

# FY2009

## Progress of Business Strategy

May 2010



**SUMITOMO METAL MINING Co., Ltd.**

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# I. Looking Back on 06 3-Yr Business Plan

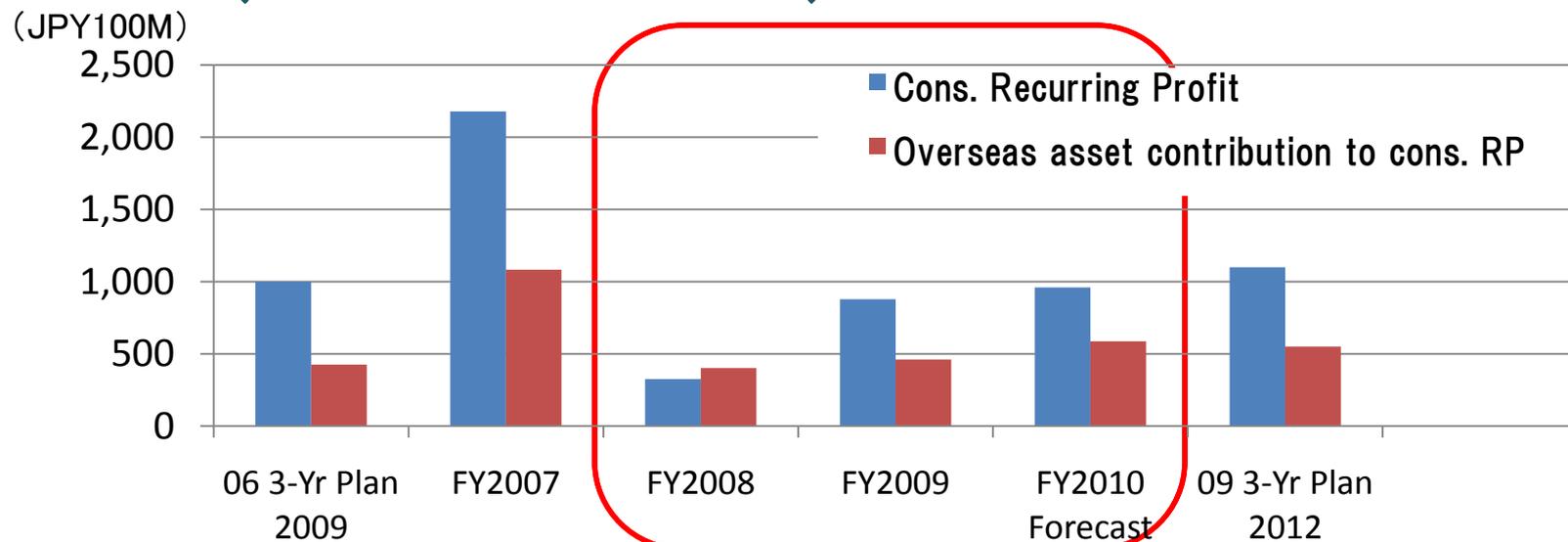


**Coral Bay Nickel**

SUMITOMO METAL MINING CO., LTD.

# 1) Consolidated Results

Actual performance average higher than 06 3-Yr Business Plan (FY09 trial calculation)



(JPY100M)	06 3-Yr 2009	FY07-09 Average	2007	2008	2009	2010 Forecast	09 3-Yr 2012
Cons. Recurring Profit	1,000	1,128	2,179	326	878	960	1,100
Overseas asset contribution to cons. RP	426	649	1,082	402	461	587	550
Cu (\$/T)	4,000	6,516	7,584	5,864	6,101	6,500	6,000
Ni (\$/lb)	7.0	10.2	15.5	7.5	7.7	9.0	8.0
Au (\$/Toz)	550	885	766	867	1,023	1,050	1,000
Forex	110.0	102.7	114.3	100.5	92.86	90.0	90.0

## 2) Main causative factors of profit increase/decrease in 06 3-Yr Business Plan

Worsening of global economic situation due to “Lehman Shock”

### Profit increase factors

#### Contribution of offshore assets

1. CBNC production increase (Ni)
2. Pogo gold mine: increase in production & interests
3. Cerro Verde production increase
4. Cost cutting measures

### *Main factors for profit increase/decrease in 06 3-Yr Business Plan*

### Profit decrease factors

#### Worsening of raw materials terms; stagnant demand

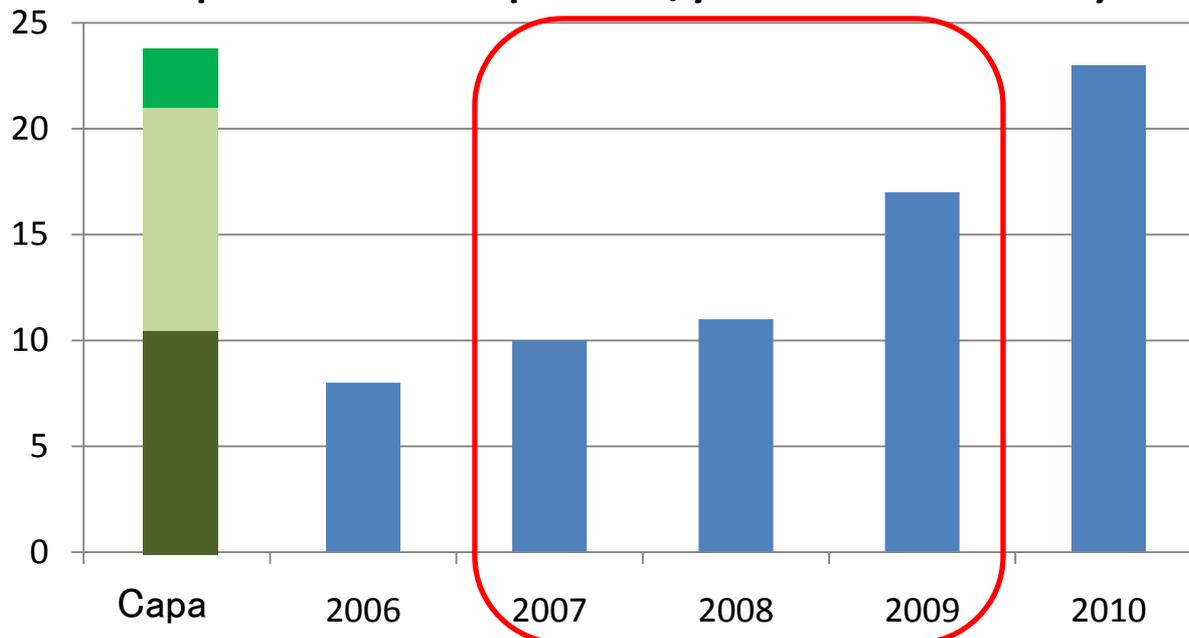
1. Falling copper smelting margins
2. Decrease of profits from Electronics and Advanced Materials
3. Large inventory evaluation loss (FY2008)

### 3) Primary strategies for 06 3-Yr Business Plan: Profit increase factor (1) Ni <1> CBNC

## Augmentation of CBNC (HPAL)

(Kt)

**CBNC production**      **Capa. 24 kt/yr to be established by 2010**



#### Production capacity

April '05: Start production 10 kt

April '09: Start production 22 kt

July '10: Start production 24 kt

With the HPAL process, we have established the recovery and production of nickel and cobalt from low-grade nickel laterite ores, formerly considered difficult to process, on a large-scale commercial basis.

#### Production (K Ni-t)

	2006	2007	2008	2009	2010
<b>CBNC</b>	8	10	11	17	23

### 3) Primary strategies for 06 3-Yr Business Plan: Profit increase factor (1) Ni <2> Electrolytic nickel (Niihama Nickel Refinery)

#### • FY2009:

**Production capacity 36 kt -> 41 kt/yr completion**

(Corresponding to production increase of CBNC II)

Total investment JPY 5.7B

(Investment in plant and equipment with a view toward augmentation of production capacity to 65 kt in 2012)

#### • FY2010:

**Begin working toward 65 kt/yr**

(Completion scheduled to correspond to Taganito production start in Y2013)

Investment in FY2010: JPY 900 M  
(Total investment JPY 11B)

