



# **MITSUI KINZOKU**

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

*FY2017 Q2 Results*

November 14, 2017

(Unit: Billion yen)

	<b>2015</b>	<b>2016</b>	<b>Previous forecasts for 2017 (Aug 9)</b>	<b>Current forecasts for 2017 (Nov 10)</b>
Net sales	450.6	436.3	478.0	507.0
Operating income	11.1	38.5	32.5	43.0
Ordinary income	-11.3	31.0	30.0	39.0
Profit (loss) attributable to owners of parent	-20.9	18.7	20.0	24.0
Free cash flow	24.0	-14.1	4.0	4.0
CAPEX	28.4	37.7	44.0	47.0
Shareholders' Equity Ratio	35.0%	33.5%	35.1%	35.8%
D/E ratio (net)	1.03	1.10	1.04	1.01

# ■ 2017 1st Half Results

## ● 2017 1st Half Sales and Ordinary Income – Comparison with Forecasts (Aug 9)

(Unit: Billion yen)

	2017 1st half results		2017 1st half forecasts (Aug 9)		Difference	
	Sales	Ordinary income	Sales	Ordinary income	Sales	Ordinary income
Engineered materials	80.6	14.0	87.0	13.3	-6.4	0.7
Metals	82.2	0	78.0	-1.8	4.2	1.8
Automotive parts and components	49.2	2.3	49.0	2.5	0.2	-0.2
Affiliates coordination	59.9	2.8	58.0	1.9	1.9	0.9
Adjustment	-29.5	-1.5	-30.0	-0.9	0.5	-0.6
Total	242.4	17.6	242.0	15.0	0.4	2.6

## ● 2017 1st Half Sales and Ordinary Income – Year-on-year Comparison

(Unit: Billion yen)

	2017 1st half results		2016 1st half results		Difference	
	Sales	Ordinary income	Sales	Ordinary income	Sales	Ordinary income
Engineered materials	80.6	14.0	70.6	6.0	10.0	8.0
Metals	82.2	0	59.2	0.7	23.0	-0.7
Automotive parts and components	49.2	2.3	54.6	2.7	-5.4	-0.4
Affiliates coordination	59.9	2.8	49.2	1.4	10.7	1.4
Adjustment	-29.5	-1.5	-33.1	-1.9	3.6	0.4
Total	242.4	17.6	200.5	8.9	41.9	8.7

