



# FY2019

# Progress of Business Strategy

May 19th, 2020

President and Representative Director **Akira Nozaki**

 **SUMITOMO METAL MINING**

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## Summary in view of spread of COVID-19①

- Giving priority to employees' safety, we continue operation to the extent possible at each production site while implementing measures to prevent infection.
- The operation of some bases has been affected, but there was no significant impact on actual results in FY2019.
- Given the Japanese government's declaration of a state of emergency and in accordance with the fundamental approach to dealing with infectious diseases, the SMM Group has instituted working from home as the norm for staff at its head office and in Osaka and other branch offices for the foreseeable future.

## Summary in view of spread of COVID-19②

- Going into FY2020, outlook for the economic environment is unpredictable due to the spread of the COVID-19, and it is difficult to reasonably calculate the full-year results.
  - ⇒ The forecast of consolidated operating results for FY2020 remains undetermined.
  - ⇒ The same applies to dividend forecast and sensitivity.
  - ⇒ The forecast will be promptly disclosed once it can be reasonably calculated.
- The outlook is unclear, however, considering a suitable disclosure, we disclosed capital expenditure, reference quantity on metal production and sales .
  - ⇒ Major projects (Cote/Pomalaa) are not included in capital investments.  
(Because timing of decision-making on investment depends on the future situation of COVID-19)
  - ⇒ Production and sales for FY2020 are reference amounts reflected a level of COVID-19 influence which can be estimated at the present moment.  
(This differs from the "Plan" normally disclosed)

## Summary in recent management challenges

- 1) Mid-to-long term countermeasure:  
Proceeding growth strategy and reinforcement of business base**
- 2) Short term countermeasure:  
Consider and implement measures to secure profit and cash flow under the impact of COVID-19.**

## II . Overview of FY2019 results



Summary



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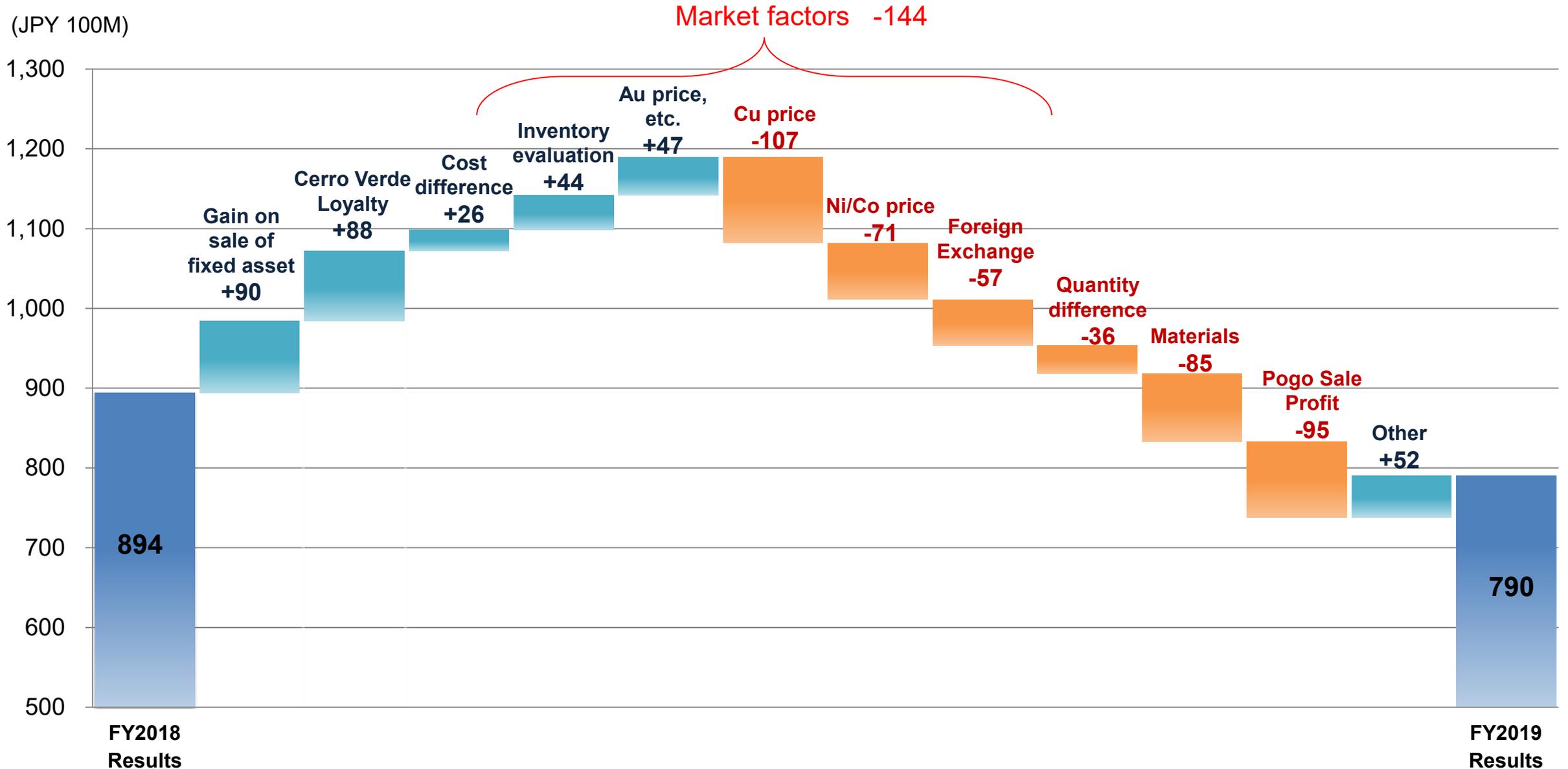


Supplementary Materials

# 1) Change in actual results (FY2013-FY2019)

		Japanese Standards [J-GAAP]					International Financial Reporting Standards [IFRS]		
		2013	2014	2015	2016	2017	2017	2018	2019 results
Net sales		8,305	9,213	8,554	7,861	9,335	9,297	9,122	8,726
Operating profit		754	1,258	597	764	1,102	—	—	—
Recurring profit/loss		1,144	1,742	-128	-16	1,249	—	—	—
Profit/loss before tax		1,110	1,233	6	-60	1,058	1,083	894	790
Equity method profit/loss		298	239	-732	-860	114	123	-49	62
Segment Profit	Mineral resources	691	538	-443	-536	560	580	473	379
	Smelting & refining	291	813	253	333	515	478	409	482
	Materials	111	129	60	121	153	71	138	53
	Other	16	-1	-8	-1	2	-74	-20	-9
	Diff. Adjustment	35	263	10	67	19	28	-106	-115
Net income (Profit attributable to owners of parent)		803	911	-3	-185	916	902	668	606
Copper (\$/t)		7,104	6,554	5,215	5,154	6,444	6,444	6,341	5,860
Nickel (\$/lb)		6.51	7.62	4.71	4.56	5.06	5.06	5.85	6.35
Gold (\$/Toz)		1,327	1,248	1,150	1,258	1,285	1,285	1,263	1,462
Cobalt (\$/lb)		12.67	13.69	11.73	13.67	30.64	30.64	31.64	15.76
Exchange (¥/\$)		100.24	109.93	120.15	108.40	110.86	110.86	110.92	108.74

## 2) Profit/loss before tax analysis FY2019 results vs FY2018 results



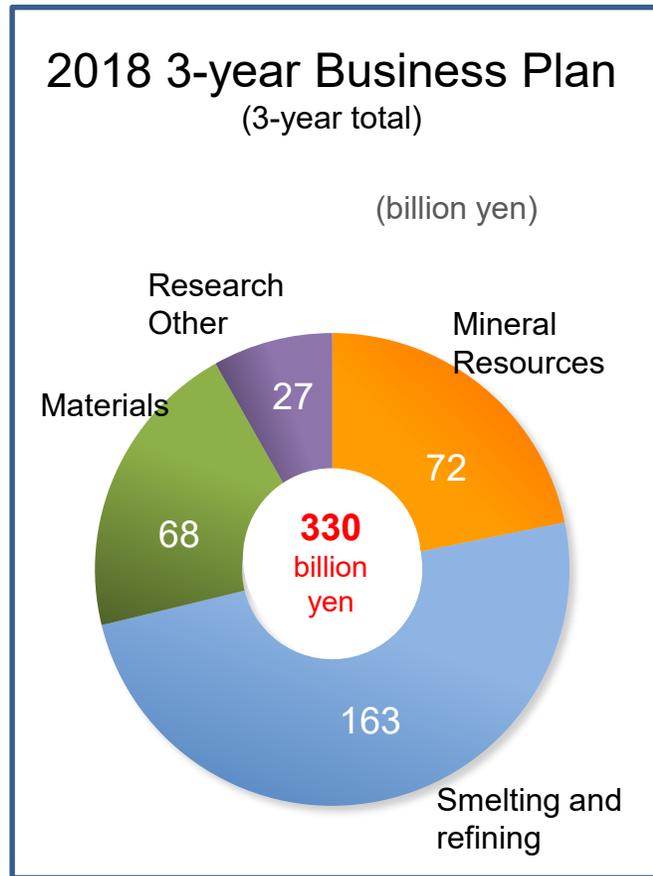
### 3) ROA results by segment

	Mineral Resources	Smelting and Refining	Materials	Overall
FY2014	14.3%	11.7%	7.8%	5.5%
FY2015	-12.3%	3.7%	3.2%	0.0%
FY2016	-13.7%	5.0%	6.1%	-1.1%
FY2017	11.9%	7.8%	6.9%	5.4%
FY2018	6.6%	6.0%	5.6%	3.8%
FY2019	5.7%	7.1%	2.2%	3.4%

Note: ROA by segment is based on ordinary profit/loss or profit/loss before tax. ROA for overall is based on net income/loss.

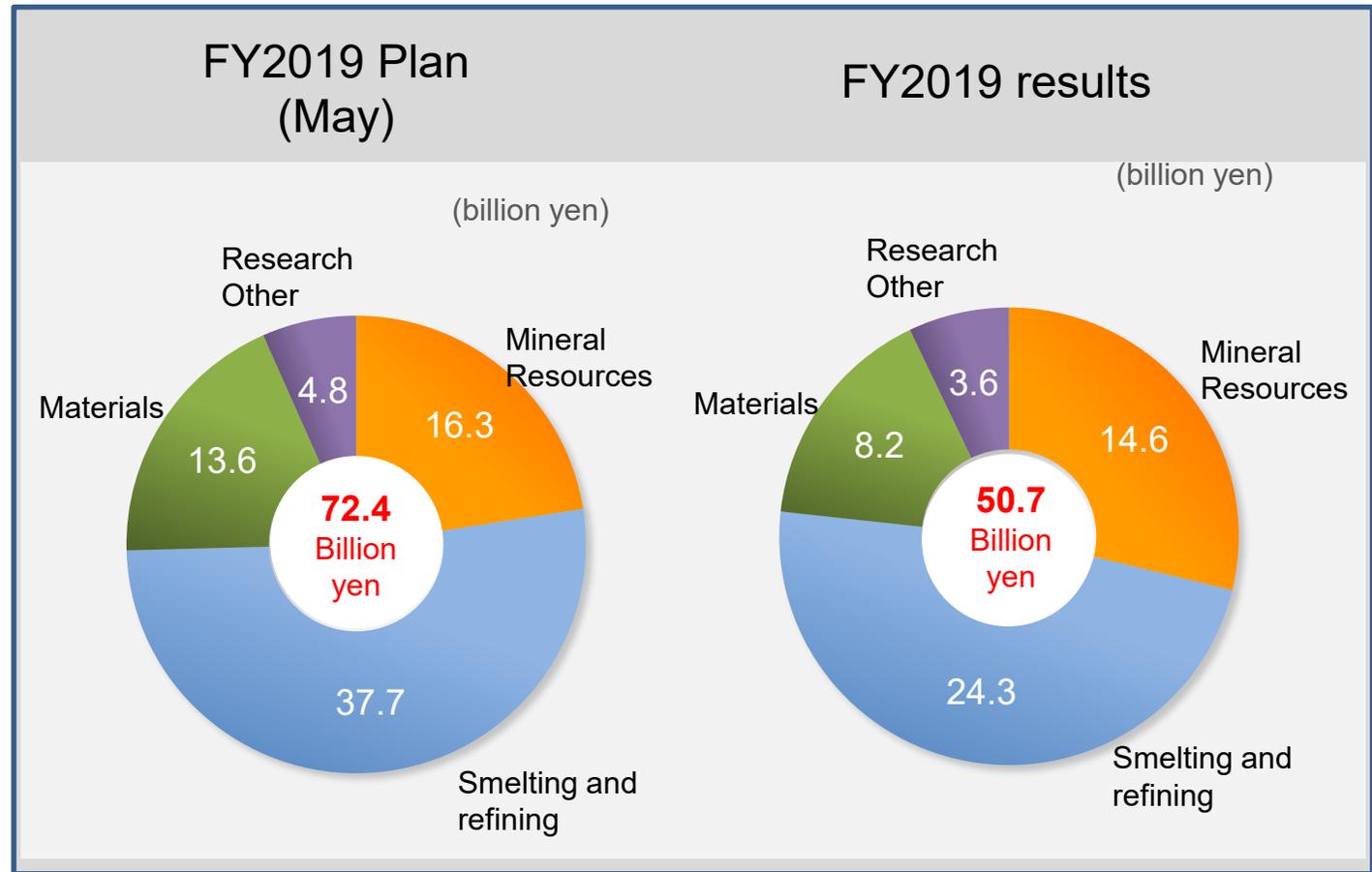
Based on Japanese Standards up to FY2017 and IFRS from FY2018.