**MCLE process:**

**Matte Chlorine Leach Electro-winning**

**Niihama Nickel Refinery won the Okochi Production Memorial Award**

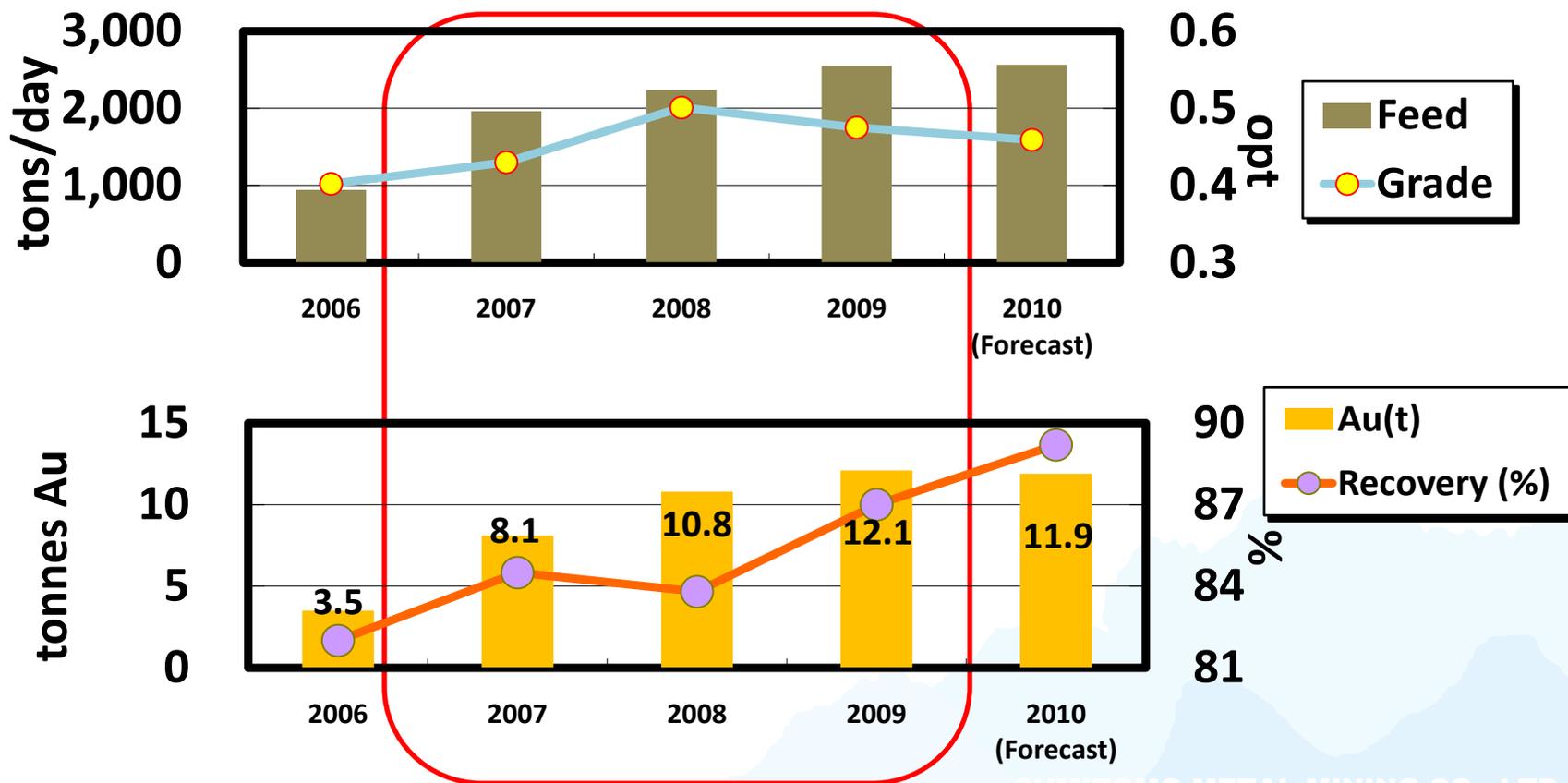
- 1980: Solvent extraction and partitioning of cobalt
- 1996: MCLE process
- 2009:HPAL process



# 3) Primary strategies for 06 3-Yr Business Plan: Profit increase factor (2) Pogo Gold Mine

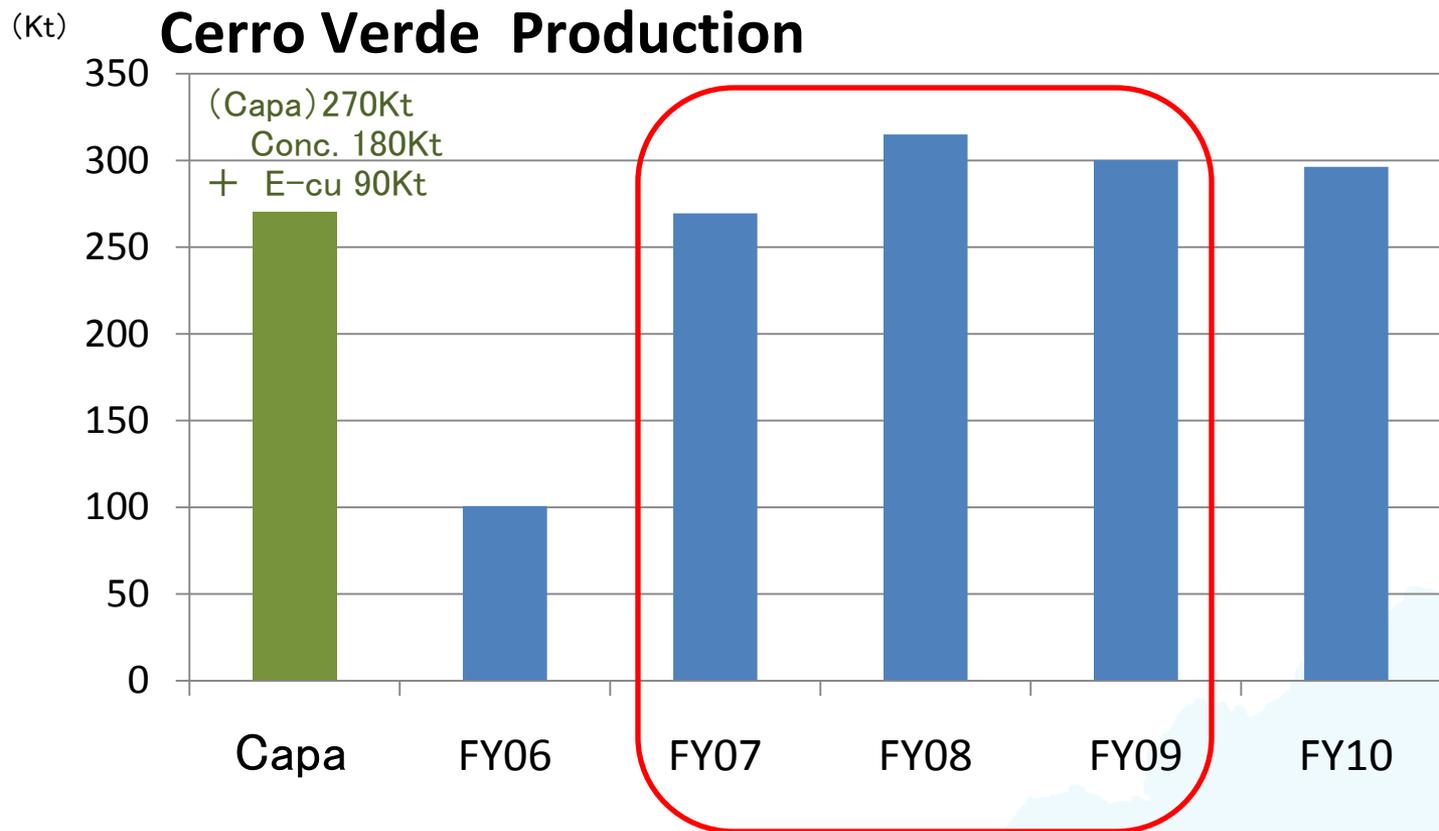
Attained production capacity of 12 tons/year  
– Utilization of SMM technology and know-how –

(July '09: Acquisition of Teck's interest (40%), bringing Japanese interest to 100%)



### 3) Primary strategies for 06 3-Yr Business Plan: Profit increase factor (3) Cerro Verde production increase

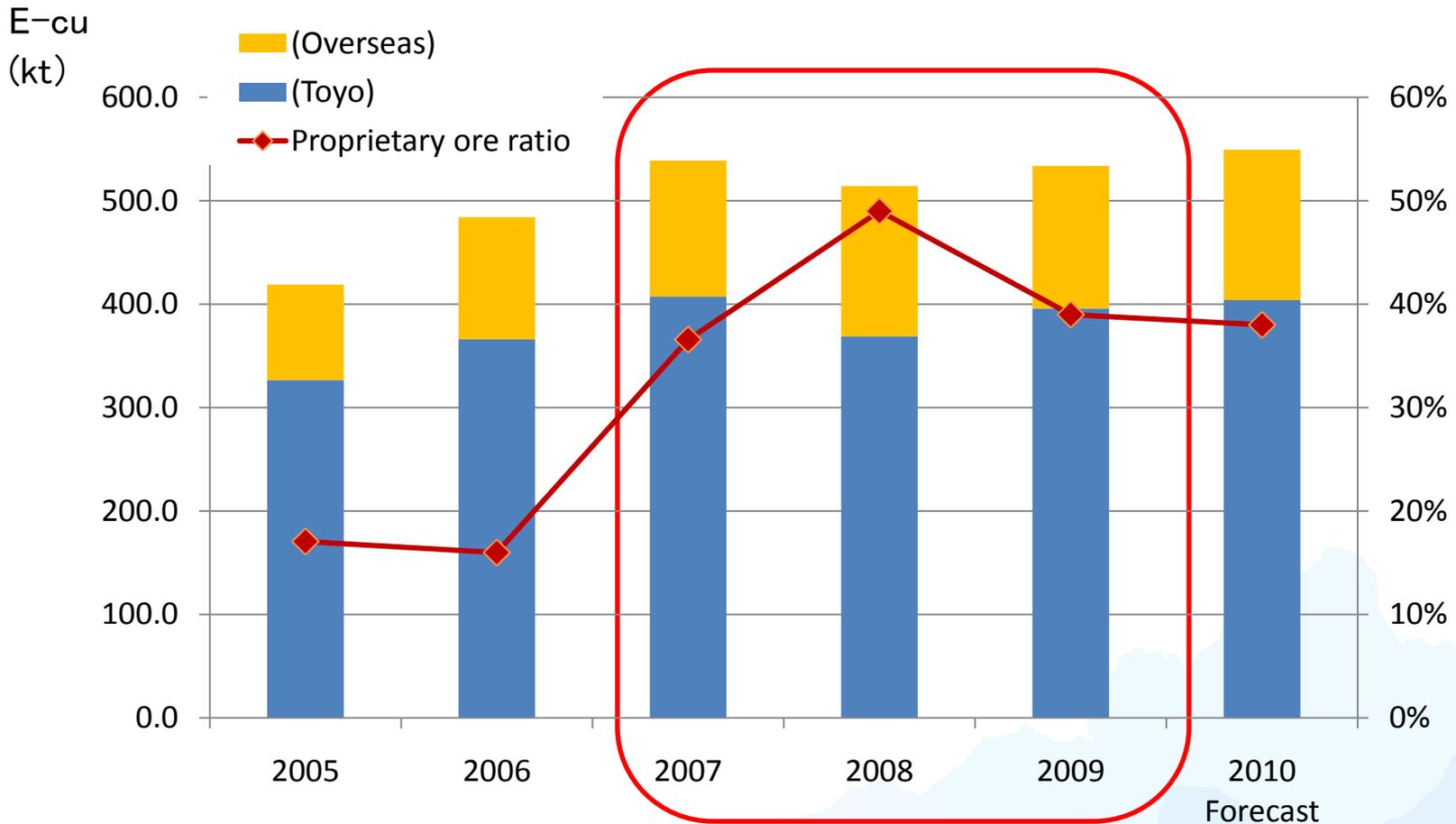
Results above and beyond production capacity  
(Improved grade; steady, stable operation)



