MITSUI KINZOKU

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

2019-2021 Medium Term Business Plan Progress

November 15, 2021

■ Performance Trends

Material Intelligence

(Unit: Billion yen)

	2016	2017	2018	2019	2020	2021 Forecast	2021 Medium Plan
Net sales	436.3	519.2	497.7	473.1	522.9	625.0	550.0
Operating income	38.5	49.5	18.2	13.0	51.1	51.0	37.0
Ordinary income	31.0	11.2	17.8	9.3	51.3	52.0	37.0
Profit (loss) attributable to owners of parent	18.7	-0.7	4.7	1.6	44.8	39.0	23.0
Free cash flow	-14.1	12.1	-4.1	1.3	11.3	30.0	* 50.0
CAPEX	37.7	40.5	36.1	34.0	28.2	33.5	*105.0
Shareholders' Equity Ratio	33.5%	32.4%	32.5%	30.7%	33.4%	38.8%	40.0%
D/E ratio (net)	1.10	1.11	1.15	1.22	1.09	0.84	0.70

* 2019-2021 3 years total

■ Sales and Ordinary Income Forecasts by Segments

● Sales and Ordinary Income Forecasts by Segments

(Unit: Billion yen)

	2021 forecast		2021 Plan		Difference	
	Sales	Ordinary Income	Sales	Ordinary Income	Sales	Ordinary Income
Engineered materials	248.0	24.0	212.0	26.0	36.0	-2.0
Metals	231.0	27.0	163.0	3.0	68.0	24.0
Automotive parts and components	79.0	0.9	104.0	5.0	-25.0	-4.1
Affiliates coordination	136.0	2.7	134.0	6.0	2.0	-3.3
Adjustment	-69.0	-2.6	-63.0	-3.0	-6.0	0.4
Total	625.0	52.0	550.0	37.0	75.0	15.0

Excluding Inventory factors and precious metal price factors	2021 forecast		2021 Plan		Difference	
	Sales	Ordinary Income	Sales	Ordinary Income	Sales	Ordinary Income
Engineered materials	248.0	25.5	212.0	26.0	36.0	-0.5
Metals	231.0	20.2	163.0	3.7	68.0	16.5
Automotive parts and components	79.0	0.9	104.0	5.0	-25.0	-4.1
Affiliates coordination	136.0	1.7	134.0	6.0	2.0	-4.3
Adjustment	-69.0	-2.6	-63.0	-3.0	-6.0	0.4
Total	625.0	45.7	550.0	37.7	75.0	8.0

Assumption	2021 Forecast	2021 Medium Plan
Zinc Price（$/t）	3,127	2,400
Copper Price（¢/lb）	426	295
Forex （yen/$）	111	110

Business Indicator

	2021 forecast	2021 target
Ordinary income (Billion yen)	52.0	37.0
Shareholders' equity ratio	38.8%	40%
ROE	18.1%	10%

Business Figure

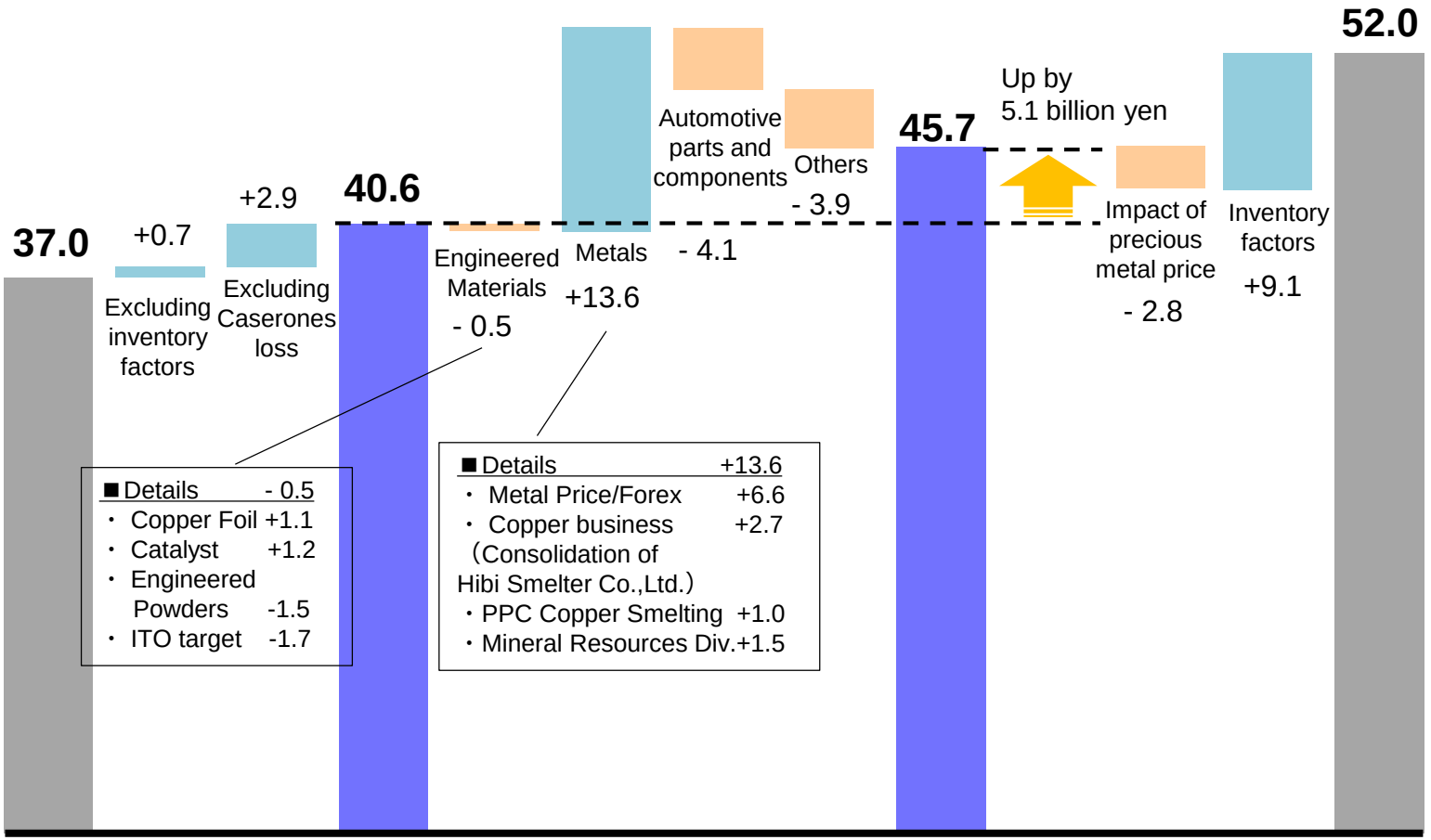
(Unit: Billion yen)

	2019-2021 Forecast	2019-2021 Medium Plan
Free Cash Flow	42.6	50.0
CAPEX	95.7	105.0

■ Business Indicator Progress (2) – Ordinary income

Material Intelligence

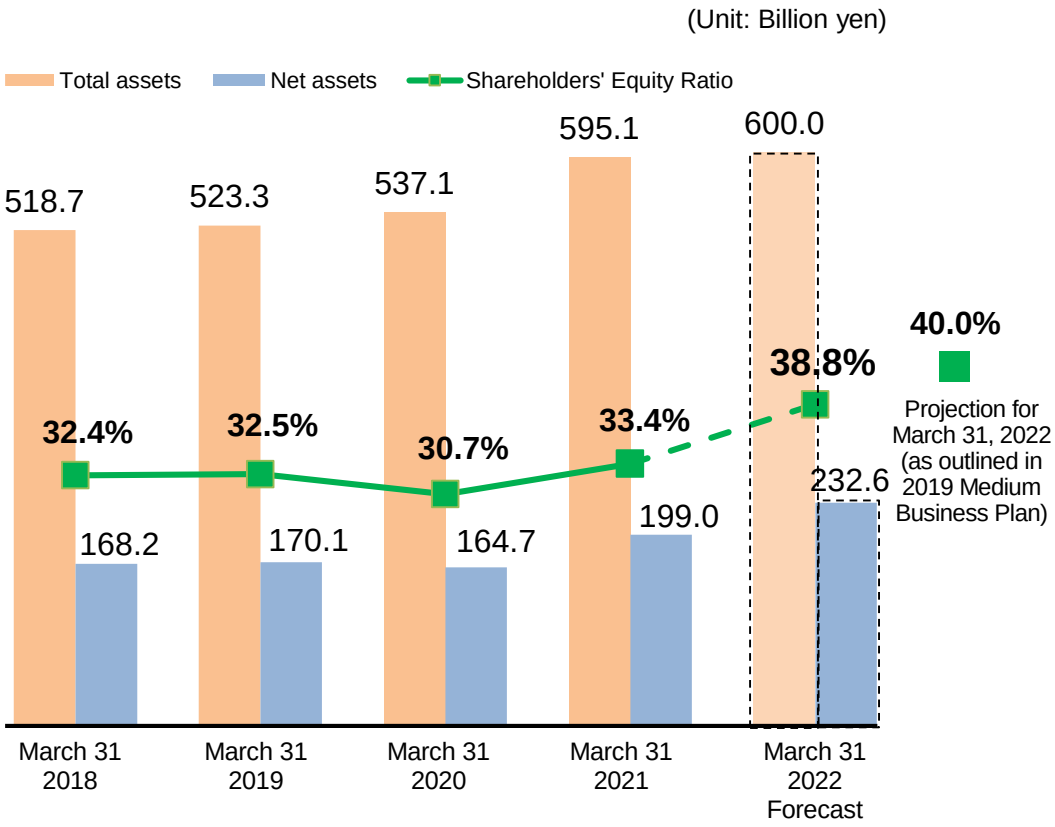
We forecast that ordinary income in FY2021 will exceed the 2021 Plan's target. Even when excluding inventory factors, impact of precious metal prices, and Caserones loss, ordinary income will increase 5.1 billion.