## ● 2017 Full-year Forecasts – Comparison with Previous Forecasts (Aug 9)

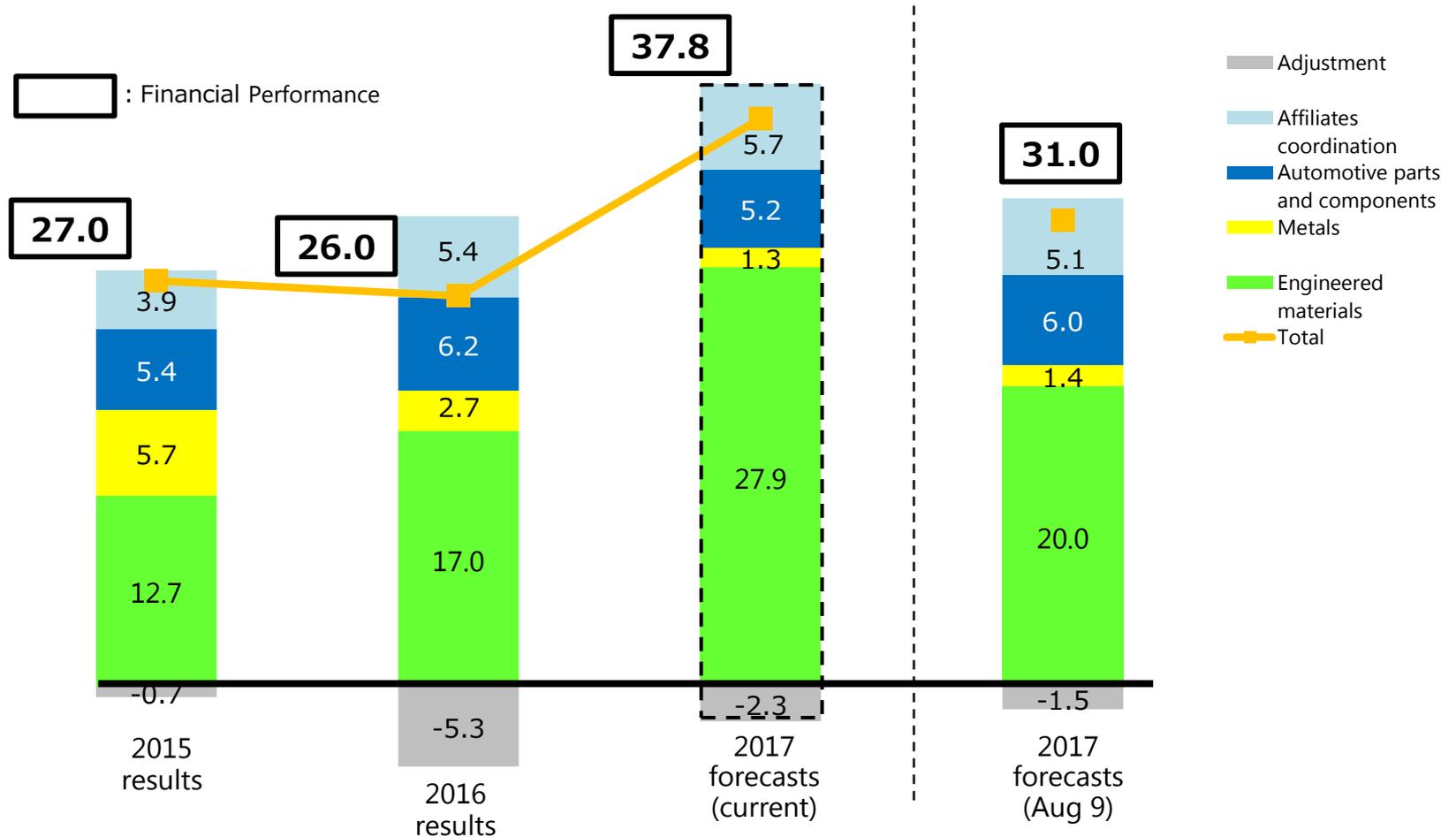
(Unit: Billion yen)

	Current full-year forecasts		Previous full-year forecasts (Aug 9)		Difference	
	Sales	Ordinary income	Sales	Ordinary income	Sales	Ordinary income
Engineered materials	165.0	27.3	150.0	20.0	15.0	7.3
Metals	171.0	2.8	156.0	0.4	15.0	2.4
Automotive parts and components	100.0	5.2	101.0	6.0	-1.0	-0.8
Affiliates coordination	128.0	6.0	127.0	5.1	1.0	0.9
Adjustment	-57.0	-2.3	-56.0	-1.5	-1.0	-0.8
<b>Total</b>	<b>507.0</b>	<b>39.0</b>	<b>478.0</b>	<b>30.0</b>	<b>29.0</b>	<b>9.0</b>