Toward consideration of preparation of F/S for double expansion (FY2010)

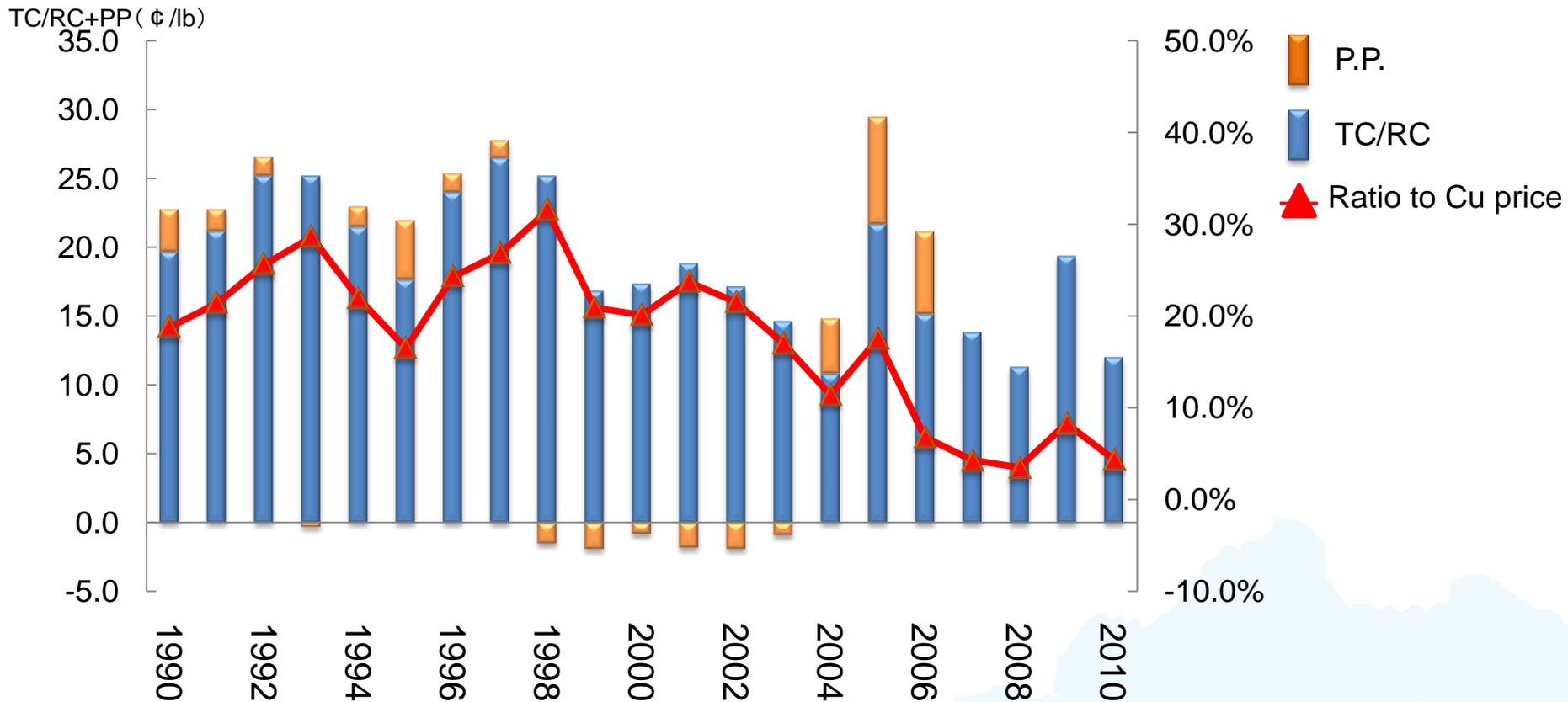
### 3) Primary strategies for 06 3-Yr Business Plan: Profit increase factor (4) Toyo Smelter & Refinery 45 kt/yr, 40% proprietary ore ratio

Implementation of minimum cost operation; maintaining 400 kt/yr production



### 3) Primary strategies for 06 3-Yr Business Plan: Profit decrease factor (1) Toyo Smelter & Refinery 45 kt/yr, 40% proprietary ore ratio

#### Supply terms for Japanese smelters relative to Cu price



2010: TC/RC = \$46.5 / ¢ 4.65 = Combined ¢ 12/lb  
 2009: TC/RC = \$75 / ¢ 7.5 = Combined ¢ 19/lb  
 2010: assumed Cu price \$6,000/t

(Data: JOGMEC)

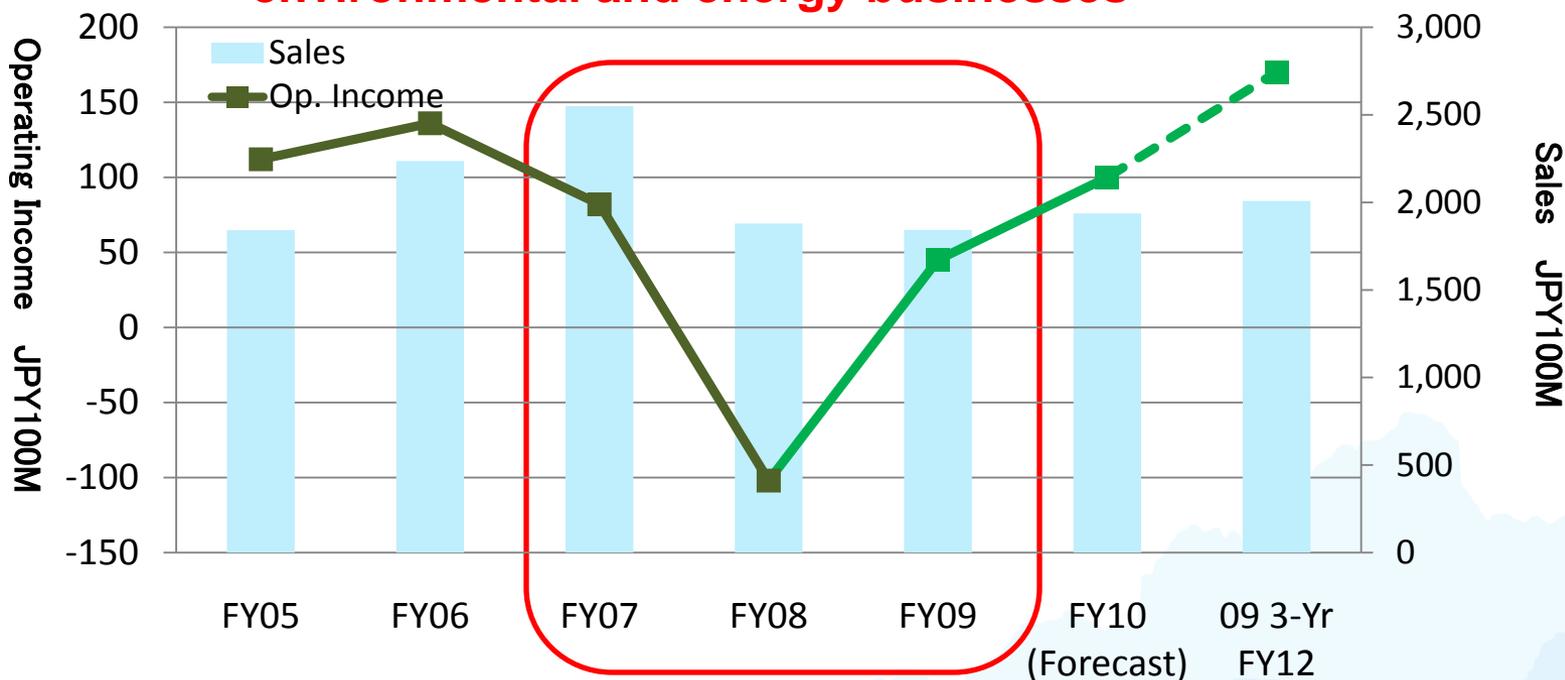
# 3) Primary strategies for 06 3-Yr Business Plan: Profit decrease factor (2) Electronics & Advanced Materials

**Plan:** “Top class share in the world; operating profit JPY 20 B”

**Result:** FY2008 share No. 1, yet in the red

Proceeding with “radical measures” in response to environmental changes

Putting efforts into independence of each business, and in environmental and energy businesses



\*Up to FY08: Operating profit after allocation of headquarters expense

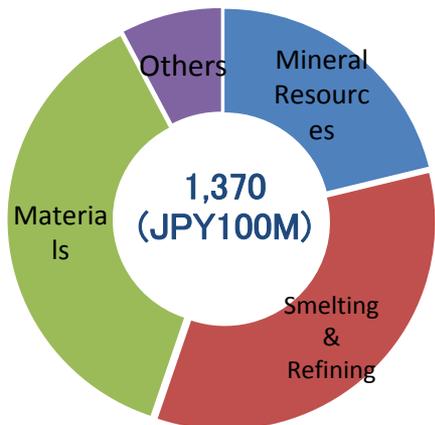
Figures for FY09 onward indicate approx. 2 B yen/yr profit increase

\*FY09 and onward: Operating profit before allocation of headquarters expense

# 4) Capital expenditure

Continue implementing growth strategy investment  
 Total JPY 176.1 B including JPY 44 B for overseas interests procurement