■ Business Indicator Progress (3) - Shareholders' Equity Ratio

We forecast we will not achieve the 2019 Medium Business Plan's target due to lingering inventory and accounts receivable from higher metal and precious metal prices and the consolidation of a copper smeltery accompanying the copper business reorganization. However, our financial health has improved.

●Trends in Shareholders' Equity Ratio

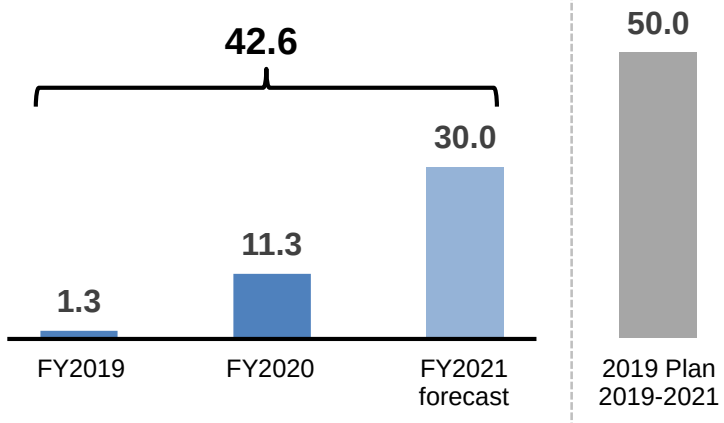


Tighter inventory control will lead to further improve our financial position.

■ Business Figures - Free Cash Flow, CAPEX

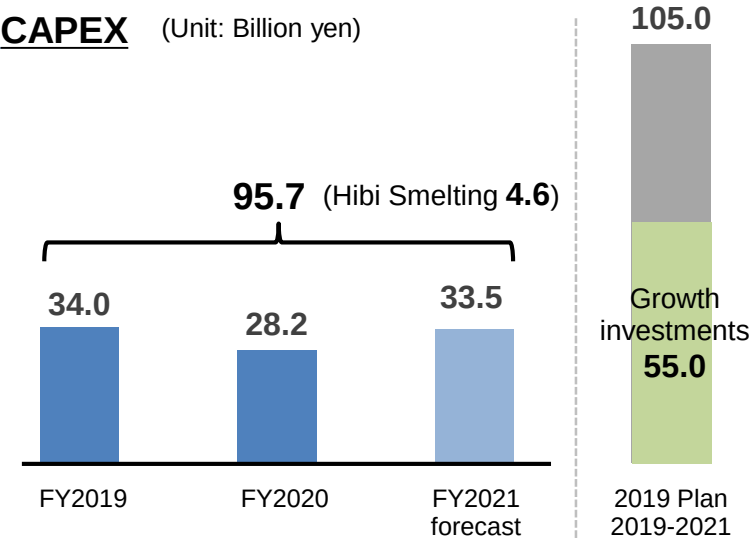
Material Intelligence

Free cash flow (Unit: Billion yen)



- Total 3-year free cash flow is forecast at 42.6 billion yen, below the 2019 Plan's target of 50 billion yen.
- We forecast that we will not meet the 2019 Plan's targets. This is because capital expenditures were less than in the 2019 Plan and we created cash by selling assets, but operating capital increased due to higher metal and precious metal prices in FY2020.

CAPEX (Unit: Billion yen)



- Total 3-year capital expenditures are forecast at 95.7 billion yen, less than the 2019 Plan's target of 105 billion yen. Expenditures decreased in 2020 due to the pandemic.
- We will make most of the 55 billion yen in growth investments in the 2019 Plan.

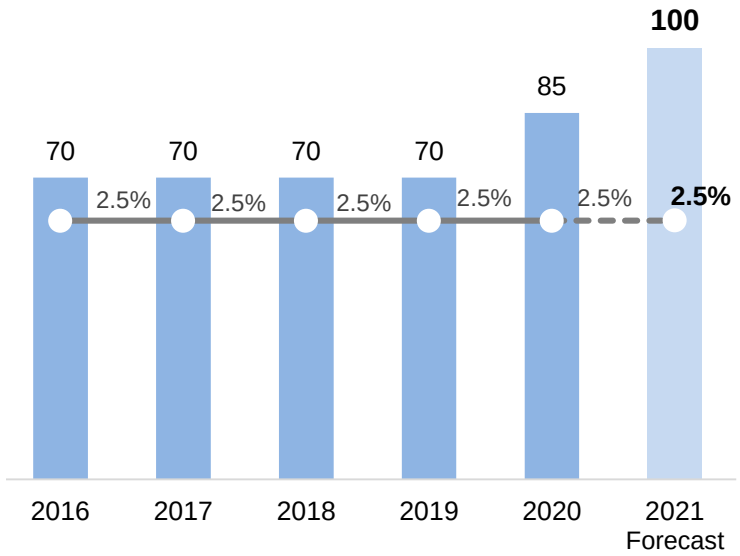
■ Shareholder Returns

We have set a dividend of ¥100 per share in view of the full-year performance forecasts and in line with our dividend policy

● **Dividend policy** Effective from year ended March 2019

- Aim for stable, constant dividends, with a benchmark of consolidated dividend payout ratio of 20%, and a benchmark of 2.5% for dividend on equity (DOE)

● **Annual comparisons in dividend per share**



- Over recent years, we have maintained stable, constant dividends, keeping DOE at 2.5%
- We will review dividends as our organizational health and financial health improve

■ Sustainability Efforts

● ESG initiatives

E: Environment

- Climate action taken (see p.9)

S: Society

- Diversity, Equity, and Inclusion Office established (see 9/27 release)
- Women appointed/promoted to senior leadership positions (woman elected as outside director, old hand promoted to executive position)

G: Governance

- Senior Managing Director appointed as board chair, progress made in separating management oversight from business execution

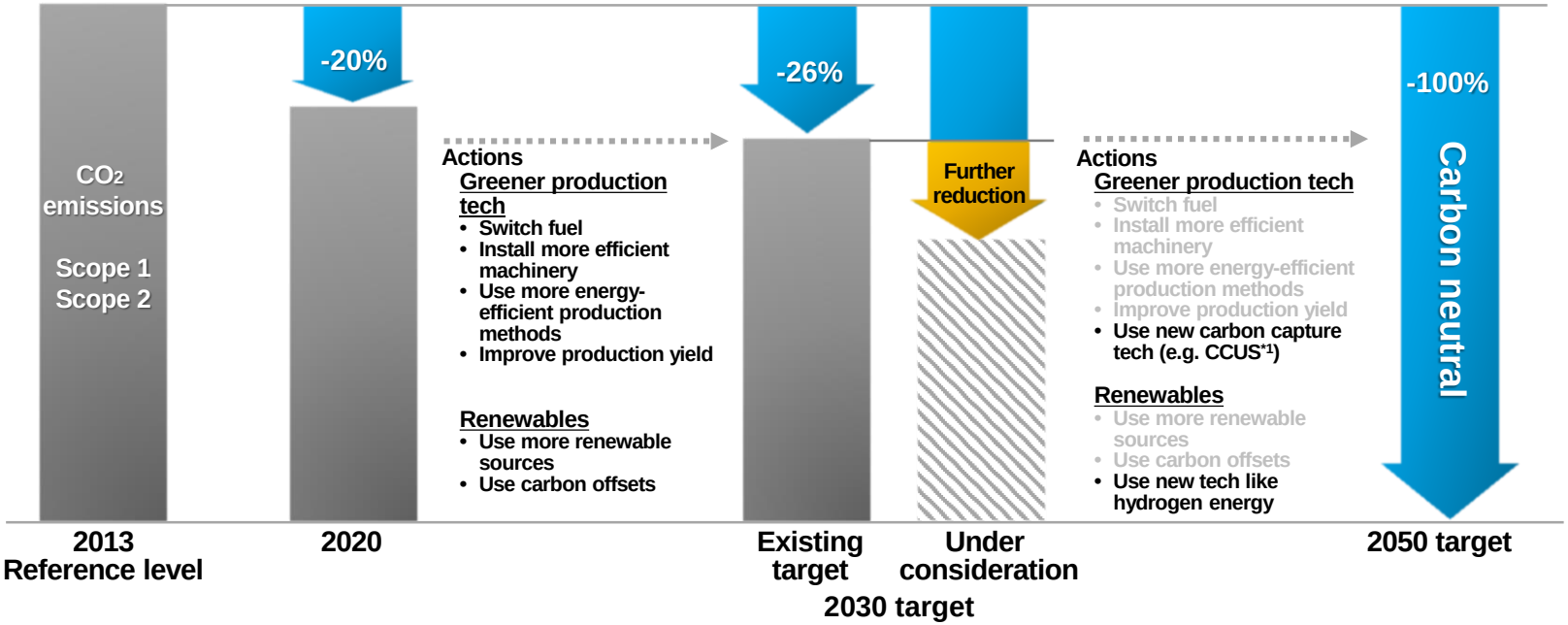
● Measures to improve corporate value

- Corporate resources reallocated across group, greater efforts taken to achieve synergy
- Better capital efficiency, management under a unified concept, ambidextrous management
- Sustainability Promotion Dept. established (see 2/24 release)
- Talent management system established to promote job satisfaction for all employees
- Progress made in digital transformation