## Trends in Financial Performance

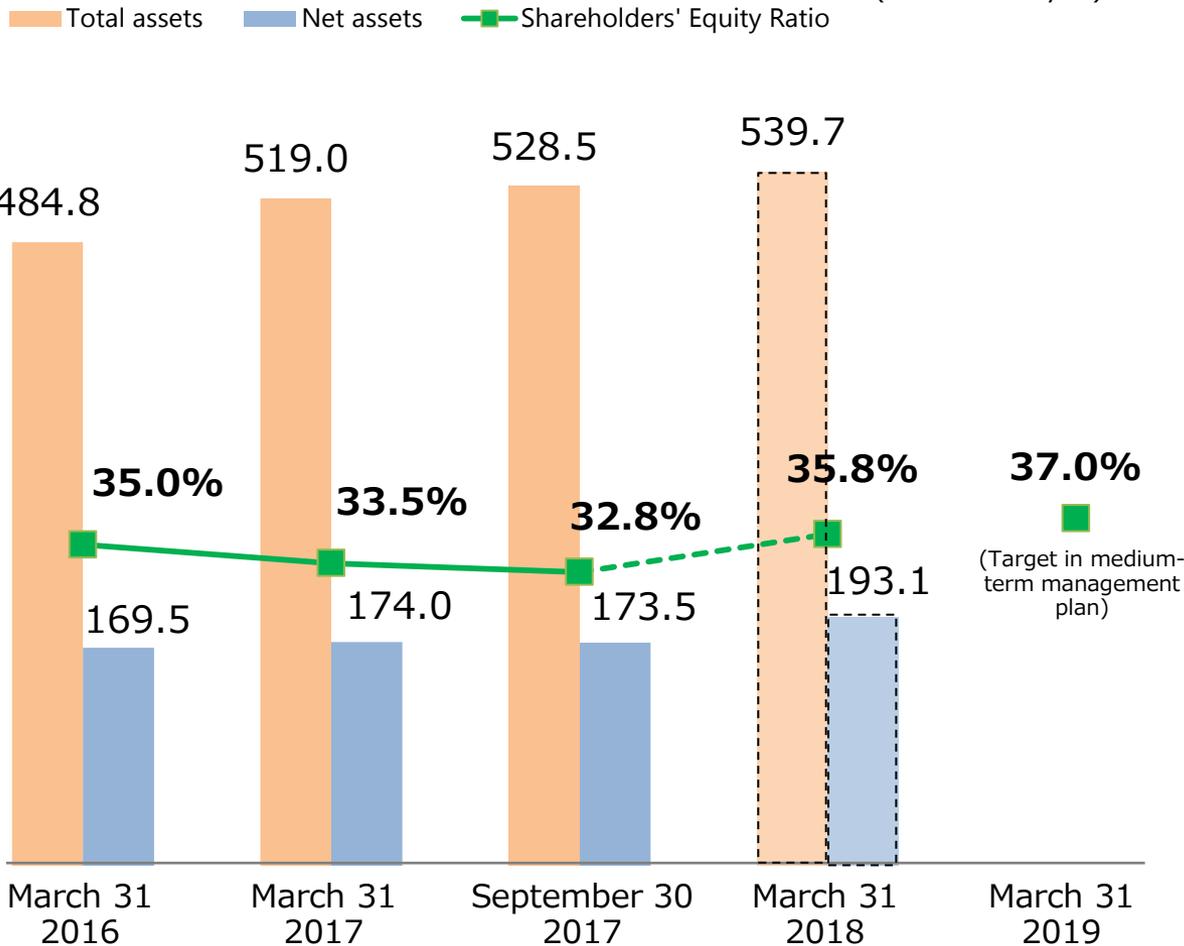
(excludes inventory factor, Caserones impairment, retirement benefit obligations)

(Unit: Billion yen)



