

# 2nd Quarter of FY2017

## Progress of Business Strategy

November 16, 2017



**SUMITOMO METAL MINING CO., LTD.**

Yoshiaki Nakazato  
President and Representative Director

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# I. FY2017 business outlook

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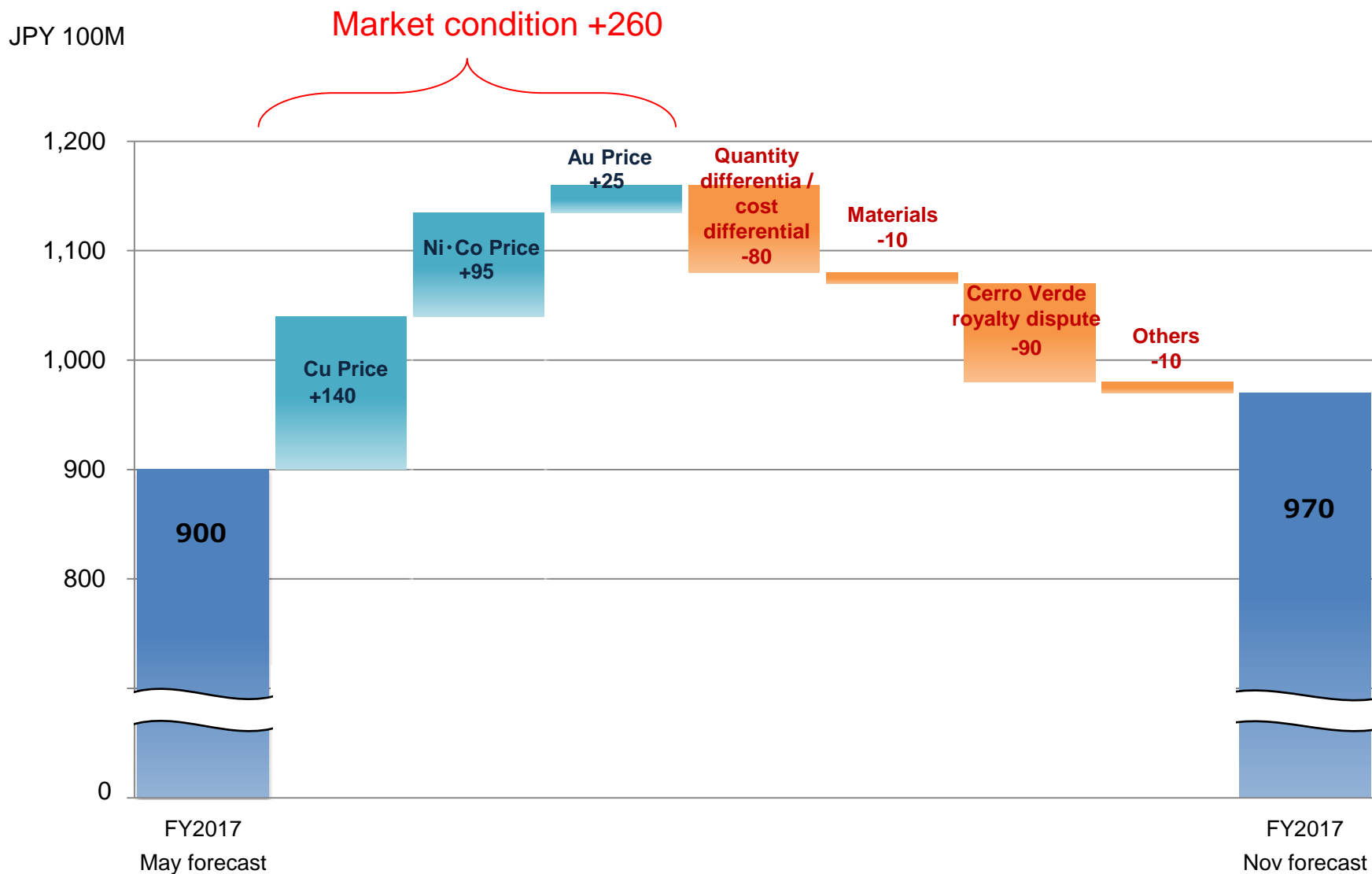
Progress of specific measures  
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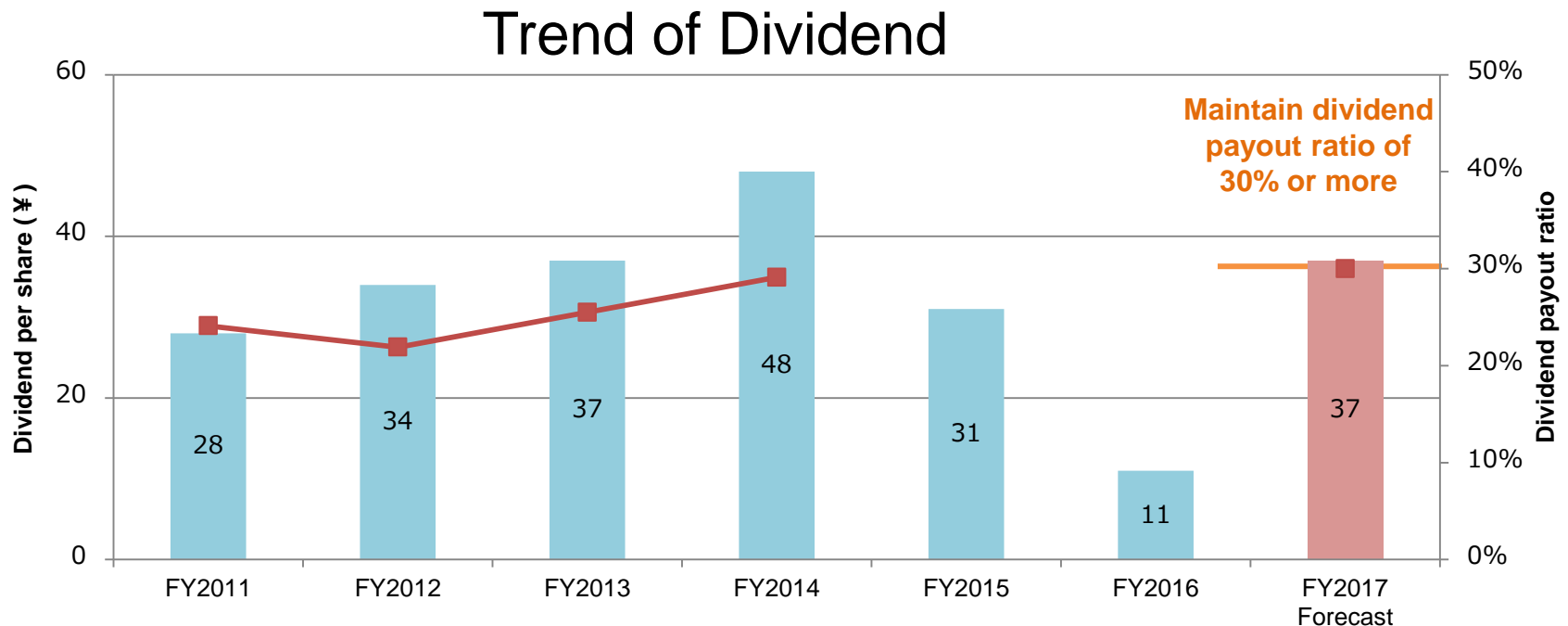
# 1) Change in business results

		2012	2013	2014	2015	2016	2017(F)
Net Sales		8,085	8,305	9,213	8,554	7,861	9,030
Operating Income		958	754	1,258	597	764	890
Recurring Profit		1,150	1,144	1,742	-128	-16	970
Equity Method profit		171	298	239	-732	-860	40
Segment Profit	Mineral Resources	661	691	538	-443	-536	520
	Smelting & Refining	406	291	813	253	333	320
	Materials	33	111	129	60	121	110
	Others	16	16	-1	-8	-1	-10
	Diff. Adjustment	34	35	263	10	67	30
Net Income (Profit attributable to owners of parent)		866	803	911	-3	-185	680
Copper (\$/t)		7,855	7,104	6,554	5,215	5,154	6,153
Nickel (\$/lb)		7.69	6.51	7.62	4.71	4.56	4.62
Gold (\$/Toz)		1,654	1,327	1,248	1,150	1,258	1,259
Exchange (¥/\$)		83.11	100.24	109.93	120.15	108.40	110.54

## 2) Recurring Profit Analysis (1) FY2017 November forecast vs May forecast



### 3) Return to shareholders



#### Change in the number of shares constituting one unit, and consolidation of shares

- Effective date: October 1, 2017
- Number of shares constituting one unit: 1,000  $\Rightarrow$  100 shares
- Consolidation of shares: Consolidation of 2 shares of common stock into 1 share

\*The above graph shows dividends per share calculated on a pre-consolidation basis.

## II. Evaluation of and issues in business results, and the management environment

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# 1) Change in business results

