



MITSUI KINZOKU

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

FY2019 Q2 Results & FY2019 Forecast

November 12, 2019

(Unit: Billion yen)

	2016	2017	2018	Current forecasts for 2019 (Nov 11)	Previous forecasts for 2019 (Aug 8)
Net sales	436.3	519.2	497.7	477.0	500.0
Operating income	38.5	49.5	18.2	16.5	26.0
Ordinary income	31.0	11.2	17.8	14.0	26.0
Profit (loss) attributable to owners of parent	18.7	-0.7	4.8	5.0	17.0
Free cash flow	-14.1	12.1	-4.1	-	1.0
CAPEX	37.7	40.5	36.1	37.0	41.0
Shareholders' Equity Ratio	33.5%	32.4%	32.5%	32.8%	34.5%
D/E ratio (net)	1.10	1.11	1.15	1.18	1.07

■ 2019 1st Half Results

● 2019 1st Half Sales and Ordinary Income – Comparison with Forecasts (Aug 8) (Unit: Billion yen)

	2019 1st half results		2019 1st half forecasts (Aug 8)		Difference	
	Sales	Ordinary Income	Sales	Ordinary Income	Sales	Ordinary Income
Engineered materials	82.3	5.2	84.0	5.5	-1.7	-0.3
Metals	83.7	0.8	80.0	1.1	3.7	-0.3
Automotive parts and components	46.1	0.1	46.0	0.0	0.1	0.1
Affiliates coordination	53.3	0.4	54.0	0.4	-0.7	0.0
Adjustment	-27.3	-1.7	-26.0	-1.5	-1.3	-0.1
Total	238.1	5.0	238.0	5.5	0.1	-0.5

● 2019 1st Half Sales and Ordinary Income – Year-on-year Comparison (Unit: Billion yen)

	2019 1st half results		2018 1st half results		Difference	
	Sales	Ordinary Income	Sales	Ordinary Income	Sales	Ordinary Income
Engineered materials	82.3	5.2	86.8	11.7	-4.4	-6.4
Metals	83.7	0.8	84.4	-3.1	-0.7	4.0
Automotive parts and components	46.1	0.1	50.5	1.9	-4.4	-1.8
Affiliates coordination	53.3	0.4	61.4	2.1	-8.1	-1.7
Adjustment	-27.3	-1.7	-32.4	-1.5	5.1	-0.2
Total	238.1	5.0	250.6	11.0	-12.5	-6.1

● 2019 Full-year Forecasts – Comparison with Previous Forecasts (Aug 8)

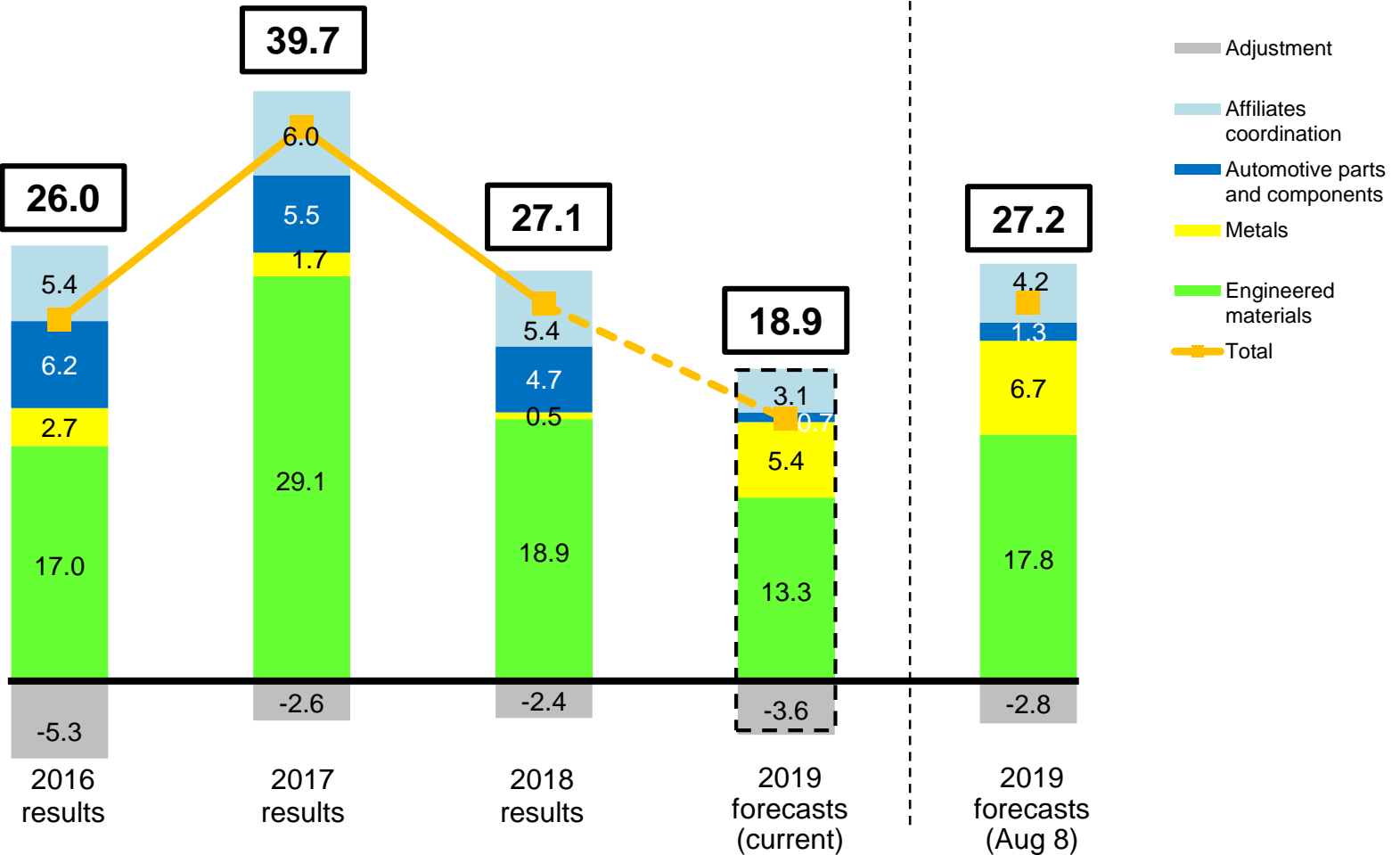
(Unit: Billion yen)

