



MITSUI KINZOKU

(Mitsui Mining & Smelting Co., Ltd. TSE5706)

2019-2021 Medium Term Business Plan Progress

November 12, 2020

(Unit: Billion yen)

	2016	2017	2018	2019	2020 Forecast	2021 Middle Term Business Plan
Net sales	436.3	519.2	497.7	473.1	480.0	550.0
Operating income	38.5	49.5	18.2	13.0	26.0	37.0
Ordinary income	31.0	11.2	17.8	9.3	22.0	37.0
Profit (loss) attributable to owners of parent	18.7	-0.7	4.7	1.6	11.0	23.0
Free cash flow	-14.1	12.1	-4.1	1.3	0.0	* 50.0
CAPEX	37.7	40.5	36.1	34.0	34.0	* 105.0
Shareholders' Equity Ratio	33.5%	32.4%	32.5%	30.7%	29.3%	40.0%
D/E ratio (net)	1.10	1.11	1.15	1.22	1.44	0.70

* 2019-2021 3 years total

■ Sales and Ordinary Income Forecasts by Segments

● Sales and Ordinary Income

(Unit: billion yen)

Actual & Forecast	2019 results		2020 forecast		2021 Plan	
	Sales	Ordinary Income	Sales	Ordinary Income	Sales	Ordinary Income
Engineered materials	167.8	13.4	181.0	14.3	212.0	26.0
Metals	161.1	-1.5	186.0	9.8	163.0	3.0
Automotive parts and components	90.6	0.5	77.0	0.5	104.0	5.0
Affiliates coordination	109.9	1.4	113.0	1.3	134.0	6.0
Adjustment	-56.3	-4.5	-77.0	-3.9	-63.0	-3.0
Total	473.1	9.3	480.0	22.0	550.0	37.0

(Unit: billion yen)

Midium Term Business Plan	2019 Plan		2020 Plan		2021 Plan	
	Sales	Ordinary Income	Sales	Ordinary Income	Sales	Ordinary Income
Engineered materials	180.0	17.8	207.0	23.0	212.0	26.0
Metals	162.0	5.5	166.0	4.0	163.0	3.0
Automotive parts and components	99.0	1.3	100.0	3.0	104.0	5.0
Affiliates coordination	123.0	4.2	131.0	5.0	134.0	6.0
Adjustment	-64.0	-2.8	-64.0	-3.0	-63.0	-3.0
Total	500.0	26.0	540.0	32.0	550.0	37.0

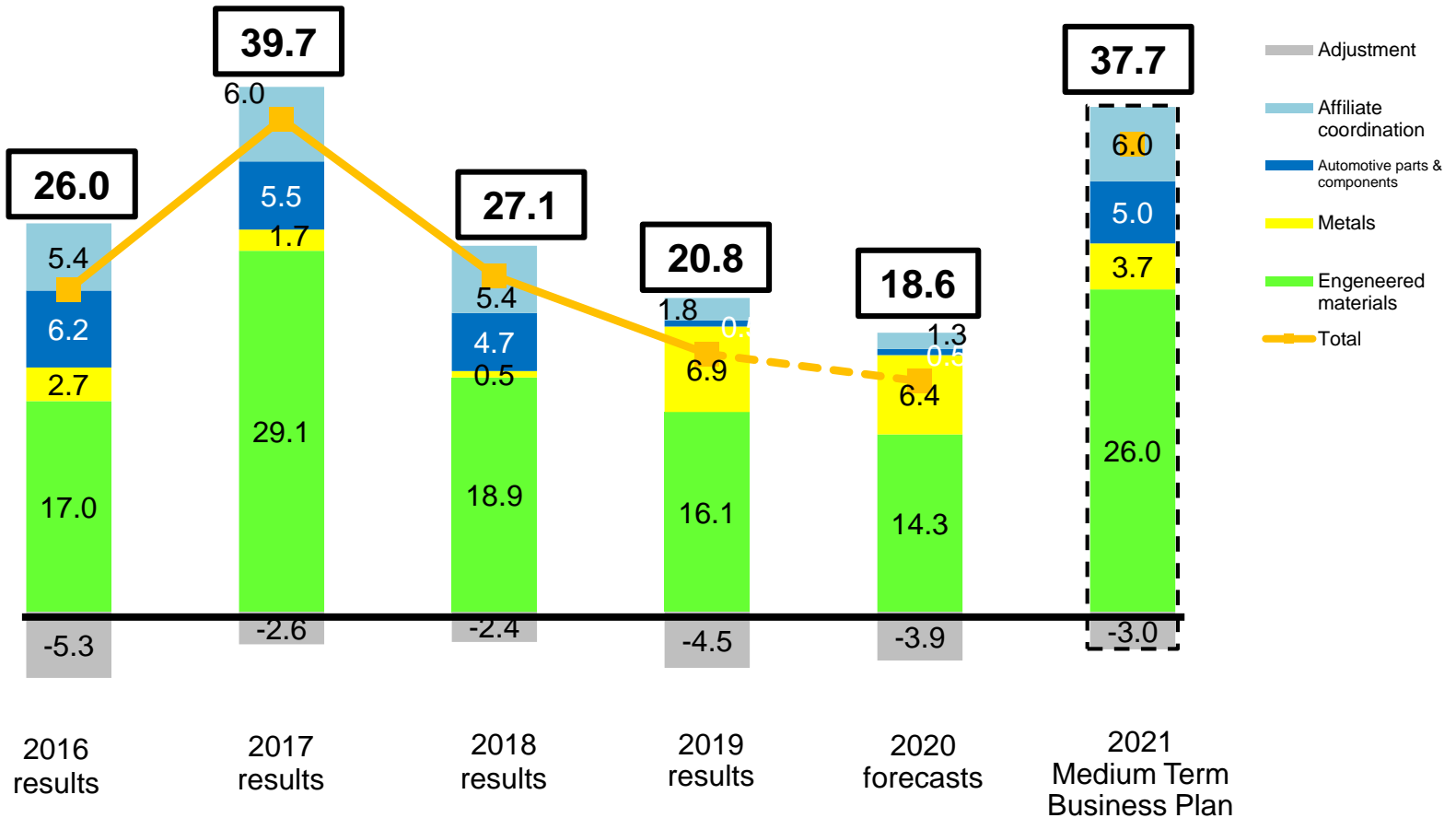
(Unit: billion yen)

Difference	2019 Plan		2020 Plan		2021 Plan	
	Sales	Ordinary Income	Sales	Ordinary Income	Sales	Ordinary Income
Engineered materials	-12.2	-4.4	-26.0	-8.7	0.0	0.0
Metals	-0.9	-7.0	20.0	5.8	0.0	0.0
Automotive parts and components	-8.4	-0.8	-23.0	-2.5	0.0	0.0
Affiliates coordination	-13.1	-2.8	-18.0	-3.7	0.0	0.0
Adjustment	7.7	-1.7	-13.0	-0.9	0.0	0.0
Total	-26.9	-16.7	-60.0	-10.0	0.0	0.0

Trends in Financial Performance (excludes inventory factor, Caserones impairment)

: Financial Performance

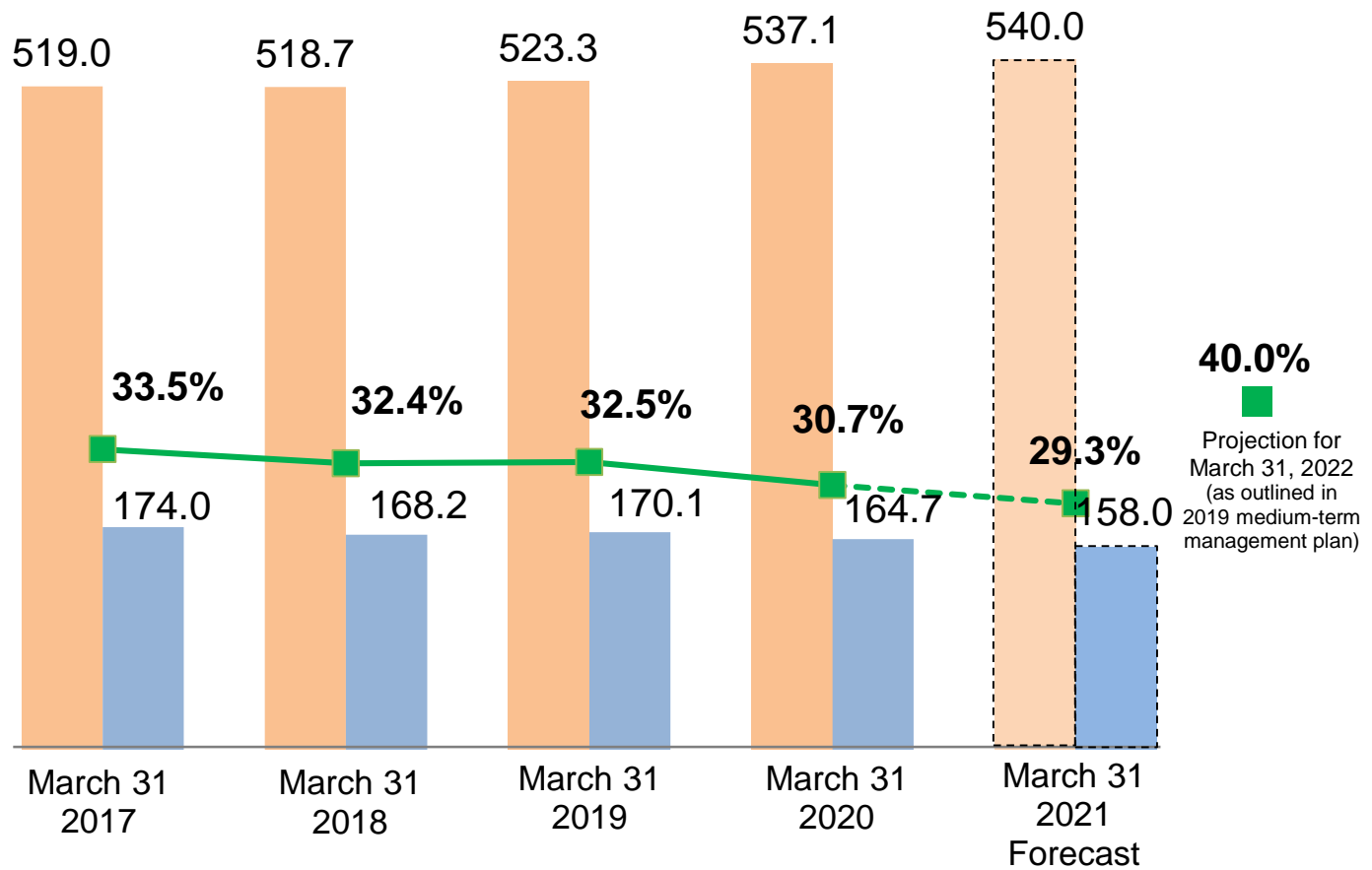
(Unit: Billion yen)