■ Climate Action

■ Co_2 Emissions reduction targets

- 2050 target: Become carbon neutral
- April 2021: Sustainability Promotion Dept. established climate action team
- Mulling more ambitious reduction target for 2030 (current target is 26% reduction from 2013 level)



■ System, organizational infrastructure for above

- System for assessing product's environmental profile (LCA*2): Organizational infrastructure under consideration
- System for environmental investment (ICP*3, capital allocation policy): Systems under consideration
- Comply with TCFD recommendations: See pp.10–11

*1 CCUS = Carbon Capture, Usage, and Storage

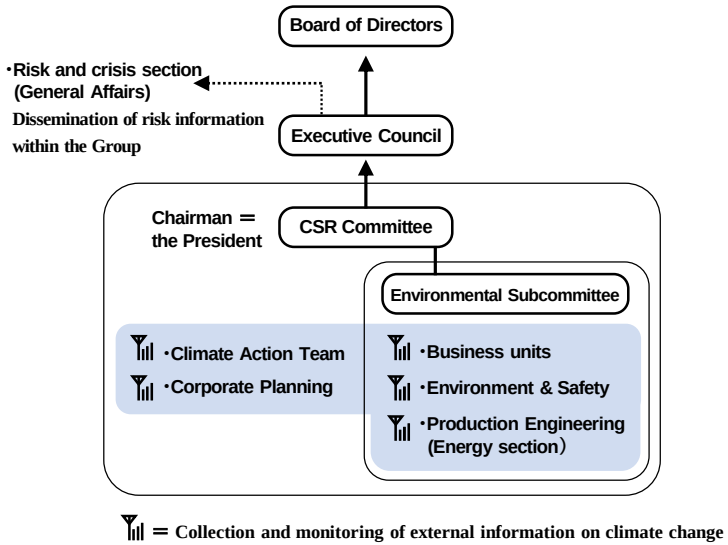
*2 LCA = Life cycle assessment: A methodology for assessing the environmental impacts of a product throughout all stages of its life cycle (production, distribution, consumption, disposal)

*3 ICP = Internal carbon pricing: A mechanism by which a company put value on their carbon emissions and assign monetary cost to each unit of carbon used. This incentivizes efforts throughout the company to reduce emissions.

■ Complying with TCFD Recommendations (1)

Material Intelligence

Core element 1: Governance



- The CSR committee chaired by the president considers the policy and priorities for climate action. These are then reviewed and approved by the executive council.
- The approved policy and priorities are reported to the Board of Directors, which will monitor and supervise their progress.

Core element 2: Strategy (scenario analysis)

- See next page

Core element 3: Risk management

- Climate action team works with business units to identify climate-related risks and opportunities in line with the TCFD framework.
- The risk management cycle operates under the above governance structure.

Core element 4: Metrics and targets

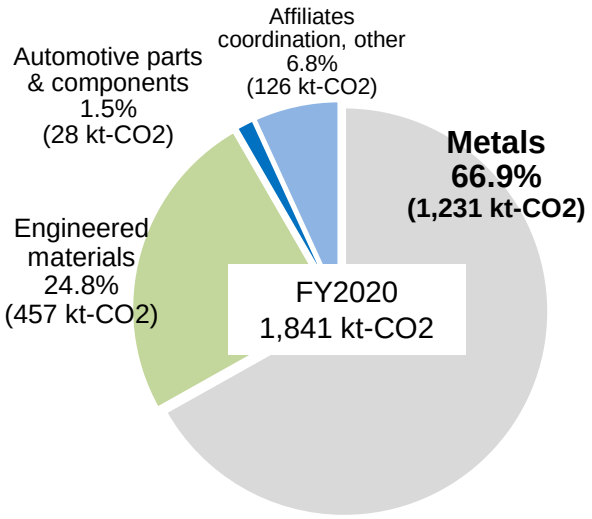
- A major climate-related risk is greenhouse gas emissions from energy-intensive businesses (e.g. nonferrous metal smelting, electro-deposited copper foil). We are reconsidering the 2030 target in light of carbon neutral declarations in Japan and other countries.

■ Complying with TCFD Recommendations (2)

Material Intelligence

Core element 2: Strategy (scenario analysis)

CO2 emissions by business

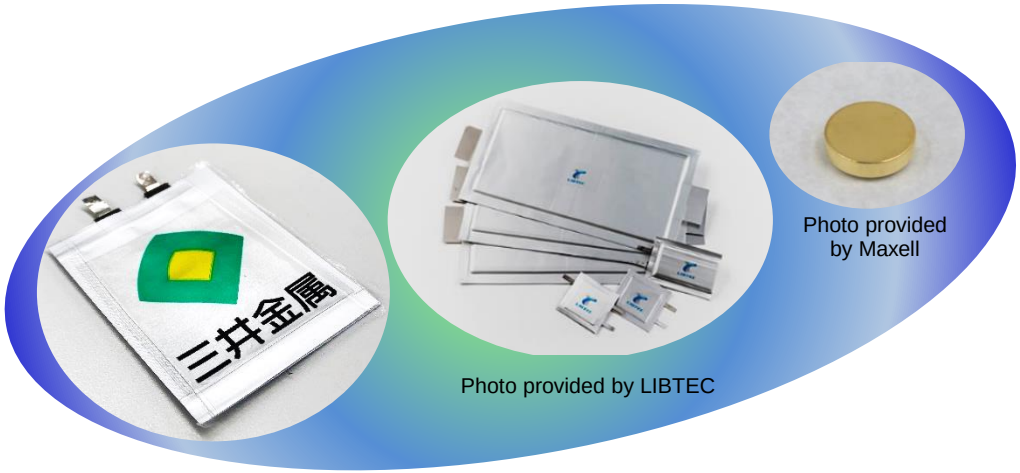


- In 2020, we subscribed to the Ministry of Environment's program of subsidies for businesses that perform scenario analysis for climate-related risks and opportunities under the TCFD framework. Accordingly, we performed a scenario analysis for the metal segment (which makes up 67% of our CO2 emissions).*
- We are rolling out scenario analysis to the engineered materials segment and other segments.
  ⇒ The analysis covers over 90% of emissions from the metals and engineered materials segments.
  Next fiscal year, we will disclose some of our findings for the engineered materials segment.

TCFD-based scenario analysis provides insights for making the business more sustainable. We will use it as a tool for integrated thinking-based management.

* Our scenario analysis in the metals segment was introduced as a best practice on the ministry's website. See the link below (Recommendations for TCFD-compliant strategies: Practical guide to performing scenario analysis, incorporating climate-related risks and opportunities, ver. 3.0)
https://www.env.go.jp/policy/policy/tcfd/TCFDguide_ver3_0_J_2.pdf

Solid electrolyte for All-Solid State Batteries (ASSBs)



Characteristics

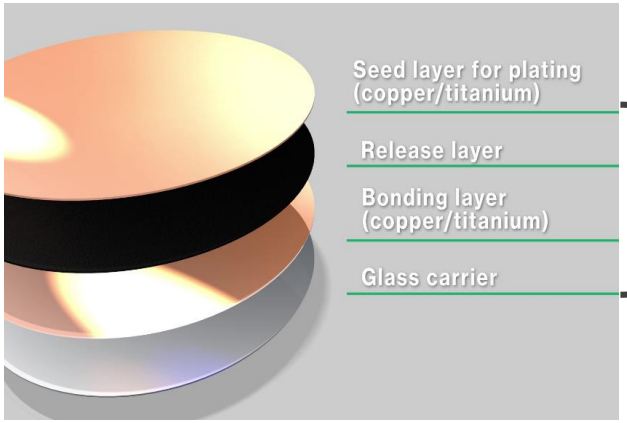
- Powdered solid electrolyte sulfide needed for ASSBs
- The argyrodite crystal structure has high ion conductivity, demonstrating excellent battery properties.