	2019 1st half results		2019 1st half forecasts (Aug 8)		Difference	
	Sales	Ordinary Income	Sales	Ordinary Income	Sales	Ordinary Income
Engineered materials	164.0	11.1	180.0	17.8	-16.0	-6.7
Metals	164.0	3.1	162.0	5.5	2.0	-2.4
Automotive parts and components	93.0	0.7	99.0	1.3	-6.0	-0.6
Affiliates coordination	118.0	2.7	123.0	4.2	-5.0	-1.5
Adjustment	-62.0	-3.6	-64.0	-2.8	2.0	-0.8
Total	477.0	14.0	500.0	26.0	-23.0	-12.0

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

: Financial Performance

(Unit: Billion yen)



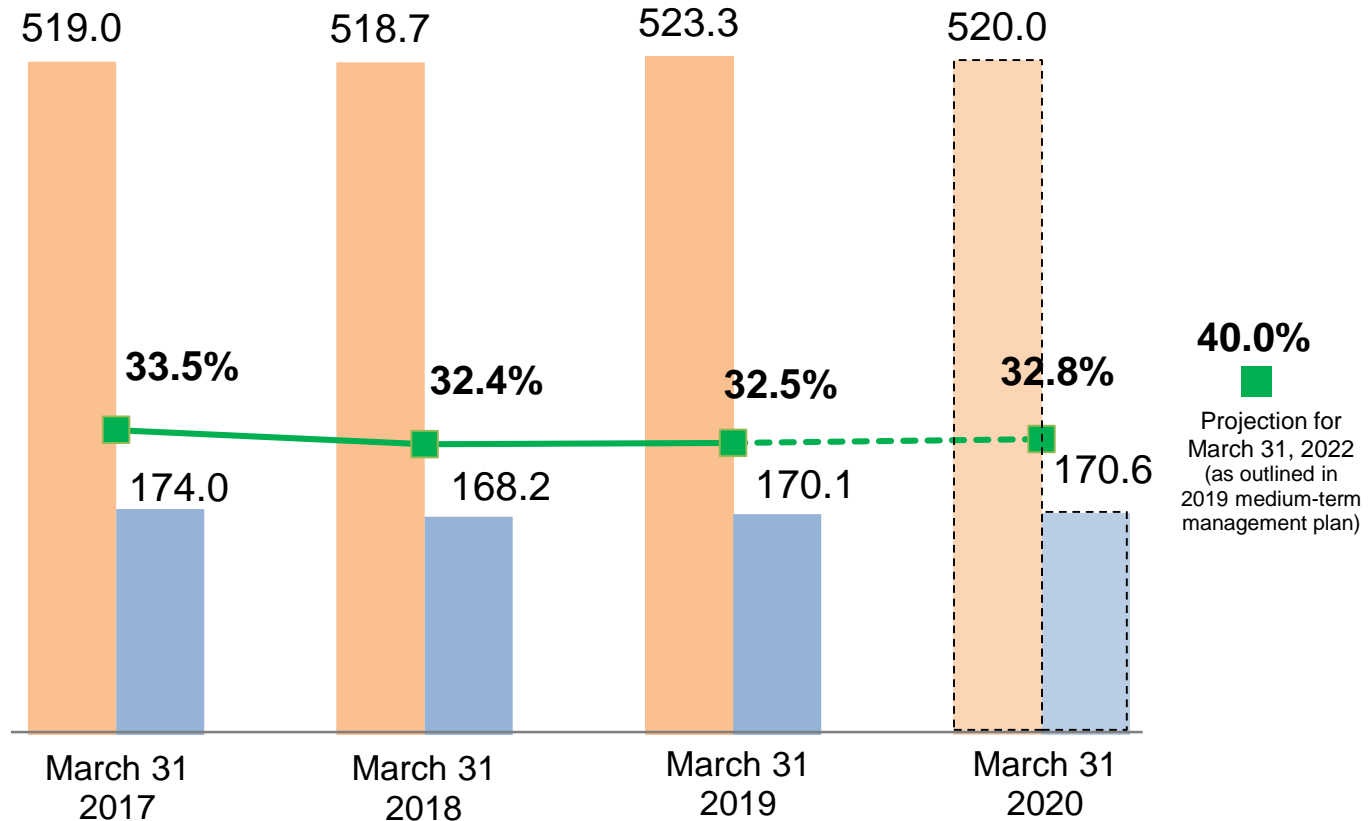
● Trends in Shareholders' Equity Ratio

(Unit: Billion yen)