● Trends in Shareholders' Equity Ratio

(Unit: Billion yen)

■ Total assets
 ■ Net assets
 ■ Shareholders' Equity Ratio



We have decided to sell our entire interest in Caserones mine to JX Nippon Mining & Metals Corporation

Background

- We want to rebalance our portfolio.
- We want to minimize the risk of performance fluctuating due to volatile copper prices.

Plan

- Copper smelting business: Rebuild and enhance smelting networks in partnership with zinc and lead businesses
- Redirect resources to areas where we are strong
- Reconfirm assets with a focus on asset efficiency to improve our corporate value

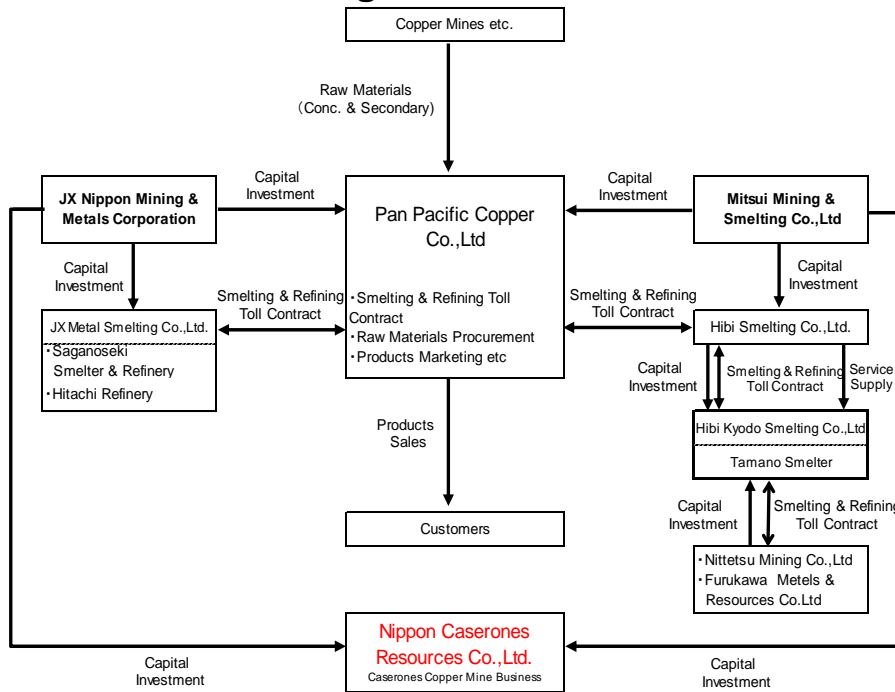
Impact on consolidated results

	FYE Mar 2021
Extraordinary loss	¥20 billion

Transfer of interest in Caserones mine (2)

We withdrew from the Caserones copper mine business operated by Nippon Caserones Resources, but the copper smelting business will continue.

Before transferring interests



(※) Investment Ratio

Pan Pacific Copper Co.,Ltd : JX Nippon Mining & Metals Corporation 67.8% · Mitsui Mining & Smelting Co.,Ltd 32.2%

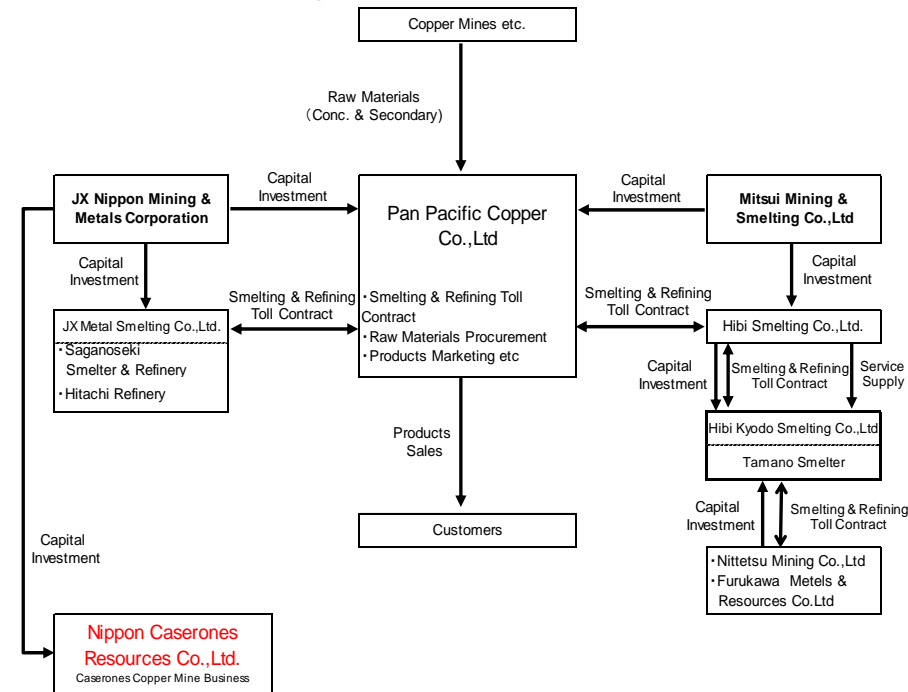
Hibi Kyodo Smelting Co.,Ltd : Hibi Smelting Co.,Ltd. 63.51% · Nittetsu Mining Co.,Ltd. 20.28% · Furukawa Metals & Resources Co.Ltd. 16.21%

JX Metal Smelting Co.,Ltd. : JX Nippon Mining & Metals Corporation 100%

Hibi Smelting Co.,Ltd. : Mitsui Mining & Smelting Co.,Ltd. 100%

Nippon Caserones Resources Co.,Ltd. : JX Nippon Mining & Metals Corporation 67.8% · Mitsui Mining & Smelting Co.,Ltd.32.2%