# 4) Capital expenditure (FY2019 results vs FY2019 plan in May)



**Investment and financing**

(QB2, etc.  
160 billion yen)

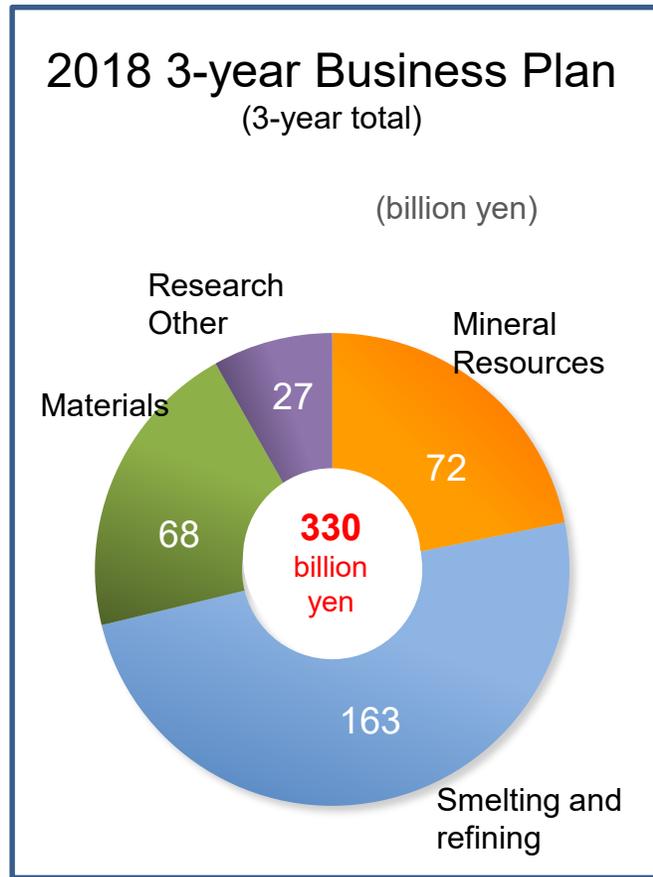


**May 2019 forecast vs FY2019 actual results: Main reasons for  $\Delta$ 21.7 billion yen**  
Timing of acceptance inspection and also postponing of capital investment

**Main projects**  
(Number inside brackets shows planned total amount)

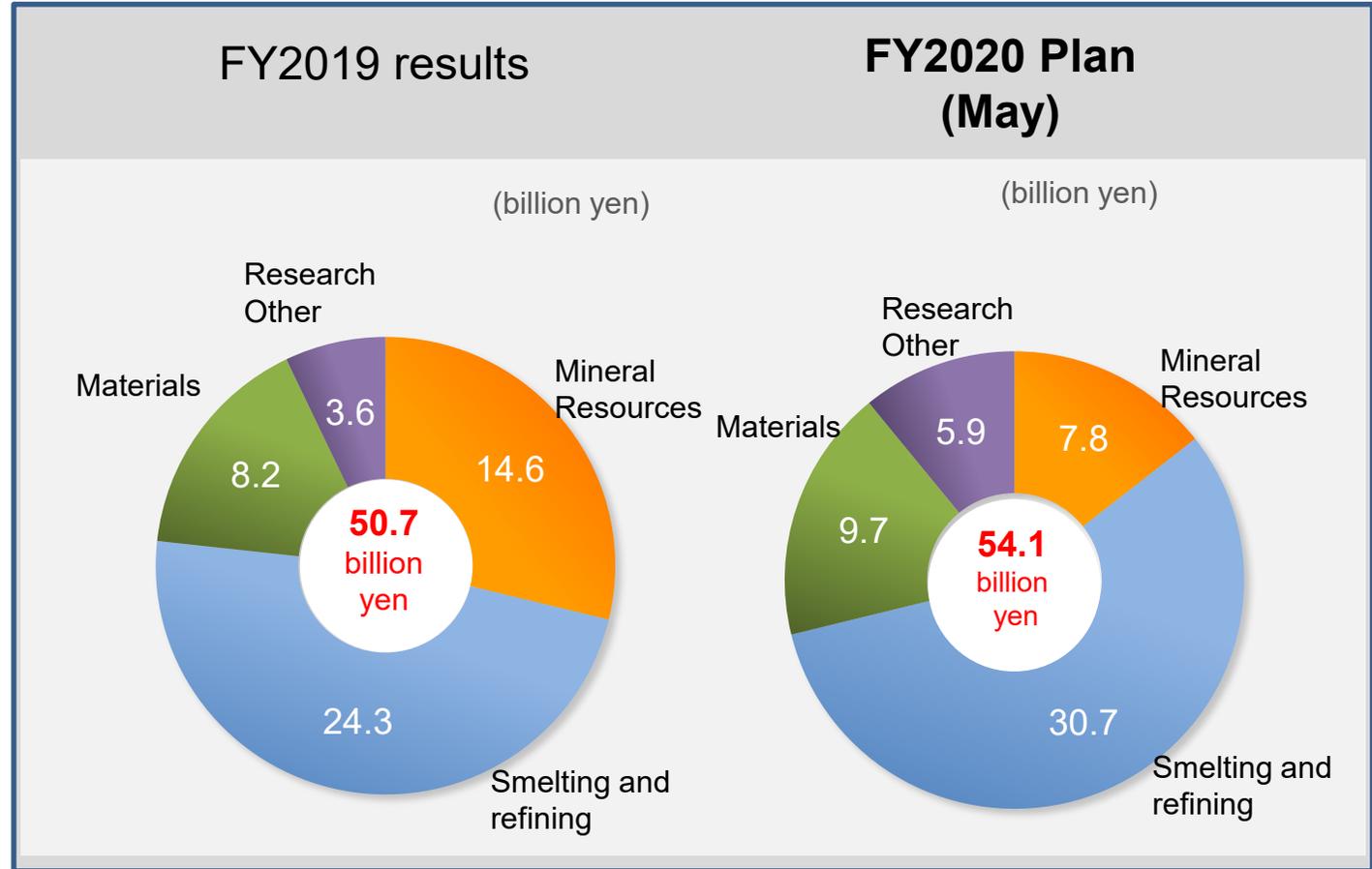
- NCA production increase: 3 billion yen (22 billion yen)
- Enhancement of processes that can process various types of nickel ore: 2 billion yen (total amount: 2.6 billion yen)
- Chromite recovery business: 1.3 billion yen (total amount: 3.5 billion yen)

# 5) Capital expenditure (FY2020 plan)



**Investment and financing**

(QB2, etc.)  
160 billion yen)



**Large scale projects (Cote and Pomalaa) are not included in above FY2020 plan**

**Main projects**  
(Number inside brackets shows planned total amount)

- Chromite recovery business : 1 billion yen (total amount: 3.5 billion yen)
- Besshi-Niihama District Div. dormitory establishment: 700 million yen (total amount: 4.7 billion yen)
- Hishikari Mine lower orebody development: 500 million yen (total amount: 3.7 billion yen)

# 6) Safety initiatives

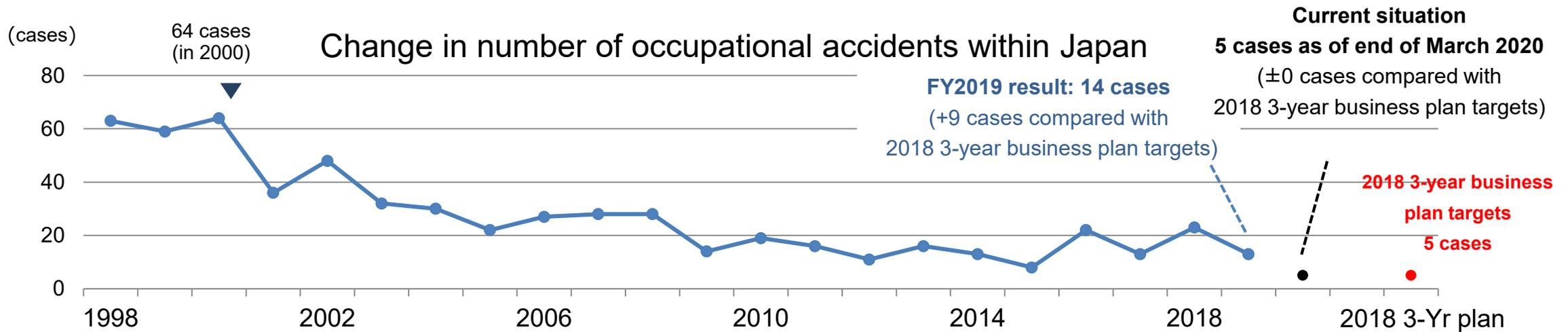
## Vision to be achieved in FY2021

Workplaces that prevent serious accidents by **clearly defining priority issues needing improvement and implementing PDCA cycles** while promoting safety activities

Workplaces that ensure **that top management and supervisors communicate with workers, grasp actual conditions at sites and promote facility improvements based on the three realities principle (real places, real facts, real things), and work using procedures that naturally take safety into sufficient consideration.**

### 2018 3-Yr Business Plan Targets

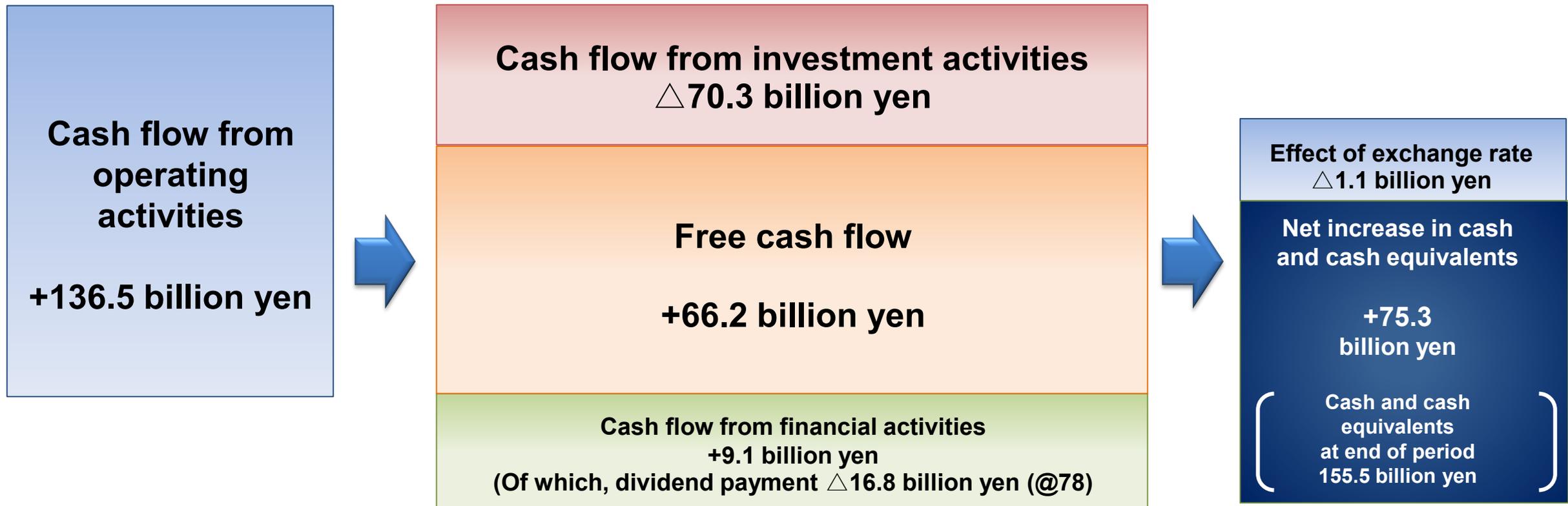
Limit domestic occupational accidents to **5** or less  
Limit overseas occupational accidents to **3** or less



## 7) Cash flow (FY2019 results)

While a cash flow of plus ¥136.5 bn from operating activities in the current term represented a year-on-year increase in revenue, expenses were reduced compared to the previous fiscal year where cash flow from investment activities was minus ¥70.3 bn and there was a significant expenditure on acquisition of interest in Quebrada Blanca.