■ Total assets

■ Net assets

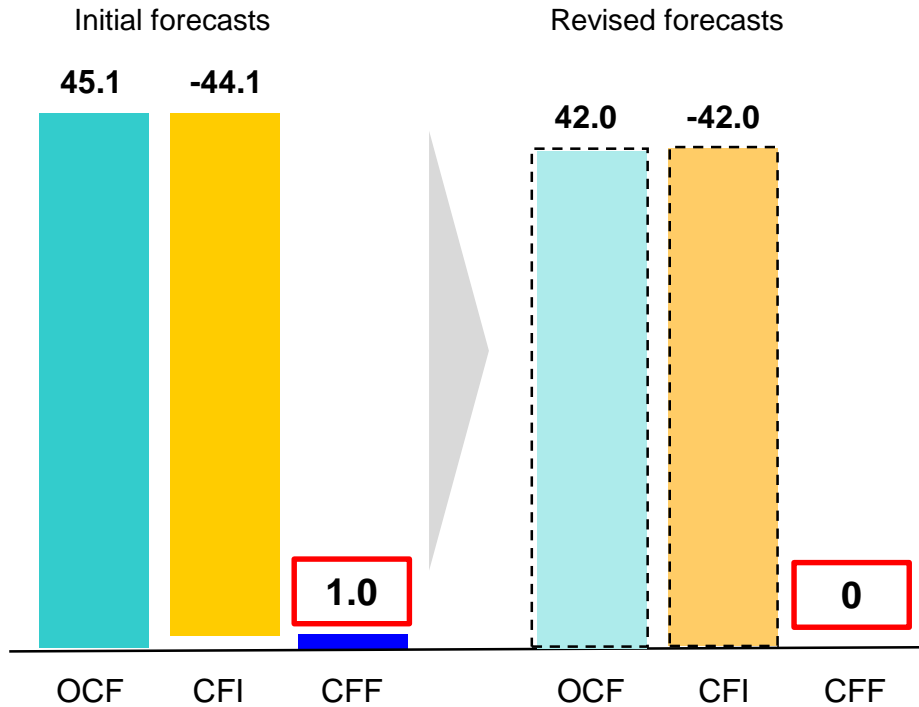
■ Shareholders' Equity Ratio



Following downturn in performance, cash flow from operating activities decreases, resulting in tighter CAPEX.

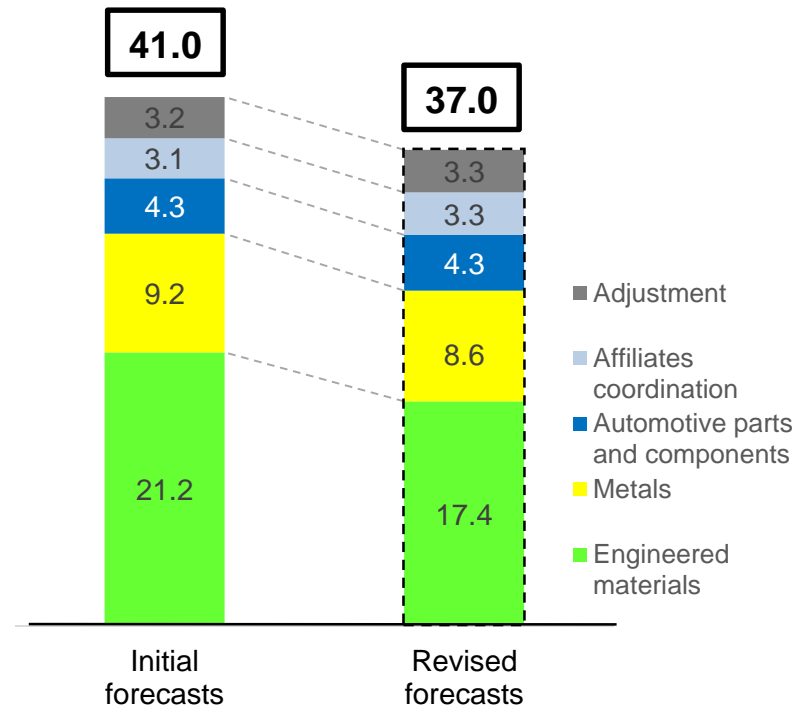
● Cash flows (vs. initial forecasts)

(unit: billion yen)



● CAPEX breakdown (vs. initial forecasts)

(unit: billion yen)



Segments/ Operations	Press releases	Remarks
Copper Foil	<ul style="list-style-type: none"> Mitsui Kinzoku issues statement on JX Nippon Mining & Metals' legal action 	<ul style="list-style-type: none"> May 14 press release
Copper Foil	<ul style="list-style-type: none"> <u>Mitsui Kinzoku boosts production of VSP® electro-deposited copper foil (for high-frequency circuit boards)</u> 	<ul style="list-style-type: none"> Jun 4 press release (see page 9)
Research and development	<ul style="list-style-type: none"> Mitsui Kinzoku invests in renewable energy startup Atomis 	<ul style="list-style-type: none"> Jul 1 press release
Catalysts	<ul style="list-style-type: none"> <u>Mitsui Kinzoku develops catalyzed gas particulate filter for light-duty gasoline-powered vehicles</u> Mass production to begin in 2022 	<ul style="list-style-type: none"> Jul 11 press release (see pages 10 & 11)
Metals Division	<ul style="list-style-type: none"> Mitsui Kinzoku suspends operations at hydropower plant Mitsui Kinzoku restarts operations at hydropower plant 	<ul style="list-style-type: none"> Aug 8 press release Aug 29 press release