After transferring interests



(※) Investment Ratio

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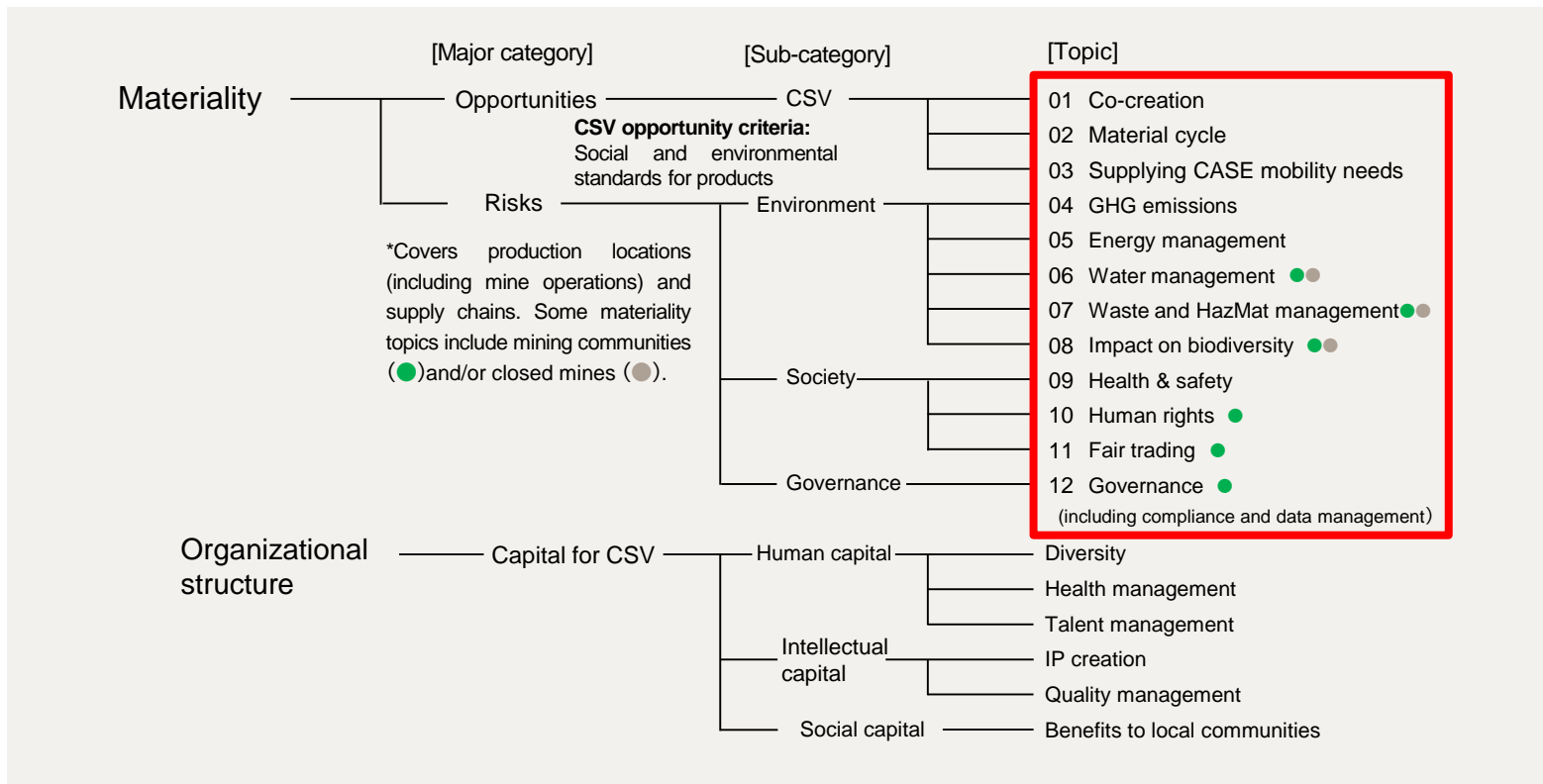
Hibi Smelting Co.,Ltd. : Mitsui Mining & Smelting Co.,Ltd. 100%

Nippon Caserones Resources Co.,Ltd. : JX Nippon Mining & Metals Corporation 100%

Copper business specializing in the smelting, by the re-building and deepening of smelting network, it will enhance the competitiveness of the copper smelting business.

Materiality review

We reduced the number of material topics from 28 to 12 to expedite our CSR initiatives and further incorporate CSR into our businesses.

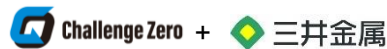


We review materiality annually as part of a PDCA cycle. In FY2020, we revised our materiality commitments, KPIs, and actions to maximize business opportunities and minimize business risks.



<https://www.challenge-zero.jp/>

We have joined Challenge Zero, a Keidanren project for reducing GHG emissions from businesses. As part of our commitment to this project, we're encouraging innovation to reduce our GHG emissions and contribute toward a carbon-free world.



On joining, we commit
to **4 actions...**

- Develop technique and equipment for producing carbon monoxide using metal oxides
- Develop all-solid-state battery for storing renewable energy
- Use digital tech in electrolysis plants to guide demand response
- Use alternative fuels to reduce amount of coke consumed during ISP smelting



This year, METI selected us under its program for supporting companies that apply TCFD-recommended scenario analysis (scenario analysis helps incorporate climate risks and opportunities into business strategy). We will leverage METI support to actively disclose the impacts of climate change on our businesses, focusing on governance, strategy, and risk management.

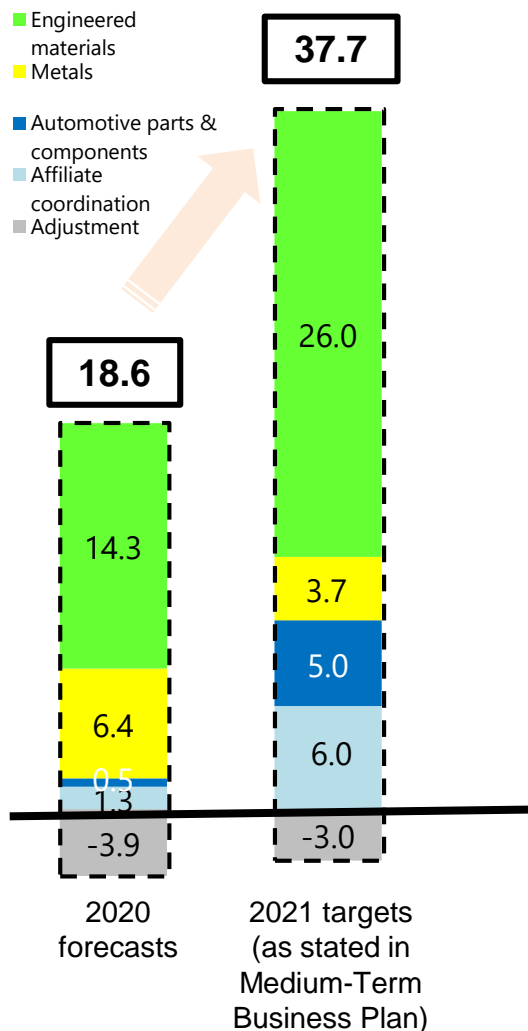
Companies that METI selected in 2020 under its program for promoting TCFD-recommended scenario analysis
<https://www.env.go.jp/press/108383.html>

Askul, Orix Asset Management, JR Kyushu, Shin-Etsu Chemical, Mitsui Mining & Smelting, Yaskawa Electric Corporation

■ Toward final year of Medium-Term Management Plan Material Intelligence

● Financial Performance (unit: billion yen)

(excludes inventory factor, Caserones impairment)



Engineered Materials Segment

Unlikely to meet FY2021 target for actual profit due to 1) business improvement plan for PVD materials, 2) failure to hit sales target for 5G products, and 3) failure to hit sales target for MicroThin™ among HDI makers

Metals Segment

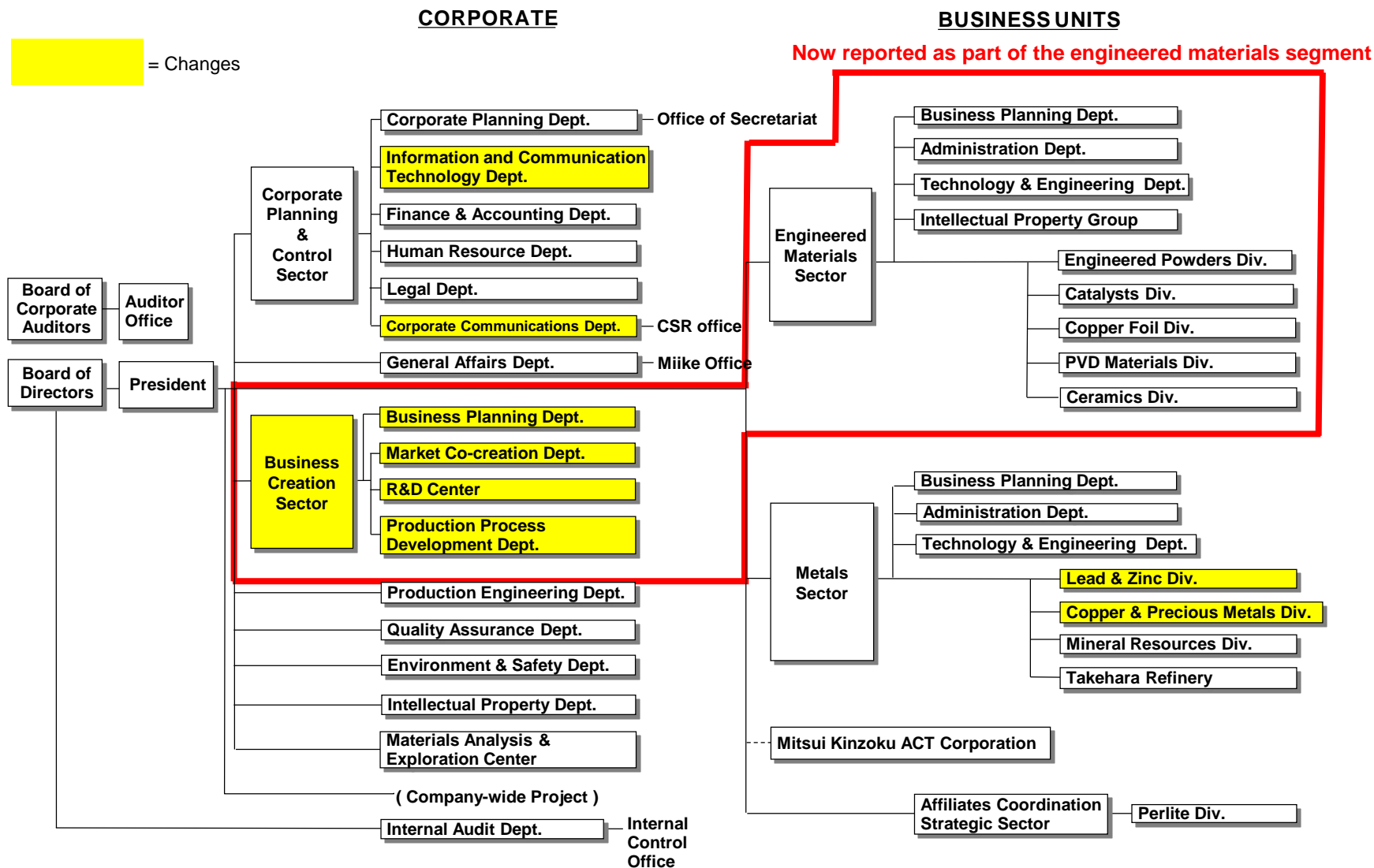
Assumptions for final year of medium term: Zinc fetches 2,400\$/t, with the dollar fetching 110 yen. TC will decline from FY2020 level, but we'll be rid of the equity loss associated with Caserones.