Free cash flow was plus ¥66.2 bn, with end of term cash and cash equivalents increasing by ¥75.3 bn (excludes valuation differences)



## 8) Shareholder return

### Dividend forecast

#### FY2019

Interim dividend 39 yen/share

Year-end dividend forecast 39 yen/share

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Yearly dividend forecast 78 yen/share (dividend payout ratio: 35.4 %)

<2018 3-year plan>  
Dividend payout ratio  
35% or higher

#### FY2020

**Underdetermined**

As the outlook for the economic environment is unpredictable due to the spread of the COVID-19, and it is difficult to reasonably calculate the full-year results at this time.

# III. 2018 3-Year Business Plan: Progress of 3 major projects



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# 1) Progress of QB2 project

- Given the impact of COVID-19, project construction has been suspended since March 18. (As of March 18, overall progress on the project had reached 29%. )
- Due to the social unrest in Chile that occurred in 2019, there were delays in transporting equipment and difficulties obtaining permits and licenses. It is predicted that first production, which was initially set to start in Q4 of 2021, will now start in Q2 of 2022.  
(excluding impacts related to the COVID-19 suspension)

## **Overview of Quebrada Blanca 2 Project**

Interest ratio: Teck 60%, SMM 25%, Sumitomo Corporation 5%, other 10%

Planned investment amount: 5.2 billion US\$ (PJ 100% base, includes impact of inflation)

Average production volume: 240kt/year

Location: 165km northeast of Iquique City, Chile's first provincial capital

## 2) Pomalaa Project

- DFS (Definitive Feasibility Study) ongoing. We will make the investment decision after DFS finishes.
- It is taking some time to obtain the necessary permits, to consult with PJ partners, etc. due to the impact of COVID-19.

### Overview of Pomalaa Project

The SMM's third HPAL plant following CBNC and THPAL in the Philippines

- Production volume: MS 40kt-Ni (prospective)
- Investment amount: Several billion US\$ (PJ 100% base)
- Targeting start of operation in mid-2020s



### 3) Battery materials expansion (current situation/outlook)

- In FY2019, NCA established monthly production output of 4,550 tonnes, and kept full production.
- Our NMC has been adopted in a model of new hybrid vehicle.
- As automobile makers have ceased production due to the impact of COVID-19, an impact on our battery material business is concerned.

#### **Expansion of battery material production in 2018 3-year business plan**

- During 2024 3-year business plan (until FY2027), we aim to establish a system for cathode material production of 10,000 t/month (NCA + NMC + nickel hydroxide)
- Investment amount (total during the 2018 3-year business plan): 35 billion yen

# IV. Recent operational conditions and impact of COVID-19



Summary



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\*Operational conditions are based on the situation from the end of April to financial result release on May 8th, 2020.  
There are not referring to prediction for the future.



Vision for 2030



Prior question QA



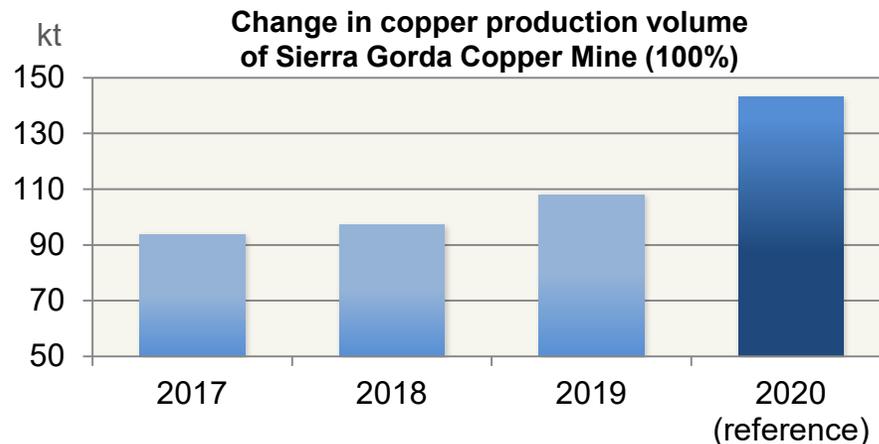
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# 1) Mineral Resources (1) Progress of debottlenecking at Sierra Gorda Copper Mine

Recovery rate is stable, and in FY2019 a production volume exceeding the plan at the beginning of the year was achieved.

Debottlenecking will continue to be implemented as planned, and cost reduction will be promoted.

- We are implementing measures such as reducing the numbers of mobilized personnel during the planned shut-down, but the impact of the COVID-19 on operation and debottlenecking projects is limited.
- Production volume  
FY2019 108 kt (results)  
FY2020 143 kt (reference)
- Mineral ore processing volume after completion of debottlenecking  
Current 110 kt/day -> 130 kt/day in 2020



# 1) Mineral Resources (2) Overseas copper mines

## **Morenci Copper Mine (US)**

FY2019 production volume was 461kt-Cu, exceeding planned volume by 60kt. Reference production volume of FY2020 is 420kt. The mine is operating normally at present, but measures to be taken in dealing with an unstable economic environment (such as operation cost reduction and postponement of non-essential investment) are being considered.

## **Cerro Verde Copper Mine (Peru)**

FY2019 production volume was 455kt-Cu. Given the declaration of a state of emergency in Peru due to the spread of COVID-19, operation has been under care and maintenance since March 16. Taking into account this situation, the reference production volume of FY2020 is 380kt.

## **Candelaria Copper Mine (Chile)**

FY2019 production volume was 141kt-Cu. Based on the effects of the mill reinforcement project, the reference production volume of FY2020 is 168kt. The mine is operating normally at present. (Production volume reflects the total combined with that of Ojos del Salado copper mine.)

# 1) Mineral Resources (3) Gold mine and project

## < Hishikari Mine (Kagoshima Prefecture) >

- There is no impact from the COVID-19. Operation is continuing while implementing measures to prevent infection.
- Reference production volume for FY2020 is 6 tonnes.
- Continued lower orebody development (orebody confirmed in 2012).

## < Cote Gold Project (Canada) >

- The project is not impacted any restrictions relating COVID-19. Construction preparation work at local site is continuing on a smaller scale.
- Risk reduction work such as detailed design is being implemented as planned.

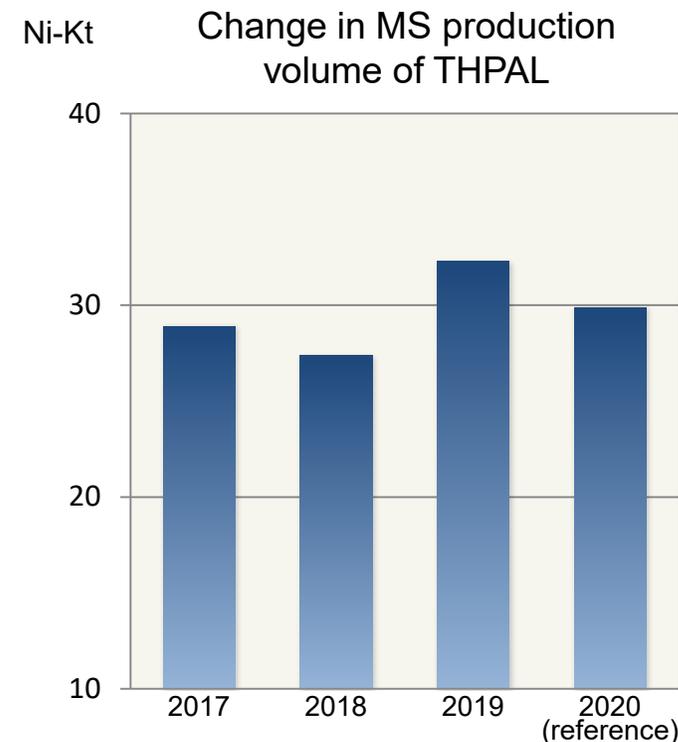
## 2) Smelting and refining (1) CBNC/THPAL operational situation

### <CBNC>

- There is very little impact from the COVID-19. Operation is continuing while implementing measures to prevent infection.

### <THPAL>

- Production volume in FY2019 reached a cumulative total of 32kt-Ni, exceeding 30kt/year for the first time.
- Due to the impact of the COVID-19, there was a partial lengthening of the planned March-April operation shut-down period.
- Reference production volume of FY2020 is 30kt.
- The difference with capacity of 36kt is due to the following factors.
  - Increased frequency of periodic equipment inspections
  - Impact of mineral ore composition
  - Lengthening operation shut-down period due to COVID-19



### <Toyo Smelter & Refinery>

Operation is continuing while implementing measures to prevent infection.

FY2019 electrolytic copper production volume was 399kt.

In April, production volume for FY2020 was planned to be 450kt, but the reference production volume disclosed this time has been revised to 444kt based on the latest copper grade in concentrates.

### <Niihama Nickel Refinery and Harima Refinery>

Operation is continuing while implementing measures to prevent infection. The FY2019 electrolytic nickel production volume was 58.8kt-Ni, 3.8kt decreased from the plan at the beginning of the year (+2.1kt compared with the last fiscal year) due to decrease of incoming mixed sulfide from the Philippines.

The reference production volume for FY2020 is 58.4kt, which is 2.4kt decreased from the April plan due to a drop in receipt of raw material due to the impact of the COVID-19.

The FY2019 nickel sulfate production volume is 75.1kt, marking a record high.

Reference production volume of FY2020 is 77.5kt (total from Niihama Nickel Refinery and Harima Refinery).

### 3) Materials (1) Battery materials

#### <Automobile industry>

- Automobile makers announced production reduction world-wide due to the impact of COVID-19, and the future prospect of the whole automobile market is difficult to foresee.
- It is same in electric vehicle market, its sales volume started to be impacted.

#### <Impact on our battery material business>

- The impact on production and sales of our battery material business is concerned. Situation is shifting from full production to production adjustment.

### 3) Materials (2) Advanced materials (crystal and powder materials)

- In FY2019, the market for both crystal and powder was sluggish, and there was the impact of inventory adjustment.
- Operation of the production sites in China for powder materials were paused after the lunar New Year due to the impact of the COVID-19, but it has already resumed, and there is no major impact on production and sales.
- There are signs that 5G-related markets will start in earnest in FY2020, and we expect there will be increased demand for crystal in particular in the second half of the year. However, it is becoming unclear due to the impact of the COVID-19.