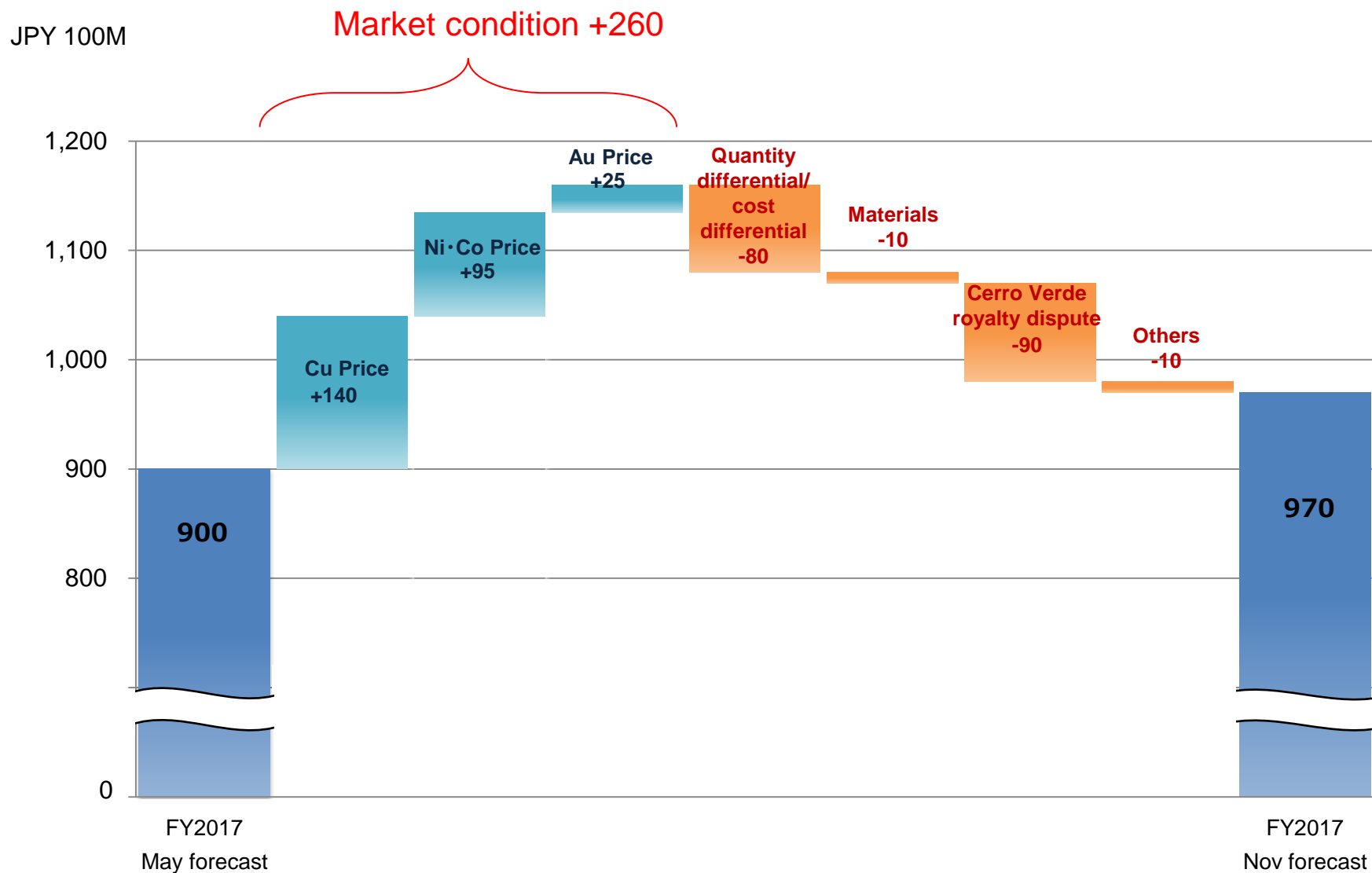
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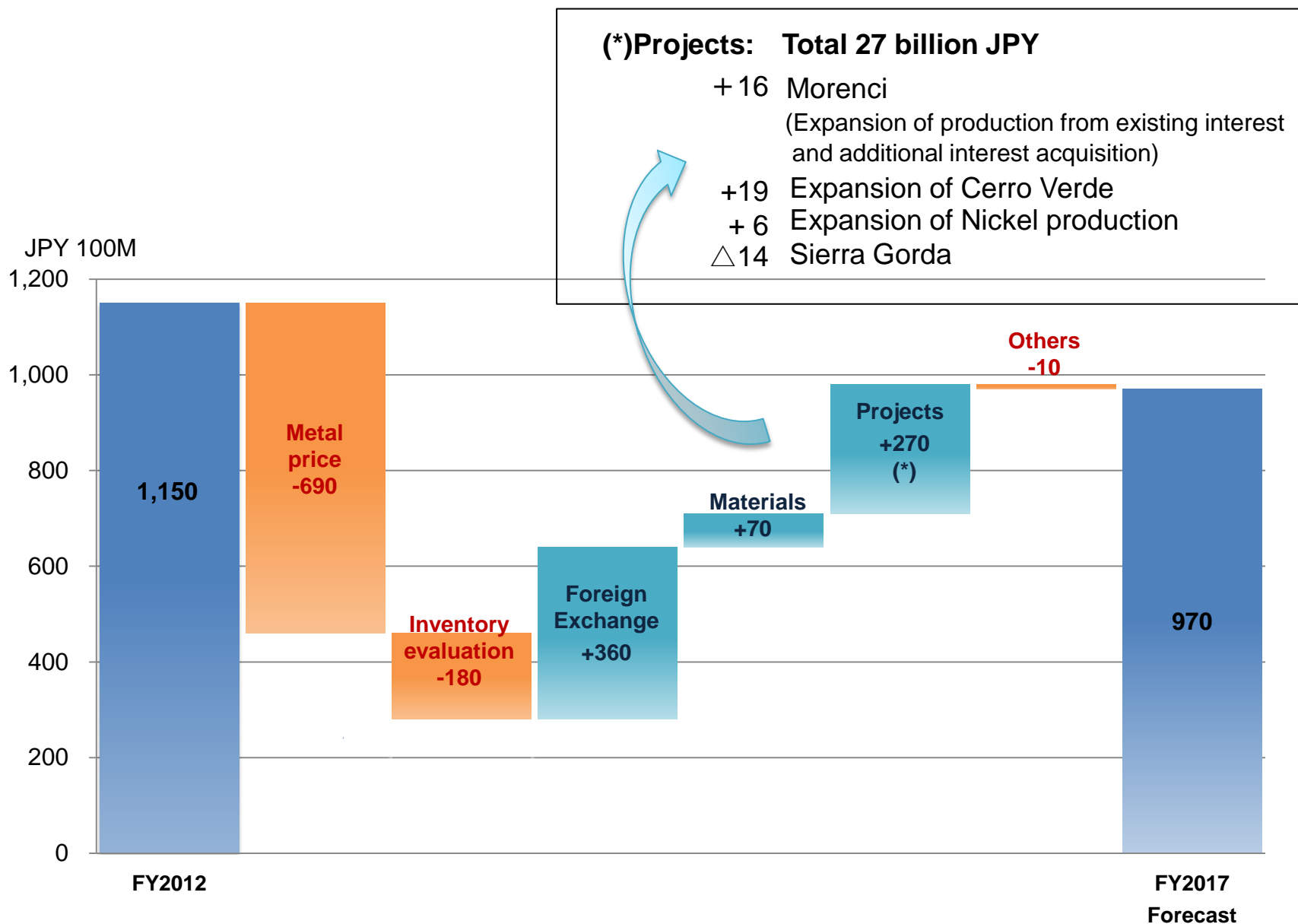


## 2) Recurring Profit Analysis (1) FY2017 November forecast vs May forecast

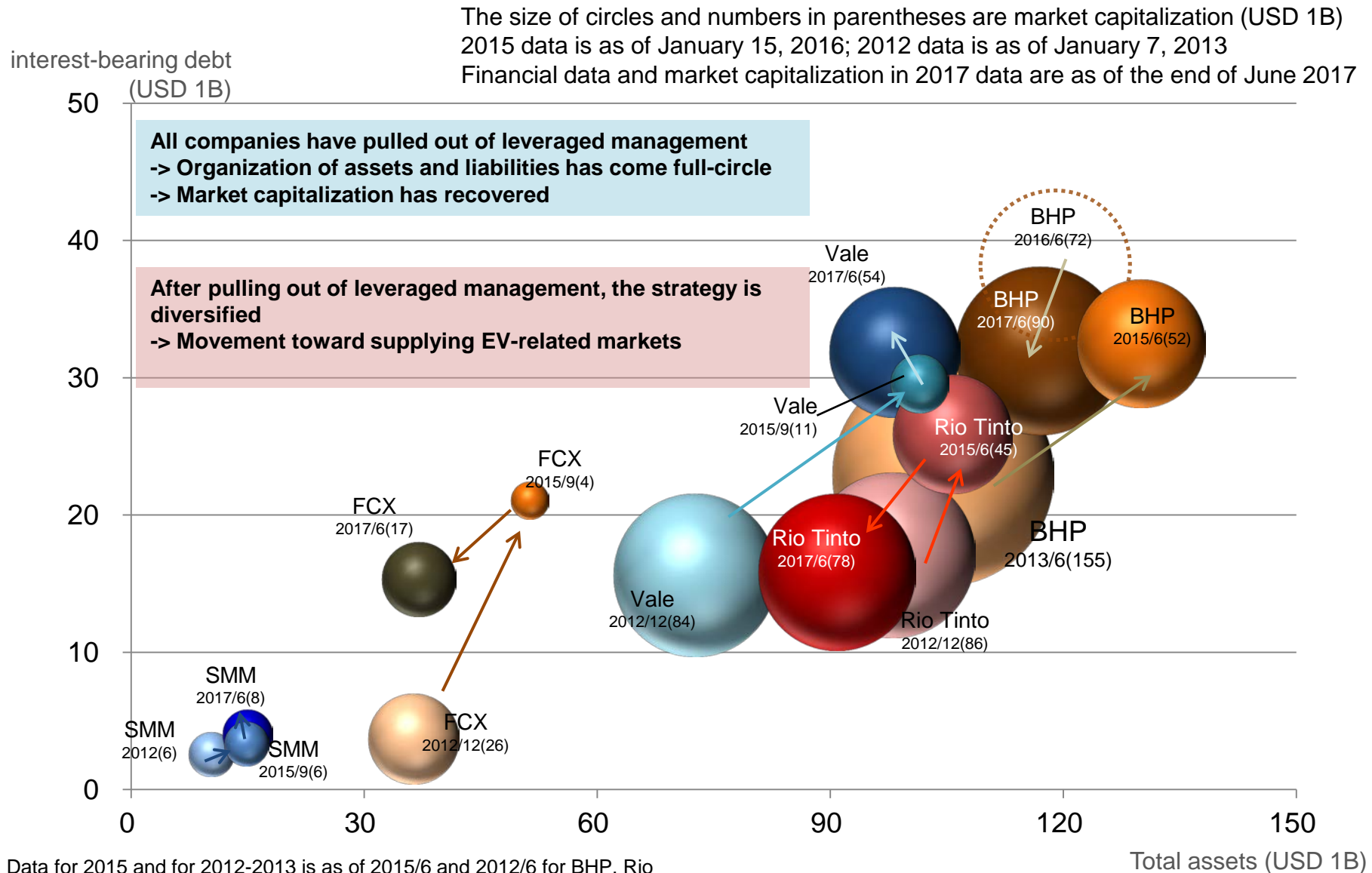
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### 3) Evaluation of FY2012 and FY2017



# 4) Movements of mineral resources companies and changes in the management environment



Data for 2015 and for 2012-2013 is as of 2015/6 and 2012/6 for BHP, Rio Tinto, and Glencore financial data, and as of 2015/9 and 2012/9 for other financial data

## 5) Movements of mineral resources companies and changes in the management environment

### Norilsk Nickel

Start of negotiations with BASF to cooperate on raw material supply for LiB (2017/6/27 Press release)

### Rio Tinto

Signed on Memorandum of Understanding with the Government of Serbia on Jadar Project (lithium project) (2017/7/24 Press release)

### BHP

Announcement of US\$43.2 million investment in nickel sulfate production (2017/8/9 Presentation)

### Jinchuan Group

Construction of nickel and cobalt refinery targeting EVs in 2018, expansion to nickel 30kt/year and cobalt 3kt/year by 2020 in Guangxi Zhuang Autonomous Region (2017/10/20 Report by Reuters News Agency)

## 6) Battery Materials Business and response to expanding market

### <Status of investment in battery business>

- 3,550t structure Jan. 2018– (Investment amount: About ¥18.0 billion)
- 4,550t structure Jun. 2018– (Investment amount: About ¥4.0 billion)

### Trends in regulations in countries

#### US: ZEV regulations

2018–  
Target: EV, FCV

#### EU: CO2 regulations

–2021  
Target: All models

#### China: NEV regulations

2018–  
Target: EV, FCV, PHEV

\*UK and France will prohibit new sales of gasoline diesel vehicles by 2040

- **VW:** By 2025, introduce 50 EV models, sell 3 million EVs worldwide per year
- **Daimler:** By 2022, introduce 10 EV models
- **Renault–Nissan:** 30% of sales target as EVs in 2022
- **GM:** By 2023, launch over 20 EV and FCV models
- **Tesla:** Annual production of 1 million EVs in 2020
- **Toyota:** Full-scale entry into EVs in 2020

(source : media reports)

## 7) External environment surrounding SMM

- Exchange rate is stable overall
- Geopolitical risks are scattered (North Korea, Europe, etc.)
- The supply/demand balance in non-ferrous markets showed minor fluctuations throughout the year
- Demands for the securing of metal materials to meet the shift to EVs

Relatively stable business environment



## 8) Issue (1): Safe and efficient operation

- ✓ Safety Performance
- ✓ Cost Control
- ✓ Inventory Management
- ✓ Operations Performance
- ✓ Production Management
- ✓ Quality Control