03 3-yr Plan

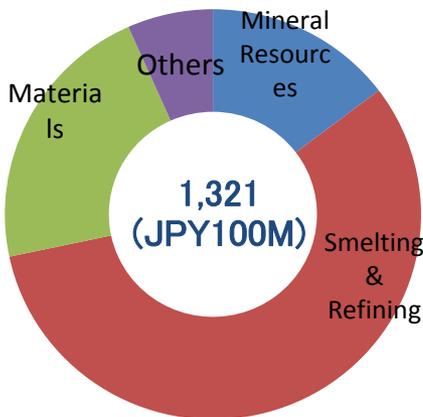


**【03 3-yr Plan: Overseas interests】**

Cerro Verde	234	
Goro	173	
Ojos	21	(JPY 100M)
<b>Total</b>	<b>428</b>	

**Total 1,798**

06 3-Yr Plan Result

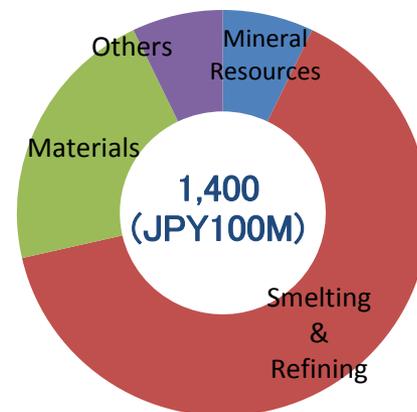


**【06 3-yr Plan: Overseas interests】**

Pogo	203	
Goro	179	
NAC	58	(JPY 100M)
<b>Total</b>	<b>440</b>	

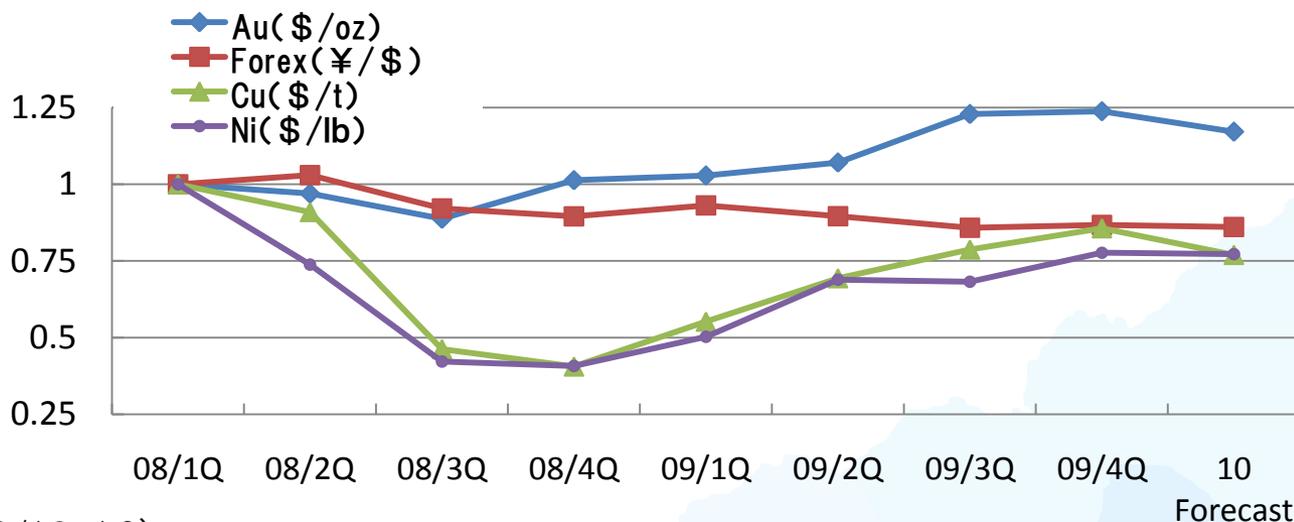
**Total 1,761**

06 3-Yr Plan



**CAPEX1400(JPY100M)  
 not include investment  
 for overseas interest  
 procurement**

# 5) Securing FY2009 earnings: (1) Steady recovery after bottoming out in 4Q '08



(Index 08/1Q=1.0)

## 5) Securing FY2009 earnings: (2) Enforcement of emergency management measures to ensure profitability

### Business operations focused on earnings maximization and cost minimization

- (1) Reduce finishing costs, increase operating efficiency.
- (2) Limit investment and exploration costs to strategic projects only.
- (3) Select and focus on improvement of unprofitable business operations and products



### Total cost reductions: Aimed ¥15bn, Achieved ¥18bn

(Segment) Mineral Resources & Metals: ¥10bn reduction  
Electronics & Advanced Materials: ¥8bn reduction

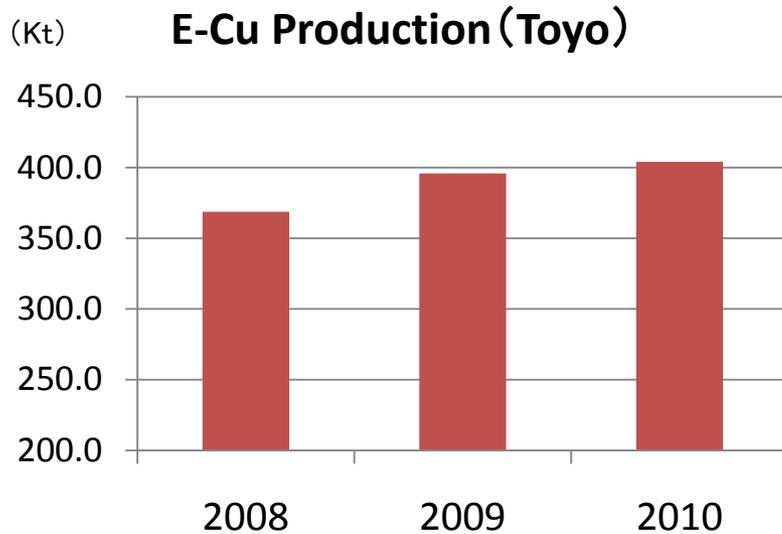
【¥18bn Breakdown】 Energy costs:¥3bn, Repair costs:¥2bn,  
Controllable costs: ¥4bn, Labor cost : ¥6bn, others :¥3bn

Progress of Reconfiguration of growth strategy of  
Electronics & Advanced Materials



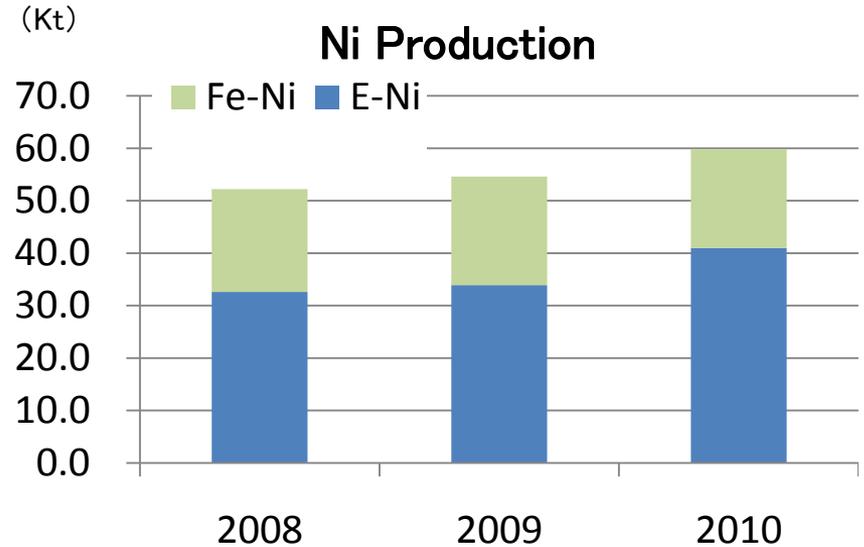
FY2010: Continue cost reduction of total JPY 15 B (over FY2008)