## V. Vision for 2030



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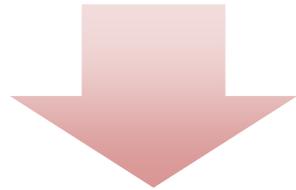


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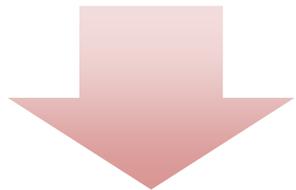
# 1) Background to revision

## March 4, 2020 **Vision for 2030** announced

### CSR activities to date



### Vision for 2020



### Vision for 2030

- A major premise of our business has been to build lasting relationships with local communities, such as environmental conservation including reforestation of Besshi Copper Mine from the Meiji period
- We endeavor to resolve social issues through our business, developing CSR activities that are at one with our business
- Formulated in 2008: Systematic launch of CSR activities
- Revised in 2015: Identification of material issues, establishment of KPI and clarification of goals
- Milestones for achievement of long-term vision
- Material issues were selected not simply as conventional sustainability issues, but as management issues
- Identifying association with SDGs

## 2) Image for achievement of the Vision

### Image for achievement of the Vision



## 3) Viewpoint of revision

### Major trends in the materials industries

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- Metal materials and advanced materials will play an important role in the rapid advance of digitalization such as the IoT and CASE, and in the switchover of energy sources and technological innovation aimed at achieving a low-carbon society.

### Major prerequisites for business continuity and sustainable growth

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- In response to growing social demands related to human rights issues in the sourcing of minerals and avoiding complicity in human rights violations in the supply chain, our Group has a duty as a resource company to actively address these issues.
- Actively addressing the SDGs and other social issues through CSR and TCFD is indispensable to the achievement of growth strategies in the Mineral Resources business and Smelting & Refining business.

## 4) Issue-specific key measures

### Issue-specific key measures

#### Effective use of non-ferrous metal resources



- **Strengthen our production structure at JV copper mines:** Achieve and maintain 300 kt/year copper production level from interests
- Increase use of **low-grade nickel ore**
  - Operation of third HPAL plant: Start of operation in mid-2020s
- **Contribute to marine resource development** and other national projects
- Participate in business to recover **lithium** from salt lake brine with high levels of impurities
- **Recycle automotive lithium-ion batteries**
  - Commercialize battery recycling that recovers cobalt

#### Environmental preservation Response to climate change



- Keep total GHG emissions below that of FY2013 and formulate a plan to reduce our emissions to zero in the second half of the century
- Reduce GHG emissions by **more than 26% based on FY2013 levels**
- Expand business in **products contributing to a low-carbon society (battery materials, sunlight shielding inks, etc.)**
  - Contribution to GHG reduction: 600 kt-CO<sub>2</sub>/year or more**
  - **Cathode materials:** Maintain **top class global share**
  - **NiO for fuel cells (nickel oxide):** Commercialize and supply stably
- **TCFD:** Became a supporter in February 2020
- **Promote environmental investment:** Consider to introduce the **internal carbon pricing system**

## 4) Issue-specific key measures

### Issue-specific key measures

#### Promotion of occupational health and safety



- **Make plant processes and equipment safer**
  - **Promote smart technology in plants and mines**
    - New battery factory, employ remote operation and automated heavy machinery, etc. for work in Hishikari Mine
  - Start consideration on **formulation of smart factory models** in existing plants
- **Develop people who work with a priority on safety**
- Develop human resources with keen hazard awareness – Education using cutting-edge technology
- Foster a culture of safety

#### Respect for human rights



- Strengthen initiatives that respect the traditions and cultures of **indigenous peoples** in areas where we have operations
  - Support the creation of environments enabling education for indigenous peoples, including scholarships, etc.
- Eliminate infringements of human rights violations in the SMM Group and **the supply chain**
  - Promote **responsible mineral sourcing and CSR procurement**

#### Participation of diverse human resources Development of human resources



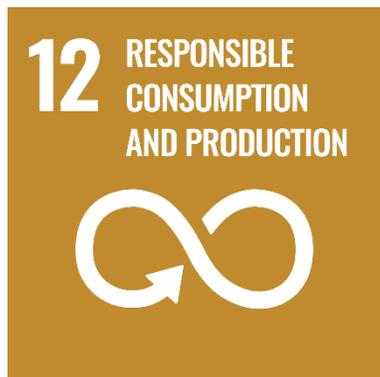
- Prepare company infrastructure that lead to the participation of diverse human resources and use digital technology, **fundamental reform of productivity and working style of white-collar jobs**
- Expand support for employees' mental and physical health by promoting **health management**
- Provide **diverse opportunities to employees to enhance their abilities** according to their needs and work needs

# 5) Material issues and the SDGs

## Material issues and the SDGs

- After identifying nine SDGs strongly connected to our material issues, we set “Responsible consumption and production,” which is directly connected to our management vision, as the most important goal directly connected to our management vision.

### The most important SDG



	Material issues	SDGs		Material issues	SDGs
1	Effective Use of Non-Ferrous Metal Resources		5	Employees' Occupational Health and Safety	
2	Climate Change	 	6	Diverse Human Resources	
			7	Development and Participation of Human Resources	
3	Significant Environmental Accidents		8	Engagement with Stakeholders	
			9	Co-Existence and Mutual Prosperity with Local Communities	
4	Biodiversity		10	Rights of Indigenous Peoples	
			11	Human Rights in the Supply Chain	

## 6) Material issues and the SDGs

### Material issues and the SDGs

- We will work to resolve the issue of “Responsible consumption and production” through our approaches to the nine SDGs strongly connected to our material issues, and will achieve our Long-Term Vision.



## VI. Q&A



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Q&A



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We collected questions from investors from after the announcement of financial results on May 8 until 12:00 on May 11 (Mon.) due to cancelation of briefing session.

We respond to common questions.

<Question>

What is the impact of the COVID-19 on your world-wide supply chain?

<Answer>

Regarding copper related business, operation at Cerro Verde copper mine is impacted, but it does not mean our copper smelting and refining business will be impacted immediately. However, there are not only mines where we have ownership, and many copper mines are impacted, if the influence of COVID-19 lasts for long time, there is a concern that the copper concentrate market will be tightened.

Nickel related business was a little impacted by COVID-19 in terms of operation and logistics due to restriction by government of the Philippines, but the operation has been resumed already based on consultation with local government. Thus, we do not assume there will be a serious impact as a whole internal supply chain at this moment.

### <Question>

What were the thought processes and presuppositions behind the production and sales quantity of FY2020 disclosed as reference for mineral resource business, smelting and refining business?  
How should we interpret these numbers?

### <Answer>

These numbers as 'reference' are numbers formulated by considering the impact of COVID-19 we have confirmed until FY2019 financial result release and guidance disclosed by major companies, and excluding future impact.

## &lt;Question&gt;

What impact is the COVID-19 going to have on the structure of the non-ferrous metal industry and on your management strategy?

I don't imagine there will be a change in the Vision, but how does the company feel it should conduct itself based on short-term and mid-to-long-term changes in the environment, including the structure of supply and demand?

## &lt;Answer&gt;

At present, it's difficult to predict the scale of the impact the COVID-19 will have, or when it will end, so we would like to refrain from making comments about recent and future changes in the environment, including supply and demand.

However, at present, the situation is not one where changes will be made to the 2018 3-year business plan goals settled or where the major projects decided on in those 3-year plan goals will be cancelled.

Regarding the implementation of the large-scale projects and determinations on investing, suitable decisions will be made when implementation can be estimated.

Supply side will recover soon when those restrictions are removed. Demand side seems to be impacted by production decrease in automobile industry for near future but fundamental demand for mid to long term will be unchanged as robust. This COVID-19 situation is a very unusual situation which is hard to foresee, rarely experience, and barely stated as Force Majeure in general business contracts. Now we think once again that it is important to get involve in good projects, strengthen business base, and build a solid management base like strong financial position in order not to influenced in this kind of situation.

<Question>

Construction has ceased for Quebrada Blanca 2 and the Teck has released an estimate that development costs will rise. How will investment returns be managed?

<Answer>

If we do not include impact from the COVID-19, construction cost estimates are unchanged from the original plan. Costs will increase while the project is suspended due to the impact of the COVID-19, however foreign exchange benefit of peso, utilization of the government's employment insurance and renegotiations with contractors, we will keep expenditures down.

Once construction begins again, we will carefully manage the newly established contingency fund and plan for a return on investment. Additionally, we will do everything we can to construct an operation system to prevent any trouble that may occur starting up following the completion of construction.

## Ⅶ. Supplementary Materials



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# 1) Trends in supply and demand (copper and nickel)

## Copper

[ISCG forecast of October 2019]

\*October 2019 forecast is the latest.

(kt)

	2018	2019	2020 (forecast)
Production	24,098	24,250	25,281
Usage	24,502	24,570	25,000
Balance	-404	-320	+281

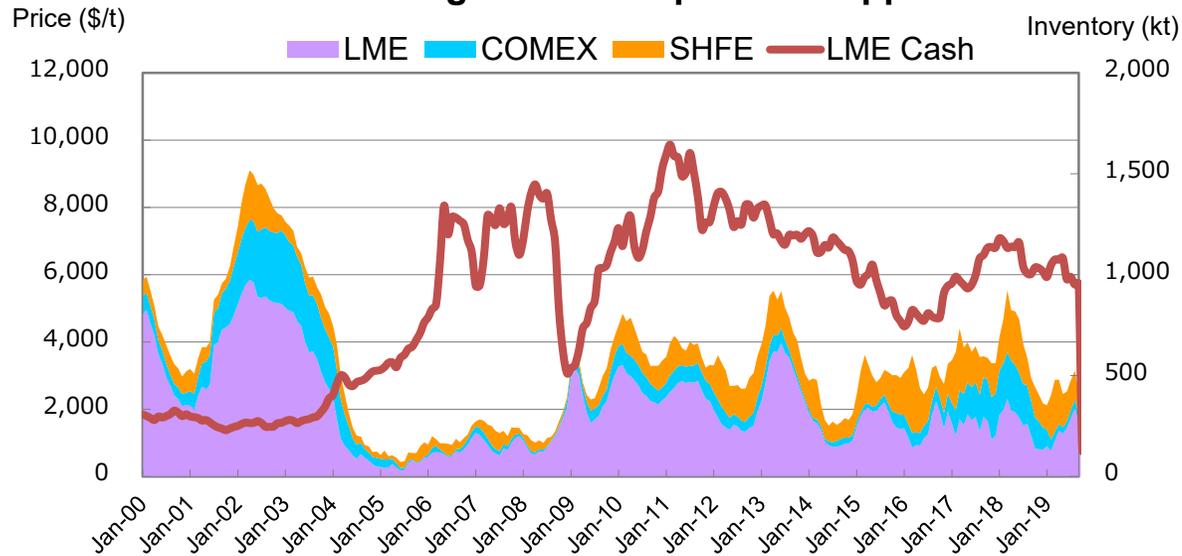
## Nickel

(kt)

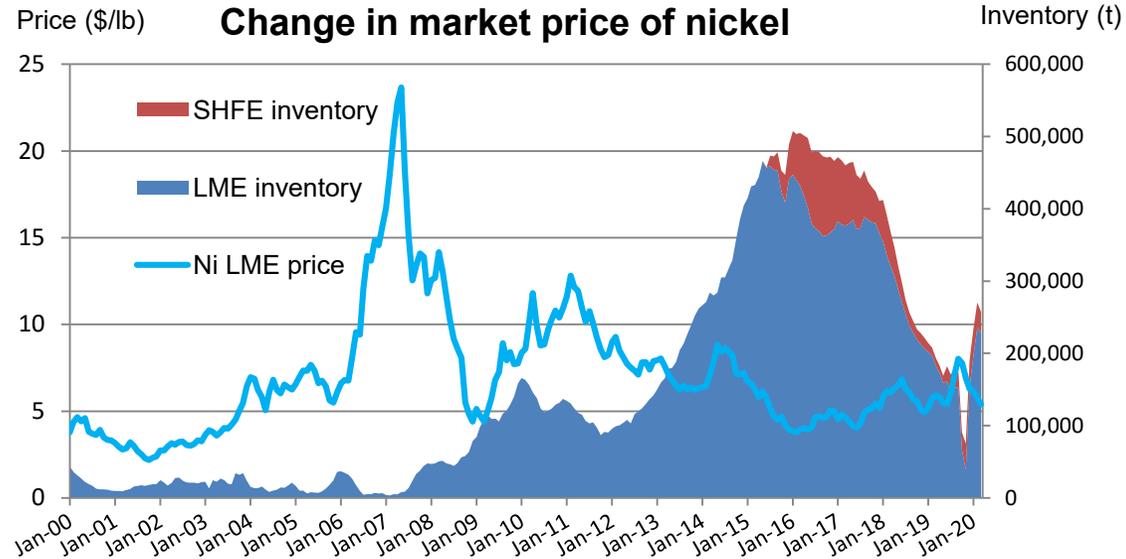
	ISCG forecast in October 2019			SMM forecast in November 2019		
	2018	2019	2020 (forecast)	2018	2019	2020 (forecast)
Production	2,184	2,370	2,476	2,161	2,363	2,448
Usage	2,318	2,449	2,511	2,271	2,394	2,465
Balance	-144	-79	-47	-110	-31	-17