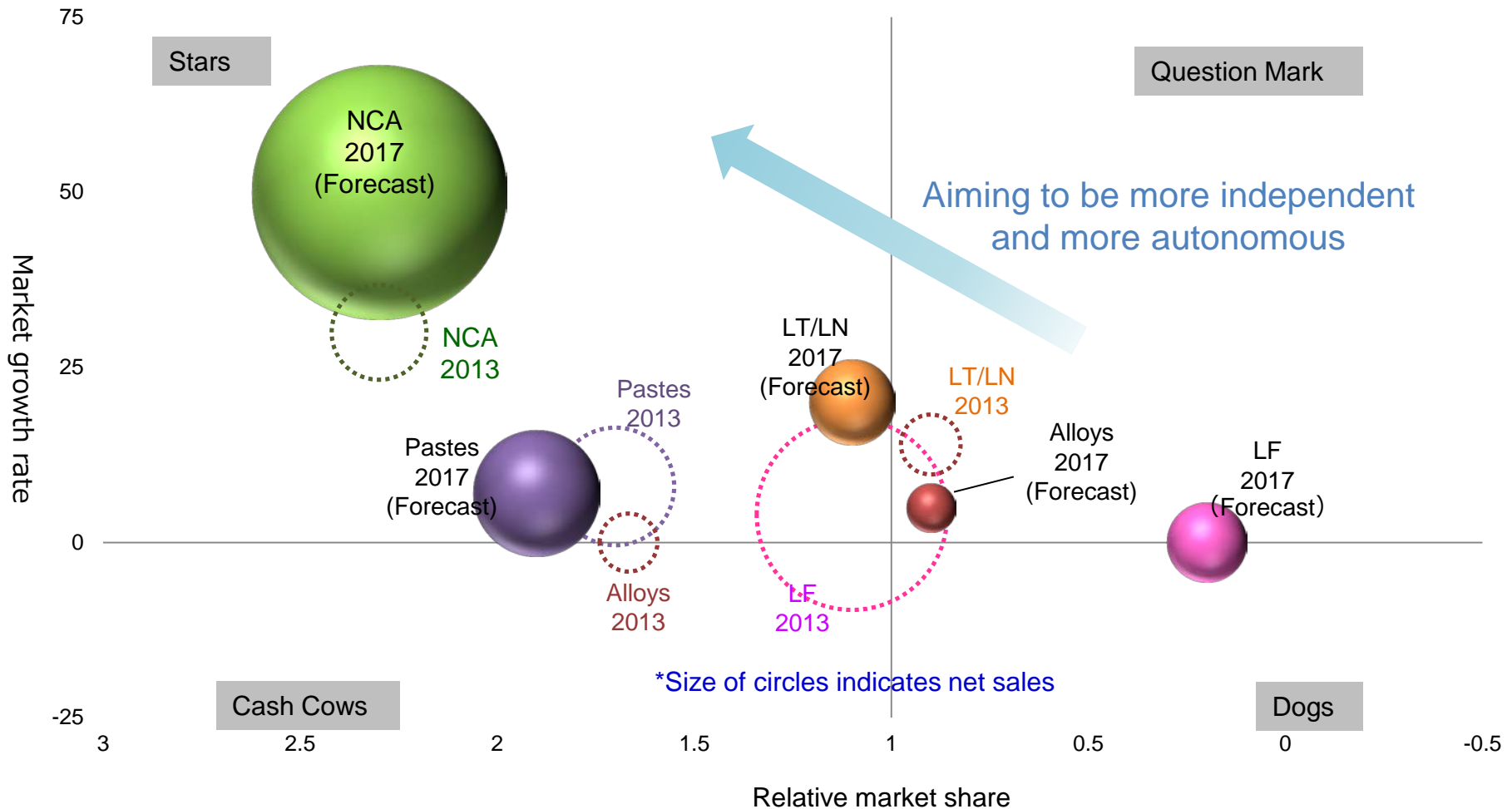
**The foundation of manufacturing:  
commit to what we planned**

**Strengthening  
on-site capabilities**

**Minimize opportunity losses**



## 9) Issue(2) : Making the Materials Business independent and autonomous



**Sowing seeds of new profit-earning businesses  
-> Planting -> Nurturing**



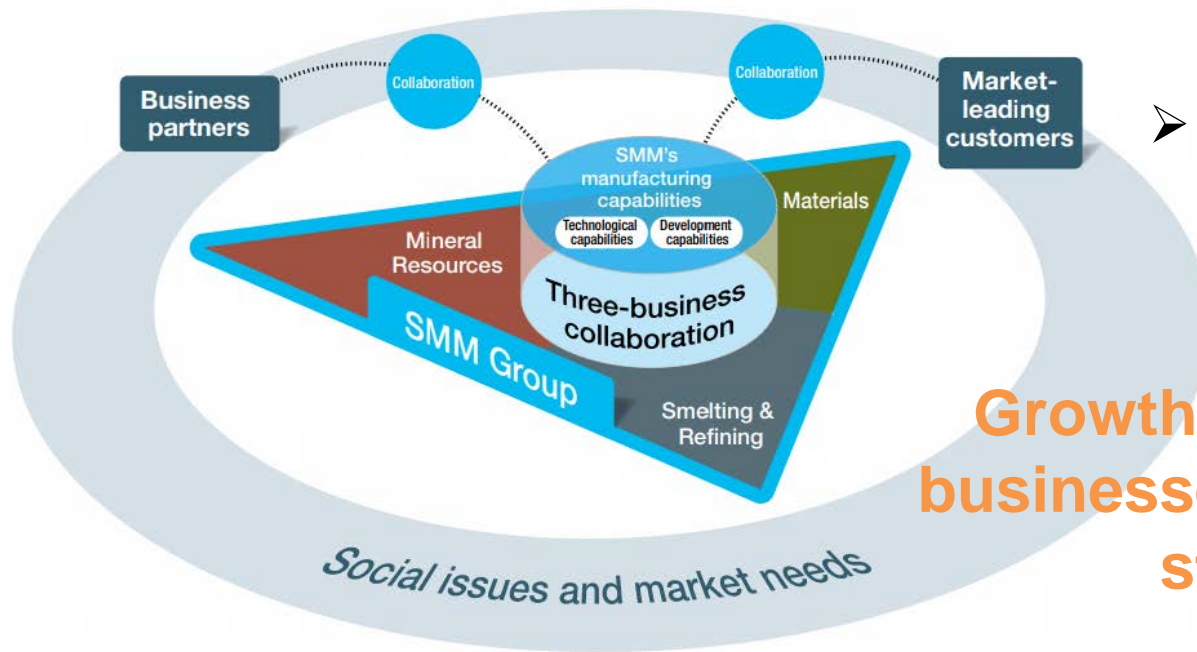
# 10) The key to achieving growth

**Mineral Resources**

**× Smelting and Refining**

**× Materials**

**= Enhancement of corporate value**



➤  $1 \times 1 \times 1$  remains 1

**Growth strategy for three businesses, supported by all stakeholders**

**The “key” for growth:**

**Formulation and execution of excellent strategies**

- ✓ Having a great deal of foresight in changing business environment
- ✓ Free and open corporate culture

## 11) Achieving the strong and solid profit structure: Mineral Resources

Profit contribution of major investments,  
and making a strategic move for the future

- Stable operation at Morenci
  - Stably make profit from additionally acquired interest
- Moving forward with the Côté Gold Project
  - Proactive participation in the project from the FS stage
- Sierra Gorda
  - Stabilize Operational Earnings
    - ⇒Cash-Neutral Operation/Management
    - ⇒Urging to make profit gains



## 12) Achieving the strong and solid profit structure: Smelting and Refining

Time for the Smelting and Refining business to display its manufacturing prowess

- Stable operations, cost reduction
- Efforts to efficiently expand

### THPAL expansion

Completed 20% expansion structure in Sep. 2017; full production from second half

Investment amount  
¥300 million  
Production capacity  
30kt => 36kt/year  
(Ni-t)

### Harima nickel sulfate expansion

Launch at start of 2018

Investment amount  
¥200 million  
Production capacity  
45kt => 49kt/year  
(Nickel sulfate volume)

### Scandium

THPAL scheduled to start production in January 2018, Harima Refinery in Apr.

Investment amount  
¥4.0 billion  
Production capacity  
7.5t/year  
(Scandium oxide volume)

## 13) Current conditions and issues in the Materials Business

Condition: Steady profit trend  
(batteries and powder material)

Issue: Rapid changes in the environment

- Crystal business (LT/LN): prolonged inventory adjustment
- Battery business: Contribution on a real ability basis will be from 2018

=> Is our strategy execution **being ahead of market growth?**

### To continue the growth strategy

- **Entry into SiC business**  
Building new market by utilizing substrate production technology
- **Making Granopt Co., Ltd. a subsidiary**  
Strengthening optical communication business



# 14) Future expected risks and issues

## 1) Sierra Gorda

- Stable operations
- Molybdenum recovery rate
- De-bottlenecking

## 2) Battery materials (cathode materials)

- Risk of NMC substituting the NCA market
- Changes in required specifications
- Expectations and uncertainty toward market growth

## 3) Technology development

- Handling declining ore grade and difficult-to-process ores (impurities)
- Recycling
- Emergence of resource conservation, resource substitution

### III. Progress of FY2017 business performance and outlook for annual business results (Progress of 15 3-Yr Business Plan)

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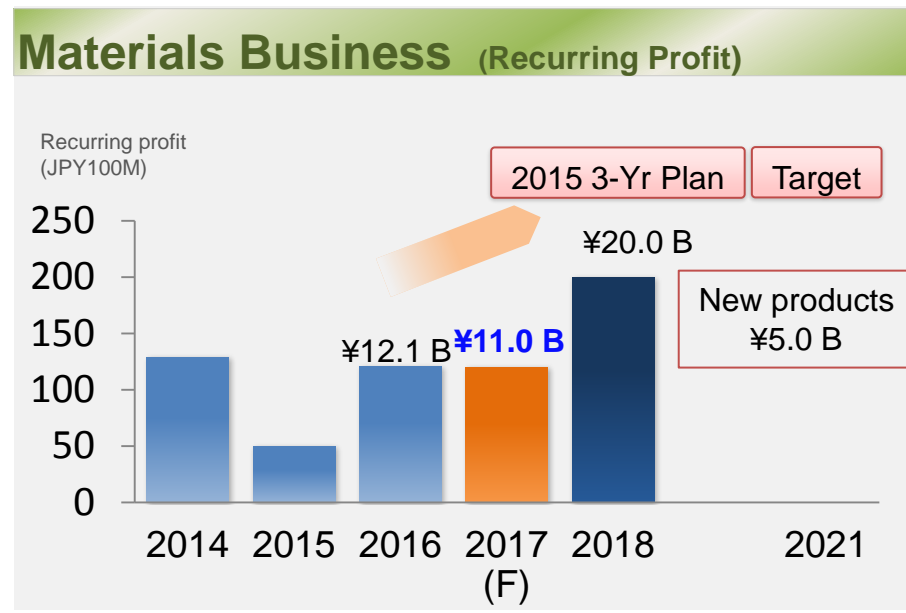
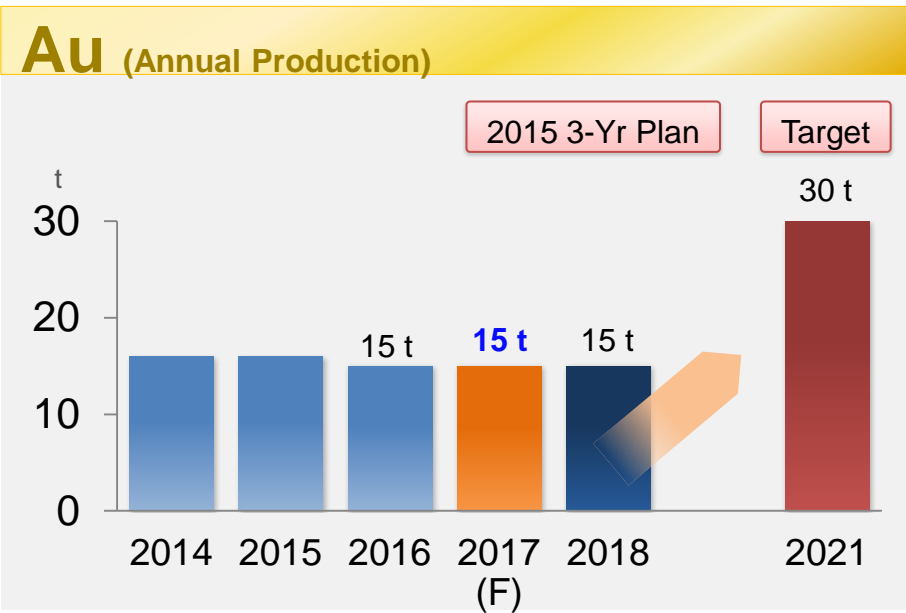
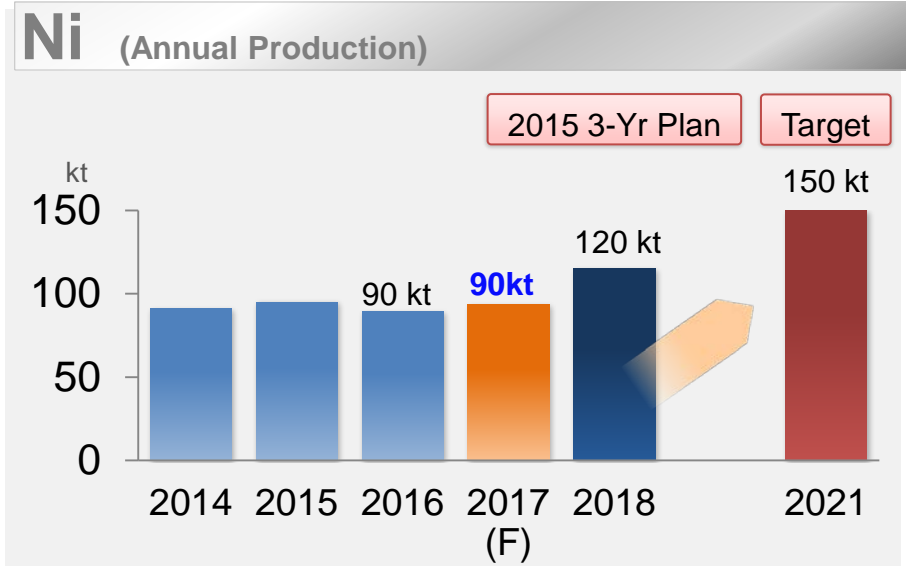
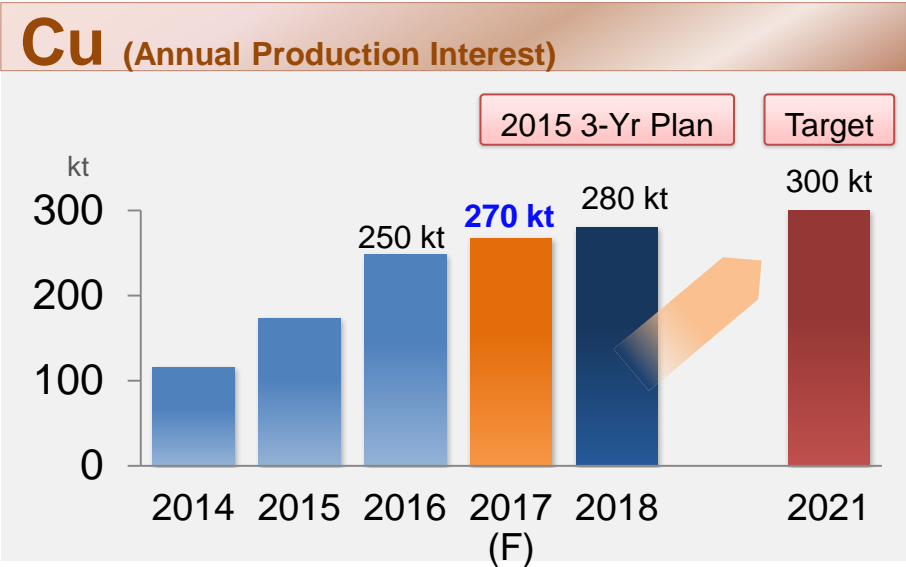
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Progress of specific measures  
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# 1) Status of Achievement of Long-Term Vision