# 5) Securing FY2009 earnings: (3) Metal production trends



	2008	2009	2010
E-Cu	368.7	395.8	404.0

Continuing minimum cost operations

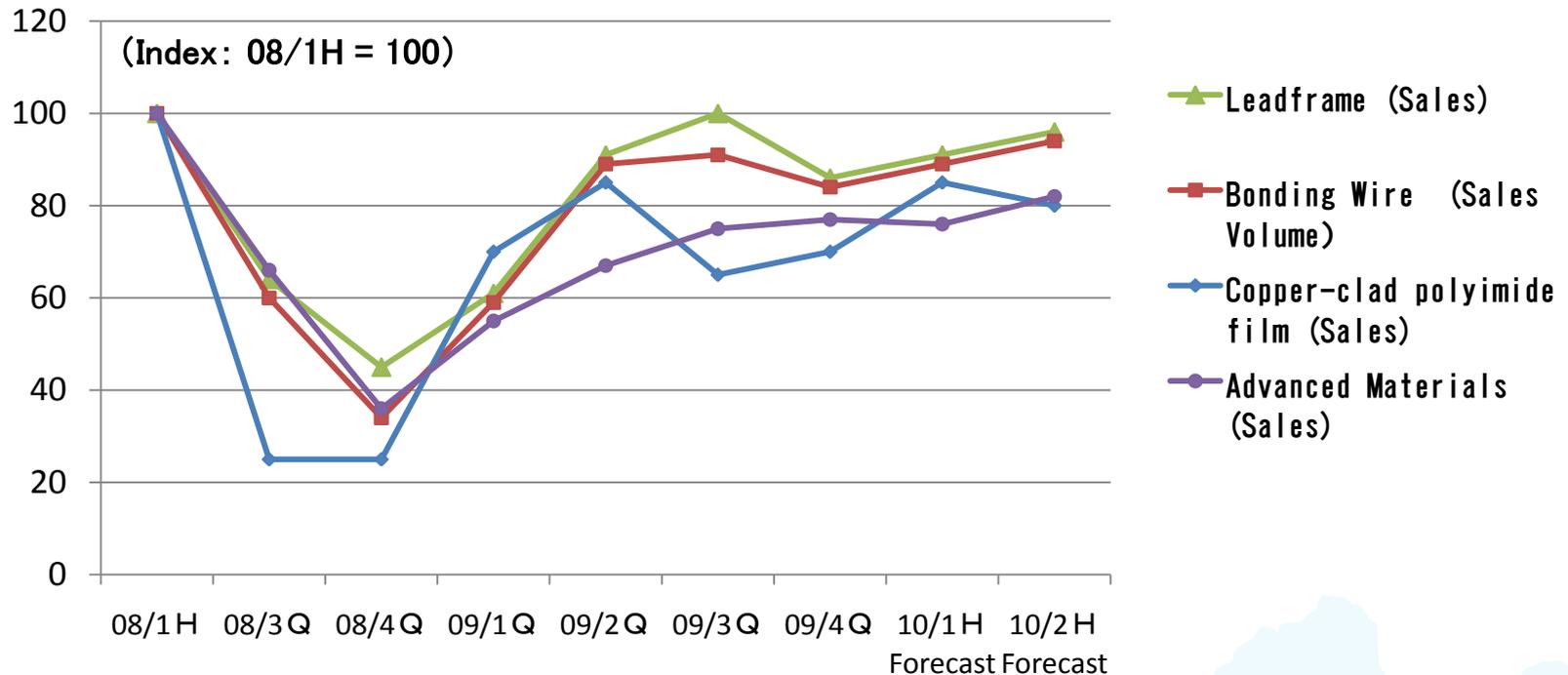


	2008	2009	2010
E-Ni	32.6	33.9	41.0
Fe-Ni	19.6	20.7	18.8

Steadily increasing production toward 100 kt/yr setup

# 5) Securing FY2009 earnings: (4) Electronics and Advanced Materials sales trends

Reinforcement of business base;  
market is also recovering



	08/1H	08/3Q	08/4Q	09/1Q	09/2Q	09/3Q	09/4Q	10/1H Forecast	10/2H Forecast
Leadframe (Sales)	100	65	45	60	90	100	85	90	95
Bonding Wire (Sales Volume)	100	60	35	60	90	90	85	90	95
Copper-clad polyimide film (Sales)	100	25	25	70	85	65	70	85	80
Advanced Materials (Sales)	100	65	35	55	67	75	77	76	82

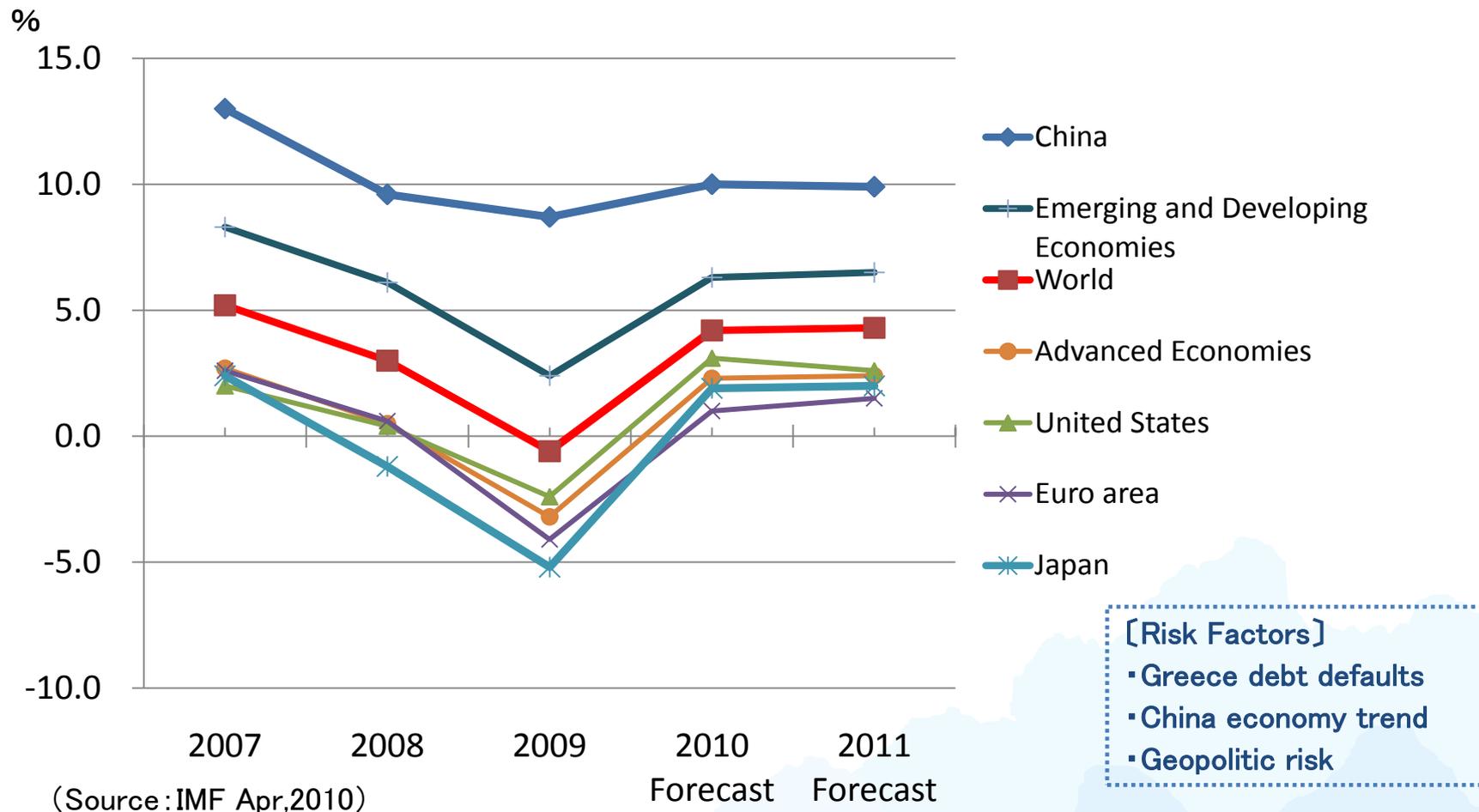
## II. FY2010 External Environment and Metal Markets