# 2) Metal price and foreign exchange

### Change in market price of copper



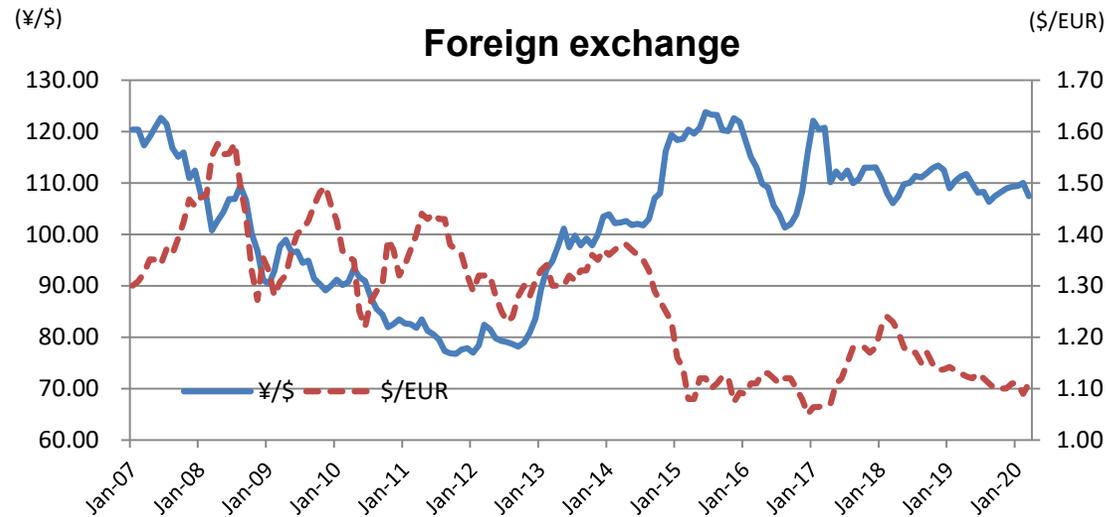
### Change in market price of nickel



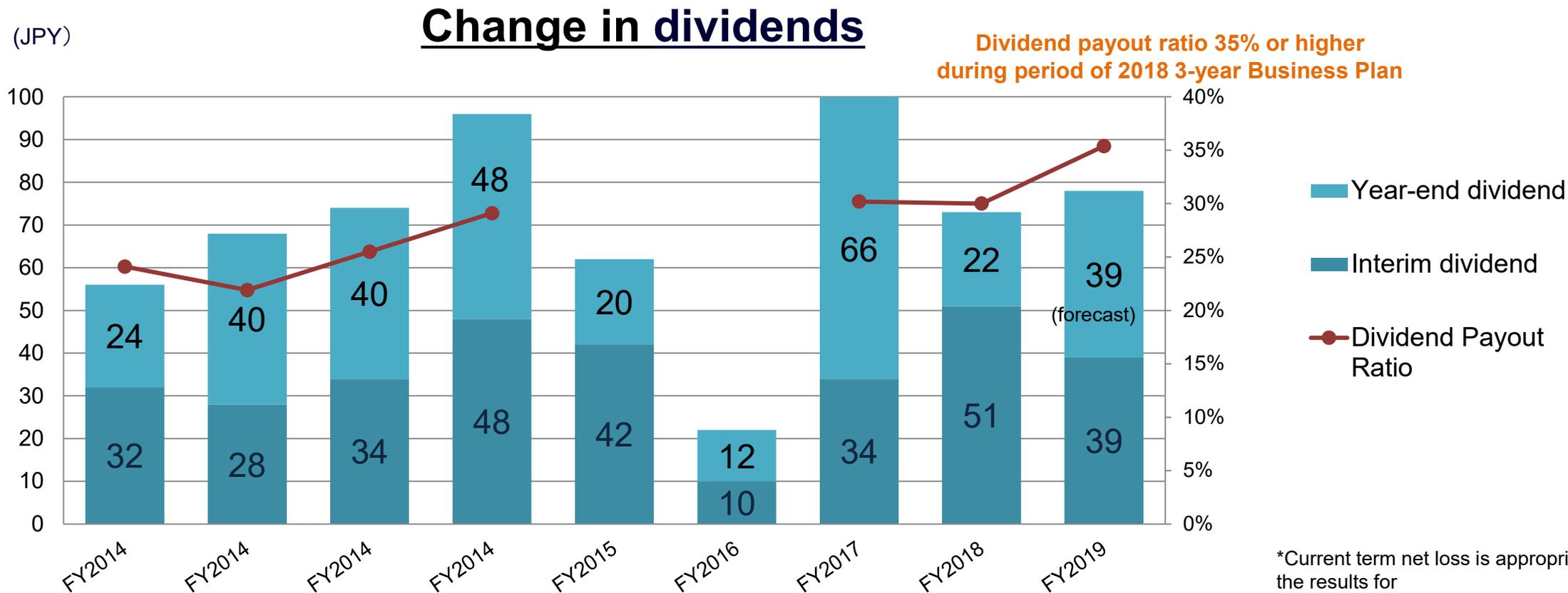
### Change in market price of gold



### Foreign exchange



# 3) Change in dividends



**Note: Due to stock consolidation (ratio 2:1) as of October 1, 2017, the dividend per share before that date is calculated and presented based on the standard after stock consolidation.**

\*Current term net loss is appropriated in the results for FY2015 and FY2016, so the dividend payout ratio cannot be calculated.

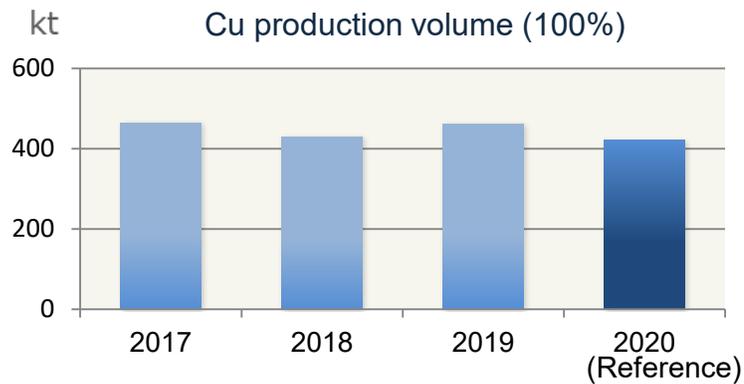
# 4) Individual business overview (1) Resources ① Copper (Morenci/Cerro Verde/Candelaria)

## Morenci Copper Mine (US)

Equity interest ratio	FCX	72%
	SMM	25%
	Sumitomo Corp.	3%



- Production volume  
FY2019 461 kt (results)  
FY2020 420 kt (reference)

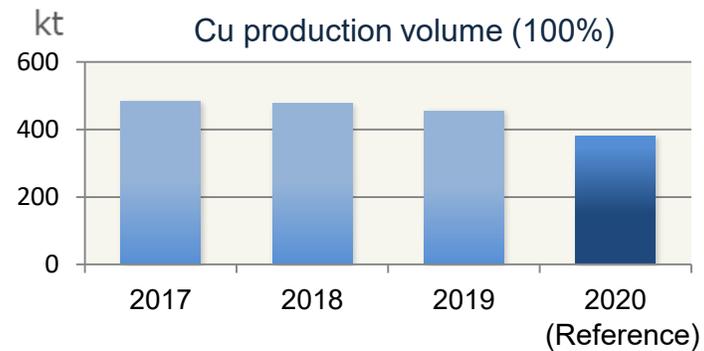


## Cerro Verde Copper Mine (Peru)

Equity interest ratio	FCX	53.56%
	SMM	16.80%
	Sumitomo Corp.	4.20%
	Other	25.44%



- Production volume  
FY2019 455 kt (results)  
FY2020 380 kt (reference)

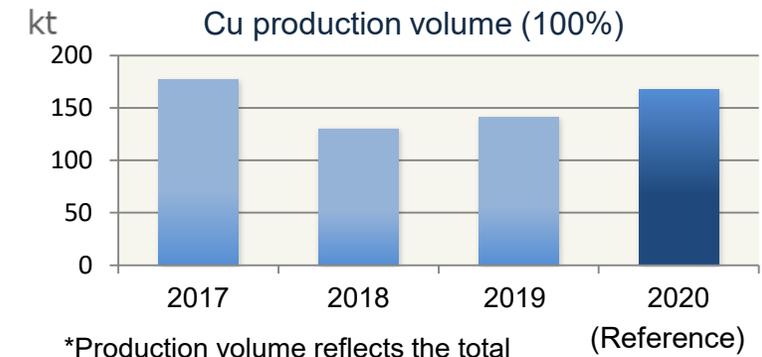


## Candelaria Copper Mine (Chile)

Equity interest ratio	Lundin	80%
	SMM	16%
	Sumitomo Corp.	4%



- Production volume  
FY2019 141 kt (results)  
FY2020 168 kt (reference)



\*Production volume reflects the total combined with that of Ojos del Salado

Continuation of stable production with operation plan from long-term perspective

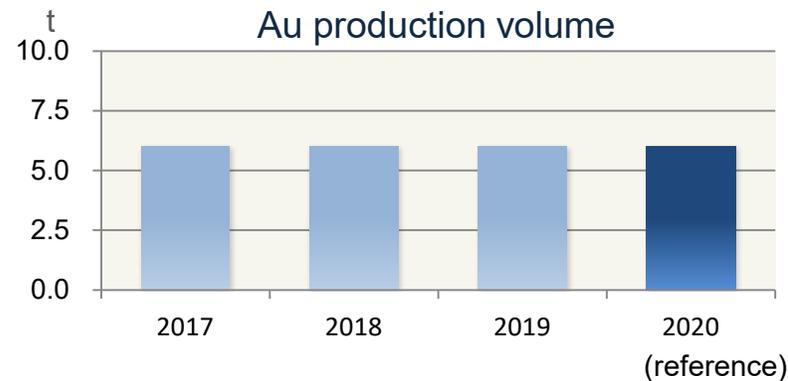
# 4) Individual business overview (1) Resources ② Gold (Hishikari/Cote)

## Hishikari Mine (Kagoshima Prefecture)

interest ratio SMM 100%



- Lower orebody development: Continued with safety-first policy
- Reserve: 163t (based on JIS) at the end of 2019
- Production: FY2020 6.0t (reference)



## Cote Gold Project (Canada)

Interest ratio IAMGOLD 64.75%  
SMM 27.75%  
Other 7.50%

Acquisition amount: 195 million \$US (approx. 21.5 billion yen)  
Location: Ontario

- F/S completed in November 2018
- Start of production scheduled for beginning of 2021 and determination to start construction delayed
- Detailed design is currently being implemented

	FS Base case
NPV@5% (Au: US\$1,250/oz)	US\$795M
Initial construction project costs	US\$1,147M
Mine life	16 years
Reserve	199 t
Average grade	0.98 g/t

(from a press release by IAMGOLD on November 1, 2018)

Hishikari Mine is continuing with stable operation and at the same time proceeding with mineral exploration aimed at extending mine life. Work on the Cote Gold Project is proceeding at full pace toward a production start.