News

- Now shipping small ASSB samples (mAH-class coin-shaped, substrate-mounted) to Maxell
- Started shipping ASSB samples with world-class 1,000 mAH to Hitachi Zosen
- Spurred development of large automotive ASSBs, receiving more inquiries on our solid electrolytes
- Following the launch of mass production test equipment, we started supplying solid electrolytes (A-SOLiD®)*

* November 11, 2021 news release

HRDP® - Special Glass Carrier for Next-Gen Semiconductor Chip Mounting -



Product structure

Panel type

Wafer type

Characteristics

- Special glass carrier for efficient production of fan-out packaging[*1]
- Fan-out, chip-last process[*2] addresses technical process issues to help optimize the customer's process capabilities

News

- In first mass production phase, last January, we started production for Japanese manufacturers of composite chip modules. Production is on track.
- In second phase, from November, we ship to major overseas manufacturers of mounts.
- Getting more assessments/making preparations with over 30 suppliers developing next-generation semiconductor packaging
- Plan to start mass production for diverse applications: 5G market devices, HPC,[*3] mobile, etc.

*1. Substrateless packaging technology with fine rewiring expanded to the chip's outside
*2. The rewired layer is formed first and the chip is mounted later
*3. High-Performance Computing: uses computers with extremely fast computing capabilities on a large scale

Progress in 2019 medium-term business plan (as of November 2021)

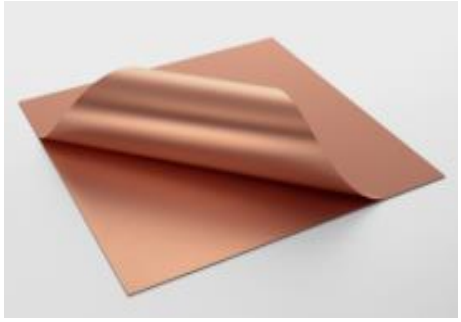
Red: Had deteriorated as of May release
Blue: Had improved as of May release

Business unit	Action plan for 2019–2021	Progress
Functional powders	• Expand sales of 5G-related products • Expand abrasives business	Poor • Copper powders for electronics have sold less well than planned OK • Abrasive material sales under target due to issue on client side
Catalysts	• Maintain share in motorcycle market • Expand sales in automobile market and strengthen technology development	OK • Maintaining share for motorcycles, but sales volume below target Good • Progress for cars largely as planned Good • Smooth start toward beginning mass production of GPF catalysts in FY2022
Copper foil	• Expand sales of 5G-related products • Expand MicroThin™ sales to HDI makers and non-smartphone PKG makers	Poor • Sales of high-end copper foil for 5G under target Poor • Sales volume of MicroThin™ for HDI applications below target Good • MicroThin™ for non-smartphone packaging above target
PVD materials	• Make ITOs and IGZOs more competitive and increase their share	Poor • Shifted focus from expanding ITO market share to earning profits Good • Expanded IGZO market share

■ copper powders for electronics (right)

■ catalysts for automobiles

■ MicroThin™



■ ITO sputtering targets (PVD materials)

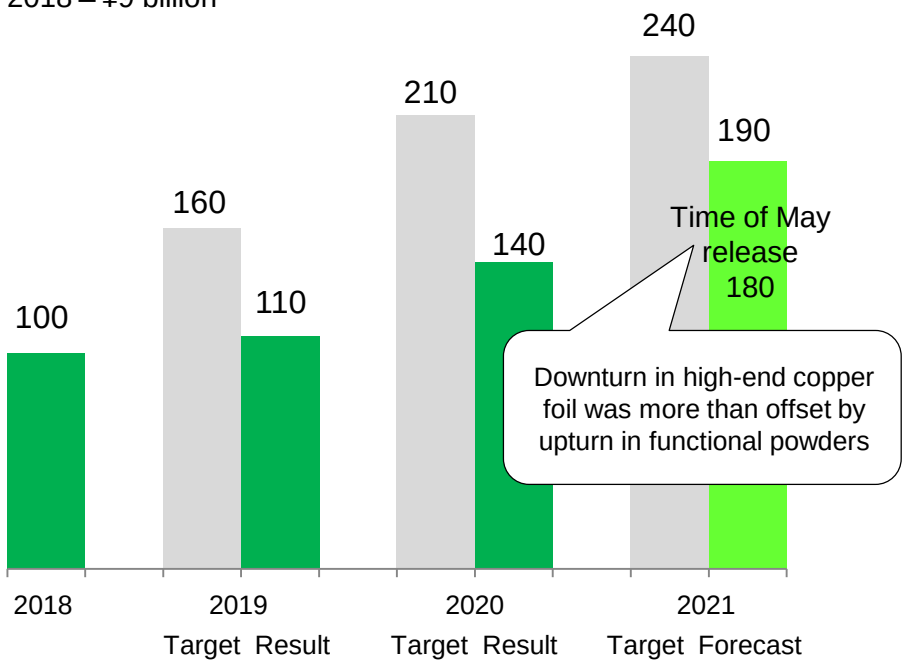
■ Engineered Materials Segment: Performance of 5G products

Material Intelligence

Although increased demand is forecast for MLCC copper powder and copper foil from 5G electronic components handling higher frequencies and with better performance, we do not expect to fulfill the FY2021 sales target.

5G product sales

(2018 scaled at 100)
2018 = ¥9 billion



FY2021 5G product trends

- Engineered Powders Div.
  - Copper Powder for MLCC
  - Tantalum oxide for surface acoustic wave filters

  → Both will be far short of targets
- Copper Foil Div.
  - High-end electro-deposited copper foil for 5G

  → Under target due to slower demand related to 5G base installations in China
  - MicroThin™ for PKG makers

  → Will hold at target level
- Ceramics Div.

  MLCC firing trays are largely on target

Growth in sales of MicroThin™ for PKG makers is insufficient to offset under-target sales of copper powder, tantalum oxide, and high-end electro-deposited copper foil for 5G

■ Engineered Materials Segment - Catalysts

For FY2021, we forecast year-on-year sales growth despite impact of Covid-19 and concern over the global chip crunch. Over the medium to long term, our development capabilities will help us further strengthen our businesses.

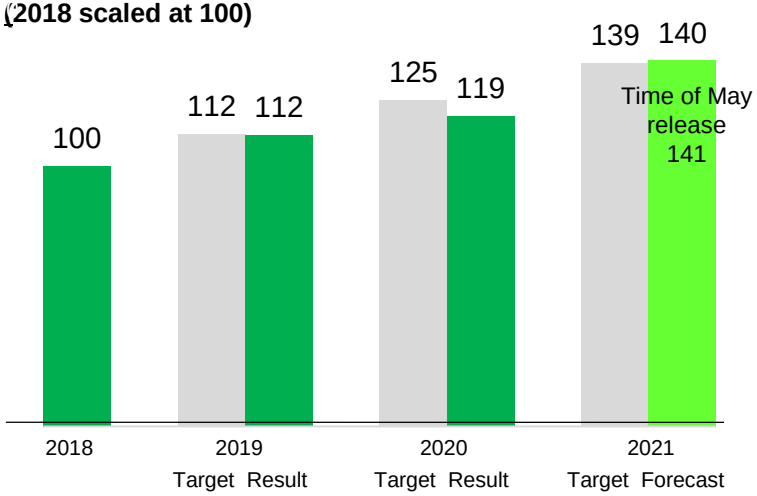
Expected sales of catalysts for motorcycles

(2018 scaled at 100)

- Sales volume in 2021
  - As in the previous year, sales volume expected to be less than target due to Covid-19 impact.
- Upcoming Strategy
  - Sustain share by adapting to reduction of precious metals and forthcoming regulations in different countries.

Expected sales of catalysts for automobiles

(2018 scaled at 100)



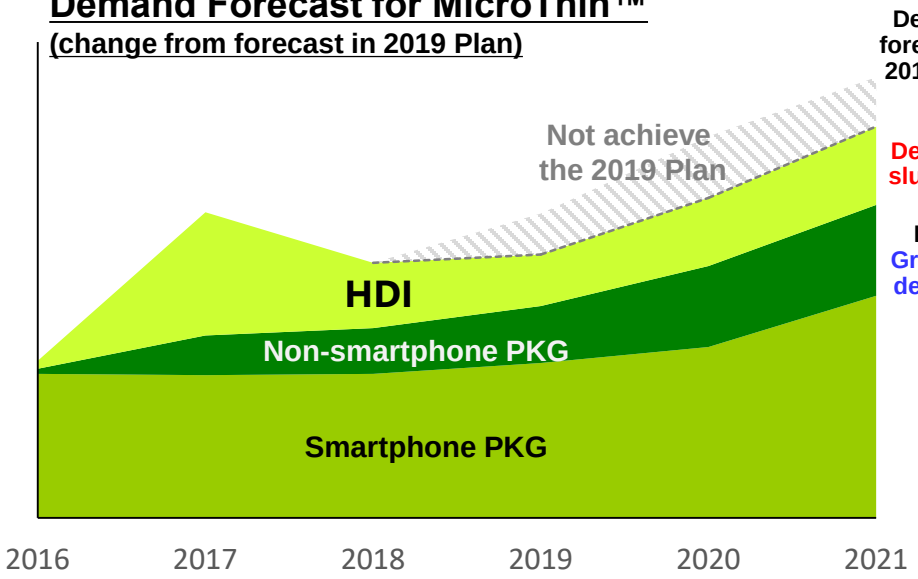
- Sales volume in 2021
  - On course to hit target, but chip crunch has created uncertainty.
- Upcoming Strategy
  - With more electrification forthcoming, recover investments, including those in GPF catalysts.
  - Find new growth opportunities by developing technology to adapt to reduction of precious metals and forthcoming regulations in different countries.