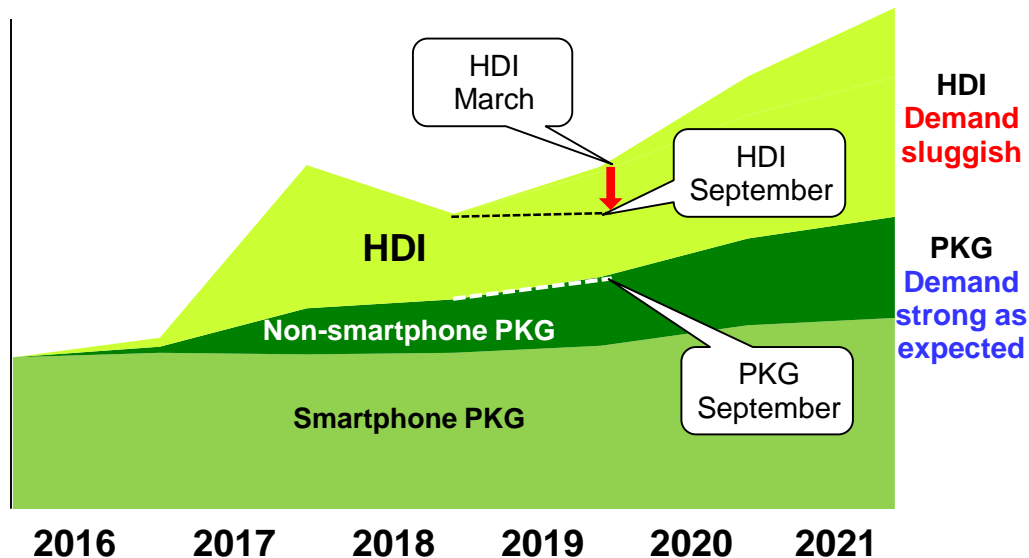
*GPF = Gasoline particulate filter

MicroThin™ for PKG* applications: Move to 5G continues to drive demand as expected.

MicroThin™ for HDI** applications: Demand stalling amid poor smartphone sales. Demand should pick up in 2021 with big transition to 5G.

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

Demand Forecast for MicroThin™



● HDI applications

Demand has been disappointing this year (due to poor smartphone sales), but should pick up from next year due to...

- More 5G smartphones
- Greater uptake among Chinese firms

● PKG applications

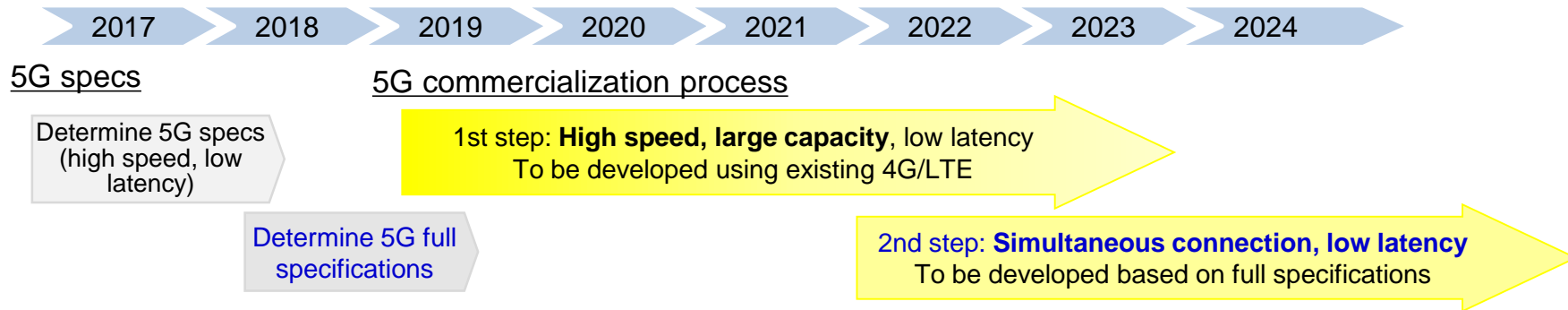
Demand for non-smartphone applications (external memory, GPU*) strong as expected. Demand should continue to grow with transition to 5G.

*GPU = Graphics processing unit

Why demand for HDI applications has slowed

- Fewer applications
- New applications slow to emerge
- Poor smartphone sales
- Customers improving productivity
- Competitor entering MicroThin™ market

5G roadmap

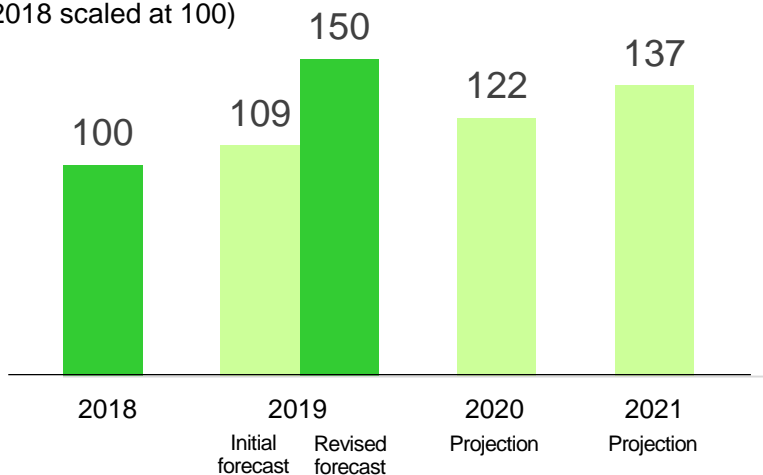


- 2019 saw launch of 5G market. Market should blossom in 2021.
- Rapid growth expected during 2nd step (full specs), beginning in 2022.

Product for 5G market:

High-end electro-deposited copper foil

(2018 scaled at 100)

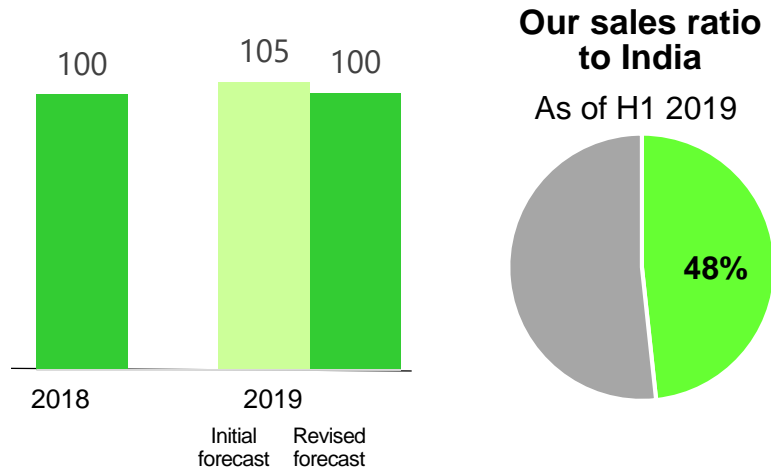


Applications: Servers, routers, base stations

- High-frequency bands: High-end electro-deposited copper foil selling well, suggesting that demand is rising two years earlier than initially expected.
 - More designations for 5G infrastructure
 - Sharp rise in new application
- ⇒ Demand will rise even further from next year (including for mid-range copper foil)