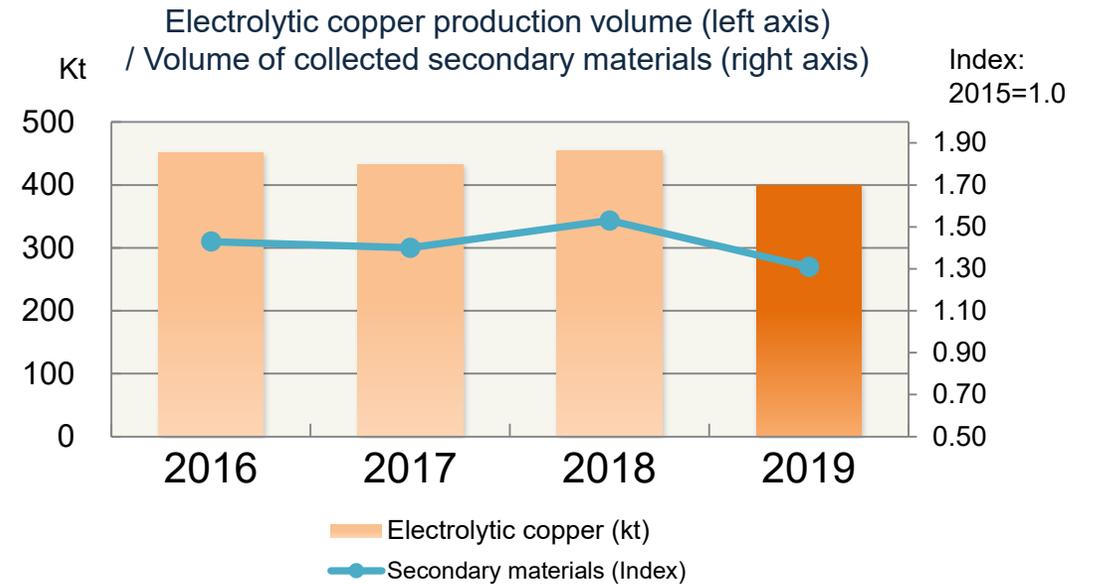
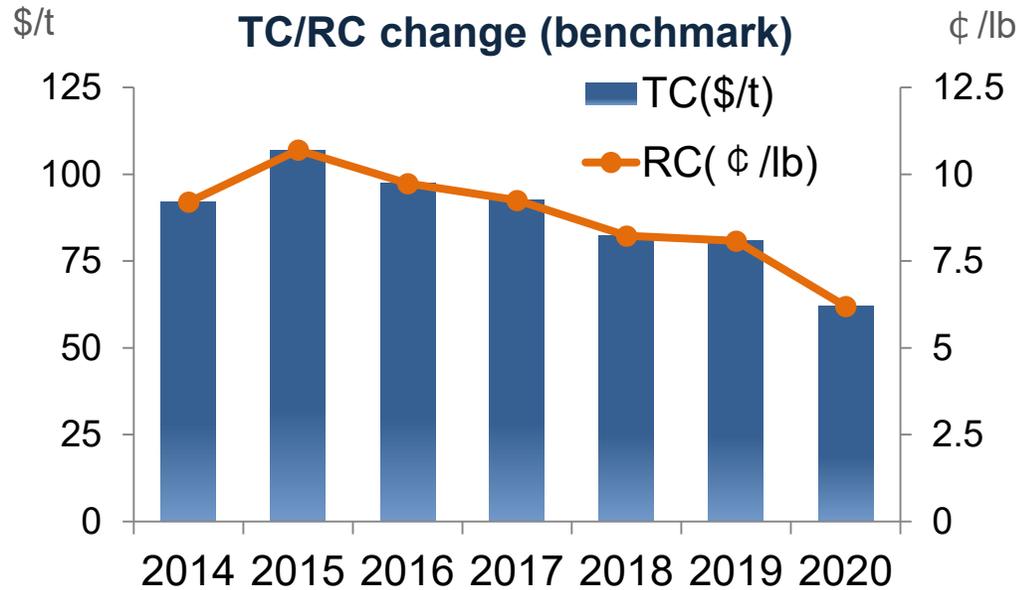
# Toyo Smelter & Refinery

## Production volume

FY2019 399 kt (results)

FY2020 444 kt (reference)

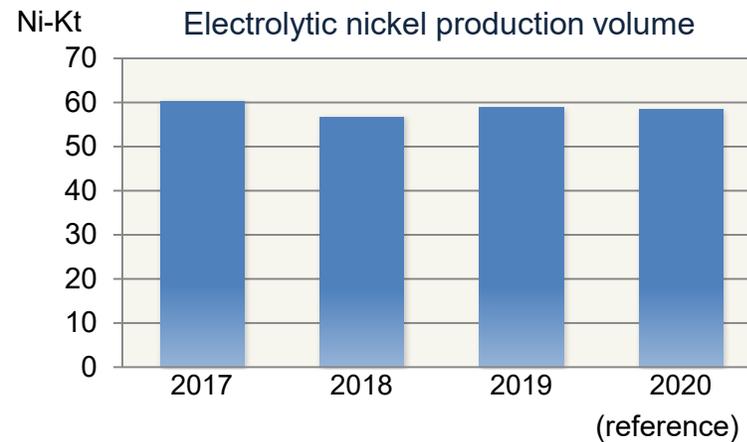
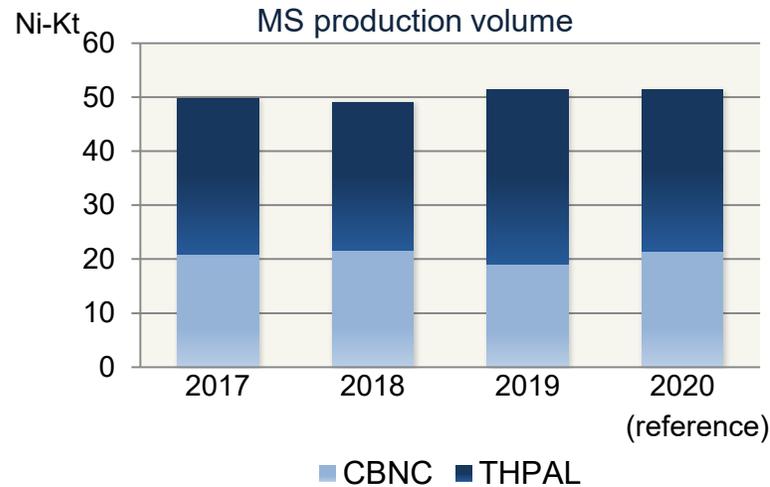
\*No scheduled shutdowns in FY2020



# CBNC, THPAL, Niihama Nickel Refinery

Production volume (FY2019 results, FY 2020 reference)

unit Ni-kt	FY2019 Results		FY2020 (reference)	Fluctuation	
	1H result	2H result			
CBNC	1H result	9.9	19.1	21.5	+2.4
	2H result	9.2			
THPAL	1H result	15.9	32.3	29.9	△2.4
	2H result	16.4			
Niihama Nickel Refinery (electrolytic nickel)	1H result	29.0	58.8	58.4	△0.4
	2H result	29.8			



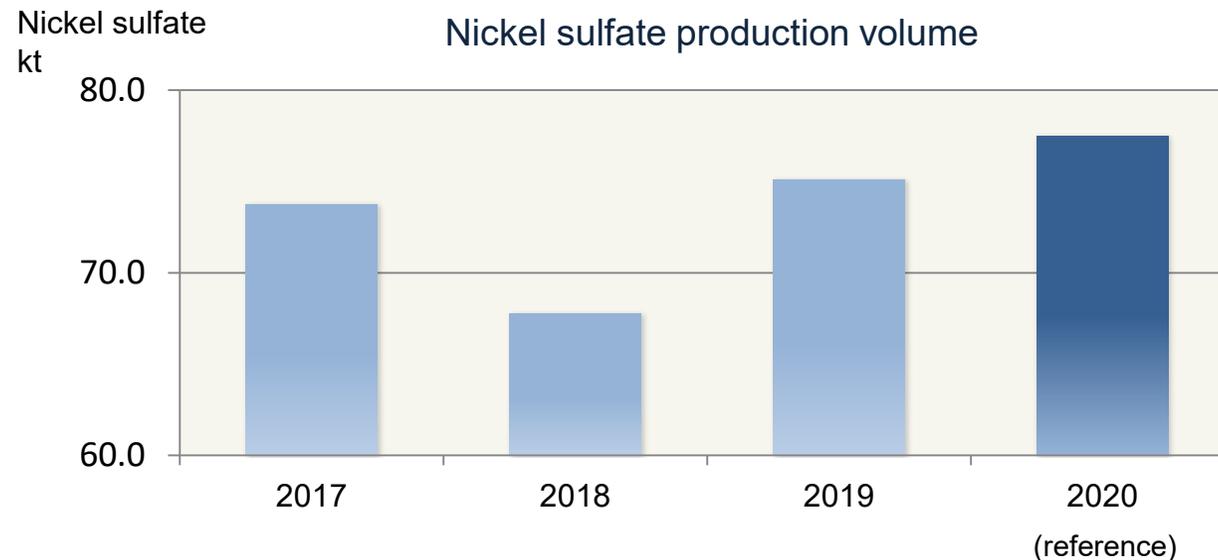
## Maximize HPAL by-product recovery

Scandium oxide:  
Started commercial production from  
January 2019

Chromite:  
Aim to start commercial production in 2020

## Niihama Nickel Refinery, Harima Refinery

- In FY2019, total production volume at Niihama Nickel Refinery and Harima Refinery reached a record high of 75.1 kt.
- The reference for FY2020 shows a total production volume at Niihama Nickel Refinery and Harima Refinery of 77.5 kt.



In order to deal with healthy demand for battery materials (cathode material), both Niihama Nickel Refinery and Harima Refinery will maximize nickel sulfate production and shipment

## Hyuga Smelting Co., Ltd

### Production volume

FY2019 13.5 Ni-Kt (actual results)

FY2020 13.3 Ni-Kt (reference)

Maximize production volume under the structure of 2 kilns, 1 electric furnace setup

Strive for cost reduction through stable production and efficient operation, and secure profits



Ni-Kt

Fe-Ni production volume



## 4) Individual business overview (3) Material segment

**Battery Materials** FY2019: NCA established monthly production system of 4,550 tonnes, full production continued.

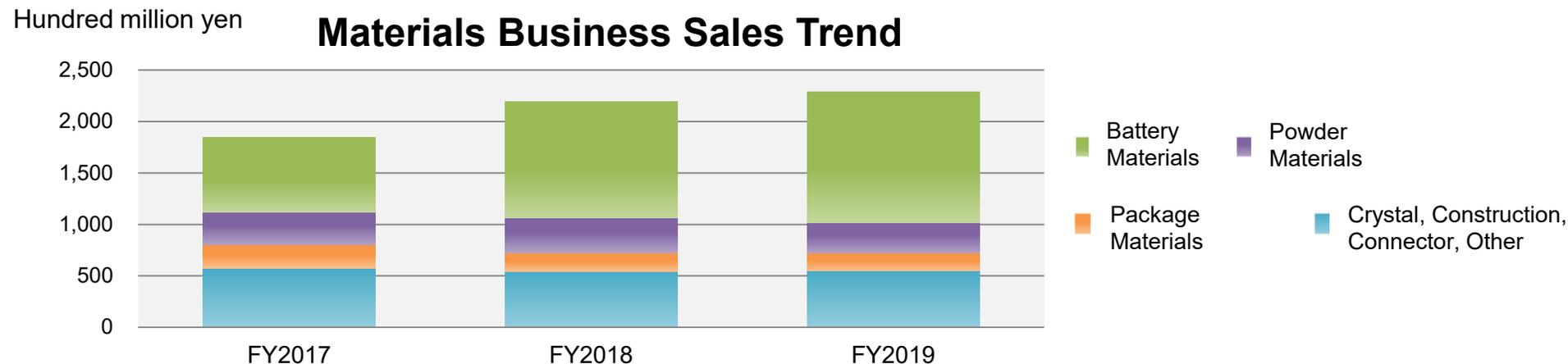
Sale increase compared to previous fiscal year.