## ● Trends in Shareholders' Equity Ratio

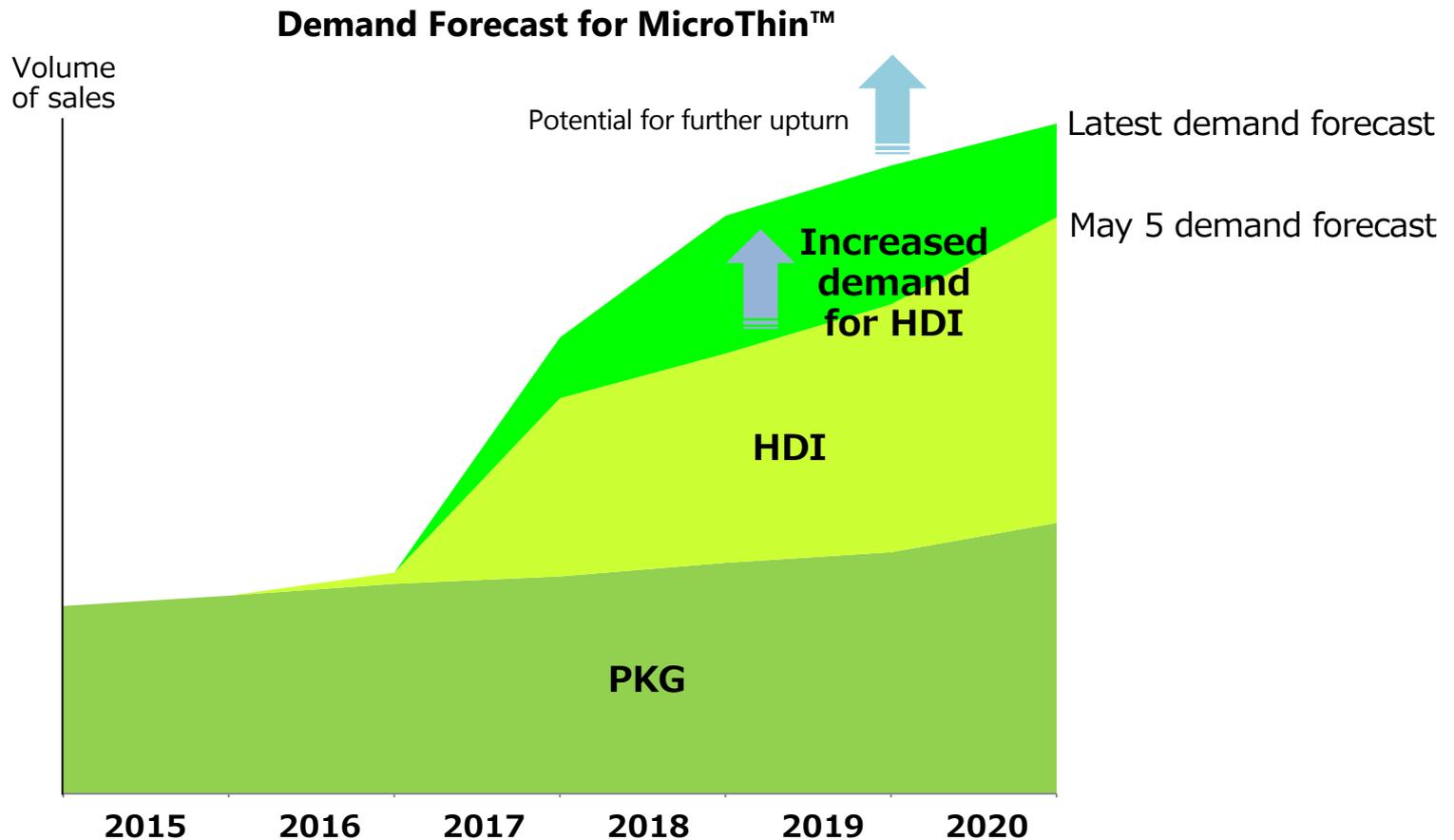
(Unit: Billion yen)



Operations	Actions in 2017	Remarks
Copper foil	<ul style="list-style-type: none"> <li>• <b><u>Decision to make second and third increase in production capacity of MicroThin™</u></b></li> <li>• Increased production capacity of electro-deposited copper foil for flexible printed circuits</li> <li>• Increased production capacity of electro-deposited copper foil for high-frequency circuit boards</li> </ul>	<ul style="list-style-type: none"> <li>• November 14 press release</li> <li>• July 13 press release</li> <li>• July 20 press release</li> </ul>
Catalysts	<ul style="list-style-type: none"> <li>• Strengthened and improved sales of catalysts for automobiles</li> <li>• Improved sales of catalysts for motorcycles</li> </ul>	<ul style="list-style-type: none"> <li>• Progress is in line with 2016 medium-term management plan</li> <li>• Market share of approx. 55%</li> </ul>
PVD materials	<ul style="list-style-type: none"> <li>• Improved sales of ITO sputtering targets</li> </ul>	<ul style="list-style-type: none"> <li>• Exceeded target level in 2016 medium-term management plan</li> </ul>
Engineered powders	<ul style="list-style-type: none"> <li>• Increased production capacity of cerium oxide based abrasive MIREK™</li> </ul>	<ul style="list-style-type: none"> <li>• September 14 press release</li> </ul>
Research and development	<ul style="list-style-type: none"> <li>• <b><u>Steady progress made in development of active material for all-solid-state battery</u></b></li> </ul>	
Growth strategy	<ul style="list-style-type: none"> <li>• Jointly established private fund with SBI Investment</li> <li>• First joint venture under the private fund</li> </ul>	<ul style="list-style-type: none"> <li>• September 1 press release</li> <li>• November 7 press release</li> </ul>

# ■ Copper Foil: New Application of MicroThin™ (HDI Circuit Boards) Material Intelligence

Upward revision from May 15 forecast in anticipation of an increase in high-end demand.  
An increase in middle-end demand will potentially create a further upturn.