Expected sales of catalysts for motorcycles

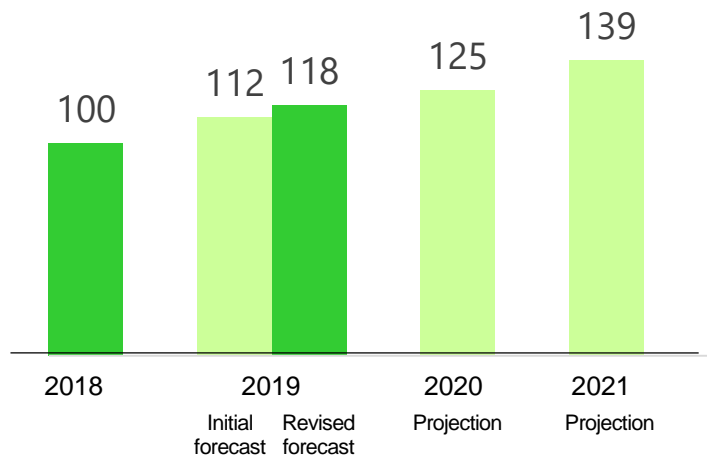
(2018 scaled at 100)



- Sales expected to be on par with the same period last year, slightly lower than initial forecast
- Sales in India should pick up in H2, but full-year results may fall short of last year's level, depending on the extent of market recovery.

Expected sales of catalysts for automobiles

(2018 scaled at 100)

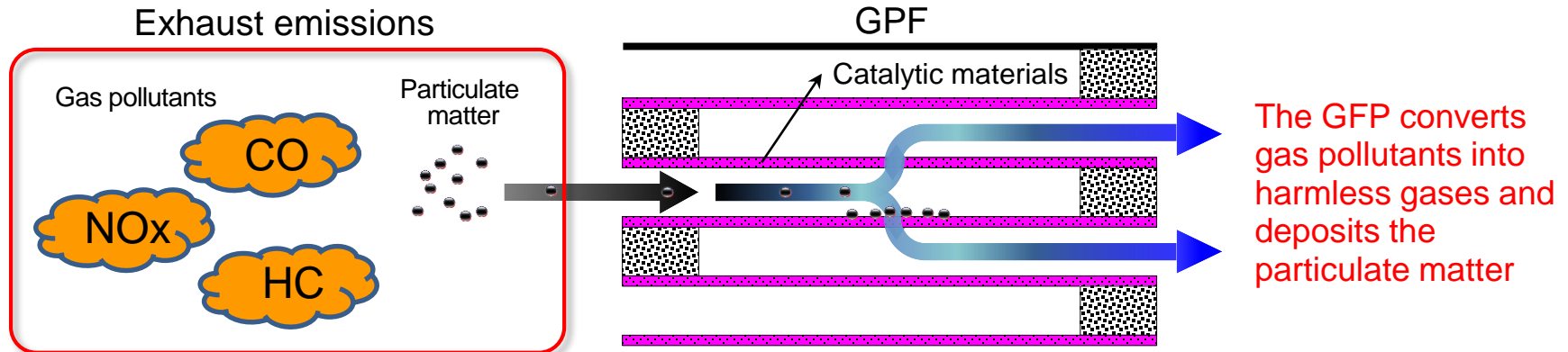


- Despite decline in global auto industry, sales for automobiles are set to grow as forecasted.
- A major client has ordered the product for its main vehicles in 2021. We expect a similar order for 2023.
- We developed a catalyzed GPF* for automobiles. The product has performed well, and we expect orders for use in mass-produced vehicles from 2022.

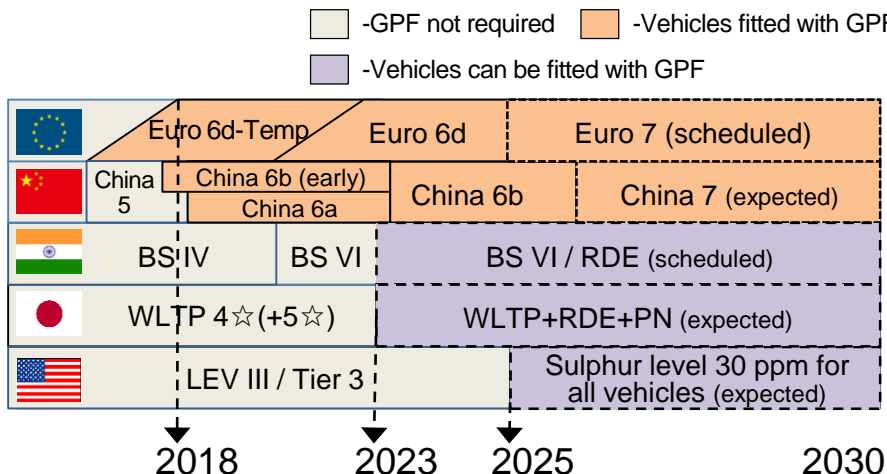
*The GPF is described in the next slide.