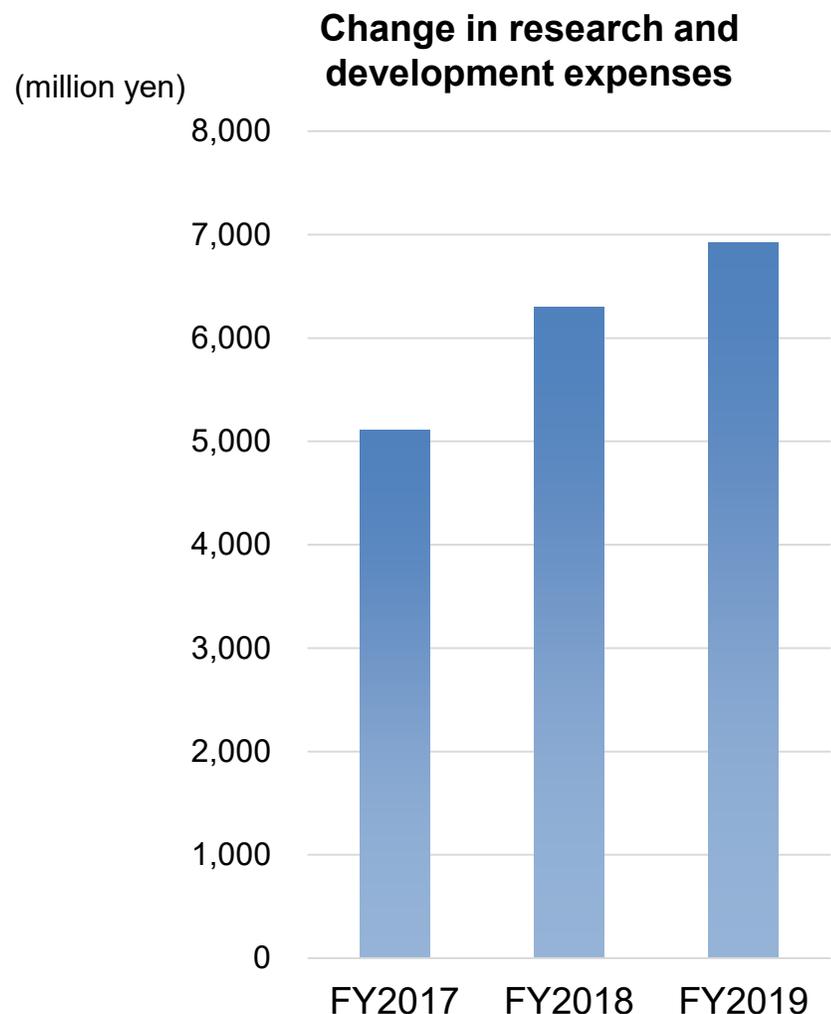
**Powder materials** FY2019: Impacted by the inventory adjustment at both smartphones and automobiles market in the first half of the year, and bottomed out sometime in June and recovered to the end of the year.

**Package Materials** FY2019: Tape material sales are stagnant due to sluggish TV demand.  
Smartphone-oriented COF sales for mid-to-small panels are strong.

**Crystal Materials** FY2019: Inventory adjustment continued.

It bottomed out in 3Q and turned to recovery, but COVID-19 had impact on SAW devices shipment in 4Q.





## Material Business (material development)

### [Battery materials]

- Research & development of higher performance battery cathode materials
- Customizing for solid state batteries.

### [Crystal materials]

- Cost reduction ahead of commodification  
Achievement of improved productivity through crystal lengthening, larger bore, and improved crystal growing/production yield, etc.
- Meeting new user needs  
Large bore LT crystal growth technology established, now in user work

## Smelting & Refining Business (process development)

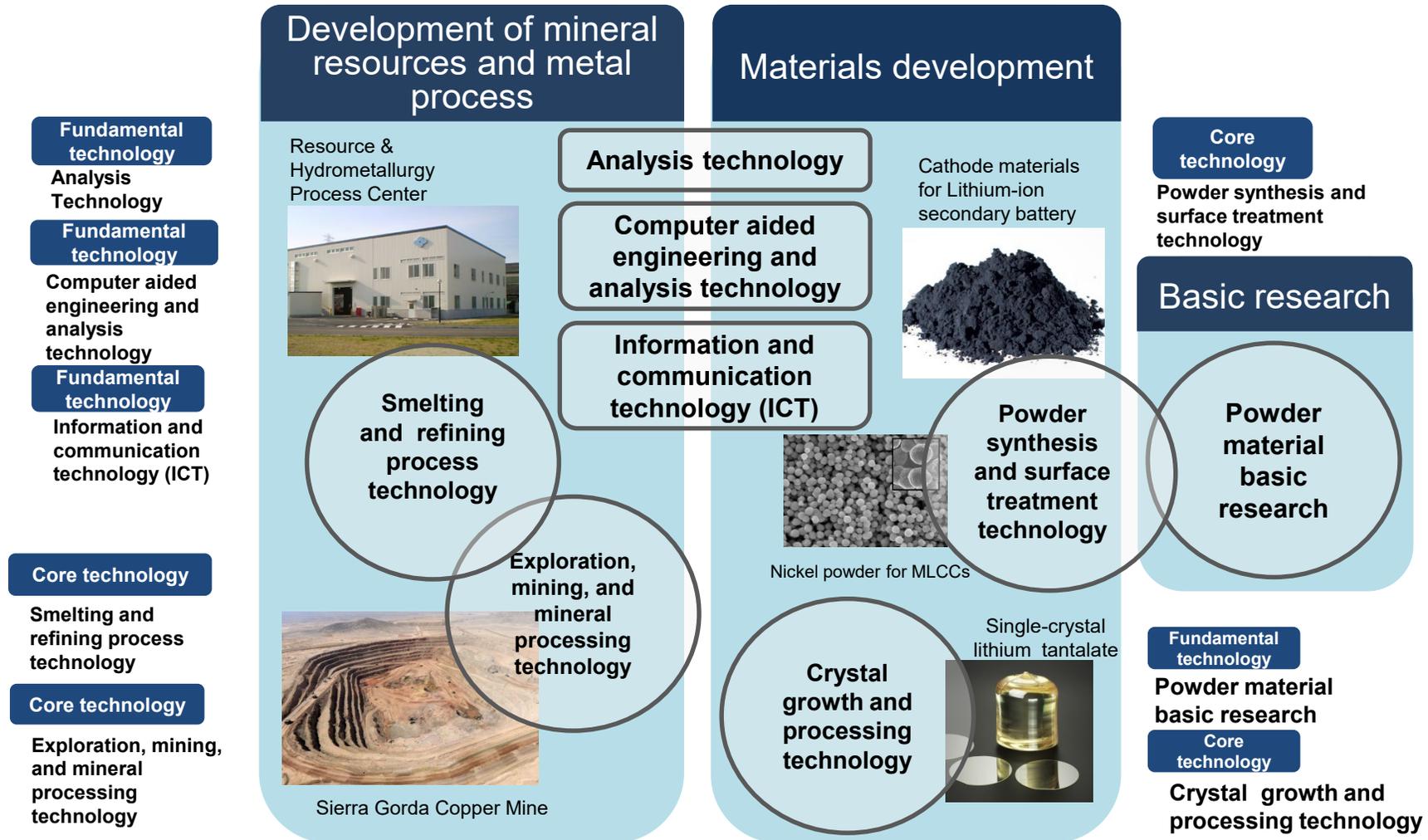
### [Securing raw material for batteries (Ni/Co)]

- Internal low cost chemical product manufacturing process established specialized in battery raw material
- New process to enable new Ni/Co raw material utilization, and enhance ability to handle raw materials

### [Lithium ion battery recycling]

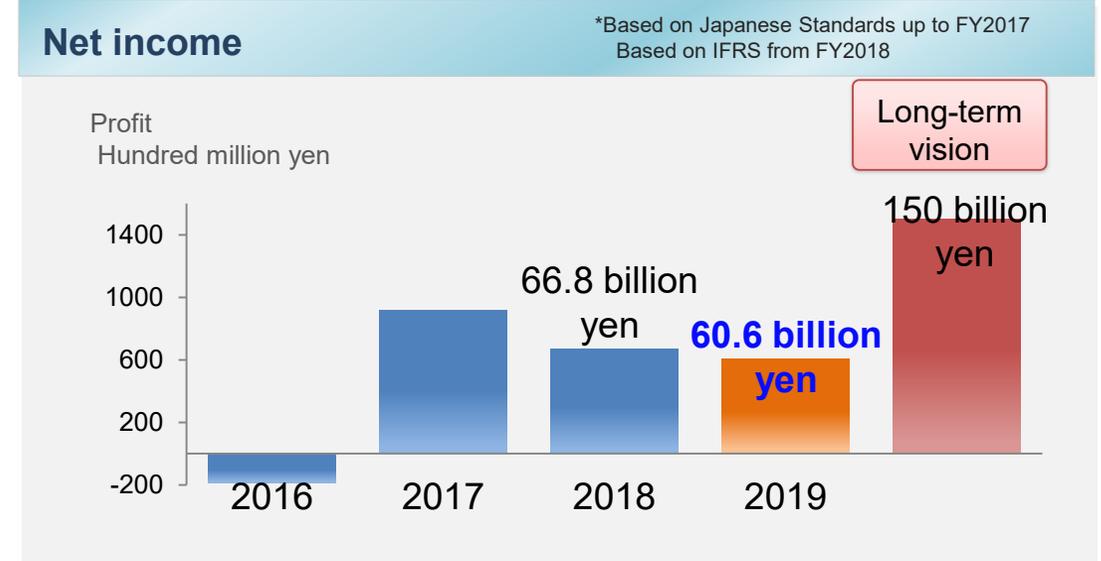
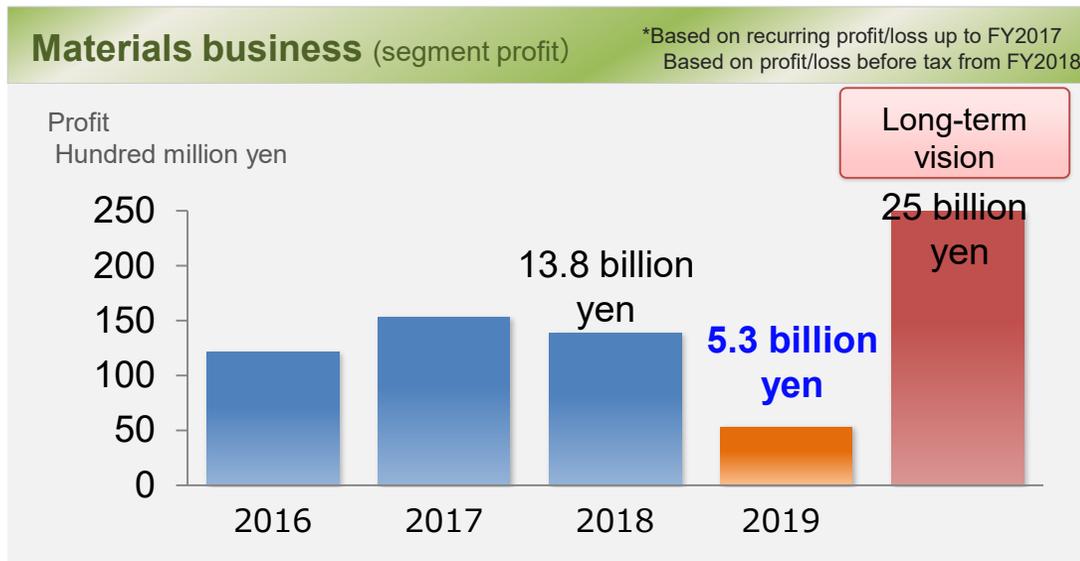
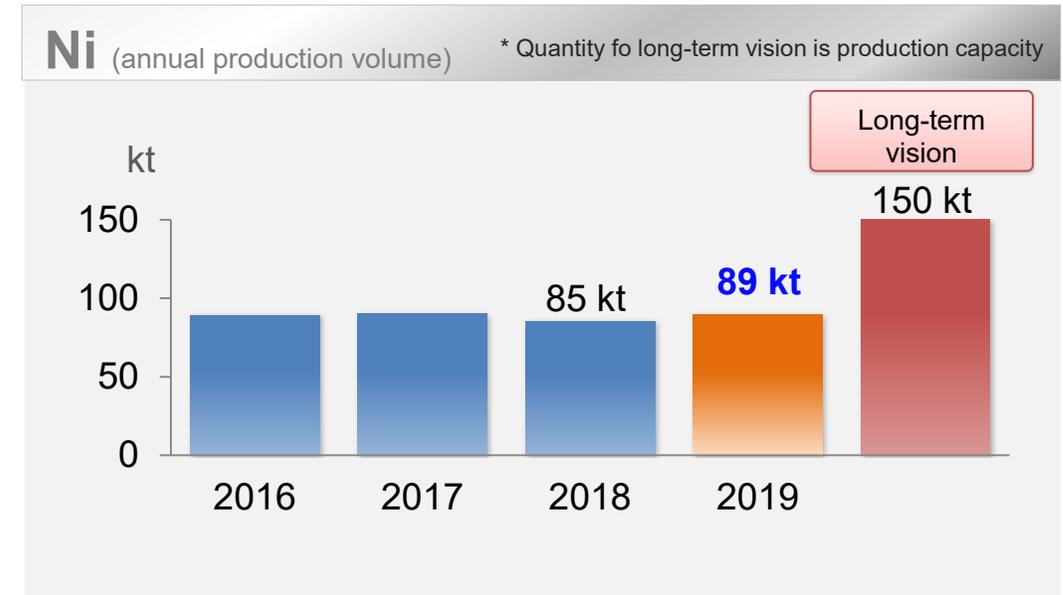
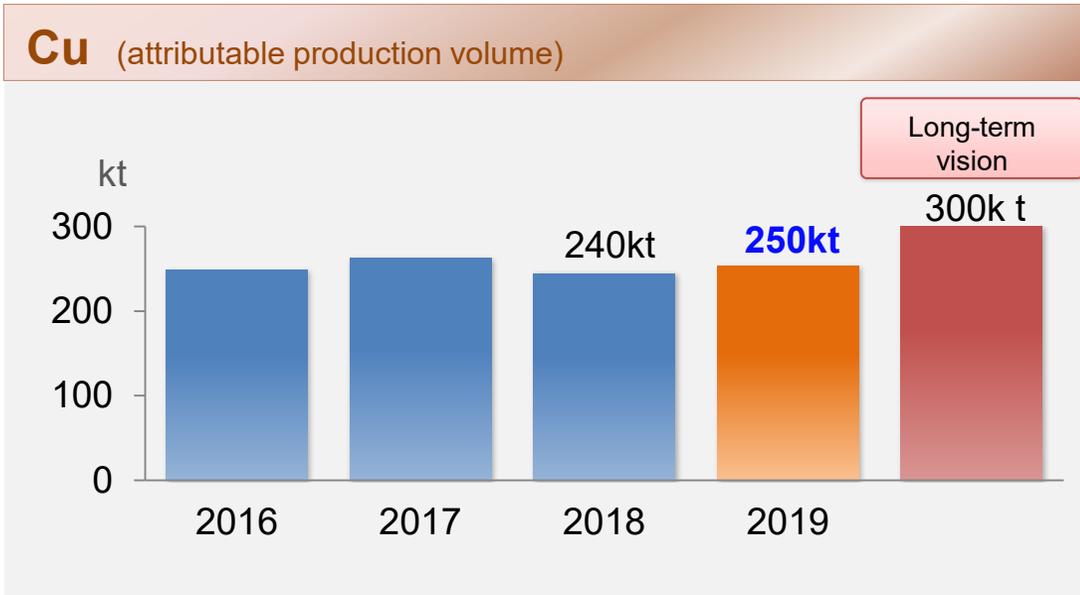
- Develop cobalt recovery process which was the subject of recycling, and pilot test is under verification.