## 2) Progress of Major Projects in 2015 3-Yr Business Plan

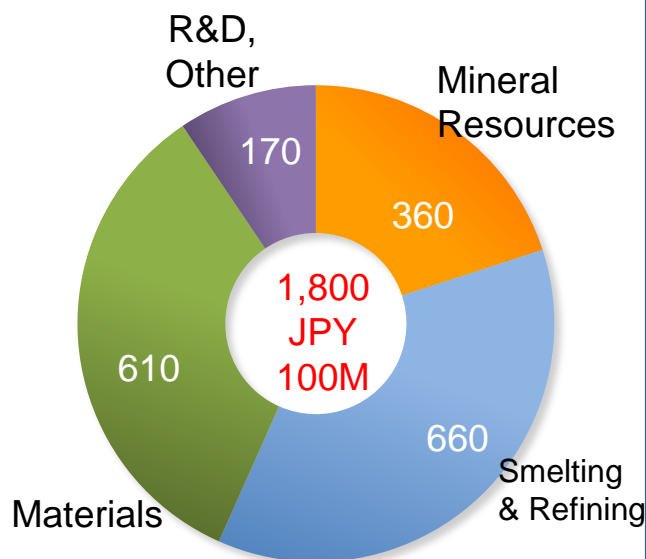
		Project name	FY2015	FY2016	FY2017	2018 onward
Mineral Resources	Cu	Sierra Gorda Copper Mine	Start commercial production	110 kt production structure		(Start debottlenecking)
	Cu	Morenci Copper Mine	Start expanded full-scale production	Acquisition of additional interests (12% -> 25%)		
	Cu	Cerro Verde Copper Mine		Start expanded full-scale production		
	Ni	Solomon			withdrawal from PJ	
	Au	Cote		Acquisition of interests	FS Start	
Smelting & Refining	Ni	Taganito HPAL			36 kt production structure	
	Ni	Pomalaa Project				DFS Start Decision on investment
	Ni	Harima Refinery Nickel sulfate		Second line launch		49kt Structure
Materials	Battery materials		NCA 1,850 t structure		NCA 3,550t Structure	NCA 4,550t Structure Ternary type
	Crystal materials (LT/LN)		Decision on production increase	300KP structure		(400KP structure) Increase production



# 3) Capital Expenditure

(¥100 million)

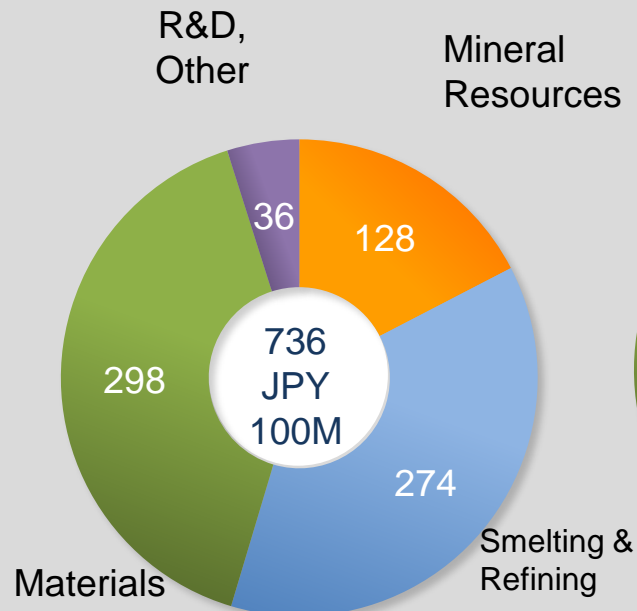
15 3-Yr Plan  
(Total of 3 Years)



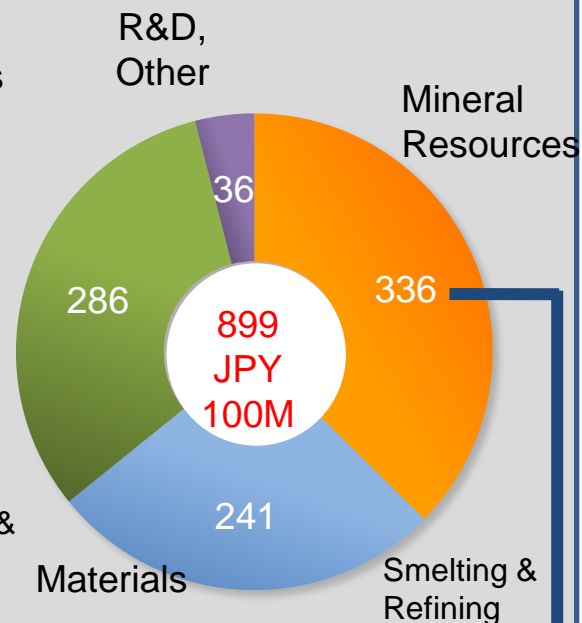
+

Acquisition of overseas interest  
( Morenci, ¥1,120 (JPY100M) )

FY 2017 Plan  
(May)



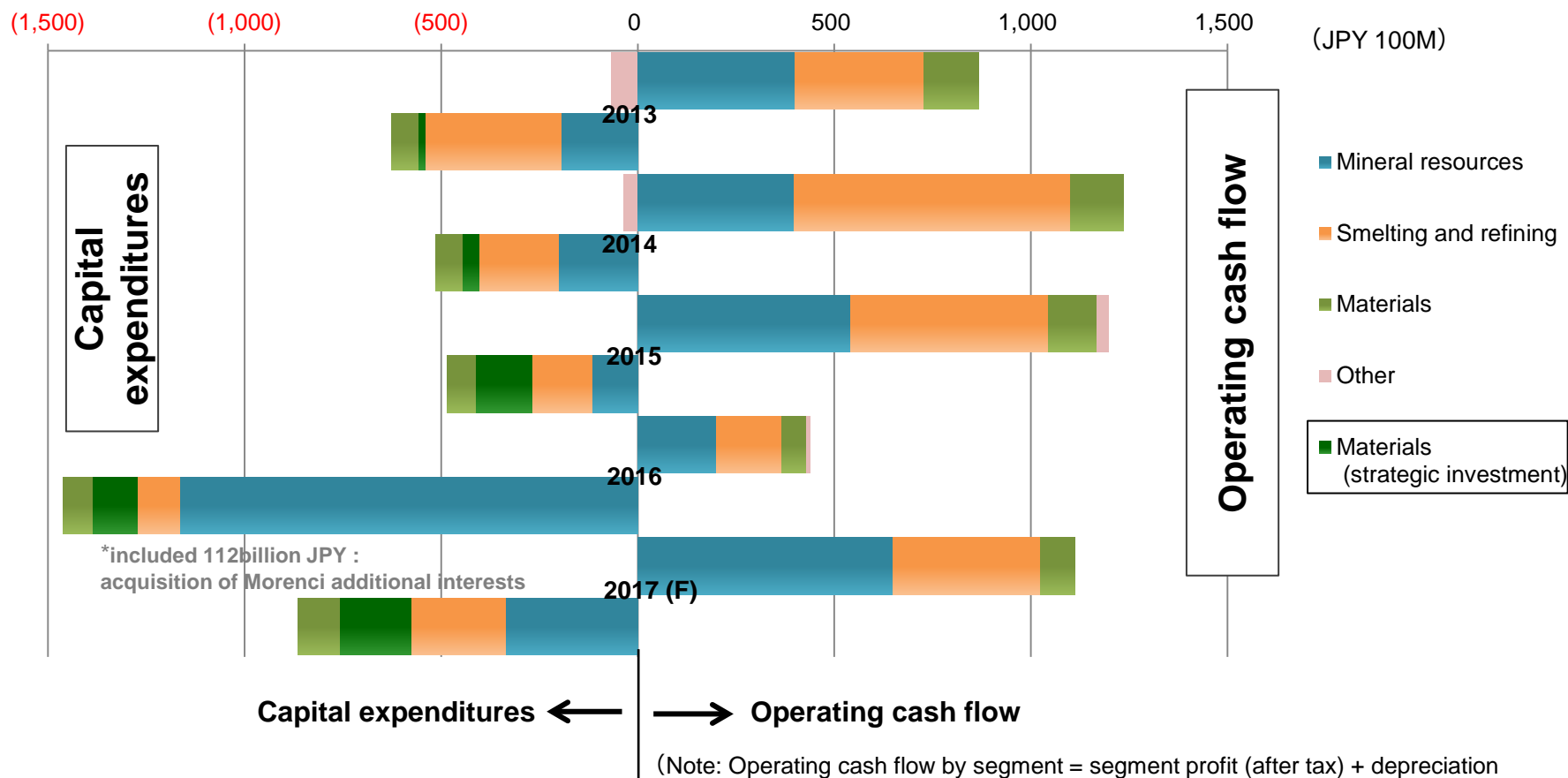
FY 2017 Forecast  
(Nov)



**Côté Gold Project**  
+ ¥21.5 billion

## 4) Cash flow (by segment)

Cash generated from mineral resources and from smelting and refining has been allocated to strategic investment in the materials business since FY2015



## 5) Comparison with 15 3-Yr Business Plan (Estimation of FY2017 business results forecast, based on 3-Yr Business Plan given conditions)