How the GPF works

The GPF removes gas pollutants and particulate matter from exhaust emissions



Trends in vehicle emission standards and use of GPF



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

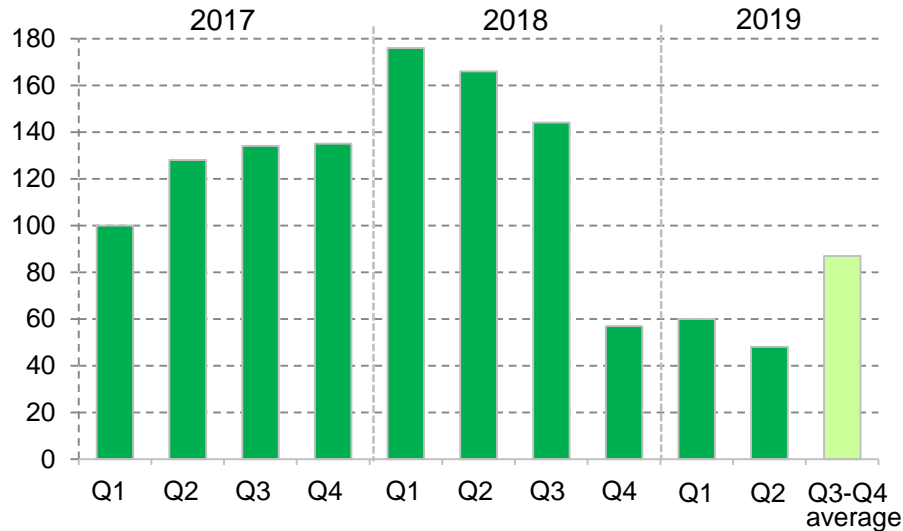
LEV: Low emission vehicles

■ Engineered materials segment

- Copper powders and ITO sputtering targets for electronics

Sales of copper powders for electronics

(17Q1 scaled at 100)

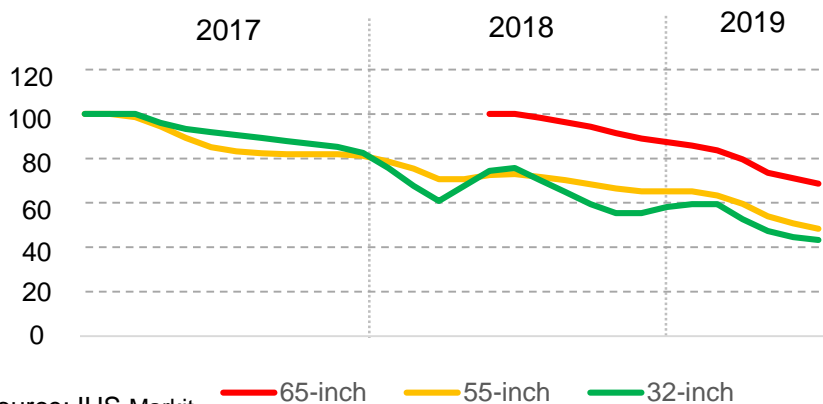


- Sales should pick up in H2, but only slightly. Full recovery should come in 2020.
- The work to boost production capacity (see press release dated August 2, 2018) has finished at Kamioka plant, but parts of the new Hikoshima plant have been delayed.

Production sites: Kamioka (Hida, Gifu)
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)

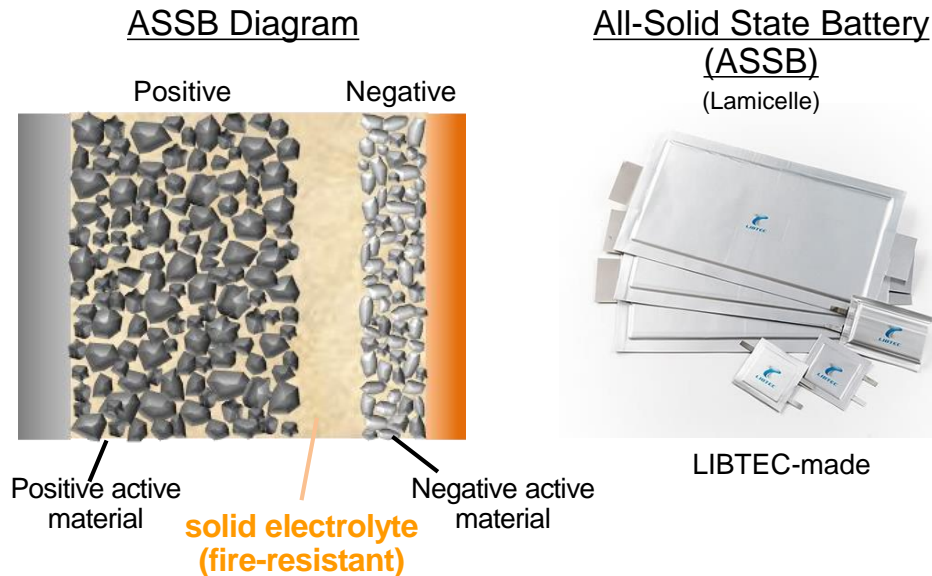


- ITO earnings have declined due to price pressure from struggling LCD panel makers coupled with a price war.
- Some clients are overhauling their production systems, suggesting that ITO sales will decline.
- Faced with these rapid changes, we are considering restructuring.