■ Engineered Materials Segment - Copper Foil (1)

Growth in demand for MicroThin™ in HDI** boards has slowed due to slower take-up.
5G-related demand for MicroThin™ for PKG* is forecast to exceed expectations.

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

Demand Forecast for MicroThin™
(change from forecast in 2019 Plan)



MicroThin™ in HDI boards

- From 2021
  - More 5G smartphones
  - New adoption by Korean and Chinese firms stalled

⇒ One of Chinese firms is considering the product

MicroThin™ for PKG

- Demand for smartphone and non-smartphone uses (external memory, etc.) will steadily rise.

⇒ We forecast higher demand accompanying the 5G rollout.

MicroThin™ production capacity

See June 23 release
(Mitsui Kinzoku increases production capacity of MicroThin™ for package substrates)

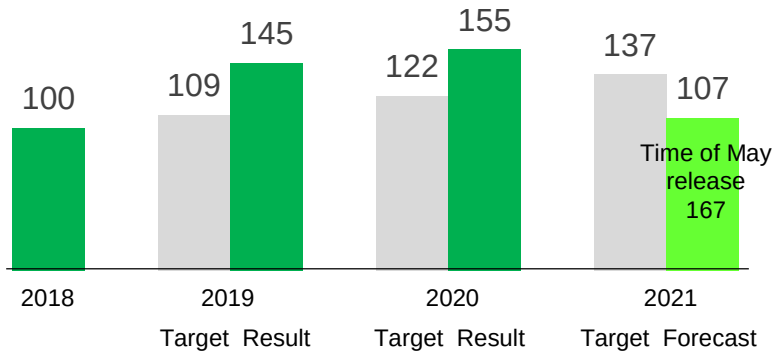
	Before	After
Japan (Ageo, Saitama)	1,500 km2	**2,000 km2**
Malaysia	2,400 km2	2,400 km2
Total	3,900 km2	4,400 km2

- Converted to smart factory and innovated, resulting in lower costs and larger production capacity
- Boosting production capacity made plant ready to accommodate increased demand for high-end products like MT-GN
- On track with transfer of PKG MicroThin™ production to Malaysia

■ Engineered Materials Segment - Copper Foil (2)

5G commercialization is expected to pick up speed in 2021.
Deployment of full-spec 5G from 2022 will increase 5G-related demand for copper foil.

High-end electro-deposited copper foil for 5G markets (2018 scaled at 100)



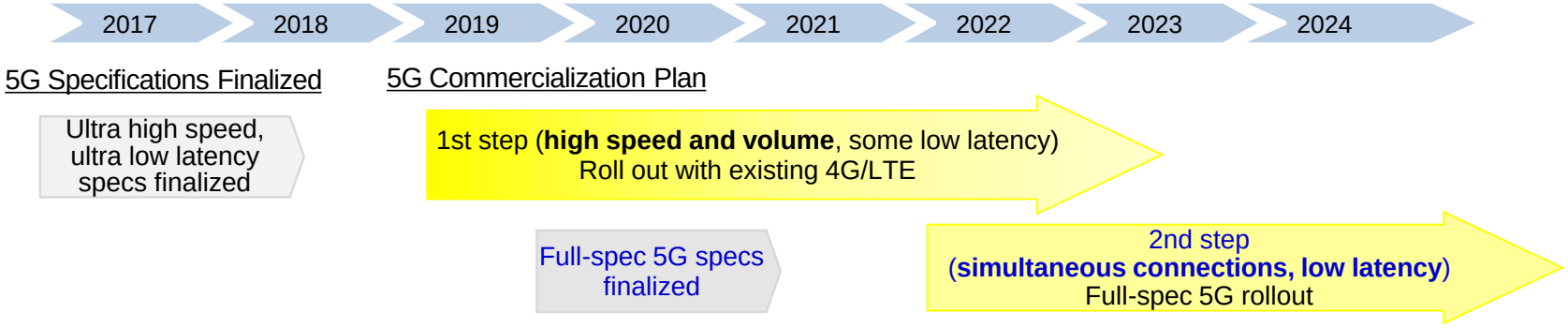
Applications: servers, routers, base stations

- For high-frequency communications:
  FY2021 sales will likely miss target due to slowdown in demand related to 5G base installations in China.

⇒Demand should pick up and continue rising over the longer term.

⇒Demand for mid-range copper foil in servers is also forecast to grow.

Ref: 5G Roadmap

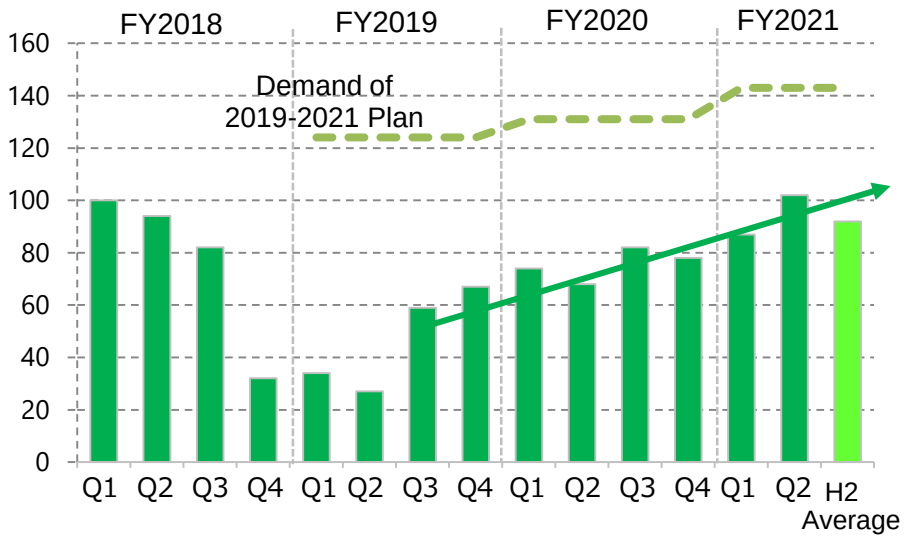


■ Engineered Materials Segment
– Copper powders and ITO sputtering targets for electronics

Material Intelligence

Sales of copper powders for electronics

(18Q1 scaled at 100)

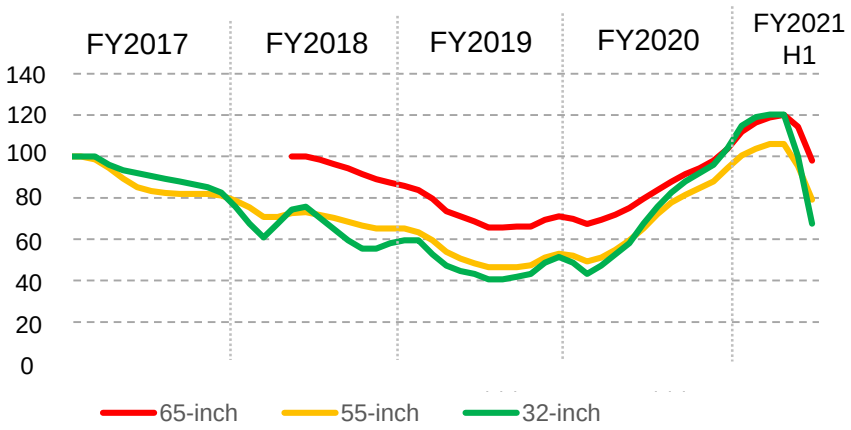


- Segment has maintained recovery trend that began in FY2019 Q3. Demand is lower than expected, but should increase in the long run.
- Among production capacity increases,* we will reconsider further investment in the delayed new Hikoshima plant in the next medium-term business plan.

*August 2, 2018 news release
- Production capacity increased at Kamioka plant (Hida City, Gifu Prefecture).
- Only the building at the new Hikoshima plant (Shimonoseki, Yamaguchi) is done.

PVD materials (ITO sputtering targets)

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



- At the end of FY2019, panel prices turned upward amid unstable supply. However, prices plunged in August 2021, raising concern that demand will slow in H2.
- We are continuing the business improvement project from the previous year

⇒ We will continue global action to cut costs and raise prices.