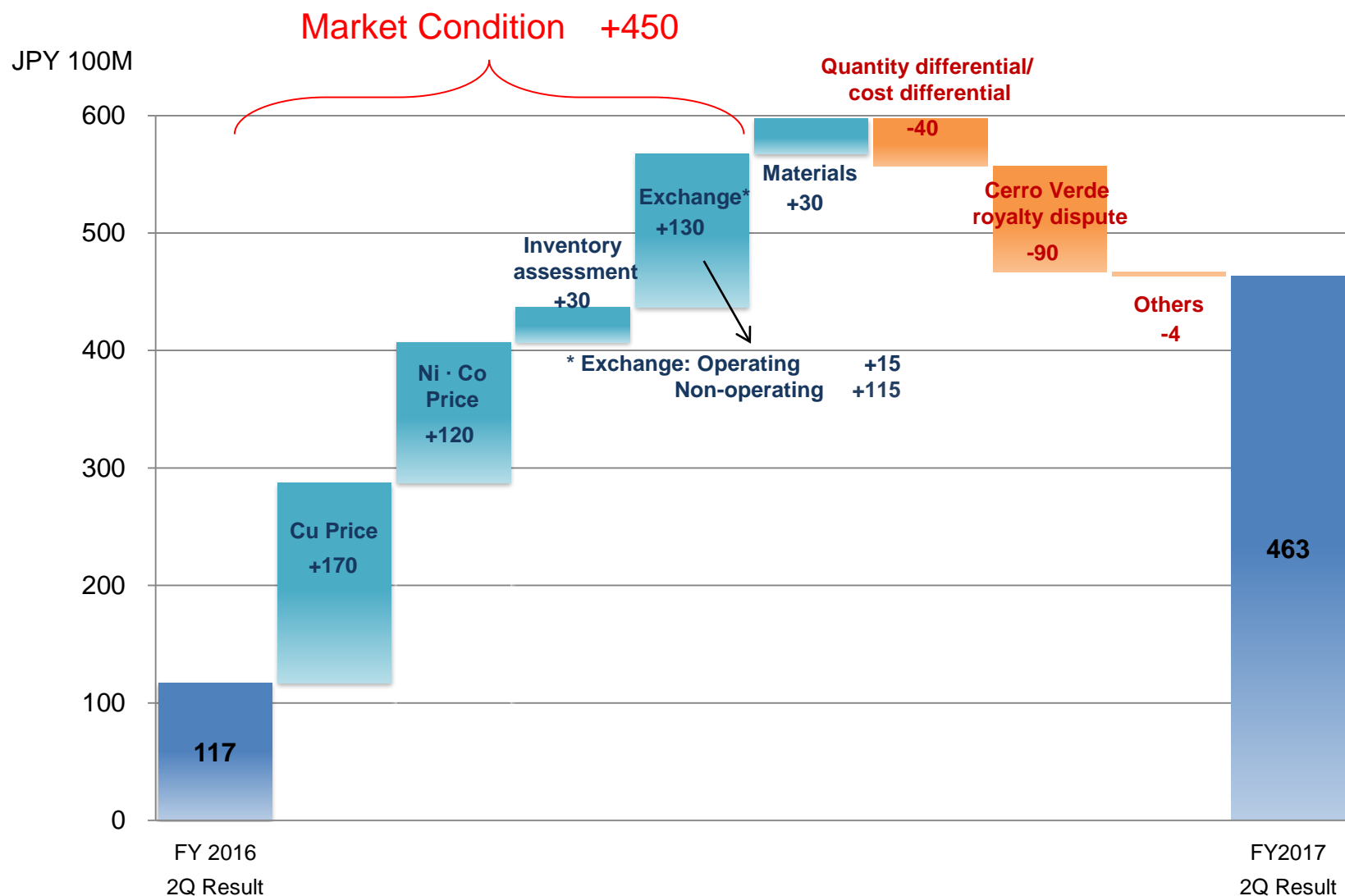
		FY2017 Nov Forecast		Difference		15 3-Yr Business Plan 2018 estimates
		announced value	Estimate from 3-Yr business plan given conditions			
Net Sales		9,030	9,463	-433		10,600
Operating Income		890	1,323	-433		1,400
Recurring Profit		970	1,481	-511		1,700
Equity Method profit		40	118	-78		270
Segment Profit	Mineral Resources	520	501	+19		660
	Smelting & Refining	320	850	-530		800
	Materials	110	110	-		200
	Others	-10	-10	-		-20
	Diff. Adjustment	30	30	-		60
Net Income (Profit attributable to owners of parent)		680	1,038	-358		1,200
Copper (\$/t)		6,153	6,000	+152		6,000
Nickel (\$/lb)		4.62	7.00	-2.38		7.00
Gold (\$/Toz)		1,259	1,150	+109		1,150
Exchange (¥/\$)		110.54	120.00	-9.46		120.00

## 6) Overview of 2Q financial results and FY2017 forecast (November)

		2017/1H (A)	2016/1H (B)	Difference (A) – (B)	2017 Nov Forecast(C)	2017 May Forecast(D)	Difference (C) – (D)
Net Sales		4,421	3,665	+756	9,030	8,550	+480
Operating Income		447	219	+228	890	750	+140
Recurring Profit		463	117	+346	970	900	+70
Equity Method profit		-27	-41	+14	40	100	-60
Segment Profit	Mineral Resources	176	123	+53	520	490	+30
	Smelting & Refining	182	36	+146	320	260	+60
	Materials	65	37	+28	110	120	-10
	Others	1	3	-2	-10	-10	0
	Diff. Adjustment	39	-82	+121	30	40	-10
Net Income (Profit attributable to owners of parent)		351	33	318	680	630	+50
Copper (\$/t)		6,005	4,752	+1,253	6,153	5,800	+352
Nickel (\$/lb)		4.49	4.33	+0.16	4.62	4.75	-0.13
Gold (\$/Toz)		1,268	1,297	-29	1,259	1,200	+59
Exchange (¥/\$)		111.08	105.31	+5.77	110.54	110.00	+0.54

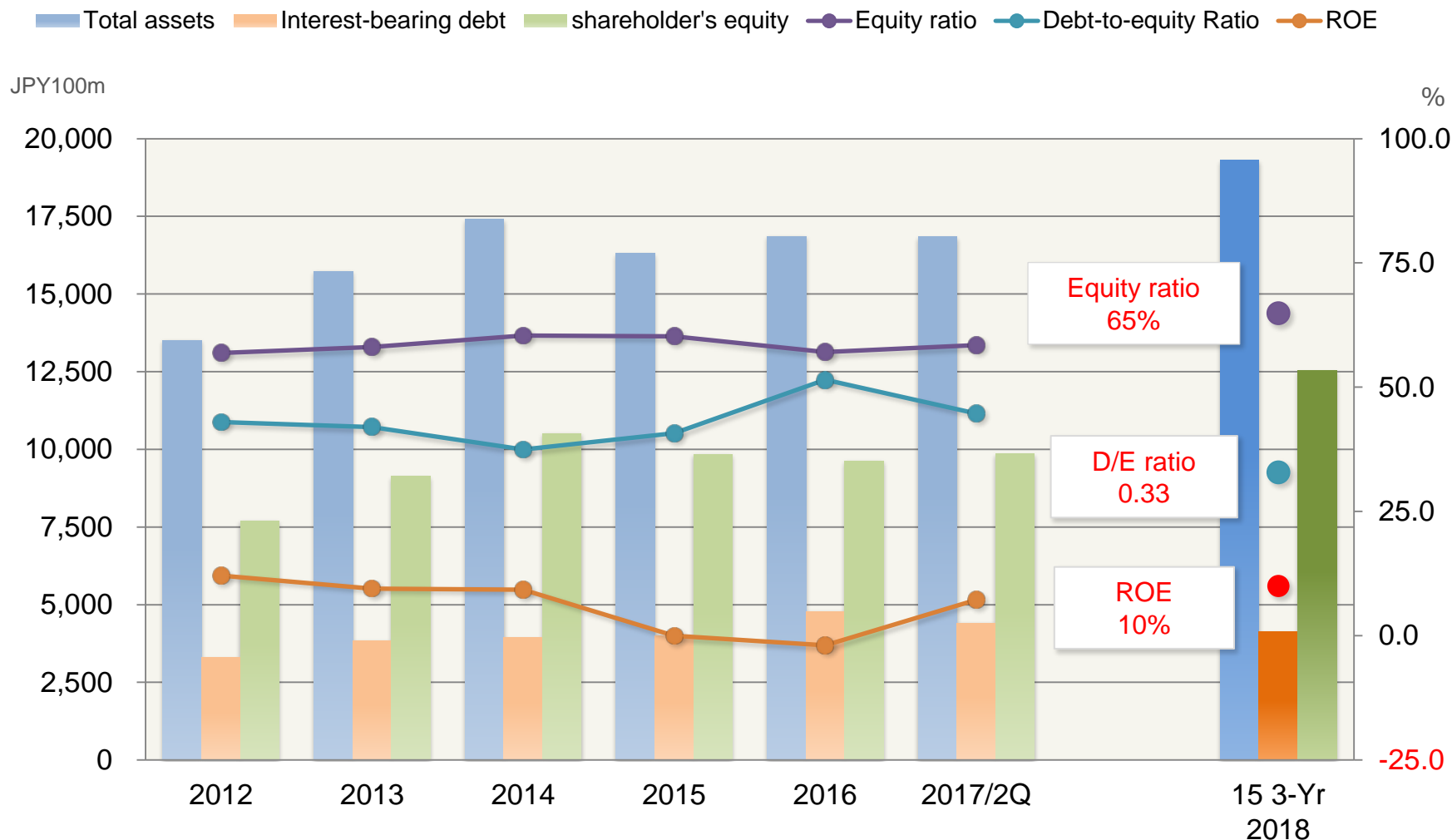
## 7) Recurring Profit Analysis (2)

### FY2016Q2 business performance vs FY 2017Q2 business performance



## 8) Financial Strategies

### Maintenance of a Sound Financial Structure



# 9) Copper, Nickel: Supply and Demand Forecast

## Copper

[ICSG Forecast Oct. 2017]

(kt)

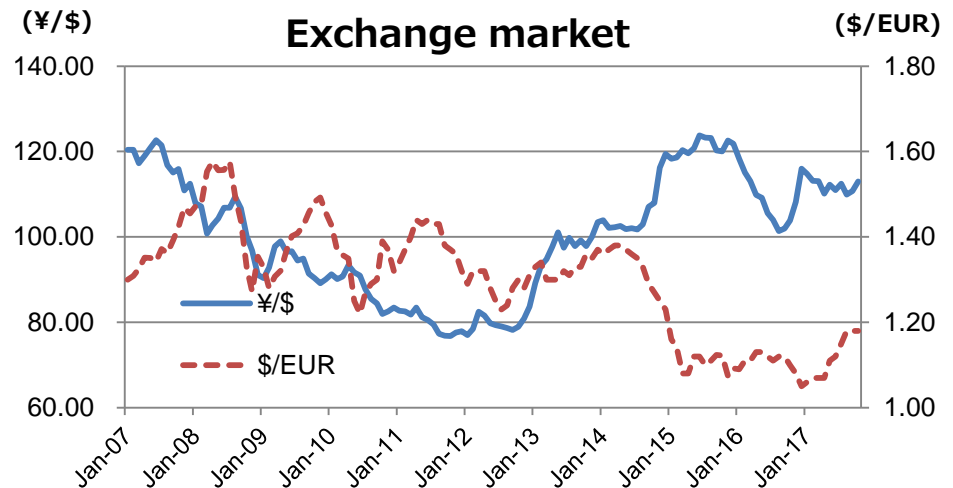
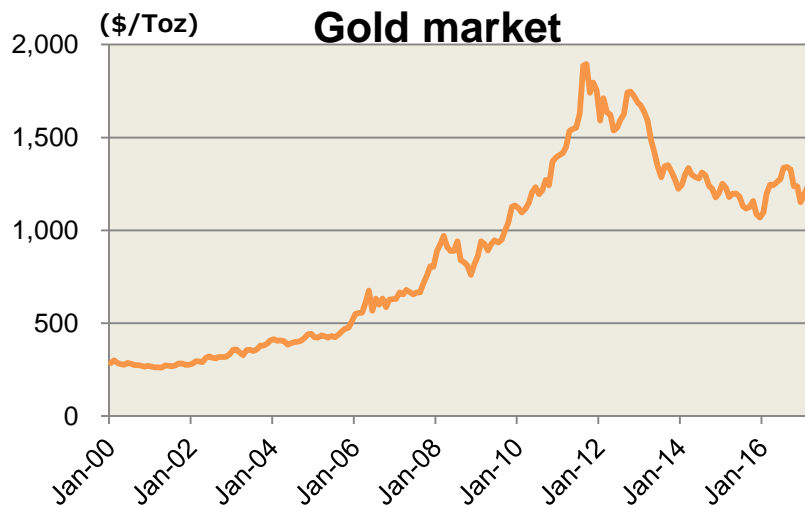
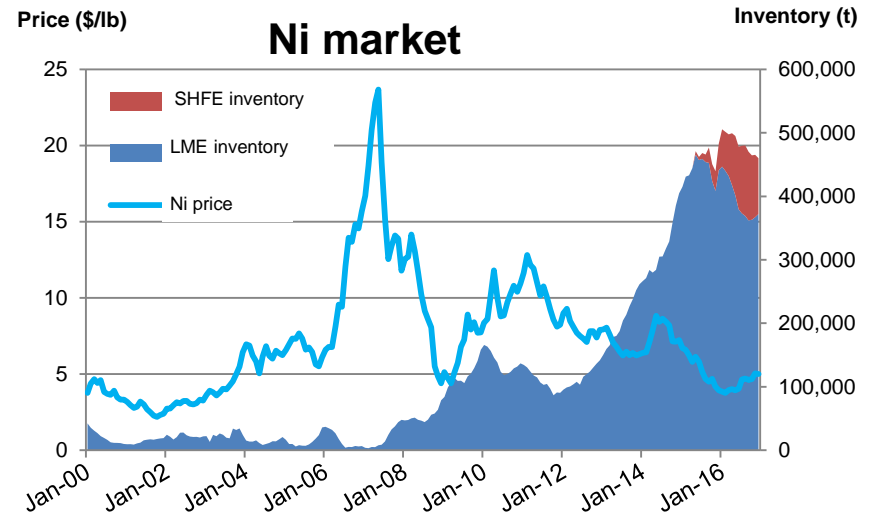
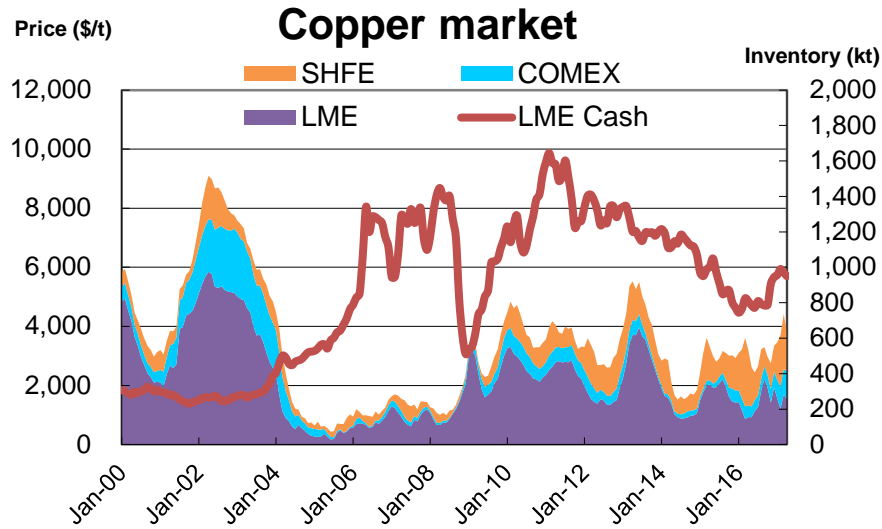
	2016	2017	2018
Production	23,339	23,583	24,179
Usage	23,491	23,733	24,283
Balance	-152	-151	-104