# 4) Individual business overview (4) Research & development ② Area/field



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

# 5) 2018 3-year Business Plan Targets and achievement of long-term vision



# 6) Vision for 2030: Material issues and list of KPIs



## 1. Effective Use of Non-Ferrous Metal Resources

### Vision

A company that generates resources through high technological capabilities

- 1 A company that stably provides non-ferrous metals to society
- 2 A company that contributes to society by effectively using impurities through collaborative, open technological development among industry, academia, and government
- 3 A company that contributes to the construction and maintenance of recycling systems for non-ferrous metals
- 4 A company that develops and supplies highly advanced materials that contribute to the resolution of social issues

### KPIs and goals

- 1
  - 1) Advance copper mine projects
    - Strengthen production structure at JV mines to achieve and maintain copper production level of 300 kt/year from interests
      - Achieve steady copper production level by reinforcing exploration of surrounding and deep areas in JV mines, expanding mineral processing technology, and improving operations leveraging IoT and AI
      - Advance Phase 2 and later projects at the Quebrada Blanca Copper Mine
  - 2) Acquire new superior copper and gold resources
    - Develop new mines for which we have operatorship
  - 3) Improve productivity by introducing new technology
    - Promote remote operation and unmanned operation of heavy machinery and information infrastructure equipment inside and outside of the Hishikari Mine
  - 4) Advance nickel ore projects and improve productivity
    - (1) Nickel production: 150 kt/year
    - (2) Yield compared to FY2018: +2%
- 2
  - 1) Develop technology to separate, stabilize and bleed off, and create value from impurities generated by smelting processes and mines
    - Develop technology to retain impurities: Develop and demonstrate the process
  - 2) Develop technology to create value from unused non-ferrous metal resources
    - Contribute to existing (e.g. marine resource development) and new development projects
  - 3) Recover non-ferrous metals from hard-to-process resources
    - Participate in business and technology for recovery of lithium from salt lake water with high levels of impurities
- 3 Demonstrate and commercialize automotive secondary battery recycling technology
  - Demonstrate, commercialize, and expand scale of recycling technology that recovers cobalt from automotive lithium-ion batteriesCommercialization: 2022
- 4
  - 1) Leverage our strengths to create new products and new businesses that contribute to society
    - Research, develop, and commercialize new advanced materials in the fields of energy, automobiles, and information communications
  - 2) Hold raw materials in-house for favorable and stable procurement
    - Commercialize NiO for fuel cells following demonstration project
  - 3) Expand sales of low-cost battery cathode materials through favorable, stable procurement of our own nickel raw materials
    - Maintain top class global share in the expanding cathode materials market

# 6) Vision for 2030: Material issues and list of KPIs

## 2. Climate Change

### Vision

A company that actively undertakes climate change countermeasures, by reducing emissions and stably supplying products contributing to a low-carbon society, a future with zero greenhouse gases (GHGs)

### KPIs and goals

Reduce GHG emissions

- Keep total GHG emissions below that of FY2013 and formulate a plan to reduce our emissions to zero in the second half of the century
- Cut GHG emissions intensity by at least 26% compared to FY2013
- Expand contribution of GHG reduction by products contributing to a low-carbon society: 600 kt-CO<sub>2</sub> or more



## 3. Significant Environmental Accidents, 4. Biodiversity

### Vision

A company that values water resources and biodiversity, and protects the richness of the sea and land

### KPIs and goals

- 1 Zero significant environmental accidents
  - Promote improvements through the use of risk and environmental management systems
  - Reinforce and improve equipment and infrastructure to address increases in sources of natural risk
- 2 Reduce emissions of hazardous substances (year-on-year)
  - Optimize water use; reduce emissions of hazardous substances to the atmosphere and water
  - Promote various environmental preservation and biodiversity preservation activities, such as regular reforestation





# 5. Employees' Occupational Health and Safety

## Vision

A company where all employees work together with safety first the priority in a comfortable working environment as well as safe facilities and operations

## KPIs and goals

- 1 Prevent occupational accidents
  - Serious accidents: zero (in Japan and overseas, including contractors)
  - All accidents: reduce year-on-year, with aim of eventually zero
- 2 Prevent occurrence of occupational diseases
  - Number of workplaces that present higher health risks: reduce year-on-year
  - Occurrence of occupational diseases: zero

# 6) Vision for 2030: Material issues and list of KPIs

## 6. Diverse Human Resources,

## 7. Development and Participation of Human Resources



### Vision

A company where all employees can take a vibrant and active part

- 1 A company that respects the humanity of each and every employee, and where employees feel pride, motivation, and joy in work
- 2 A company that provides each and every employee with opportunities to improve his/her capabilities, and grows together with employees

### KPIs and goals

- 1 Promote working style reform and create workplaces that make use of digital technology, letting diverse human resources play vibrant and active roles
  - Improve scores for “Management by top management and superiors,” “Appeal of job,” and “Work environment” in employee awareness survey
  - (1) Number of female managers: 50 (SMM employees)
  - (2) Increase workplaces open to women and improve ratio of female employees (20% or higher at Japanese sites)
  - Expand number of managerial track employees of foreign nationality
  - Percentage of employees with disabilities: 3% or higher
  - Assign jobs and provide support matched to employees’ life stages
- 2 Support employees’ mental and physical health
  - Halve the number of people found to require support in stress checks
  - Percentage of employees with abnormal findings indicated in health checkups: 50% or lower
- 3 Diversify opportunities to enhance the abilities of employees according to employee needs and work needs
  - Utilize 1-on-1 meetings that bring out the motivation and potential of every employee and boost the growth of subordinates through regular dialogues between superiors and subordinates.
  - Reconstruct the human resources development program (in-house education, external education, etc.) to provide opportunities to employees to enhance their abilities in line with their roles
  - Provide opportunities for self-development matched to each employee’s life plans and needs (correspondence courses, online training, etc.)

# 6) Vision for 2030: Material issues and list of KPIs



## 8. Engagement with Stakeholders

### Vision

A company that is appreciated and understood to be the world leader in non-ferrous metals

### KPIs and goals

- 1 Further penetrate our Group brand among employees
  - Improve results of employee awareness survey (increase ratio of employees who feel pride in working at the company)
- 2 Ensure quality and quantity in communication of information at the level of “world leader in the non-ferrous metals industry”
  - Earn a high reputation for the integrated report from outside the company (including hearings with shareholders and investors, and improvements in questionnaire and evaluation results)
- 3 Increase in recognition and understanding of our goal of “world leader in the non-ferrous metals industry”
  - Improvement in findings of surveys by external bodies (degree of recognition and understanding, etc.)

## 9. Co-Existence and Mutual Prosperity with Local Communities



### Vision

A company that contributes to regional development and earns trust as a member of the local community

### KPIs and goals

Participate in local communities through dialogue and collaboration.  
Accurately identify local issues through dialogues with local communities, and execute the following measures.

- 1 Support the local community via employee participation
  - Implement employee participation programs (from 2023)
- 2 Hire and procure locally
  - Continually implement and assess of performance
- 3 Support for nurturing of the next generation
  - Implement programs to nurture the next generation in collaboration with government, local bodies, NPOs, etc. (1 or more times/year)
  - Establish and award scholarships in Japan and maintain existing overseas scholarships (from 2023)
- 4 Support for people with disabilities and the elderly
  - Implement programs to support people with disabilities and the elderly in collaboration with government, local bodies, NPOs, etc. (1 or more times/year)
- 5 Support during disasters
  - Support regions affected by large-scale disasters

## 6) Vision for 2030: Material issues and list of KPIs



### 10. Rights of Indigenous Peoples

#### Vision

A company that understands and respects the traditions and culture of indigenous peoples

#### KPIs and goals

- 1 Understand indigenous peoples and their traditions and culture
  - Percentage of SMM Group sites implementing in-house education: 100% by end of FY2023
- 2 Support initiatives that lead to respect for the traditions and cultures of indigenous peoples
  - Provide scholarships for indigenous peoples (continue existing initiatives)
  - Support indigenous people-related initiatives by NGOs, academic societies, etc.: one initiative or more each year



### 11. Human Rights in the Supply Chain

#### Vision

A company that undertakes responsible sourcing across the supply chain

#### KPIs and goals

- Promote responsible sourcing, particularly responsible mineral sourcing
- Responsible mineral sourcing
    - Establish a responsible mineral sourcing management system in line with international standards by the end of FY2021
    - Zero mines or smelters and refineries complicit in child labor or other infringements of human rights in the supply chain
  - Responsible sourcing
    - Business partners that have received and agreed with the SMM Group Responsible Sourcing Policy: 100% by the end of FY2030
    - Establish a responsible sourcing management system in line with international standards by the end of FY2024
    - Continue implementing due diligence (DD)

# Note

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