Progress in 2019 medium-term business plan (as of November 2021)

Red: Had deteriorated as of May release
Blue: Had improved as of May release

	Action plan for 2019–2021 (targets)	Progress	Future policies
Smelting	• Start operation at Kamioka hydropower station	Good • Power station started supplying power in April 2019 Good • Power output/profits both as planned	• Ensure stable operation • Examine new deals
	• Increase processing of recycled materials (including lead)	OK • Hit target for most raw materials Poor • Missed target for lead by-product collections	• Exploit new raw materials • Improve processing of impurities
	• Sell more corrosion-resistant zinc alloys	Poor • Sales largely recovered from COVID-19 impact Good • Concentrating on joint development	• Sales to recover demands after COVID-19 • Continue product development in accordance with the market needs
	• Make copper and precious metals business more competitive	Good • Streamlined operations following integration of copper smelting business Good • Expanded processing coverage by better integrating Copper & Precious Metals Div. with Lead & Zinc Div.	• Rebuild smelting network to recover more valuable metal

Discarded boards from recycled materials (example)

Unprocessed lead recovered by smelting recycled materials (example)

■ Metals Segment : Actions to Strengthen the Businesses

The following table shows the business-strengthening actions we have taken over the FY2016–2018 and FY2019–2021 periods.

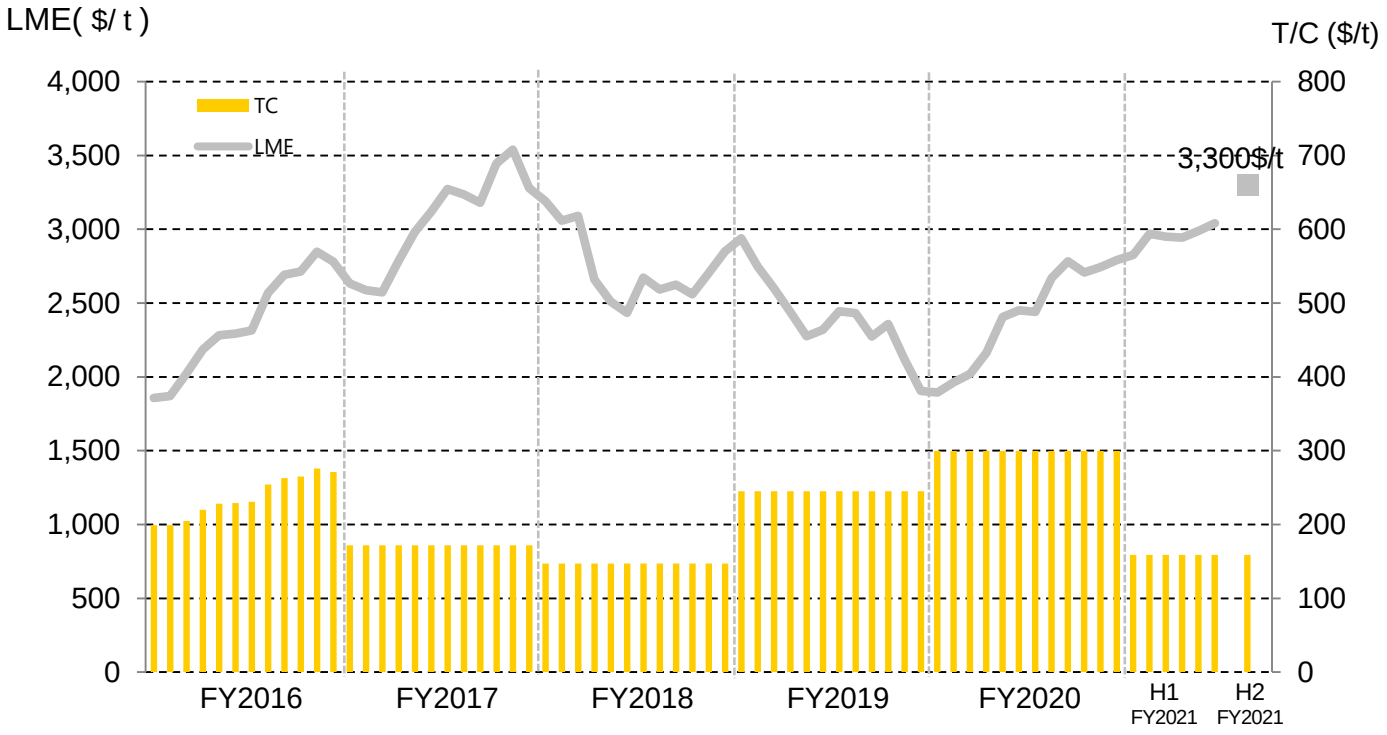
Project	Actions taken	Profit generated (annually)	2019	2020	2021
(1) Kamioka hydropower station	• From 2015 to 2018, we invested ¥20.9 bn to renovate the station • The FIT scheme was applied from April 2019	¥2–2.5 bn			
(2) Overhaul copper business to integrate copper smeltery	• In April 2020, we acquired a copper smeltery from PPC and made it a consolidated subsidiary. • We strengthened our smelting network	To be determined			
(3) Transfer our interest in the Caserones mine	• In FY2020, we ceded our interests in the copper mine to refocus our resources on non-mining operations.	¥3–5 bn			

These actions have yielded ¥5–7.5 billion more profit compared to before the FY2019–2021 period. We will continue taking actions to increase the earning capacity of the businesses.

■ Metals Segment - Zinc prices, TC

After FY2021 began, prices rose to 3,000 $/t amid the protracted pandemic and continued financial flows. In the second half, prices rose to 3,900 $/t at one point, reflecting a slowdown in zinc production following rising energy costs in Europe. For the second half, we expect the price of zinc to remain at the high level of 3,300 $/t.

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



TC	203$ /t	172$/t	147$/t	245$/t	300$/t	159$/t
Benchmark	(2,000$/t)	(-)	(-)	(-)	(-)	(-)

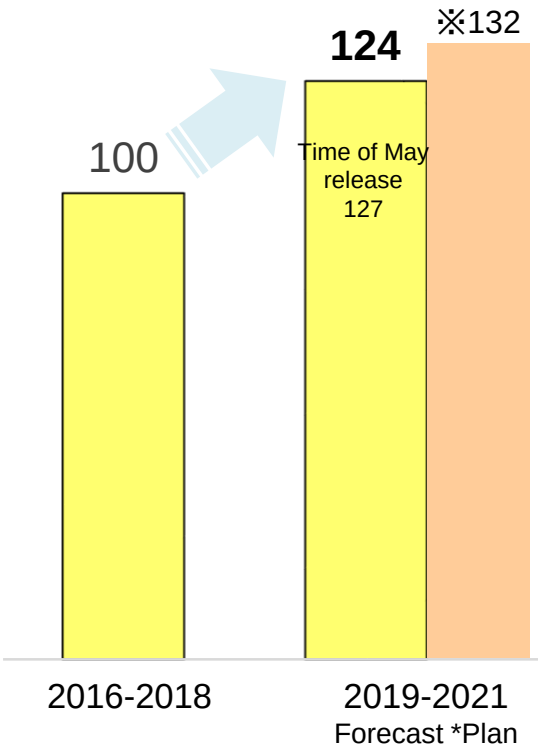
■ Metals Segment - Recycled raw materials and by-products

Material Intelligence

Thanks to progress in processing complex materials, we are now processing more recycled materials, and making more by-products, than we were during the FY2016–2018 period, although we missed our target for impurities.