## Nickel

(kt)

	INSG Forecast 2017/10			SMM Forecast 2017/10		
	2016	2017	2018	2016	2017	2018
Production	1,981	2,052	2,206	2,049	2,041	2,112
Usage	2,035	2,150	2,259	2,079	2,139	2,197
Balance	-54	-98	-53	-30	-98	-85

## 10) Management Environment : Nonferrous Metal Market · Exchange Market





# 11) Sensitivity

(JPY100M)

Element	Degree of variation	FY 2017 Operating income/ Recurring profit
Cu	±100\$/t	16/29
Ni	±10 ¢ /lb	16/18
Au	±10\$/toz	5/5
JP¥/ \$	±1¥/\$	10/10

(Remark) USD/JPY translation include RC-related and Conversion rate of overseas consolidated / equity-method affiliate companies' profit.

# IV. Progress of specific measures and initiatives for engagement

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# 1) Mineral Resources

## (1) Copper: Stable Operation of Existing Mine (Morenci, Cerro Verde)

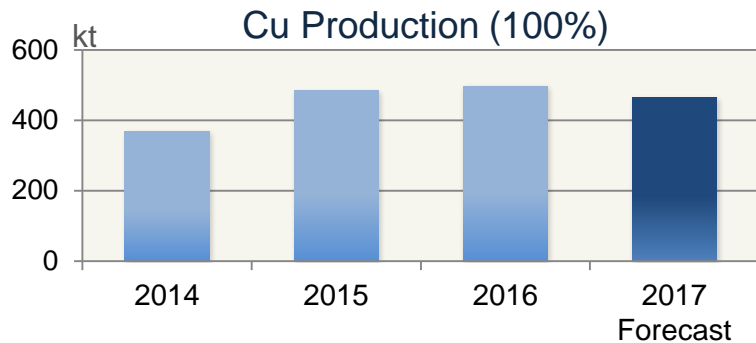
### Morenci Copper Mine (Arizona, US)

Equity  
interest  
ratio

FCX	72%
SMM	25%
Sumitomo Corp.	3%



- Effect of acquisition of additional interests -> 12 months (FY 2016: 7 months)
- Production amount: FY 2017 464 kt (planned) -> 463kt(Estimate)



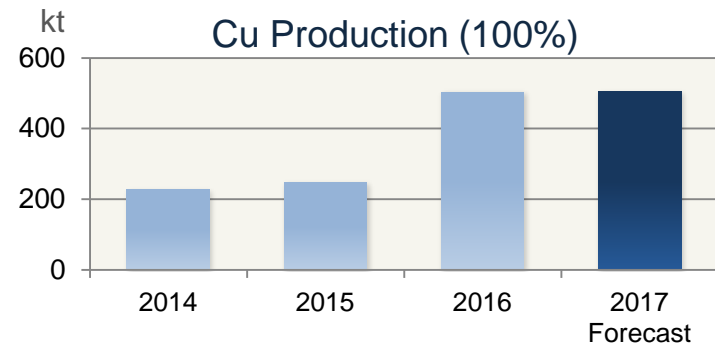
### Cerro Verde Copper Mine (Peru)

Equity  
interest  
ratio

FCX	53.56%
SMM	16.80%
Sumitomo Corp.	4.20%
Other	25.44%



- Production output: FY2017 522kt (planned) -> 504kt (forecast)
- Affected by strike in March, heavy rains from April
- Recording of royalties from past fiscal years, etc.



Continue stable production to  
benefit from recovering copper prices

# 1) Mineral Resources

## (1) Copper: Stable operation of existing mines (Sierra Gorda)

### Sierra Gorda Copper Mine (Chile)

Equity interest ratio	KGHM	55.0%
	SMM	31.5%
	Sumitomo Corp.	13.5%



#### FY 2017 Progress

- Production output

Copper: FY2017 100kt (planned) -> 101kt (forecast)

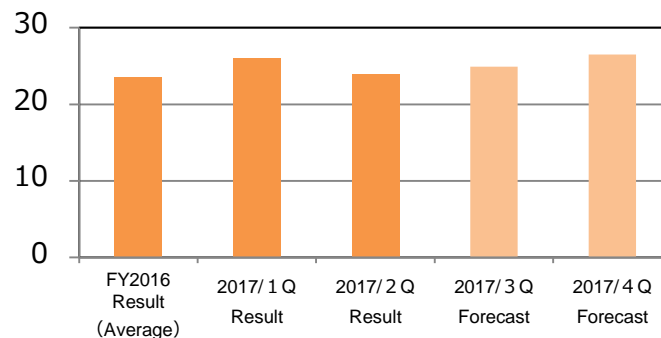
Molybdenum: Confirmation of improved yield

(Decline in production output is due to decline in ore quality)

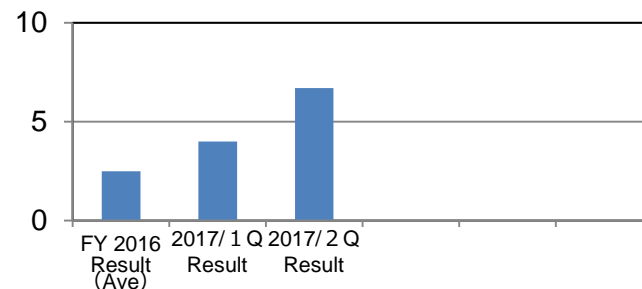
- Revision of expansion plan (de-bottlenecking)

Consideration of production scale, equipment improvements, etc.;  
continuation of discussions among shareholders

(Kt/Quarter) **Cu Production (100%)**



(Kt/quarter) **Mo Production (100%)**



Stabilizing of profits from operations ->  
Continuation of initiatives for shift to cash-neutral

# 1) Mineral Resources

## (2) Gold: Stable Operation of Existing Mine (Hishikari, Pogo)

### Hishikari Mine (Kagoshima, Japan)

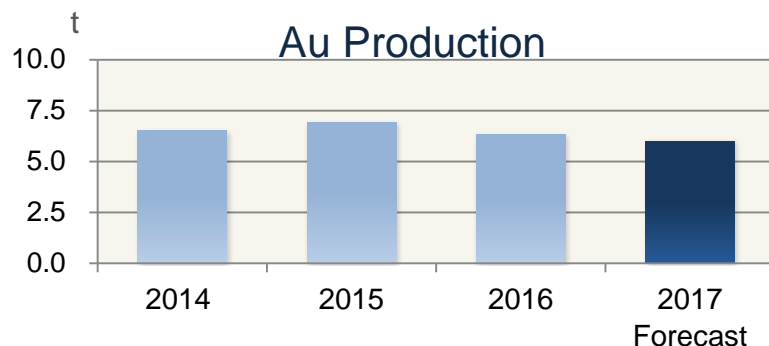
Equity  
interest ratio

SMM

100%



- Lower ore deposit development  
Continuing with priority on safety
- 2016 year-end reserves: 169 t (JIS standard)
- Production output: FY2017 6.0t (planned) → 6.0t (forecast)



### Pogo Gold Mine (Alaska, US)

Equity  
interest ratio

SMM

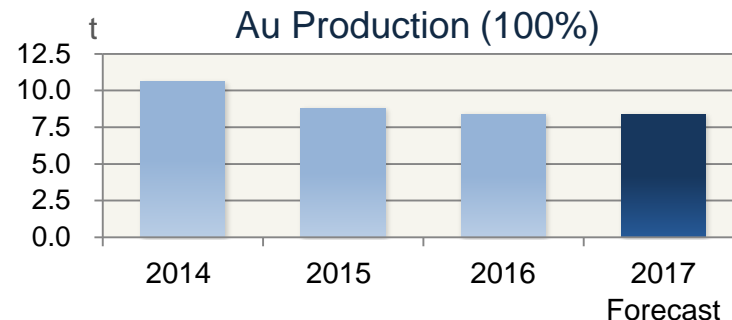
Sumitomo Corp.

85%

15%



- Promotion of cost reduction measures and continuation of active exploration of peripheral areas
- 2016 year-end reserves Reserve 39 t  
Resource 98 t Canadian standards)
- Production output: FY2017 8.7t (planned) → 8.4t (forecast)



Continue stable production; promote initiatives to extend mine life

# 1) Mineral Resources

## (2) Gold: Initiatives towards Expansion of Interests

Exploration activities Currently expanding activities with focus on Canada, Australia, and South America

### Efforts to acquire new mining interest

Expansion of information-gathering antenna and greater speed of gold development project evaluation

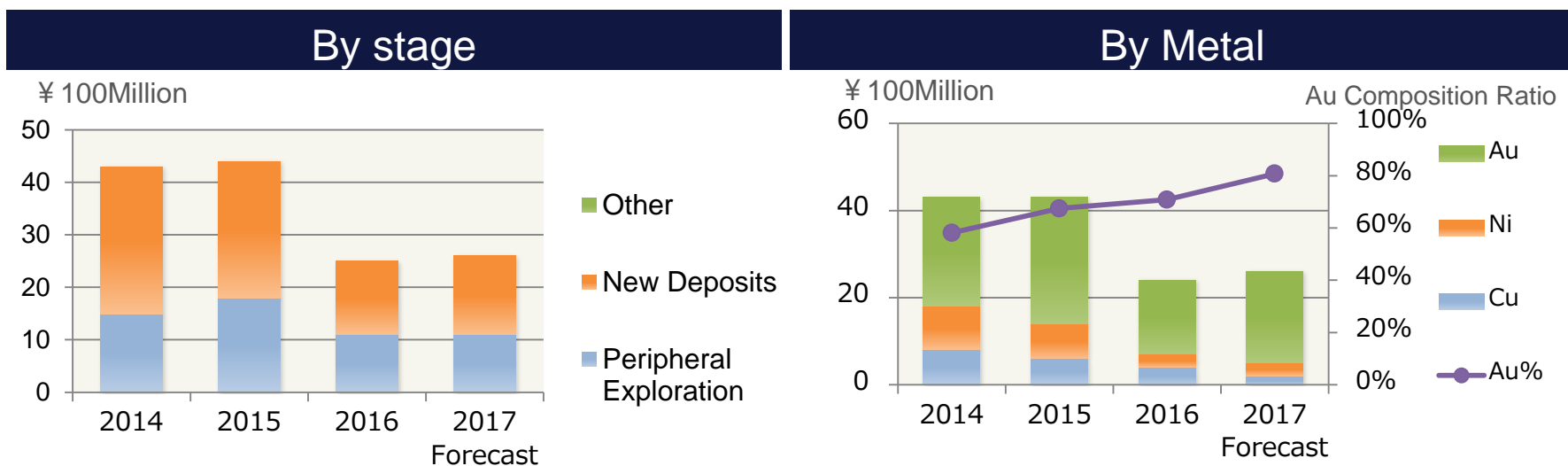
Expansion of gold production interest volume through collaboration with the world's medium producers