Automotive Parts & Components Segment

Auto demand in FY2021 will be 20% down from FY2019 forecast. The segment will likely miss the target of ¥5 billion in actual profit, but it will aim to improve profit by lowering costs and increasing margins.

Organizational reform (as of April 1, 2020)

We upgraded the Corporate Planning & Control Sector and established a new corporate sector (the Business Creation Sector) to develop new product and business ideas for future growth. Additionally, the Metals Sector's business units have been reorganized as part of an overhaul of the copper business.



Actions to develop new business ideas

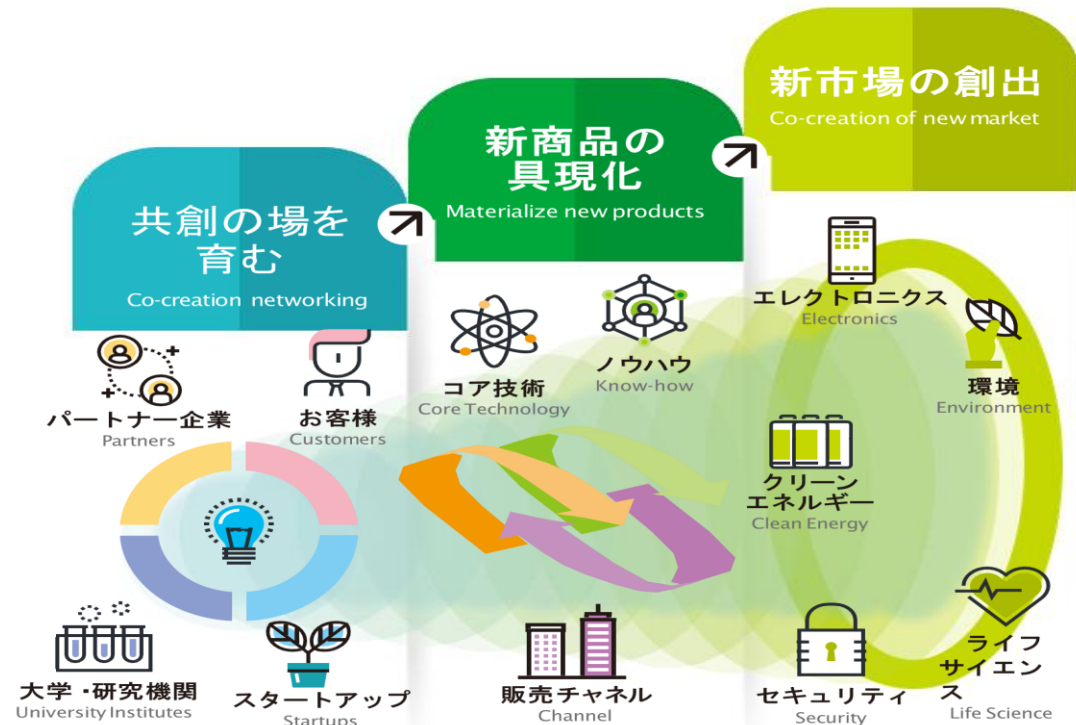
We established a new corporate sector (Business Creation Sector) to generate more products and business ideas with growth potential, and generate them more efficiently.

Co-creation strategy for generating new markets

- Cultivate tomorrow's opportunities with consumers and other external contributors (markets).
- Combine our resources* with those of external contributors to generate new products and markets.

Examples of our resources

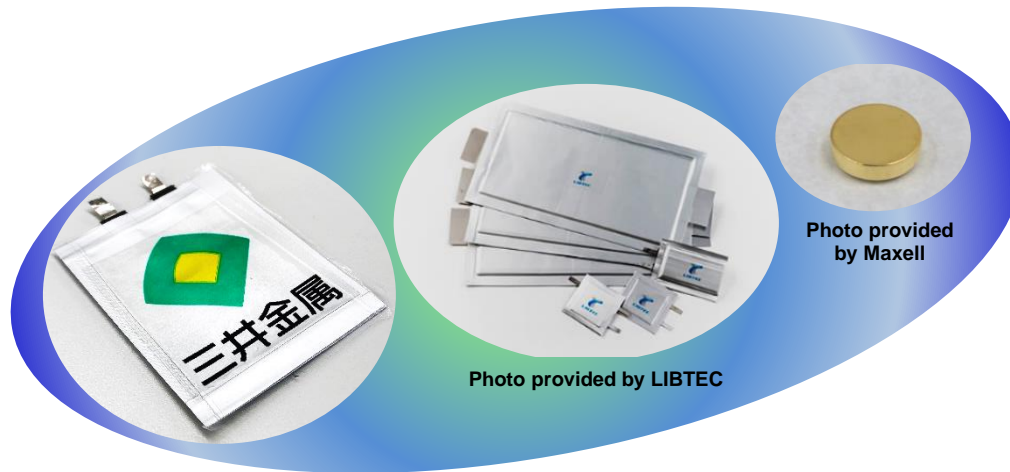
- Core tech
 - Electrochemical tech
 - Powder control tech
 - Complex compound tech
- Knowhow
 - Material design
 - Evaluation
 - Apparatus
- Sales channels
 - Electronic substrate / electrical device makers
 - Battery makers
 - Automakers



Progress in developing next-gen products

Solid electrolyte for All-Solid State Batteries (ASSBs)

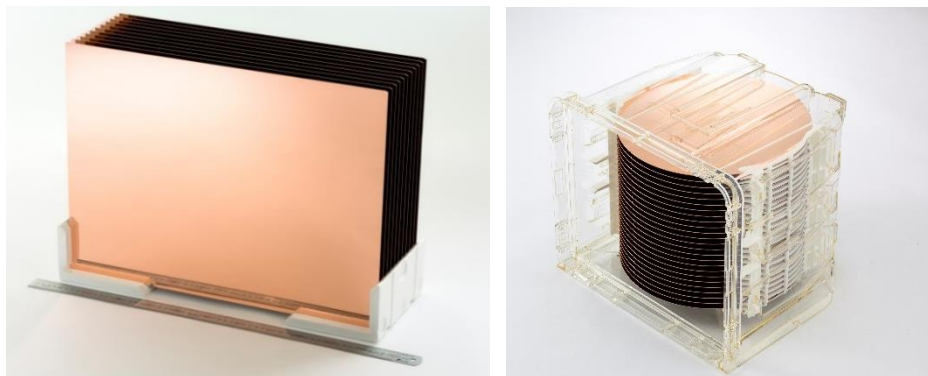
(Press releases dated November 24, 2016, and December 5, 2019)



- Cultivating new markets
Product testing underway for multiple customers and applications
Practical trials for special applications should begin in FY2020
- Mass production
Technology is being prepared to enable mass production on existing lines
Pilot plant under construction
* Plant should go online in January 2021

HRDP®: Next-gen ultra-fine circuit material

(Press release dated January 25, 2018)



HRDP®

- Cultivating new markets
Product is being sampled among electronics makers
Practical trials in customers' facilities should begin in FY2020
- Mass production
Mass production tech being prepared with Geomatec

Progress in 2019 medium-term business plan (as of November 2020)

Business unit	Action plan for 2019–2021	Progress
Functional powders	<ul style="list-style-type: none"> • Expand sales of 5G-related products • Expand abrasives business 	<ul style="list-style-type: none"> • Copper powders for electronics have sold less well than planned • Abrasives business has sold slightly less than planned
Catalysts	<ul style="list-style-type: none"> • Maintain share in motorcycle market • Expand sales in automobile market and strengthen technology development 	<ul style="list-style-type: none"> • Proceeding as planned in both motorcycle and automobile markets • GPF catalyst launched and doing well
Copper foil	<ul style="list-style-type: none"> • Expand sales of 5G-related products • Expand MicroThin™ sales to HDI makers and non-smartphone PKG makers 	<ul style="list-style-type: none"> • Sales of high-end electro-deposited copper foil for 5G applications better than planned • MicroThin™ sales to non-smartphone PKG makers largely as planned; sales to HDI makers less than planned
PVD materials	<ul style="list-style-type: none"> • Make ITOs and IGZOs more competitive and increase their share 	<ul style="list-style-type: none"> • Formulation and execution of business improvement plan due to deterioration of business environment