**Pogo Gold Mine**

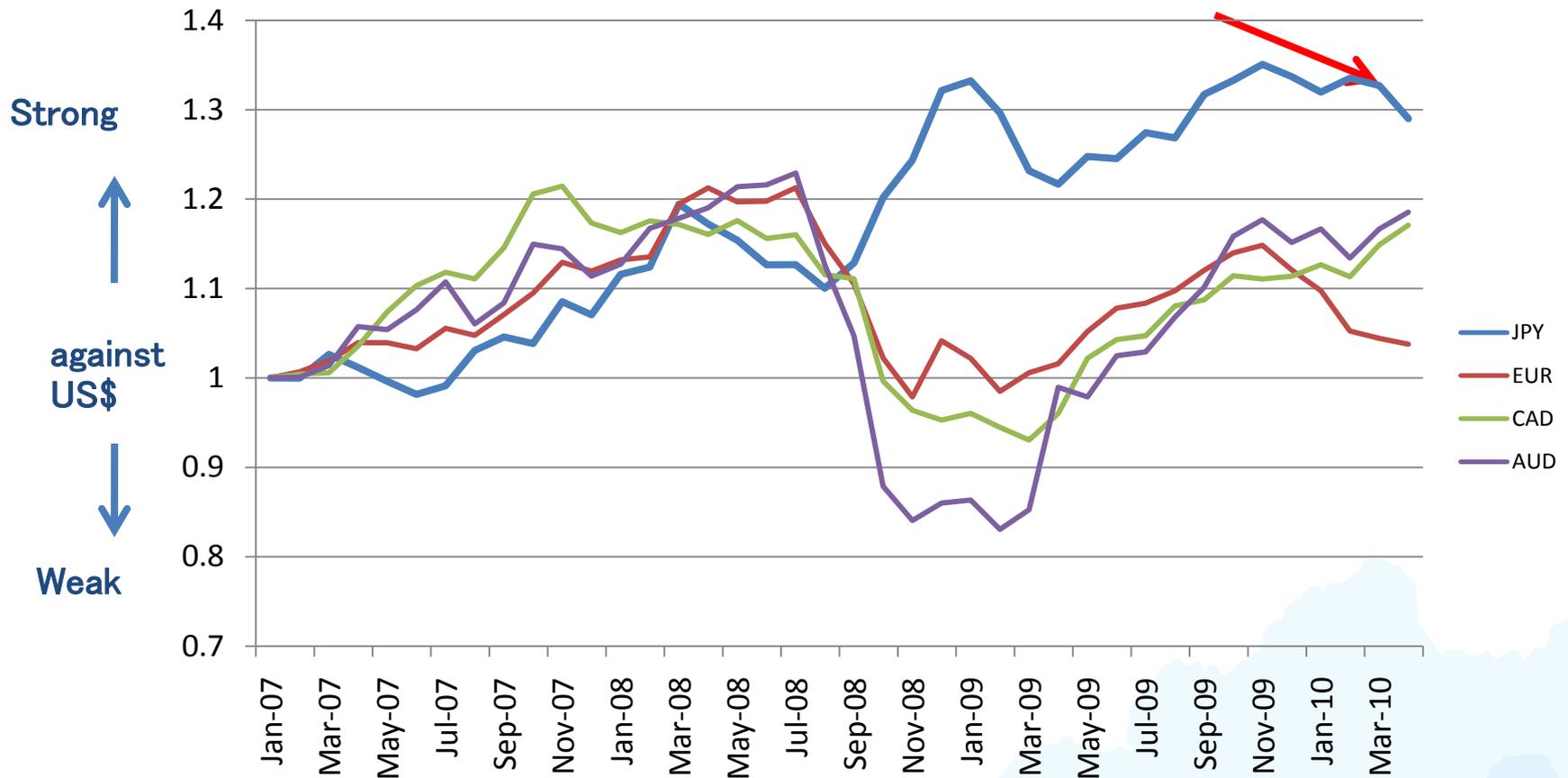
# 1) World GDP outlook

The real economy is recovering, but important to recognize risk factors



## 2) Exchange rate movement (including resource-holder countries)

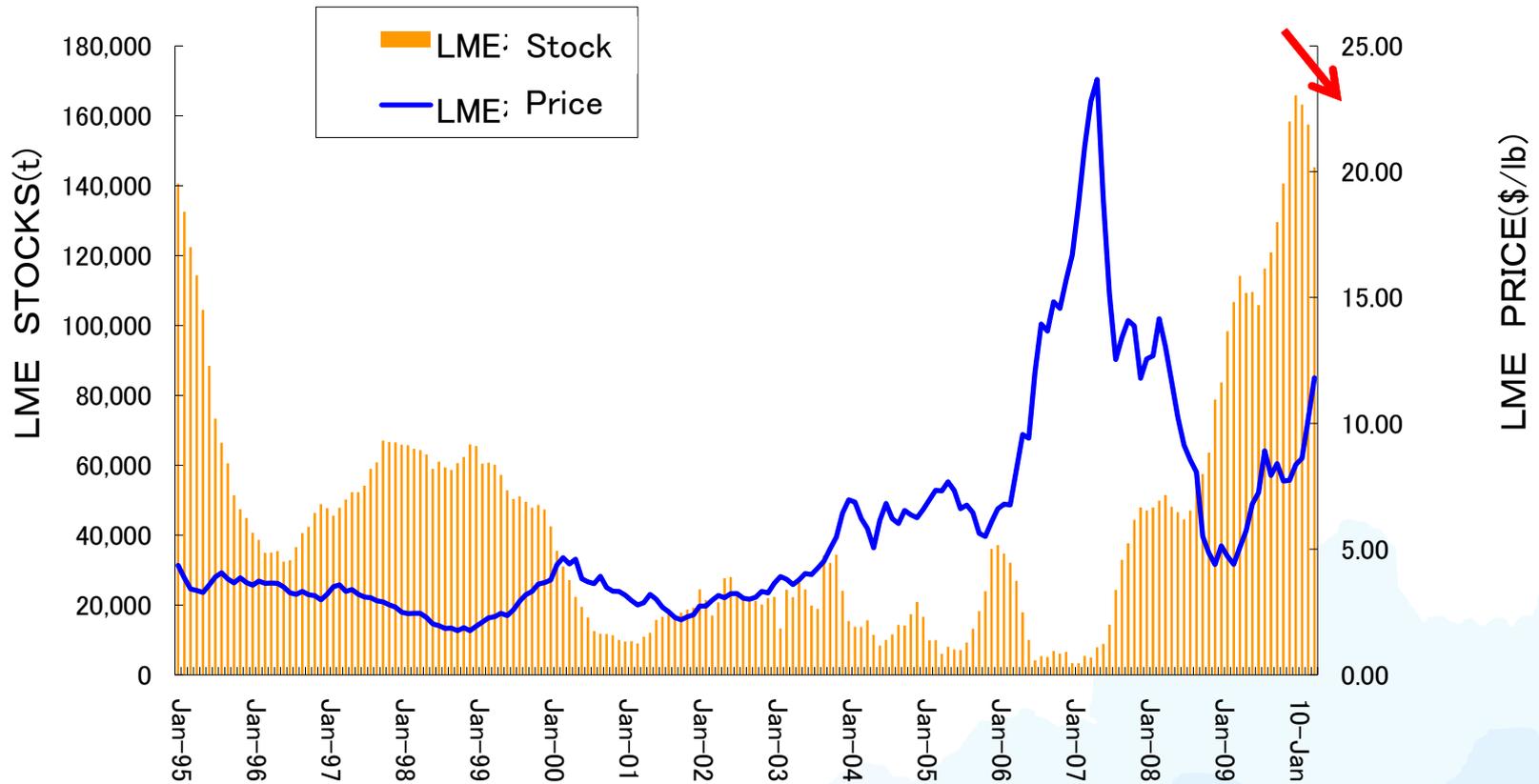
JPY on a falling trend, but with wide fluctuations



Index Jan-07 = 1.0

# 3) Nickel – (1) LME prices and stocks

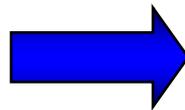
## Nickel LME Prices & Stocks



# 3) Nickel – (2) Supply & demand balance

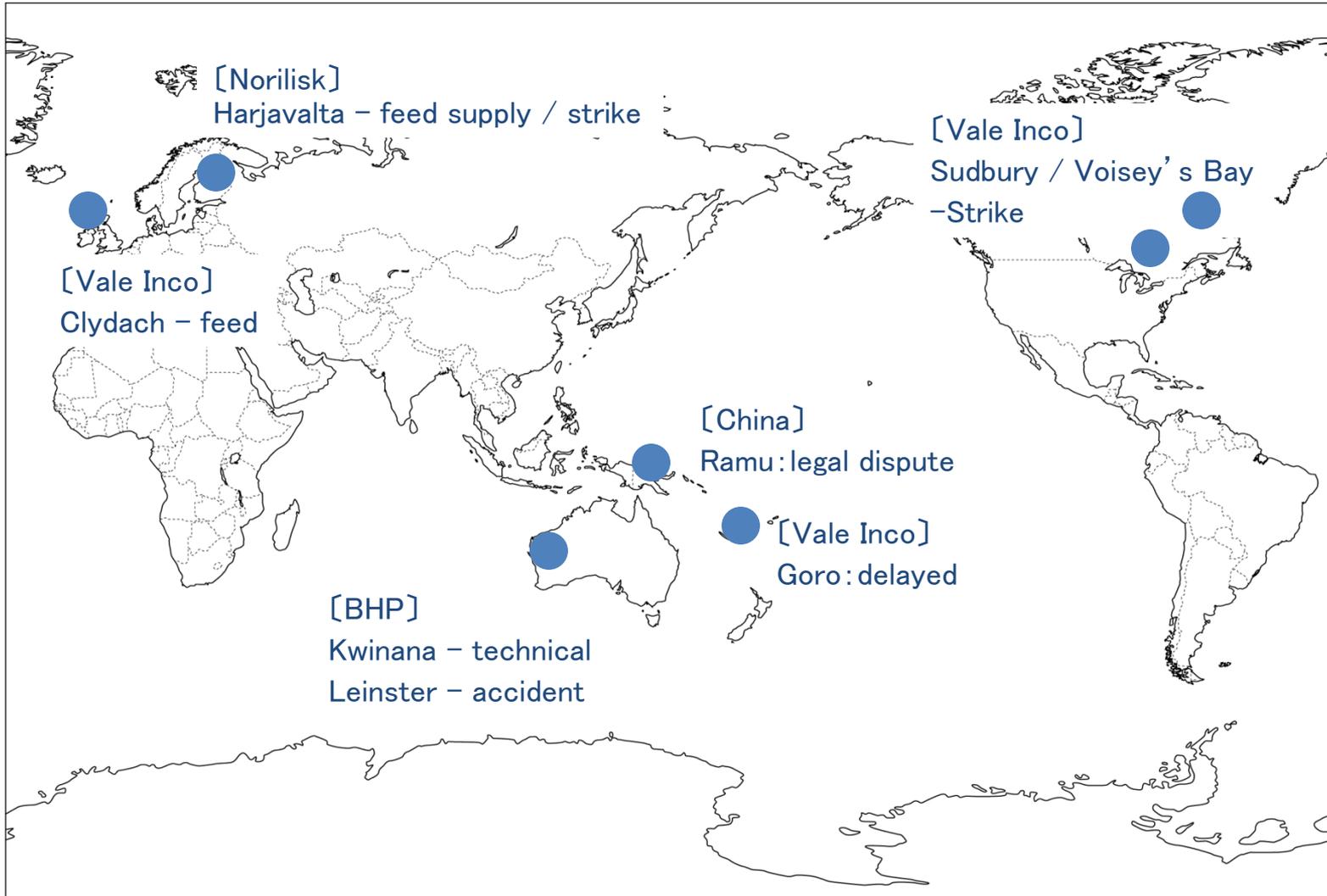
(Kt)	SMM			INSG			Macquarie
	2008	2009	2010	2008	2009	2010	2010
Output	1,363	1,279	1,374	1,382	1,332	1,395	1,414
Consumption	1,289	1,252	1,410	1,287	1,212	1,386	1,473
Balance	74	27	△ 36	95	120	9	△ 59
Estimated Timing	2010.3			2010.4			2010.4
FY (\$/lb)	7.48	7.72	9.00	—	—	—	9.5
Ni Pig Iron (Excluded)	71	95	120	—	—	—	
Stainless steel	26,317	25,125	28,492	—	—	—	30,953