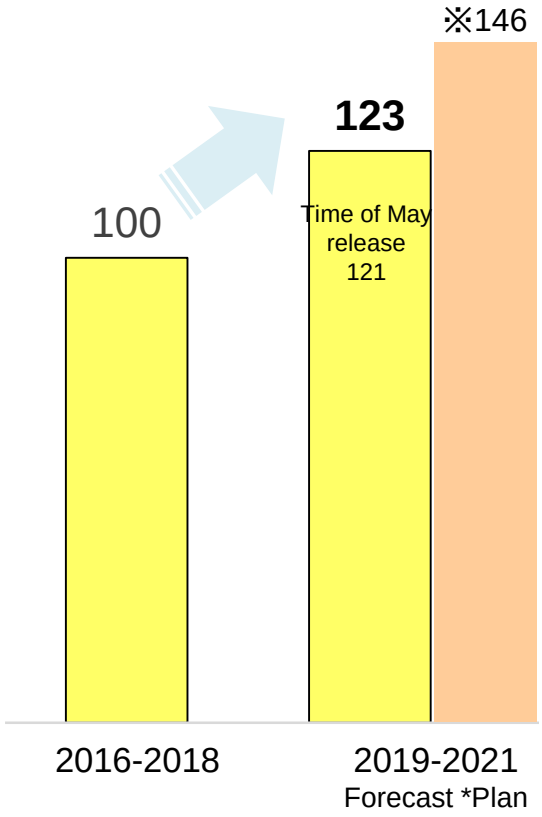
● Recycled lead processing

・We are raising the operating rate in order to hit the target



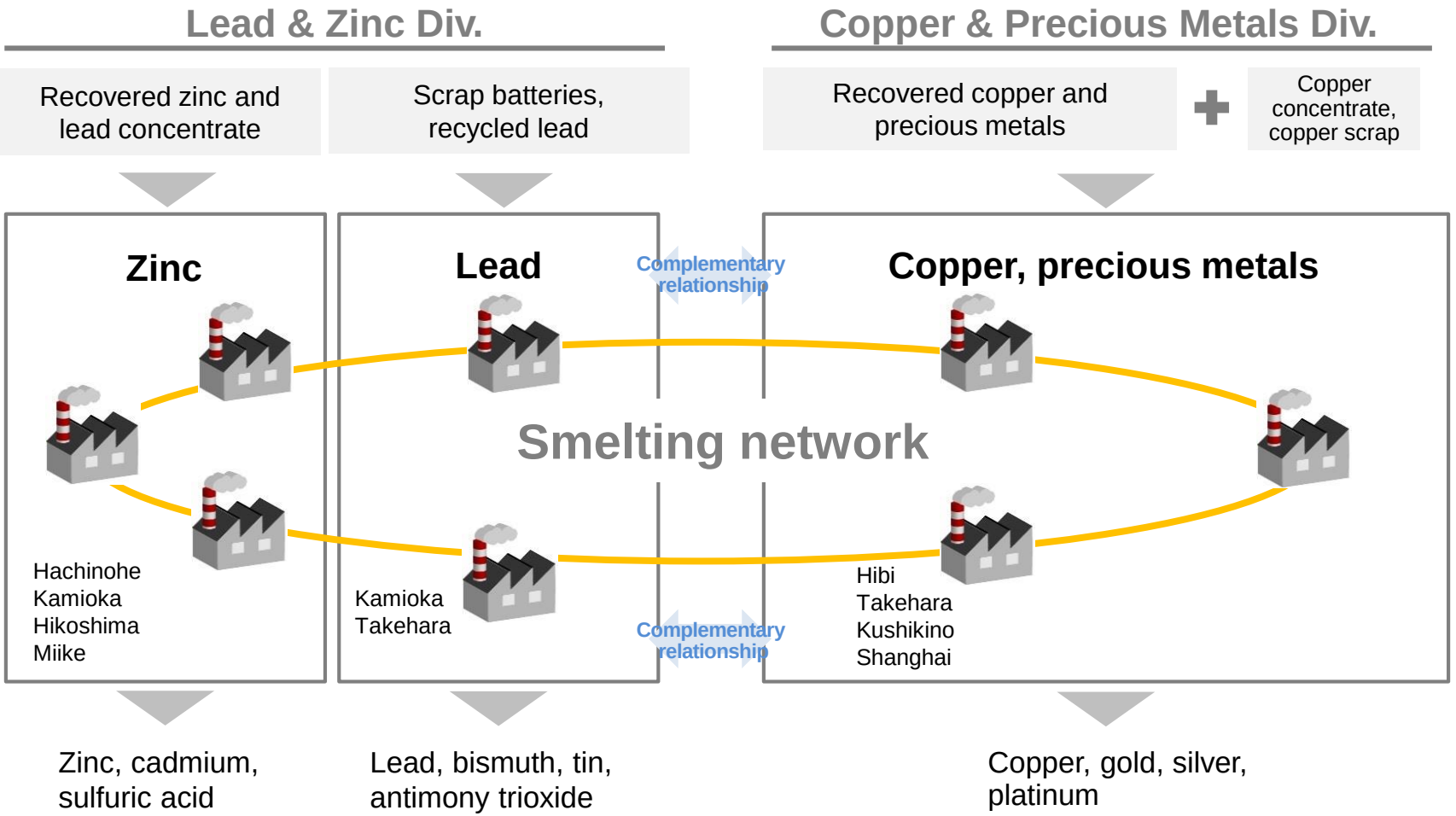
● Lead by-products production

・We need to improve the way we process impurities.



■ Metals Segment - Smelting network

The two divisions will reinforce and supplement each other to gain progress in processing raw materials and intermediate goods that we were unable to process in the past.



■ Automotive parts and components – Mitsui Kinzoku ACT (1)

Material Intelligence

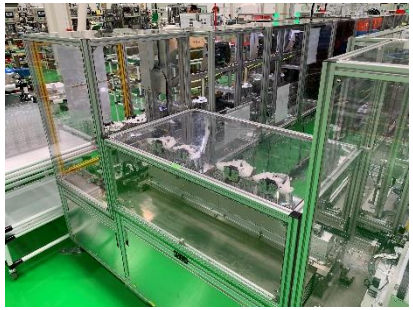
Progress in 2019 medium-term business plan (as of November 2021)

Red: Had deteriorated as of May release
Blue: Had improved as of May release

Action plan for 2019-2021	Progress
Win large strategic orders (expand sales) **→ Secure business for 2022 and beyond**	
• Continuing to promote system products for CASE mobility (with focused investment of business resources)	**Good** • Won orders for five sliding door systems in cars (e.g. EVs used for sharing services)
• Expand business and R&D organization in North America and Europe	**Good** • Won door latch orders from European OEMs
• Start up Moroccan plant	**Good** • Started door latch assembly and production in February 2021. From June 2021: Expanded production for multiple OEMS
Improve cost competitiveness **→ Achieve 2019 Plan's goals; prepare foundation for 2022 and beyond**	
• Lower costs to reflect smaller global market / demand	**Poor** • Sales plunged because of decline in auto production amid the pandemic and chip crunch
• Cut fixed costs by adopting smart, ICT-driven production systems in overseas plants and investing more judiciously	**Good** • Heavier cost-cutting measures worldwide
	Good • Deploy knowledge from smart plant retrofitting in Japan (since FY2019) to overseas plants (Thailand, Morocco)

Moroccan plant (Mitsui Kinzoku ACT Tanger Maroc SARL)

Door latch production line



■ Automotive parts and components – Mitsui Kinzoku ACT (2)

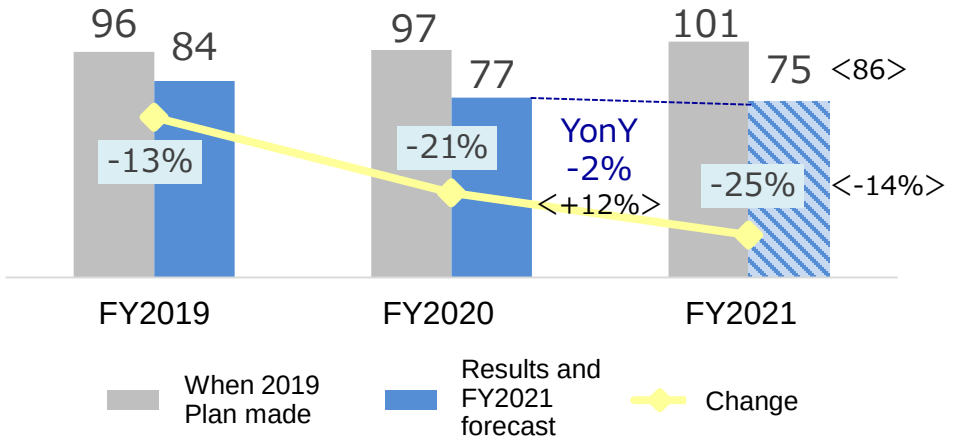
Material Intelligence

Current business environment

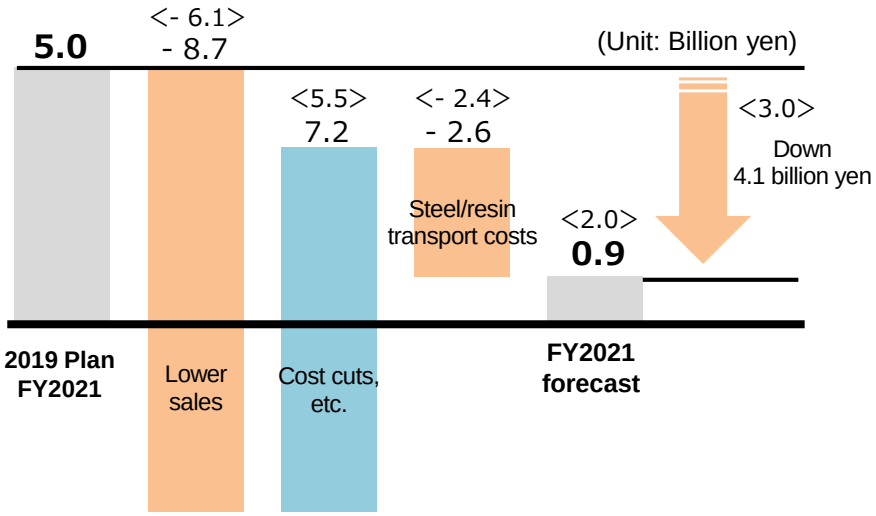
- Global automobile production fell significantly due to US-China trade friction and COVID-19.
- FY2021 forecast: Despite initial hopes of a moderate recovery, sales are likely to decline year-on-year because of the chip crunch.