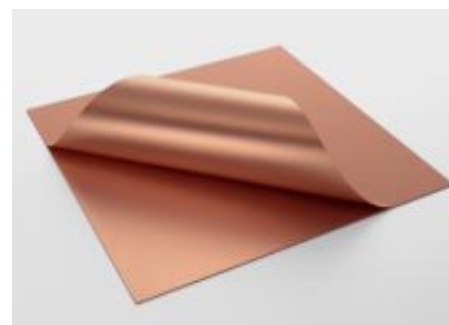
■ copper powders for electronics (right)



■ catalysts for automobiles



■ MicroThin™



■ ITO sputtering targets (PVD materials)

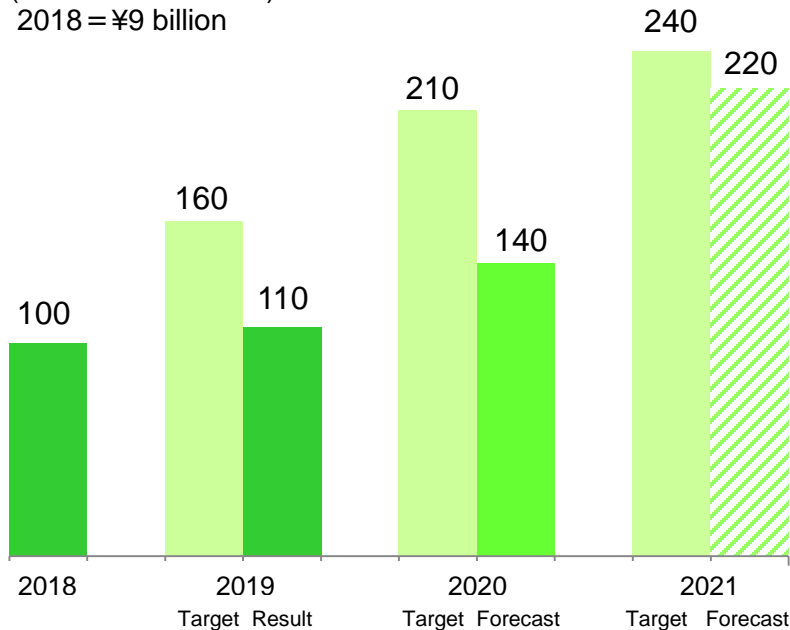


■ Engineered materials segment: Performance of 5G products

The segment will likely miss target, although demand for copper powder for MLCC and copper foil should increase as 5G commercialization leads to higher frequencies and better performance of electronics.

5G product sales

(2018 scaled at 100)
2018 = ¥9 billion



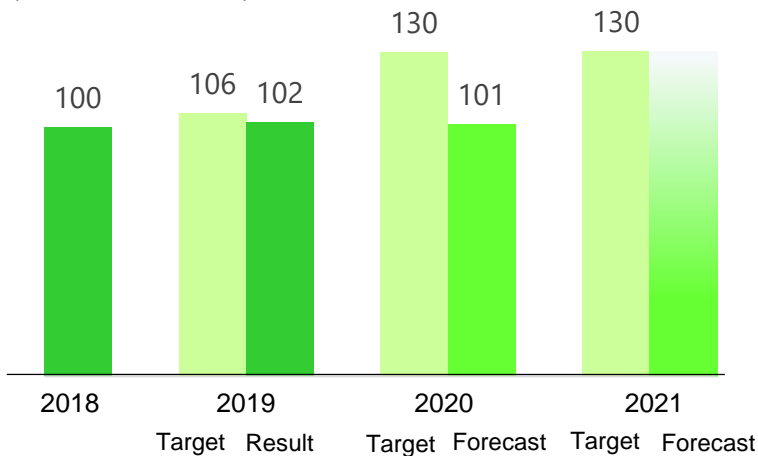
5G product trends

- Engineered Powders Div.
 - Copper Powder for MLCC
 - Tantalum oxide for surface acoustic wave filters
 - Generally, short of target
- Copper Foil Div.
 - High-end electro-deposited copper foil for 5G
 - May exceed target, but downturn is also possible depending on impact of US-China trade war.
 - MicroThin™ for PKG makers
 - On course to meet target
- Ceramics Div.
 - MLCC firing trays are largely on target

COVID-19 makes it hard to forecast volume of sales for the motorcycle and automobile markets, but FY2021 should see a YoY increase.

Expected sales of catalysts for motorcycles

(2018 scaled at 100)

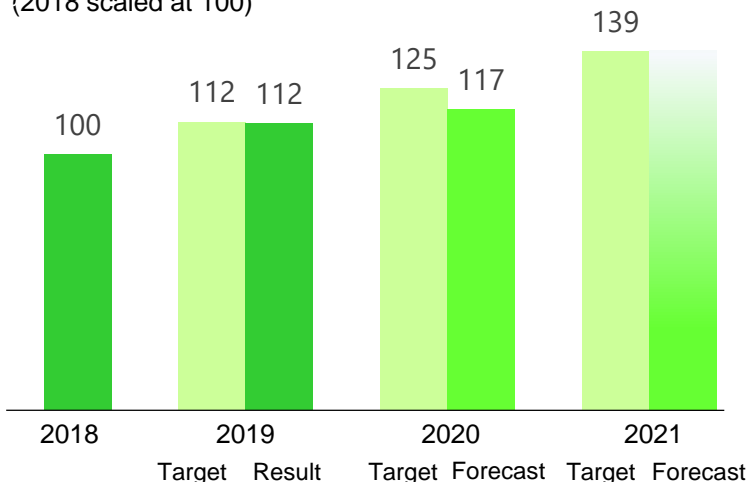


● Sales volume in FY2020

We had anticipated that volume would increase after India enacted BS6 standard (in April 2020), leading to an extra catalyst per vehicle (2 instead of 1). However, due to COVID-19, there will be no significant change from the same period last year.

Expected sales of catalysts for automobiles

(2018 scaled at 100)



● Sales volume in FY2020

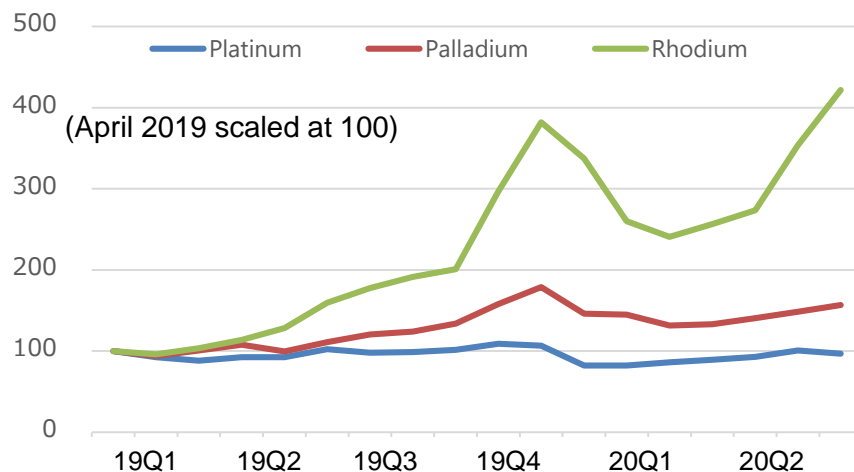
COVID-19 has reduced demand, but with new orders in Japan and India, we expect to maintain the yearly growth trend we have enjoyed since 2015.

Catalyzed GPFs for automobiles*



Catalyzed GPF production site in China GPF Mitsui Kinzoku Catalyst Zhuhai Co., Ltd. (Zhuhai, Guangdong)

Precious metal price trends



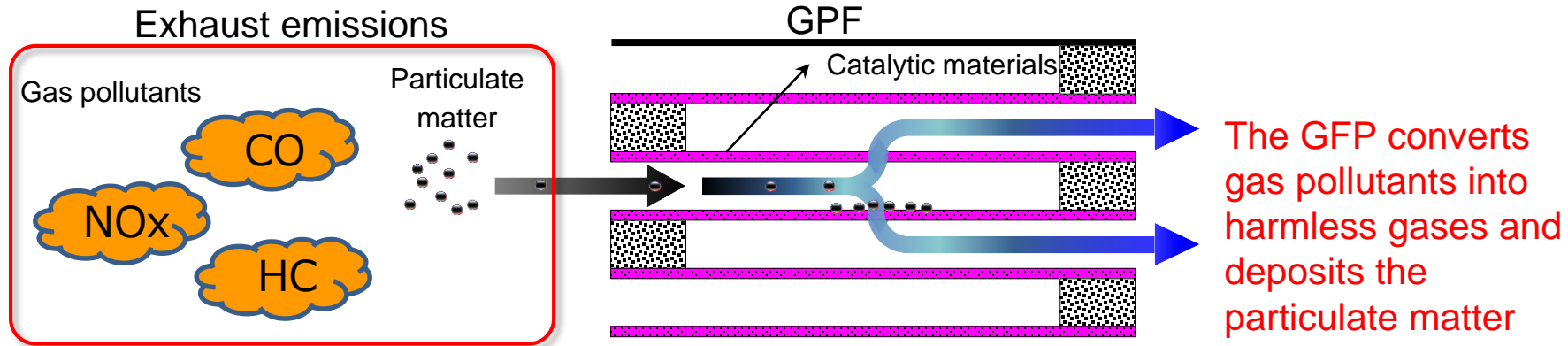
- We will boost production capacity for catalyzed GPFs in Chinese and Japanese plants as a step for penetrating new markets.
- By end of May 2020, we had finished process of boosting Japanese plant's capacity for producing catalyzed GPFs for automobiles. In the Chinese plant, the same process should be completed by the end of December.