■ Engineered materials segment

- Development of materials for all-solid state batteries (ASSBs)

Progress in development ASSB materials



- Sulfide solid electrolytes
Steady progress in developing automotive electrolytes. We are designing a pilot plant to manufacture several tons a month.
 - Design should be completed in November 2019
 - If all goes well, the plant should be ready in December 2020. Mass production should start between 2022 and 2025
- Positive and negative electrodes
We are stepping up development of materials with our sulfide electrolytes (e.g. 5V positive electrodes and silicon negative electrodes)
- Non-automotive applications
Maxell started shipping samples of ASSBs that use our electrolytes (see Maxell's press release dated September 20, 2019)
 - Big step forward toward practical application.
Focus first on automotive applications, make early start in mass producing for special applications

Ref: All-solid state batteries

- Fire-resistance offers greater safety
- High energy density
 - Electrochemically stable, compatible with many materials
- Compatible with fast chargers

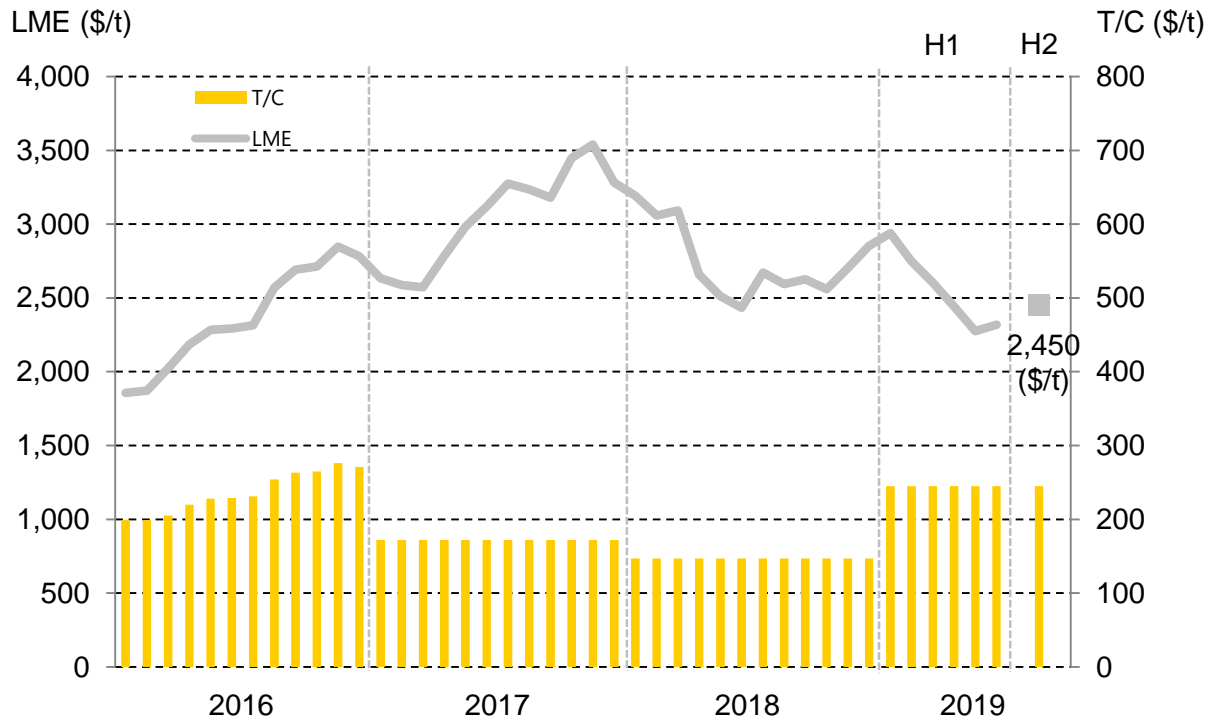
H1 2019

Zinc price declined (falling as low as 2,200 \$/t at one point) as the market turned bearish in anticipation of a surplus.

H2 2019

With the market turning bullish again, zinc price should rise to 2,450 \$/t.

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

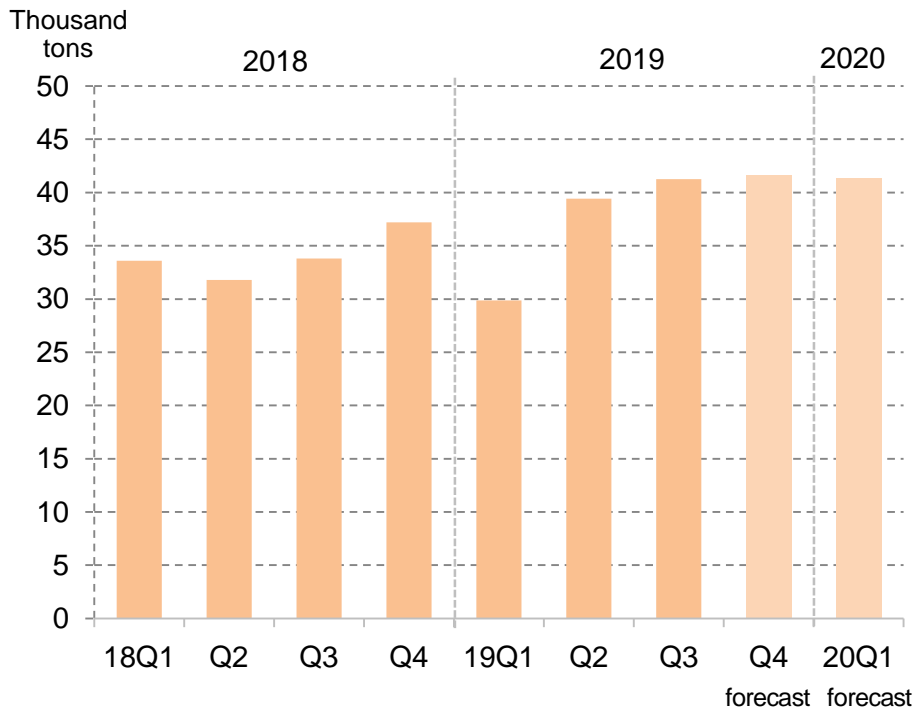


TC	203 \$/t	172 \$/t	147 \$/t	245 \$/t
Benchmark	(2,000 \$/t)	(-)	(-)	(-)