## Nickel

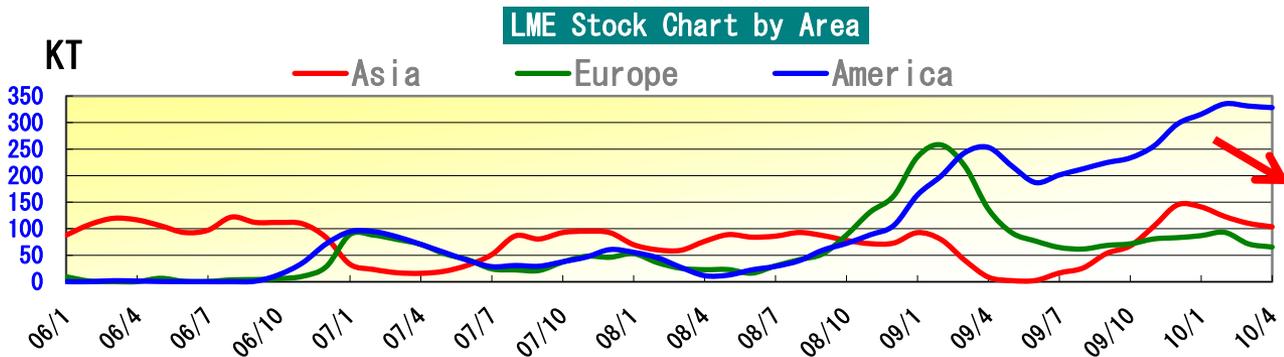
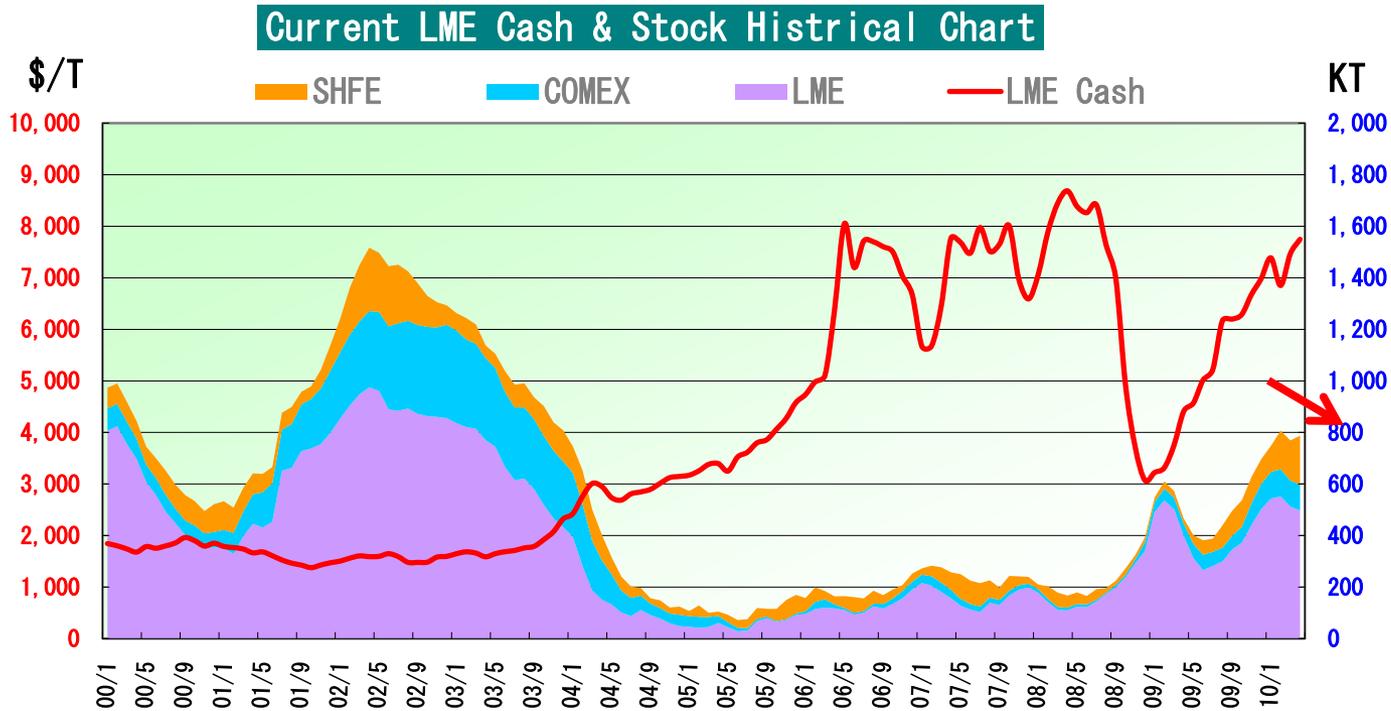


Special/stainless steel, electronic materials, etc.

# 3) Nickel – (3) Disruption outlook?



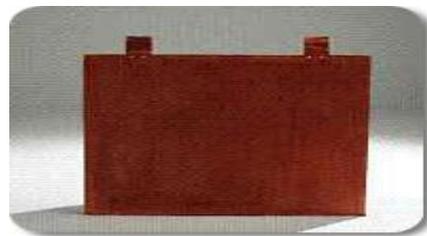
# 4) Copper – (1) LME prices and terminal stocks



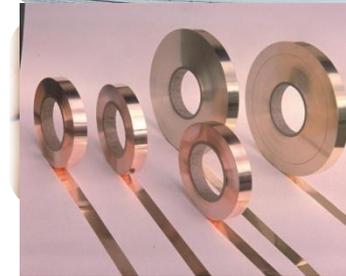
# 4) Copper – (2) Supply & demand balance

	ICSG				Macquarie
(kt)	2008	2009	2010	2011	2010
Output	18,232	18,382	18,501	19,127	18,633
Consumption	18,006	18,204	18,034	19,018	18,720
Balance	226	178	467	109	-87
FY(\$/t)	5,864	6,101	—	—	—
CY(\$/t)	6,956	5,150		—	7,500
Estimated Timing	2010.4				2010.3

E-Cu



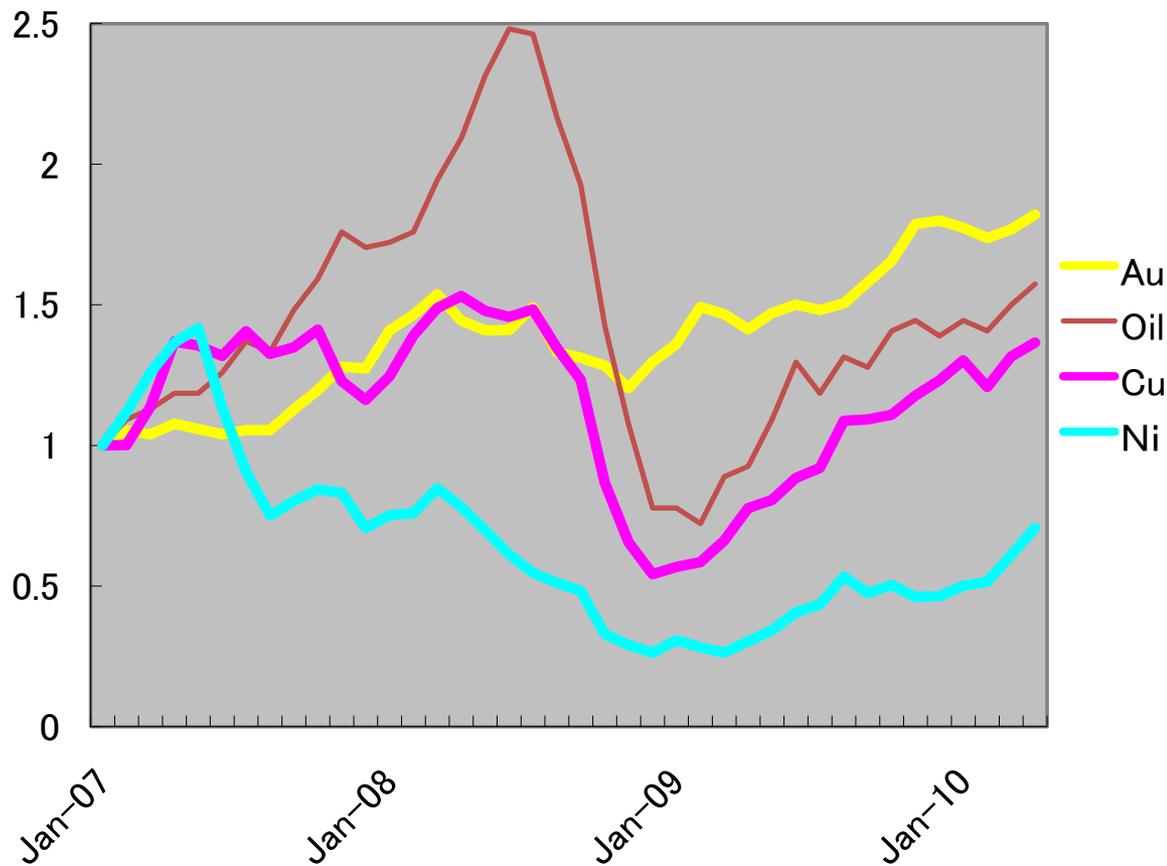
Wire, strip copper, etc.



# 5) Gold – Metal and oil prices

## Gold prices are firm as a key currency

Index  
07-Apr = 1.0



Public gold reserves by country  
(March 2010)