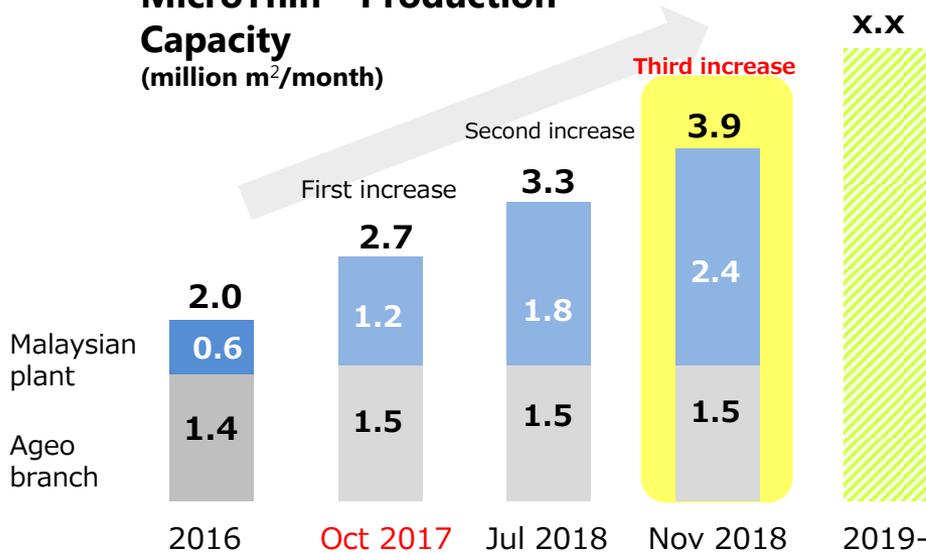


- Improvement in battery capacity enables a reduction in the size of electrode layers and micro-wiring ( $L/S \leq 30/30\mu\text{m}$ )  
⇒ Driving force for application of MicroThin™

# ■ Copper Foil: New Application of MicroThin™ (HDI Circuit Boards) Material Intelligence

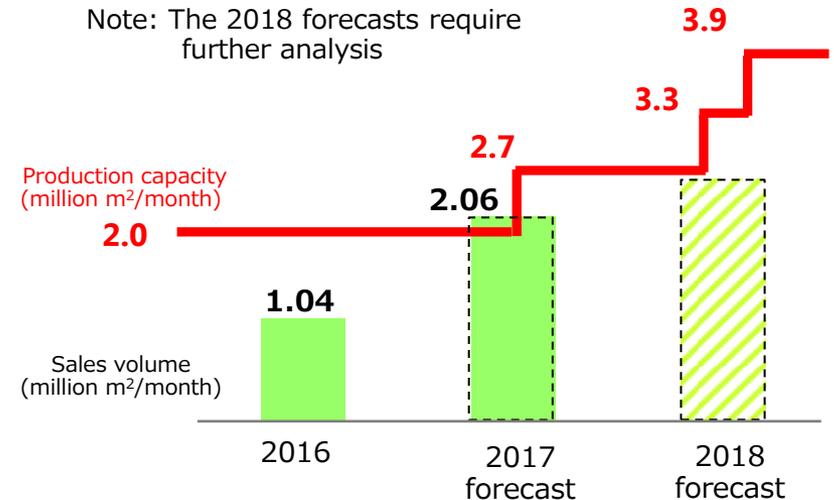
In view of the increasing application of MicroThin™ in HDI boards, the Company decided on a third increase in the production of MicroThin™ at the Malaysian plant.

