-type: none"> ◆ Enhance the power of solution by industry oriented teams ◆ Create key technologies through the Company's original development and open innovation ◆ Get closer to the customers by utilizing IoT and Big Data and enhance the level of manufacturing capability 	<ul style="list-style-type: none"> ◆ Promote tungsten recycling 	<ul style="list-style-type: none"> ◆ Promote local production for local consumption by reinforcing factories and using local vendors ◆ Expand sales and technical center networks ◆ Create synergies with Mitsubishi Hitachi Tool Engineering 	<ul style="list-style-type: none"> ◆ Reinforce the Key Account strategy ◆ Decrease cost ◆ Improve asset efficiency at factories

Electronic Materials & Components Business & Aluminum Business

Electronic Materials & Components Business



Aluminum Business



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

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Note