* Catalyzed GPF = a catalyzer that converts toxic gases into harmless gases and catches particulates (e.g. PM 2.5)

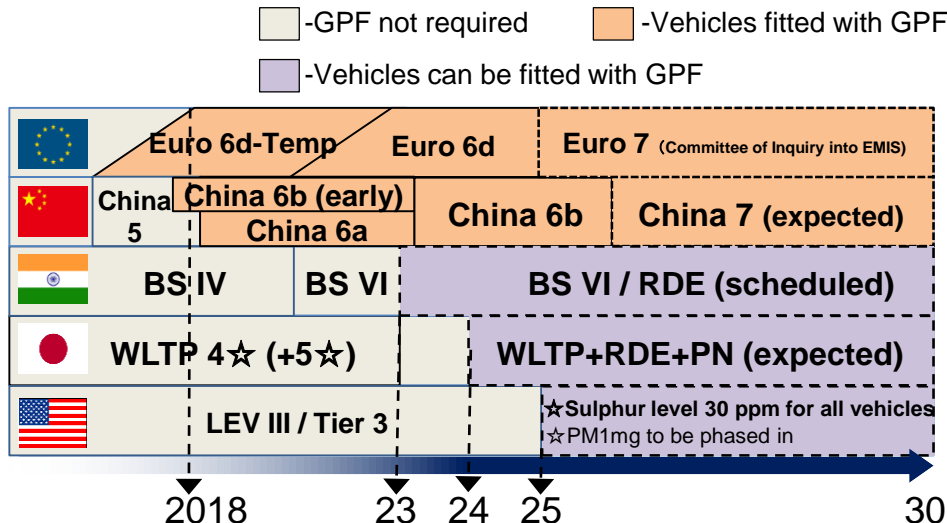
[See next slide for details](#)

- Of the prices for precious metals, palladium and rhodium prices have been unstable since FY2019 H2, resulting in marginal gains and losses. In the short term, this situation will disrupt revenue.
- Rhodium prices have been high recently, but we are watching them closely, as we are concerned that they may fall in the future.

How the GPF works



Stronger regulation and use of GPF



- The GPF market is set to expand amid tighter exhaust standards in the EU, China, India, Japan, and US.

- As the GPF market expands, more vehicles will replace conventional catalysts. This is an opportunity to promote our GPF for automobiles, which sets us apart from competition.

WLTP: World harmonized light-duty vehicles test procedure

RDE: Real driving emissions

PN: Particulate number

LEV: Low emission vehicles

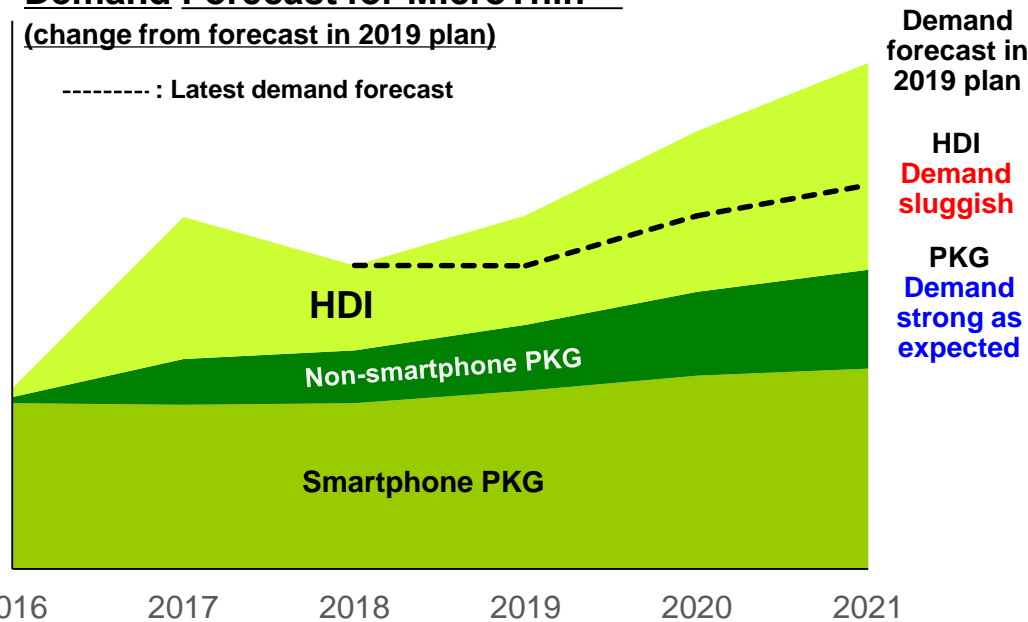
MicroThin™ for PKG* applications: 5G-related demand rising as expected

MicroThin™ for HDI** applications: Demand has dulled due to sluggish take-up of new applications;

* PKG = Package substrate **HDI = High density interconnect

Demand Forecast for MicroThin™

(change from forecast in 2019 plan)



HDI Applications

- From FY2021, there will be...
 - More 5G smartphones
 - Greater uptake among Chinese firms

PKG Applications

- Demand for non-smartphone applications (external memory) strong as expected. Demand should continue to grow with transition to 5G.
- Accelerate PKG production transfer to Malaysia plant.
 - Malaysian plant covers excess production capacity of Japanese factory
 - Flexible supply system from Japan and Malaysia

MicroThin™ Sales for PKG application (2016 scaled at 100)

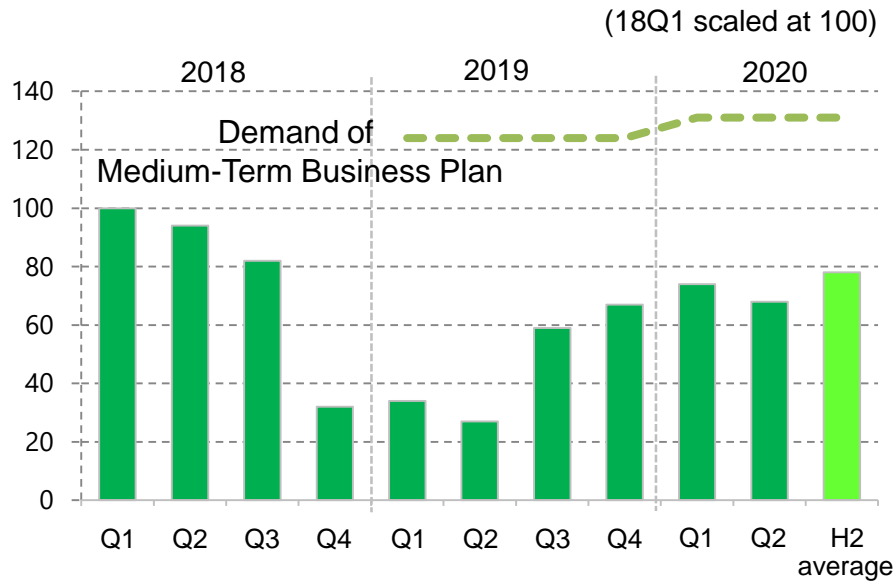
Year	2016	2017	2018	2019	2020 forecast	2021 Plan
Sales Volume	100	112	108	130	149	160

MicroThin™ for PKG = Smartphone PKG + Non-smartphone PKG

■ Engineered materials segment

– Copper powders and ITO sputtering targets for electronics Material Intelligence

Sales of copper powders for electronics



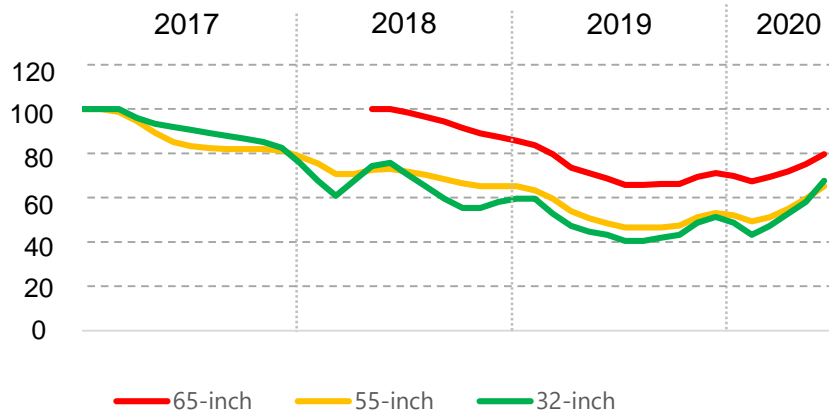
● Segment has maintained recovery trend that began in FY2019 Q3. Demand is lower than expected, but should increase in the long run.