Change in cars produced globally (million vehicles)

< > release in May



FY2021 results forecast < > release in May

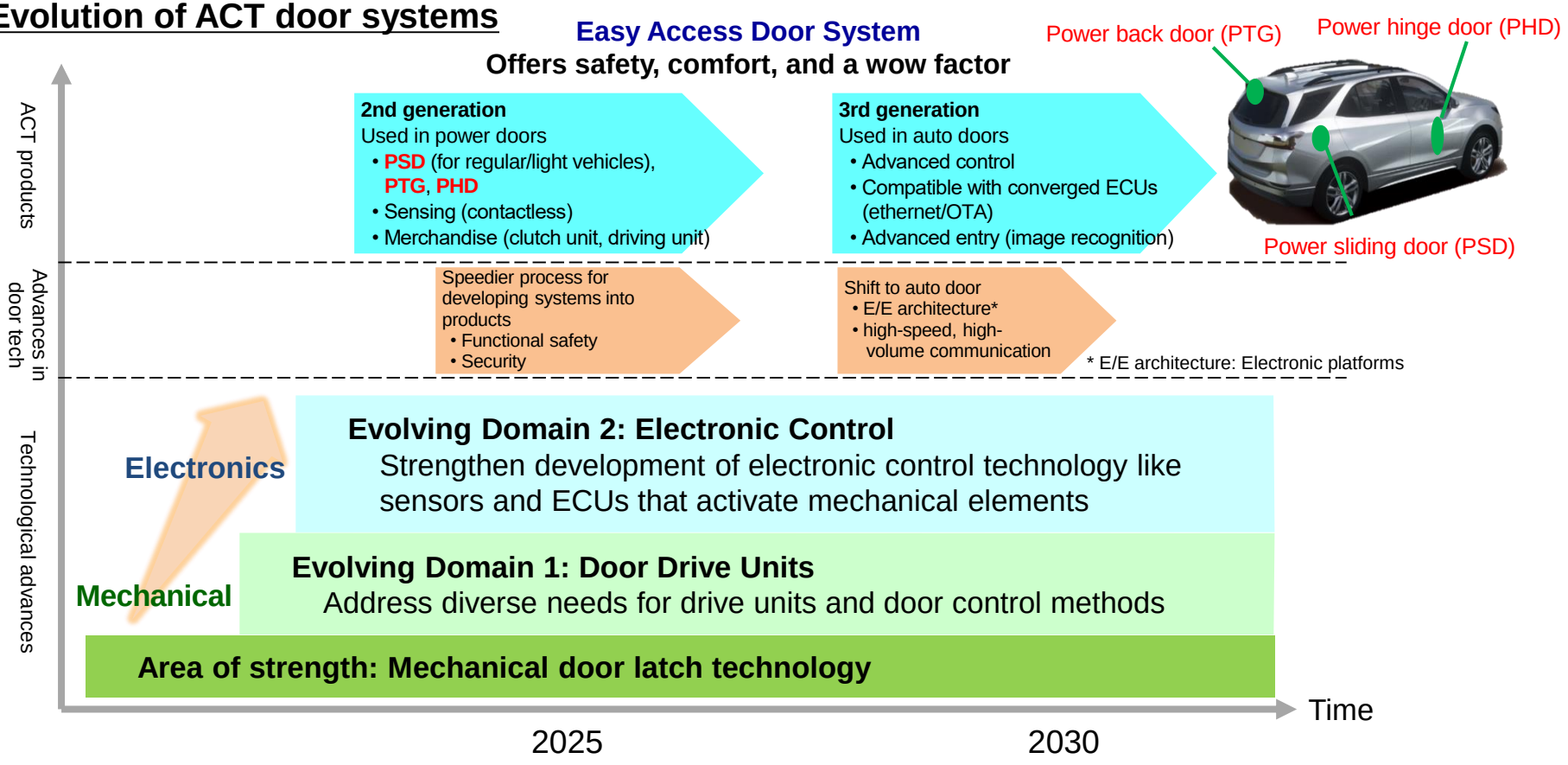


- Reduced automobile production, soaring material prices, and higher transport costs affect profit/loss.
- We exceed FY2019–2021 cost-cutting target, but this is insufficient to offset severe market downturn.

Product ideas and marketing for CASE* mobility; future vision

- Amid the rise of CASE mobility, we have integrated our longstanding latch tech and electronic control tech to develop new door products as a door system supplier.
- For the FY2019–2021 period, we focused on marketing new door systems and CASE mobility solutions. Consequently, we won orders for new slide door systems, among other things, for five car models.

Evolution of ACT door systems



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

For The Next Medium-Term Business Plan (FY2022–2024)

■ The Next Medium-Term Business Plan (FY2022–2024) (1)

Material Intelligence

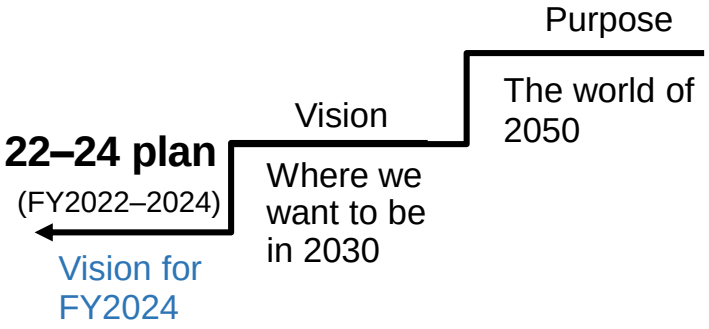
● Key words

Purpose	Integrated thinking-based management	Ambidextrous management
What is our purpose? What value do we offer? These things will guide our decisions.	Decisions should be based on social and environmental aspects, as well as financial ones.	We need to strike a fine balance between developing existing businesses (knowledge) and forging new businesses (knowledge).

● Provisional vision

We want to be an organization that embraces integrated thinking to build our corporate value.
We will make sure that our 150th anniversary in 2024 is something we can celebrate together with stakeholders.

● Position of FY2022–2024 plan



- Start by clarifying purpose.
  Then backcast from 2050
  to determine vision (where we want to be in 2030)

- Finally, decide what needs to be done in FY2022–2024 period to achieve this vision.
  The result will be Vision for FY2024

■ The Next Medium-Term Business Plan (FY2022–2024) (2)

Material Intelligence

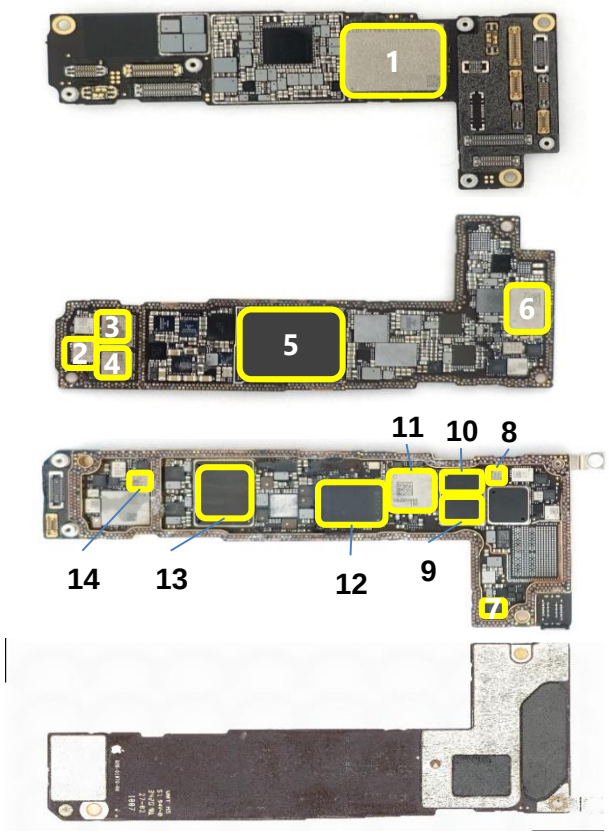
● What each business unit needs to do in FY2022–2014 period

Business Creation Sector	• Launch business promotion unit (for 4 strategic themes) • Strengthen co-creation and value creation to generate new business opportunities
Engineered Materials Segment	• Capture growth opportunities (for copper foil, engineered powders, and others) in 5G, IoT, CASE and other markets • Catalysts: Market GPF catalysts, among others, as sustainable solutions • Capture new business opportunities by creating technological synergies in the fields of powders, circuit materials, and formed and fabricated materials.
Metals Segment	• Supply recycling needs through a smelting network strengthened with the addition of copper smelting
Automotive Parts & Components Segment	• Concentrate resources on products for CASE-friendly door systems • Open ICT-driven production bases overseas

Appendix

In the 5G smartphone market, uptake of MicroThin™ for PKG has risen in tandem with rise of RF modules.

Examples of how MicroThin™ for PKG is used in 5G smartphones



PKG №	Functions
1	NAND flash memory
2	RF module
3	PA module
4	PA module
5	Application processor + DRAM
6	UWB chip
7	Acceleration sensor
8	RF module
9	RF module
10	FE module
11	WLAN / Bluetooth
12	5G modem
13	5G & LTE transceiver
14	RFFE module

In the market for millimeter-wave-compatible 5G smartphones, we should see further uptake of MicroThin™ for PKG in connection with antennas.

Caution Concerning Forward-looking Statements

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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Regarding latent risks which might impact forecast results and other uncertainties, some items are included in the “Business and Other Risks” section of our financial statements or our website. However, please recognize that these are just a summary rather than a comprehensive list of all possible items relating to latent risks and uncertainties.

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