Efforts to uncover gold development projects that leverage SMM's technological capabilities and that will truly contribute to strengthening our management foundations

### Jun. 2017: Acquired 27.75% interest in Côte Gold Project (Canada)

=> From Sep. begin FS, dispatch human resources from SMM too

### Exploration costs



Engage in exploration and acquisition of interests, with gold as the main target

## 2) Smelting & Refining

### (1) Copper smelting and refining: Maximization of competitiveness

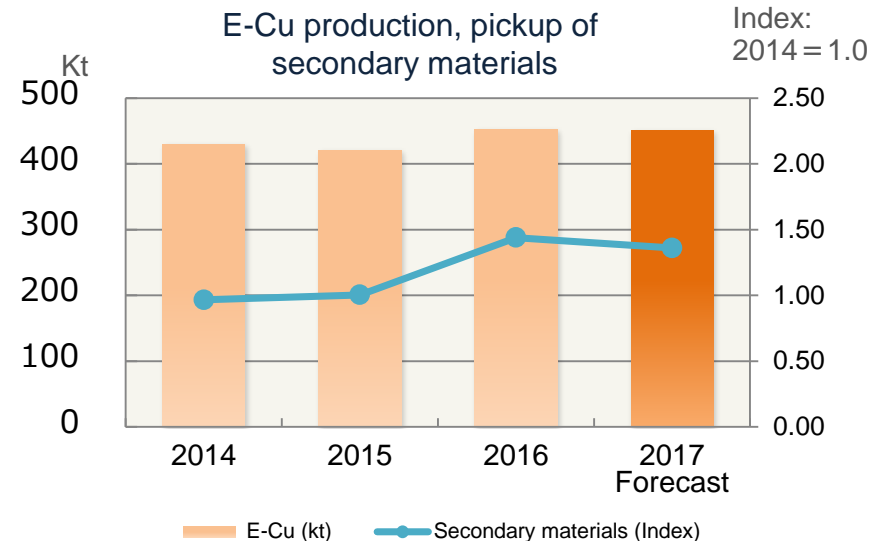
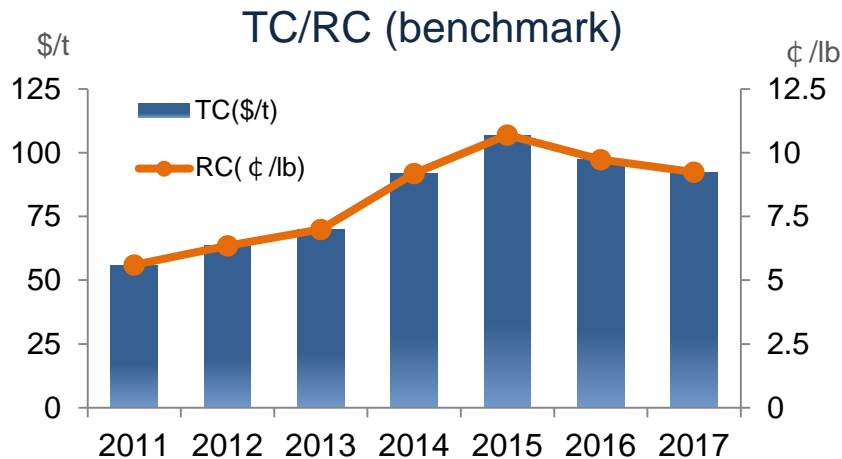
#### Toyo Smelter & Refinery

##### Production volume

FY 2016: Achieved record-high 451 kt

FY 2017: 450 kt (planned)

Further improve profitability as world-leading copper smelter through processing expansion of profitable raw materials and cost reductions



Benefit from high-level TC/RC through full production under 450 kt production structure under stable operation



## 2) Smelting & Refining (2) Nickel smelting and refining: Promotion of stable operation and construction of expansion

### CBNC/THPAL, Niihama Nickel Refinery, Harima Refinery, Hyuga Smelting Co., Ltd.

- THPAL** Expansion was completed in Sep.; mass production from second half

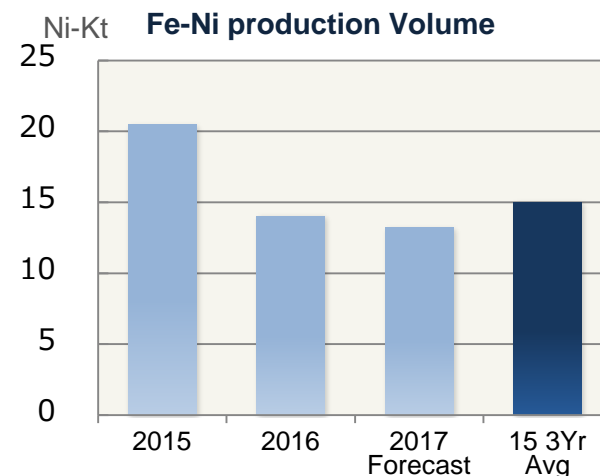
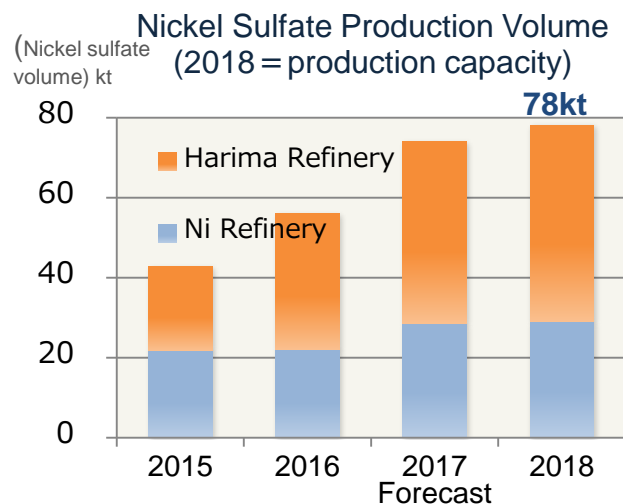
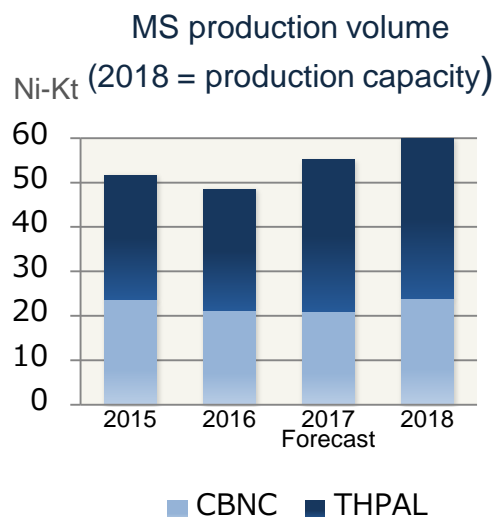
CBNC 24kt/year  
THPAL 30kt/year

From FY 2017 2H Production capacity

**CBNC : 24kt THPAL : 36kt**

**2 HPAL 60kt  
structure  
in the  
Philippines**

- Niihama Nickel Refinery:** Achievement of nickel sulfate expansion and stable production of electrolytic nickel
- Harima Refinery:** Full production under an annual 45kt production structure for nickel sulfate; now constructing a 49kt structure
- Hyuga Smelting :** Continuation of stable operations under 2-kiln, 1-electric furnace operation





### 3) Materials (1) Materials products and sub-segments

Developing products in the advanced materials area with four core functionalities

#### Battery materials



Nickel hydroxide

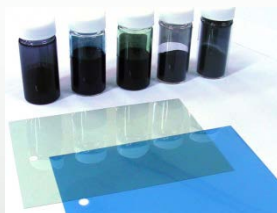


Lithium nickel oxide (NCA)

#### Powder materials



Thick film paste



Near-infrared  
Shielding Materials



Magnetic materials

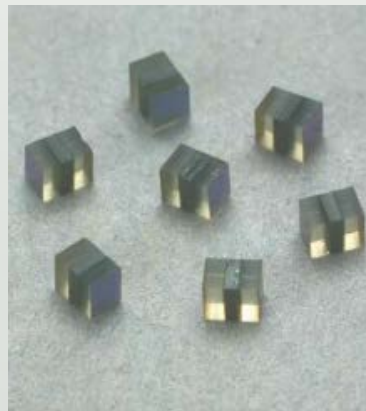


Thin film materials

#### Crystal materials

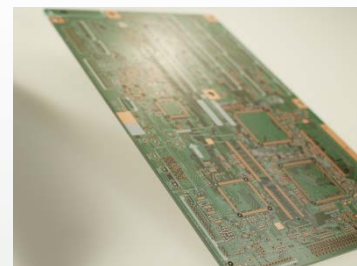


Lithium tantalate (LT)  
Lithium niobate (LN)