● Of the production-capacity increases (see press release dated August 2, 2018), some of those for the new Hikoshima plant were delayed, and there are no plans yet to resume the extra investment in the plant. However, the investment may be resumed in the future as demand increases.

Production sites: Hikoshima (Shimonoseki, Yamaguchi)

PVD materials (ITO sputtering targets)

LCD panel prices (April 2017 scaled at 100)
(for 65-inch, August 2018 is scaled at 100)



● Panel prices had declined since FY2017 until the end of FY2019, when they started rising following unstable supply. The upturn suggests that the market is improving to some extent.

● A business improvement plan is underway. This involves across-board cost reductions and efforts to raise prices.

Action plan for 2019–2021

	Action plan for 2019–2021	Progress	Future policies
Smelting	<ul style="list-style-type: none"> Start operation at Kamioka hydropower station 	<ul style="list-style-type: none"> Power station started supplying power in April 2019 Power output as planned 	<ul style="list-style-type: none"> Ensure stable operation
	<ul style="list-style-type: none"> Increase processing of recycled materials (including lead) 	<ul style="list-style-type: none"> Increased processing as planned 	<ul style="list-style-type: none"> Further increase processing
	<ul style="list-style-type: none"> Sell more corrosion-resistant zinc alloys 	<ul style="list-style-type: none"> Supporting new sales and joint development to some customers Sales volume has decreased due to COVID-19 	<ul style="list-style-type: none"> Product development in accordance with the market needs Sales to recover demands after COVID-19
	<ul style="list-style-type: none"> Make copper mining business more competitive 	<ul style="list-style-type: none"> Copper smelting spun-off as subsidiary by reviewing PPC[※] copper joint venture business structure 	<ul style="list-style-type: none"> Rebuild smelting network to recover more valuable metal

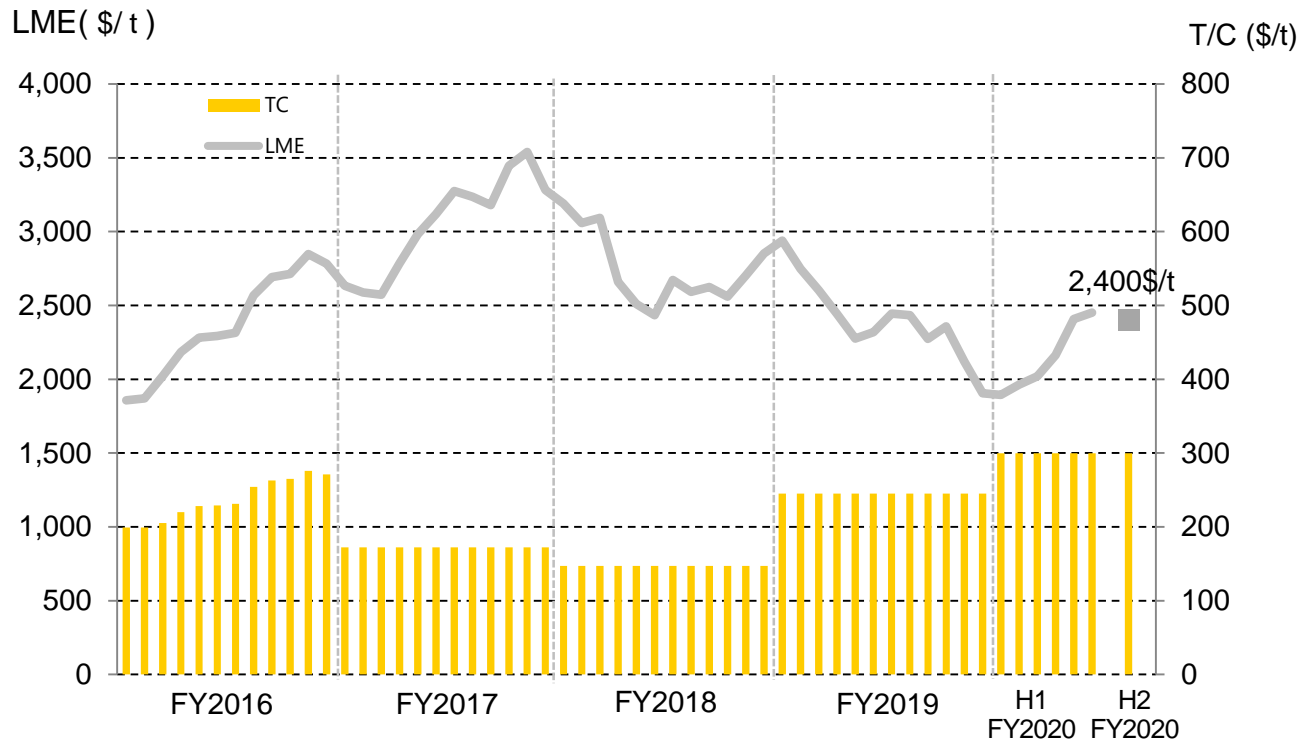
※ PPC = Pan Pacific Copper Co., Ltd.

Zinc prices fell below 2,000\$/t at the end of FY2019 due to COVID-19.

In FY2020, it rose to 2,450\$/t at the end of Q2 2020 due to the recovery of the Chinese economy and the inflow of funds.

Zinc oversupply is expected in the 2nd half, but zinc price is expected to be 2,400\$/t in consideration of inflow of funds

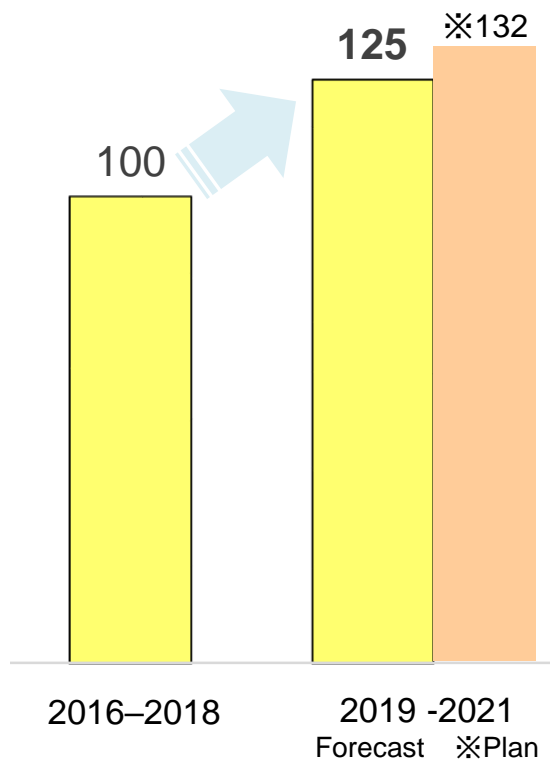
Trends in zinc price (LME) and treatment charge (TC)



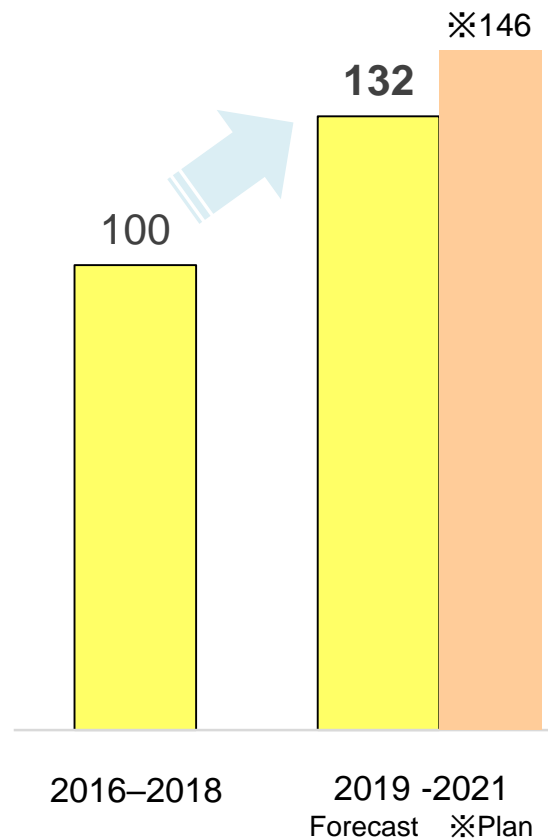
TC	\$203 /t	\$172/t	\$147/t	\$245/t	\$299.75/t
Benchmark	(\$2,000/t)	(-)	(-)	(-)	(-)

By-product production has reached a level close to the plan and has increased compared to the 16 medium-term management plan period (2016-2018).