## MicroThin™ Production Capacity (million m<sup>2</sup>/month)



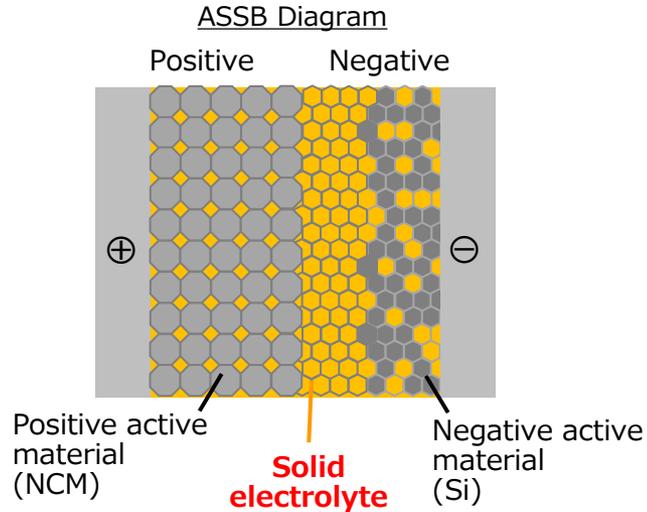
## (Ref) Production Capacity and Sales Forecasts for MicroThin™

Note: The 2018 forecasts require further analysis



- First increase: Total of 2.7 million m<sup>2</sup>/month. Increase was commenced in October 2017 ahead of the scheduled date of January 2018.
- Second increase: Total of 3.3 million m<sup>2</sup>/month. Increase to commence in July 2018.
- Third increase: Total of 3.9 million m<sup>2</sup>/month. Increase to commence in November 2018.

## All-solid-state battery (ASSB): Next-generation lithium ion secondary batteries for vehicles

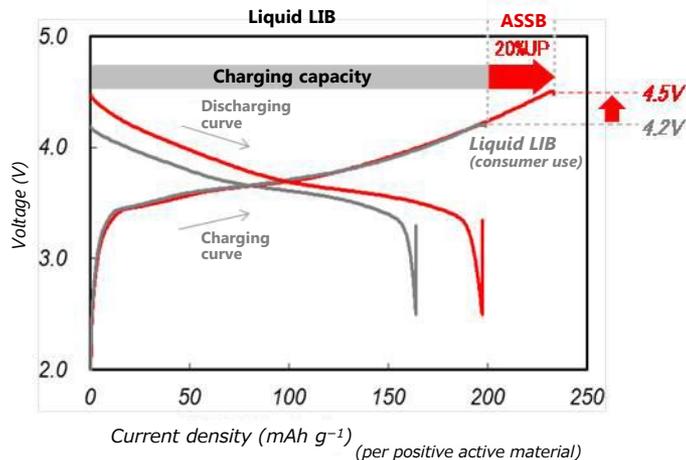


- A solid electrolyte is safer than a liquid electrolyte because it is fire-resistant
- The solid electrolyte's high energy density enables rapid recharging, thus increasing convenience

Rapid progress is being made in researching and developing the optimum positive and negative electrode materials for the Company's high lithium-ion conductive electrolyte