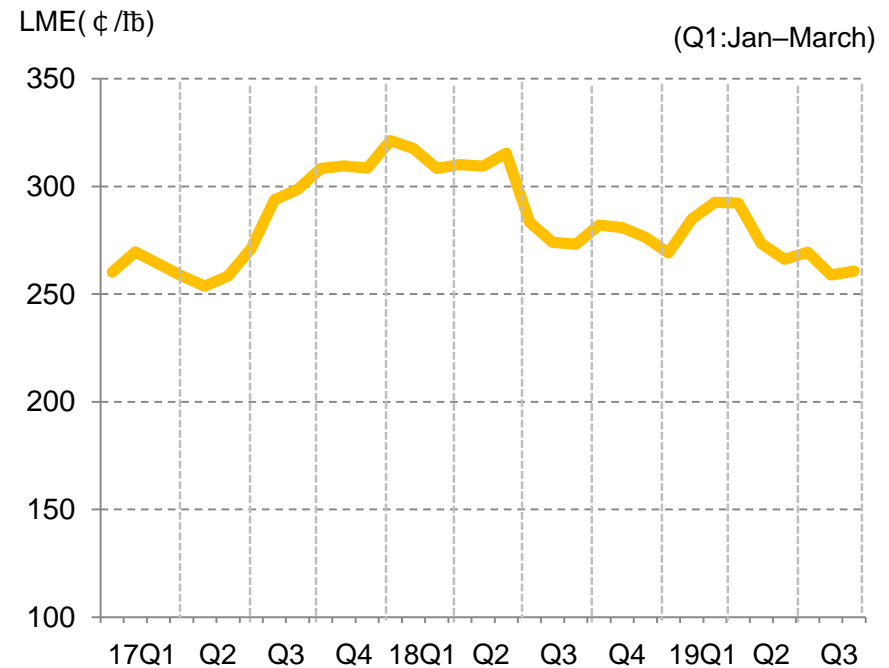
Operation has been stable this year. Output is improving.

We will continue to stabilize operations and improve output. We will also keep up our efforts to reduce costs.

● **Production trends (copper)** (Q1:Jan–March)



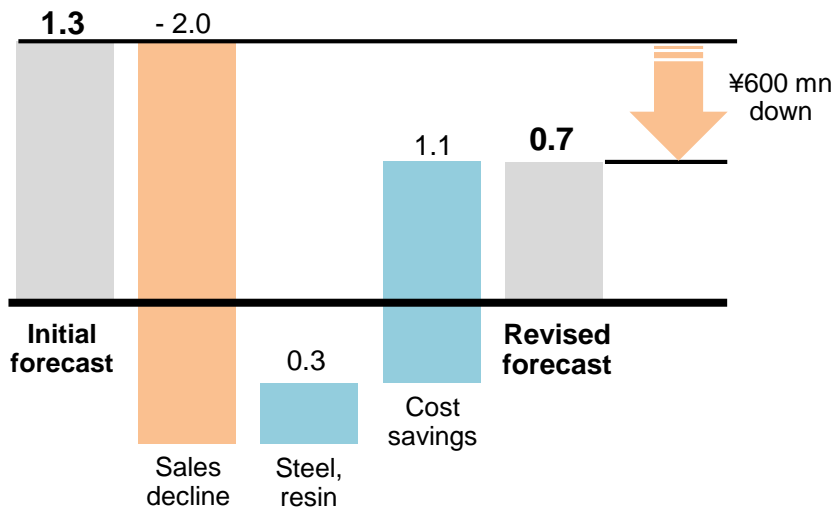
● **Trends in Copper Price** (Jan 2017 to Sep 2019)



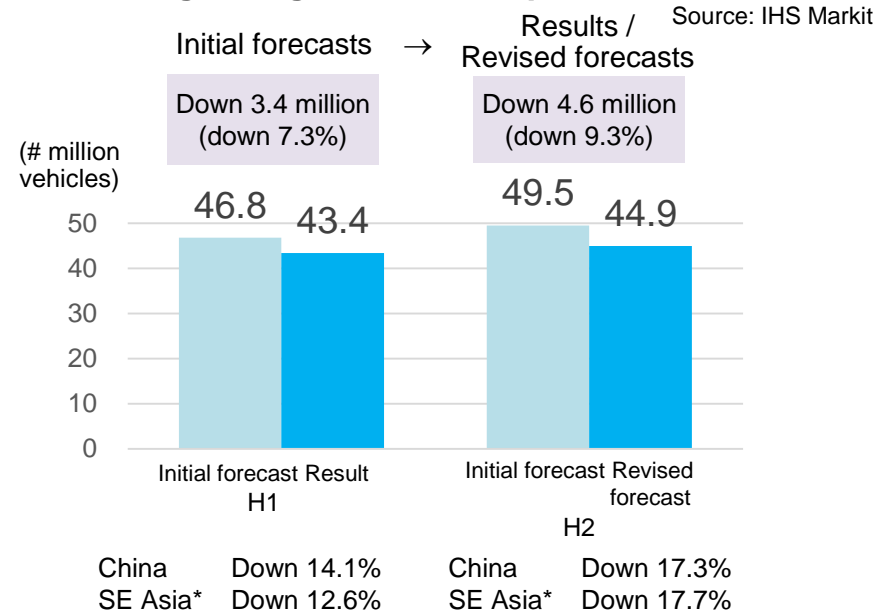
Business conditions

- Global slowdown, fewer vehicles sold worldwide
 - China's auto market sluggish
 - Sluggish in Thailand and India too
- US-China trade friction:
 - US imposed additional tariff on Chinese imports

Forecasts for 2019 (unit: billion yen)



Changes in global vehicle production



* SE Asia includes ASEAN, Oceania, and the Indian subcontinent

- Markets remained sluggish in China and other regions, leading to significant decline in sales.
- We doubled efforts to cut costs, yielding above-expected savings, but this did not compensate for the sales decline.

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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