● Recycled lead processing

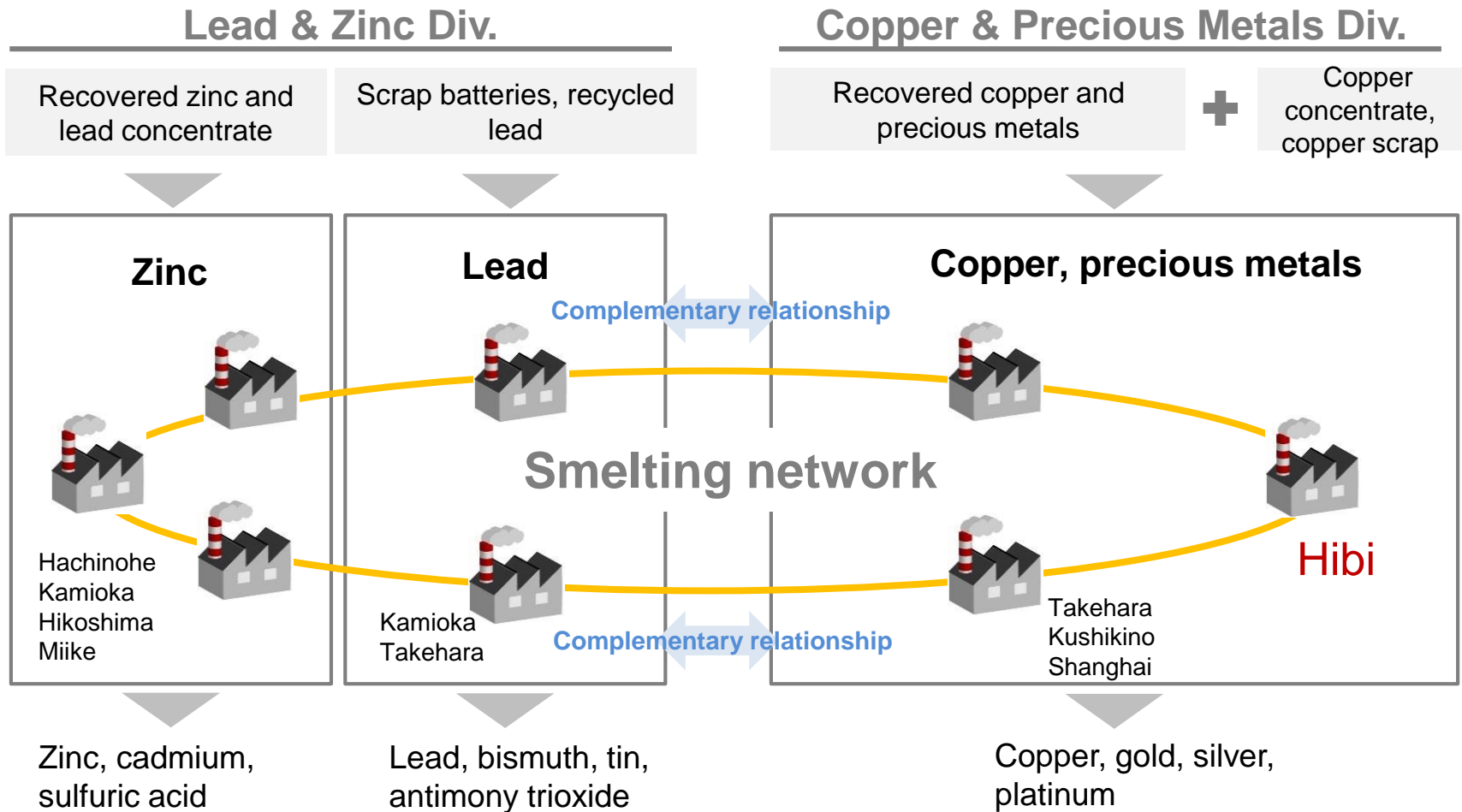


● Lead by-products production



Metals segment - Restructuring of copper operations

The two divisions will reinforce and supplement each other to enable better overall efficiency and synergy.



Action plan for 2019–2021

Actions	Progress
<p>Win large strategic orders (expand sales) → Secure business for 2022 and beyond</p> <ul style="list-style-type: none"> Continuing to promote system products for CASE mobility (with focused investment of business resources) * See next page Expand business and R&D organization in North America and Europe Complete Moroccan plant, begin operations (January 2020) 	<ul style="list-style-type: none"> We have marketed and won orders for sliding door products for vehicles used in sharing services. We have strengthened marketing to America’s Big 3 and to OEMs in Europe. Shipments began in August. Full production should begin in February 2021.
<p>Improve cost competitiveness → Achieve 2019–2021 plan’s goals; prepare foundation for 2022 and beyond</p> <ul style="list-style-type: none"> Lower costs to reflect smaller global market / demand Cut fixed costs by adopting smart, ICT-driven production systems in overseas plants and investing more judiciously 	<ul style="list-style-type: none"> COVID-19 has caused a big drop in sales. It has become even more crucial to control costs globally. We have scaled back investment by 30% of 19 Medium Term Management Plan. We are expanding smartification horizontally (smart systems successfully implemented in Japanese plants will be adopted in overseas plants).

In response to the COVID-19 impact on sales, we are doing more to lower costs, while investing more in efforts to market products for automotive systems.

Sliding door system (example)

Remote control unit



Moroccan plant (Mitsui Kinzoku ACT Tanger Maroc SARL)

Power sliding door unit

Sliding door latch



ECU

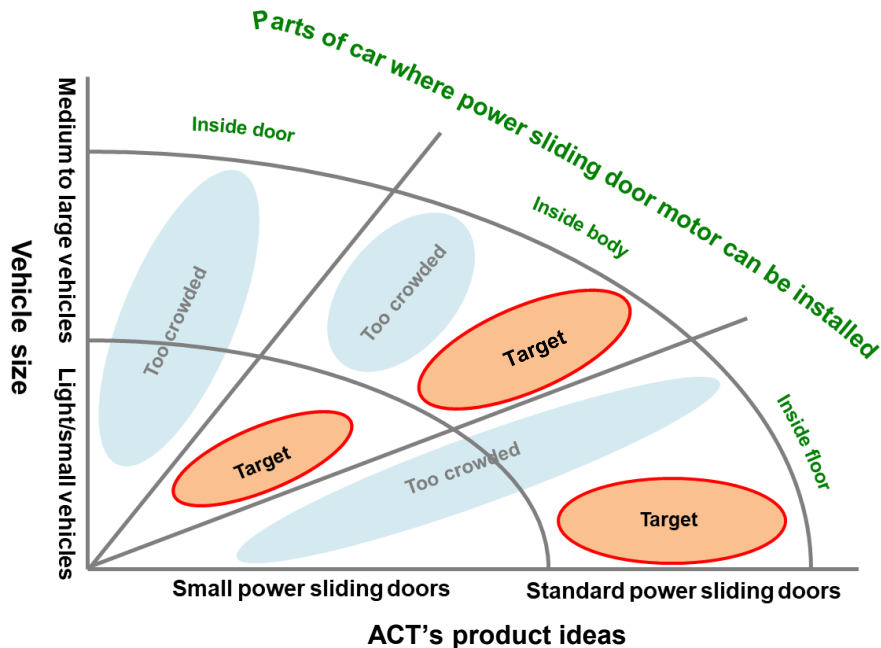
Product ideas and marketing for CASE* mobility; future vision

* CASE stands for Connected, Autonomous, Shared, Electric. It describes a new market trend for next-gen auto technology and services.

- The emerging CASE trend should fuel demand for door systems
- Leveraging our latch tech accumulated over long years, we will offer new door products and focus on CASE-compatible mobility applications. Eventually, we will extend the focus to automatic doors.

Power sliding doors: Target areas

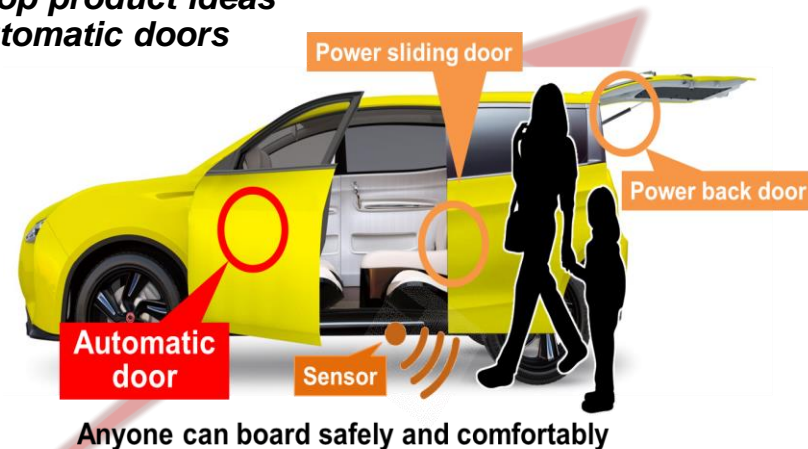
The power sliding door motor can be installed in various parts of the car. We will target installation locations for which the market is not so crowded.



Evolution of ACT System products

Add value to vehicles by integrating our latch tech with motor parts, high-speed communications, sensor tech, and other new technologies.

Develop product ideas for automatic doors



Compact, light
Energy-efficient
High-speed
communication
Sensor tech

Easy Access Door System
Offers safety, comfort,
and a wow factor

Statements contained in these materials regarding forecasts of future events are qualified by various risks, both existing and unknown, and uncertainties, which may have a material impact on the actual business conditions and operational activities. Consequently, please be aware that actual performance may differ substantially from forecasts and business plans indicated herein because of various unforeseeable factors.

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