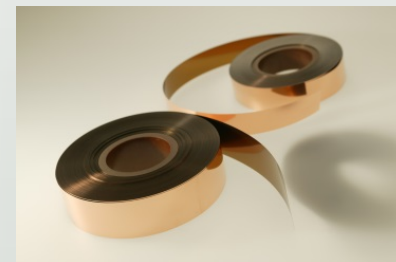


Optical isolators

#### Packaging materials



Printed circuit boards

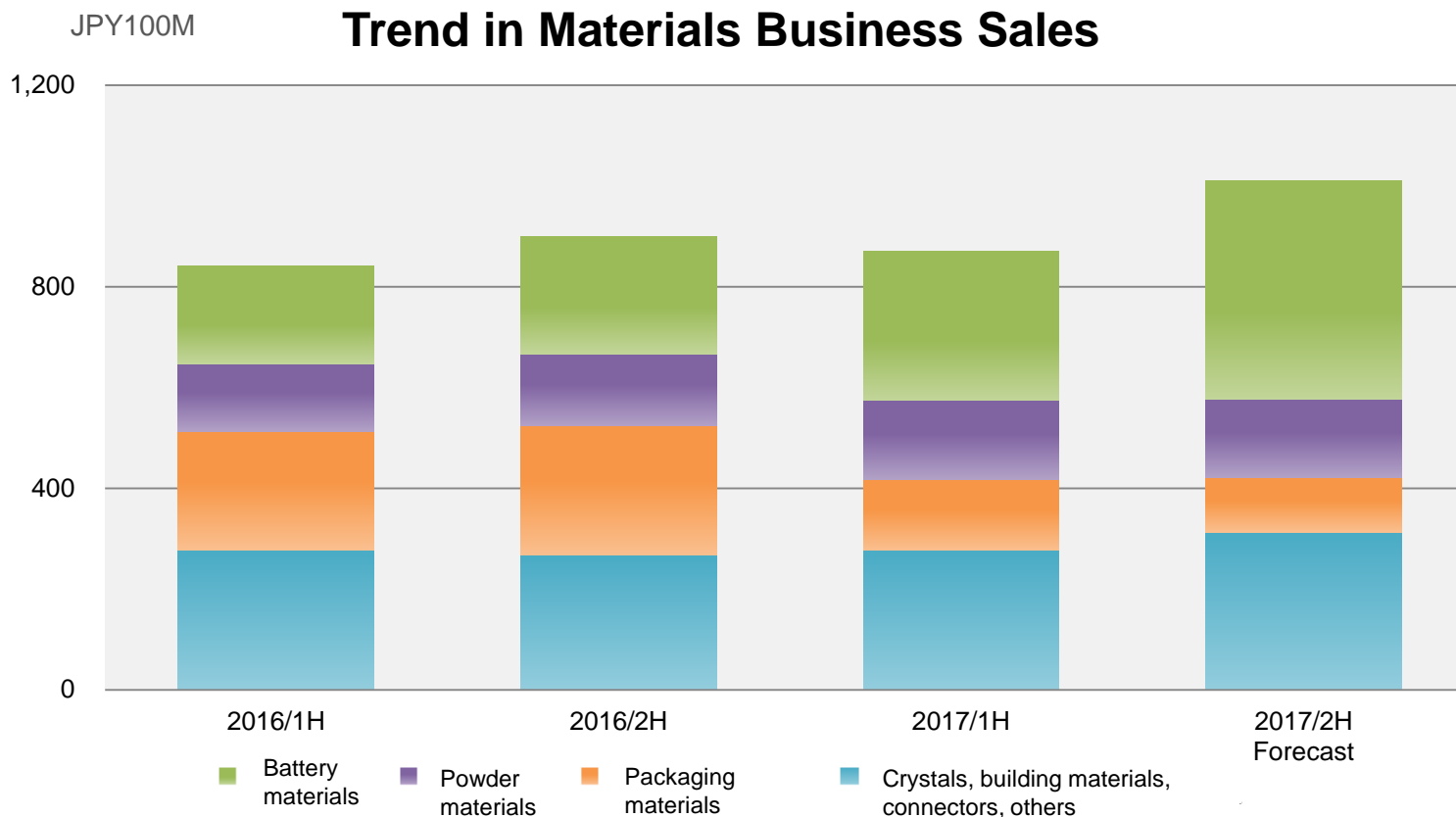


Copper-clad  
Polyimide Films

### 3) Materials (2) Trend in sales in sub-segments

**Battery materials:** 3,550t/month production structure expansion will contribute to sales from 3Q

**Crystal materials:** Customers' LT/LN inventory adjustment is expected to continue



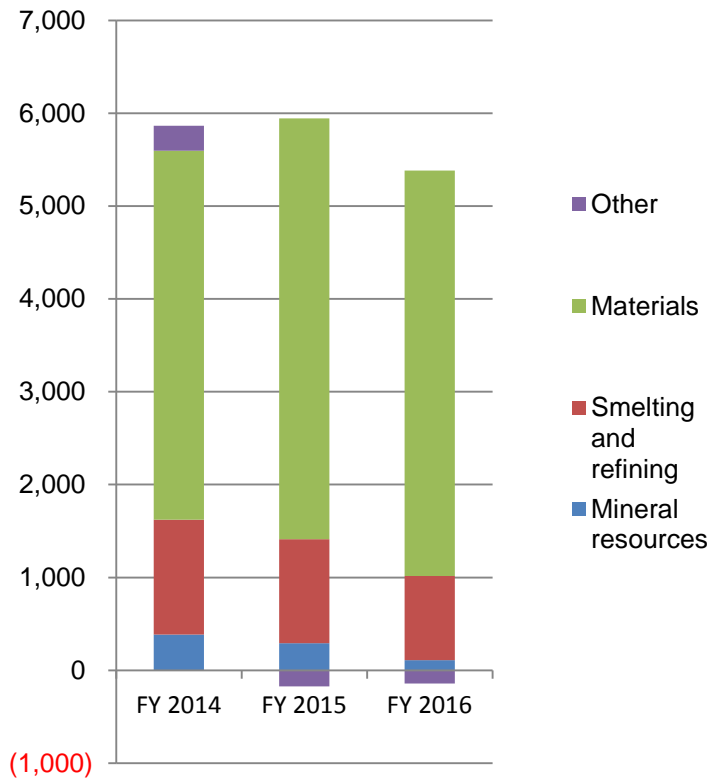
Construction of expansion structure to meet demand trends and its smooth launch

## 4) Research and Development (1) Achievements

### Research and development achievements in fiscal 2017

#### Change in research and development expenses by business segment

¥1 million



#### Materials Business (materials development)

##### [Battery materials]

- Increased capacity through higher nickel content in electric vehicle battery cathode material (lithium nickel oxide) and improved output characteristics through particle surface coat (particle surface modification); transition to mass production

##### [Crystal materials]

- Improvement in crystal growth yield lithium tantalate single crystals for SAW filter devices, and reduction in cost of wafer manufacturing

#### Smelting & Refining Business (process development)

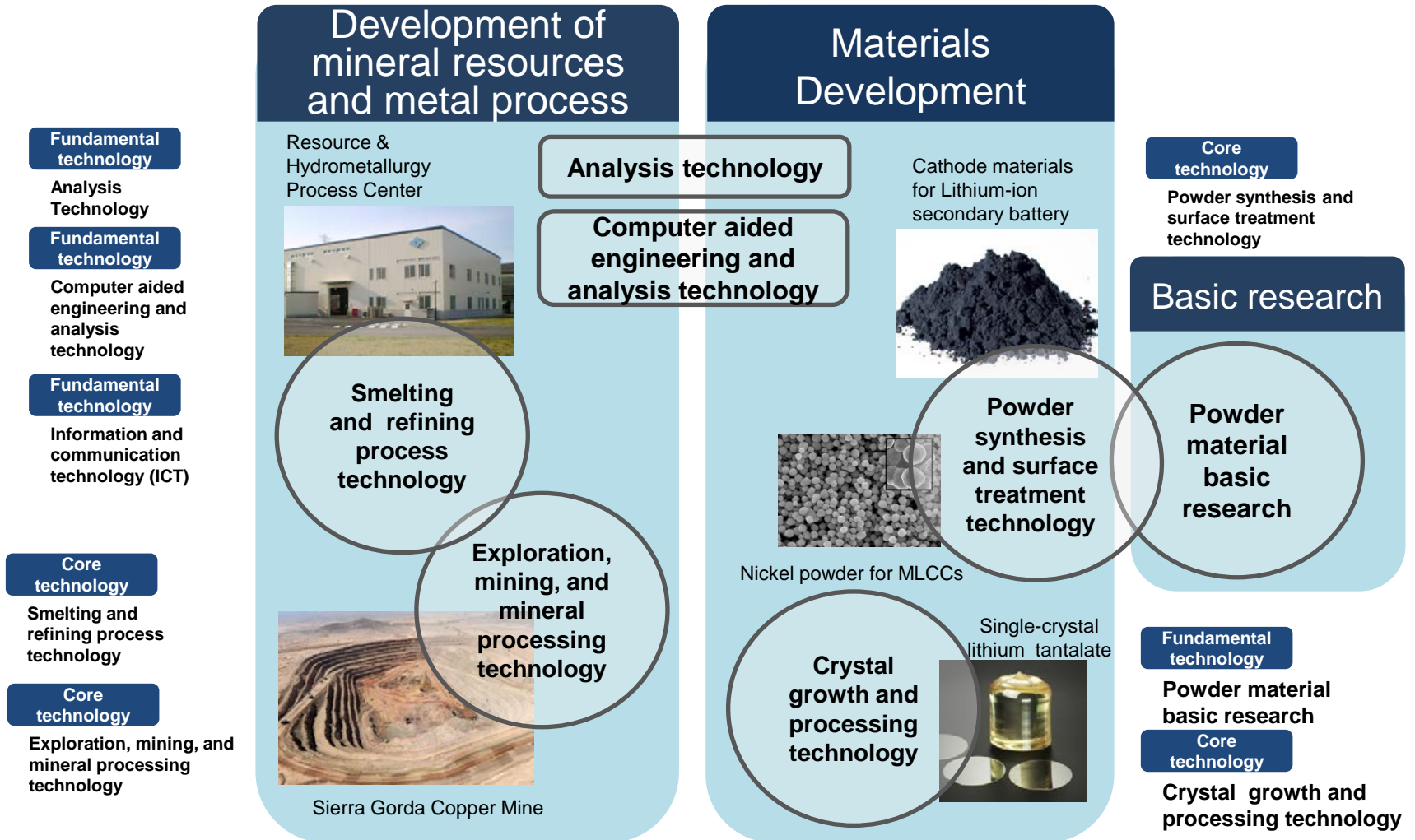
##### [Scandium recovery process]

- Development of process to recover scandium from nickel oxide ore; construction of commercial plant

##### [Lithium-ion battery recycling]

- Development of process to recover copper and nickel from used lithium-ion batteries

## 4) R&D (2) Domains and sectors



Established new ICT promotion office in December 2016. Will aim to construct mechanisms for data analysis unified across the company.

Concentration on growth strategy fields, search for "seeds" of next-generation business

### Corporate governance structure

Multiple outside directors and increased ratio of outside directors

Independent outside directors among all 8 directors:

2015: 2-person structure

→ 2016: Toward 3-person structure

→ 2017: General managers of all three core business divisions made into Directors

2016-2017

Discussion of "ideal" for Board of Directors

SMM's Board of Directors affirmed that it will place importance on decision-making functions, and will aim to strengthen that

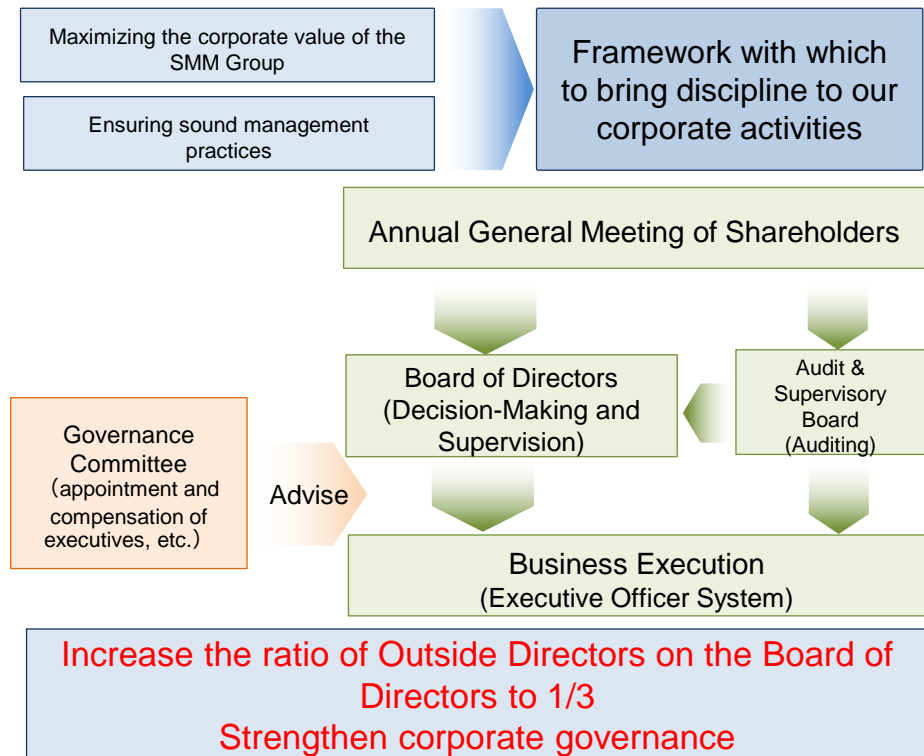
Supports for Outside Directors (Outside Audit & Supervisory Board Members)

Advance briefing on Board of Directors agenda

Convening of Outside Directors' Conference composed of only outside directors, and meetings at which outside directors and top management exchange ideas directly

### Engagement

- Strengthening of engagement with shareholders, etc. by company management (domestic / overseas)
- Continue direct dialogue by top management and explanation of business strategy to investors, etc. by persons responsible for businesses
- Hold new briefings for individual investors (scheduled)



## 6) Stance toward ESG and Significance of Initiatives

The regional impact of mine development is large, and extends broadly to the economy, environment, human rights, and the regional community



In addition to legal permit to operate, obtaining a "Social License to Operate," based on relationships of trust with local communities, is a prerequisite for business continuity, so that development can be performed in the area where the targeted resources are located



In order to acquire social license to operate and to engage in sustainable business operations

The promotion of our Corporate Philosophy of "sustainable co-existence with society and the global environment" and related investments are essential

- Minimize negative impacts
- Effectively return positive impacts to the community, through employment, procurement, social contribution activities, etc.
- Promotion of mutual understanding through regular dialogs with local residents, and construction of relationships of trust
- Enhancement of corporate governance

# Note

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Any projections included in these materials are based solely on information available at the time of this briefing, and are subject to change based on market conditions, competitive conditions, and a number of other factors.

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