## Status of development: Making progress toward high energy density

Charging and Discharging Curves for ASSB in which NCM is the Positive Material

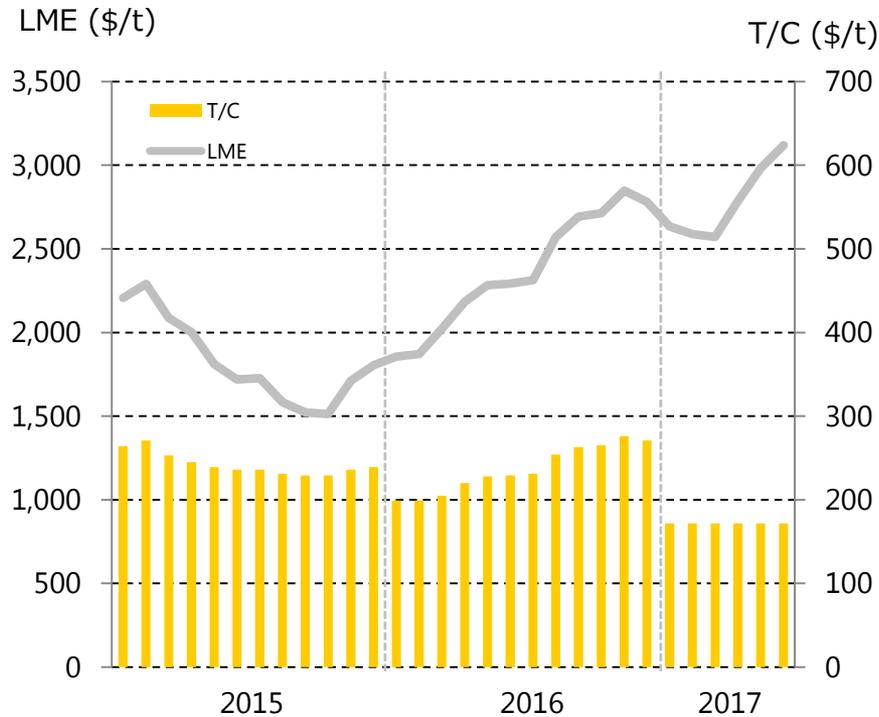


- The Company is testing out batteries that use the Company's solid electrolyte and use NCM as positive material

The high energy density of the ASSB is being demonstrated through high-voltage charging

Despite a rise in the price of zinc, there was a decline in smelting margin as indicated by T/C. The volume of recycling-based processing of raw materials is on a gradually increasing trend.

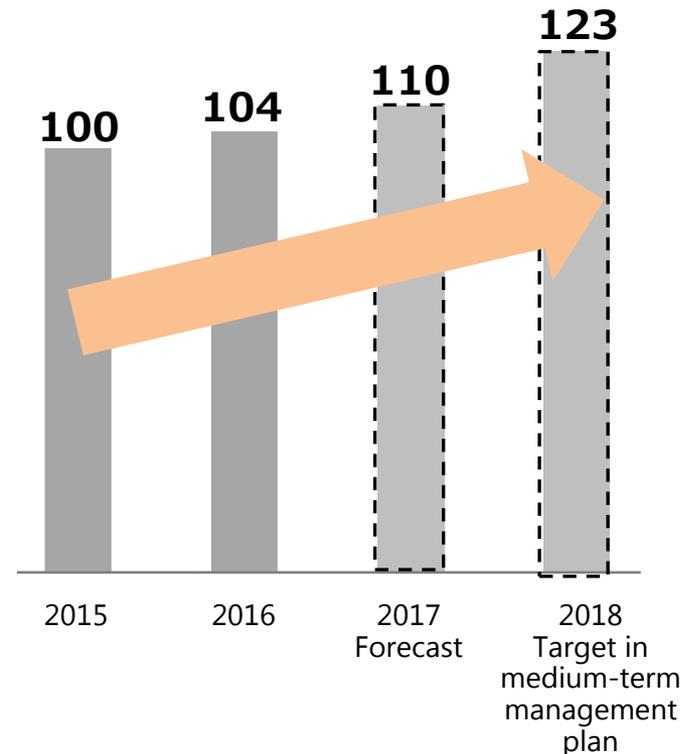
### Trends in Zinc Price and T/C



(Ref)

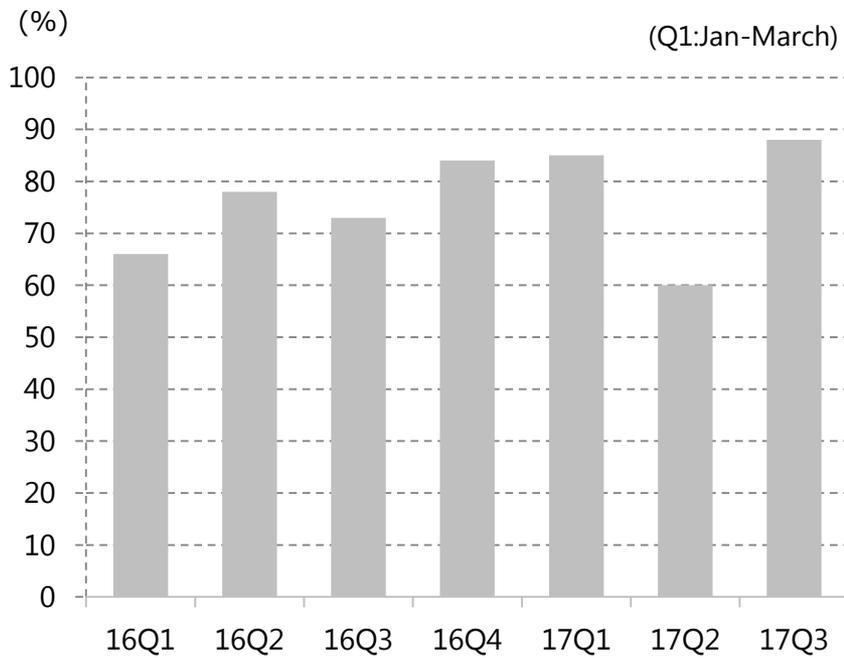
T/C Benchmark	245\$/t (2,000\$/t)	203\$/t (2,000\$/t)	172\$/t (-)
---------------	------------------------	------------------------	----------------

### Growth in recycling-based processing of raw materials (volume for 2015 scaled at 100)

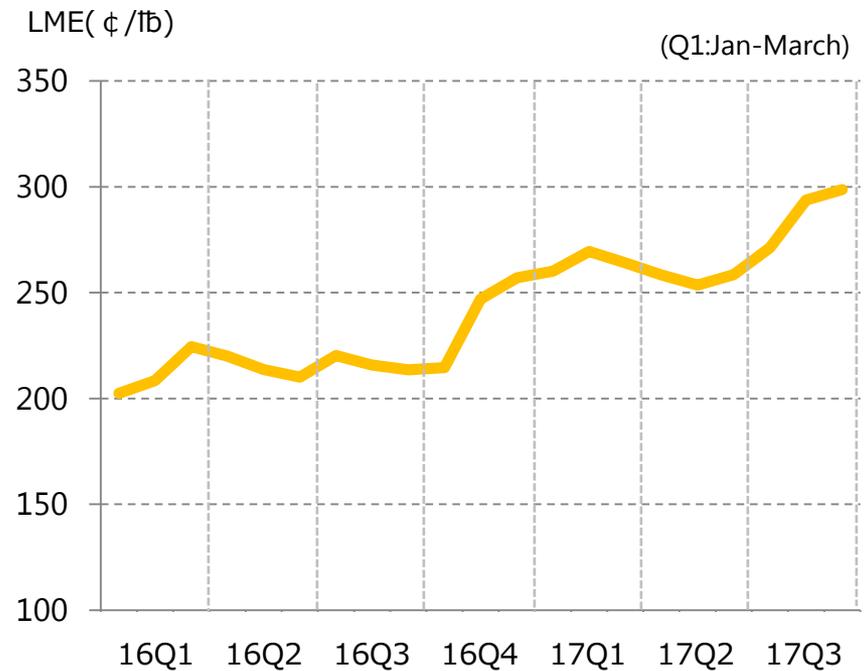


Though operations at the mine have improved, the mine's operating rate for 2017 Q2 was poor, because operations were suspended in May due to wind gusts and heavy snowfall. Since July, operations (as measured by treatment rate) have recovered.

## ● Trends in Mine Operating Rate (Ore Treatment Rate)



## ● Trends in Copper Price (Jan 2016 to Sep 2017)



## 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.

Mitsui Mining & Smelting Co., Ltd. cannot guarantee the validity of the targets, assumptions, expectations, predictions, plans, assessments and other information contained in this material, and the Company also cannot guarantee that its actual business performance will be consistent with the forecasts presented within.

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.

This material was compiled with the aim of furthering the understanding of our shareholders and other investors with regard to the Company's management policy and other details. This material is not for the purpose of soliciting investment through the purchase or sale of stocks. Accordingly, you are advised not to make your investment decision solely on the basis of the material presented herein.