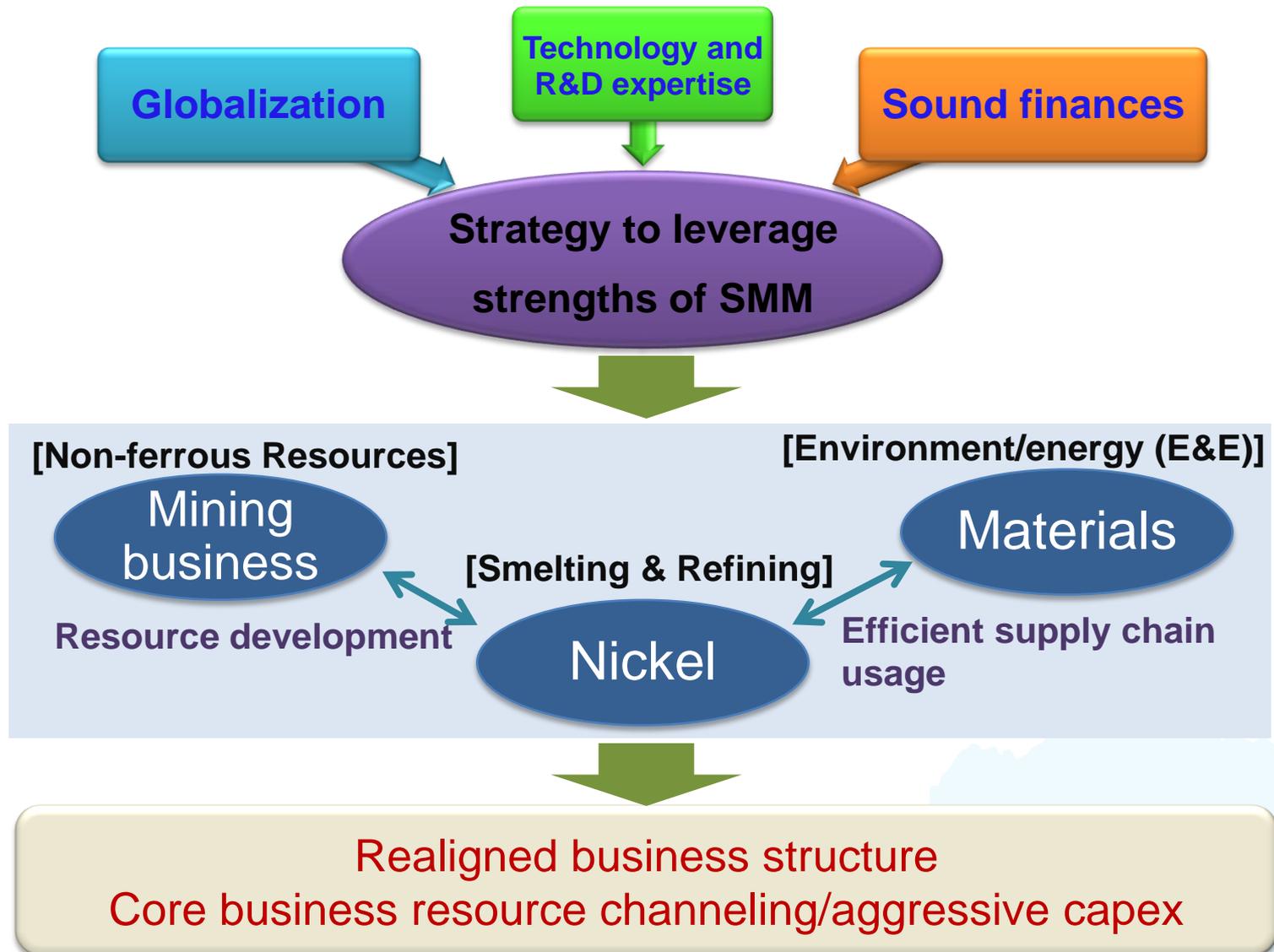
	Sectors	Gold reserves (t)	Gold /foreign reserves (%)
1	USA	8,133	70.4%
2	Germany	3,047	66.1%
3	IMF	3,005	–
4	Italy	2,452	64.9%
5	France	2,435	65.7%
6	China	1,054	1.6%
7	Switzerland	1,040	27.1%
8	Japan	765	2.5%
9	Russia	641	5.1%
10	Netherlands	613	53.4%
14	India	558	6.9%

# III. 09 3-Yr Business Plan: Progress of New Growth Strategy

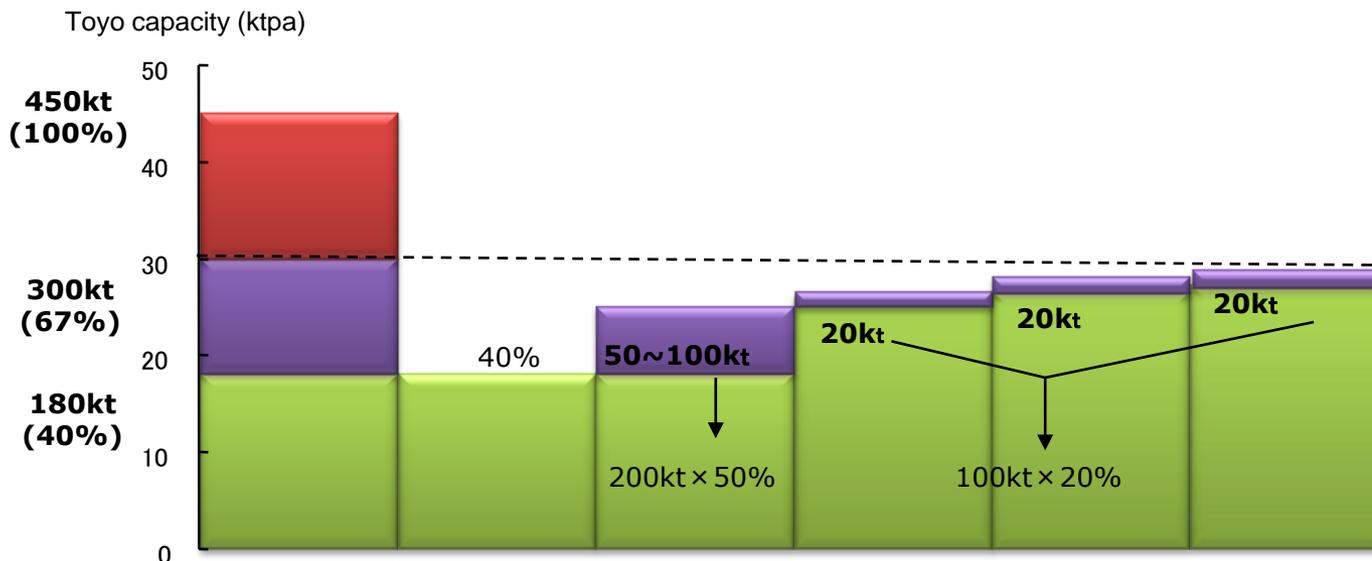


**Cerro Verde Mine**

# 1) Basic strategy of 09 3-Yr Business plan



## 2) Mineral resources business: (1) Securing of overseas mines



### [Three methods]

1) Developed by SMM

Expansion of prospecting area (from 2010)

2) External projection partnering

Intensifying competition for resource acquisition

3) Boost existing output

Cerro Verde production increase, F/S preparation during 2010  
Morenci production increase

## 2) Mineral resources business: (2) Prospecting situation at overseas mines



## 2) Mineral resources business : (3) Intensifying competition for resource acquisition

### China gaining power, price of assets rising

Project	Country	CAPEX US\$M*	Buyer	Seller	Year	Interest(%)	Sales US\$M	Resource Cu kt**	¢/lb
Esperanza	Chile	2,300	Marubeni	Antofagasta	2008	30	1,310	12,477	<b>15.9</b>
El Morro	Chile	2,520	Goldcorp	New Gold	2010	70	600	3,283	<b>10.1</b>
Tampakan	Philippines	5,200	China	Indophil	2010	34.2	631	13,936	<b>5.7</b>
Mirador & Panantza	Ecuador	2,000	China	Corriente	2010	100	631	11,569	<b>2.5</b>
Caserones	Chile	2,000	Mitsui	PPC	2010	25	135	4,482	<b>5.5</b>
Sierra Gorda	Chile	2,200	China	Quadra	2010	50	450	7,680	<b>5.0</b>

\*Calculation of ¢/lb: Asset sales prices/mineral resources assets.  
Includes some estimates by SMM

### [SMM Endeavors]

- Active information-gathering      - Expansion of target area
- Target projects: Projects in the initial stages allowing for maximization of technological superiority

### 3) Promotion of Taganito Project

Steadily promoting Taganito Project toward 100,000 tpa nickel production.

Investment in FY2010: JPY 45 B



Plant Site

◆ Investment US\$1.3bn

◆ SMM to retain majority interest  
NAC investment expected

◆ Proj. operating life: 30 yrs

◆ Schedule

Sep. 2009: Project announced

Mar. 2010: Construction start

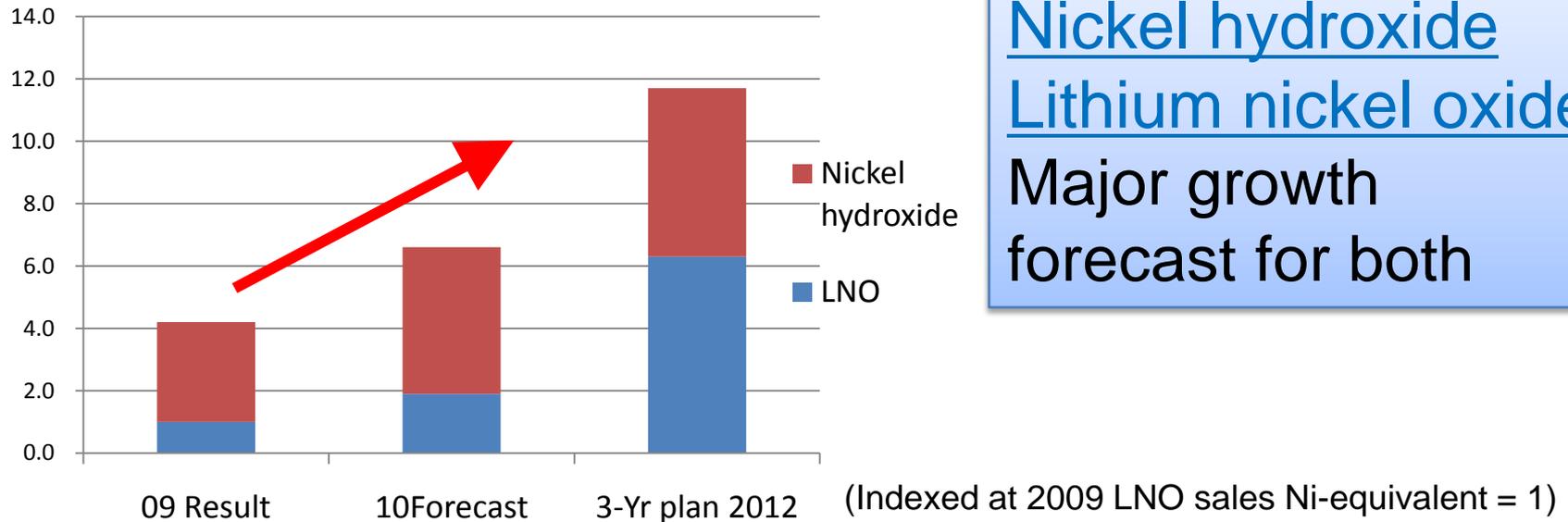
2013: Plant completion Pilot operations

**Commercial prod.**

# 4) Materials business

Environment & energy sector (1) Battery business: Planning for significant growth

## Battery sales (Ni vol.)



Nickel hydroxide  
Lithium nickel oxide  
Major growth  
forecast for both

- Anode material for Ni-MH car batteries and Li-ion battery

No.1 share in TOYOTA, Global top share in Ni-MH

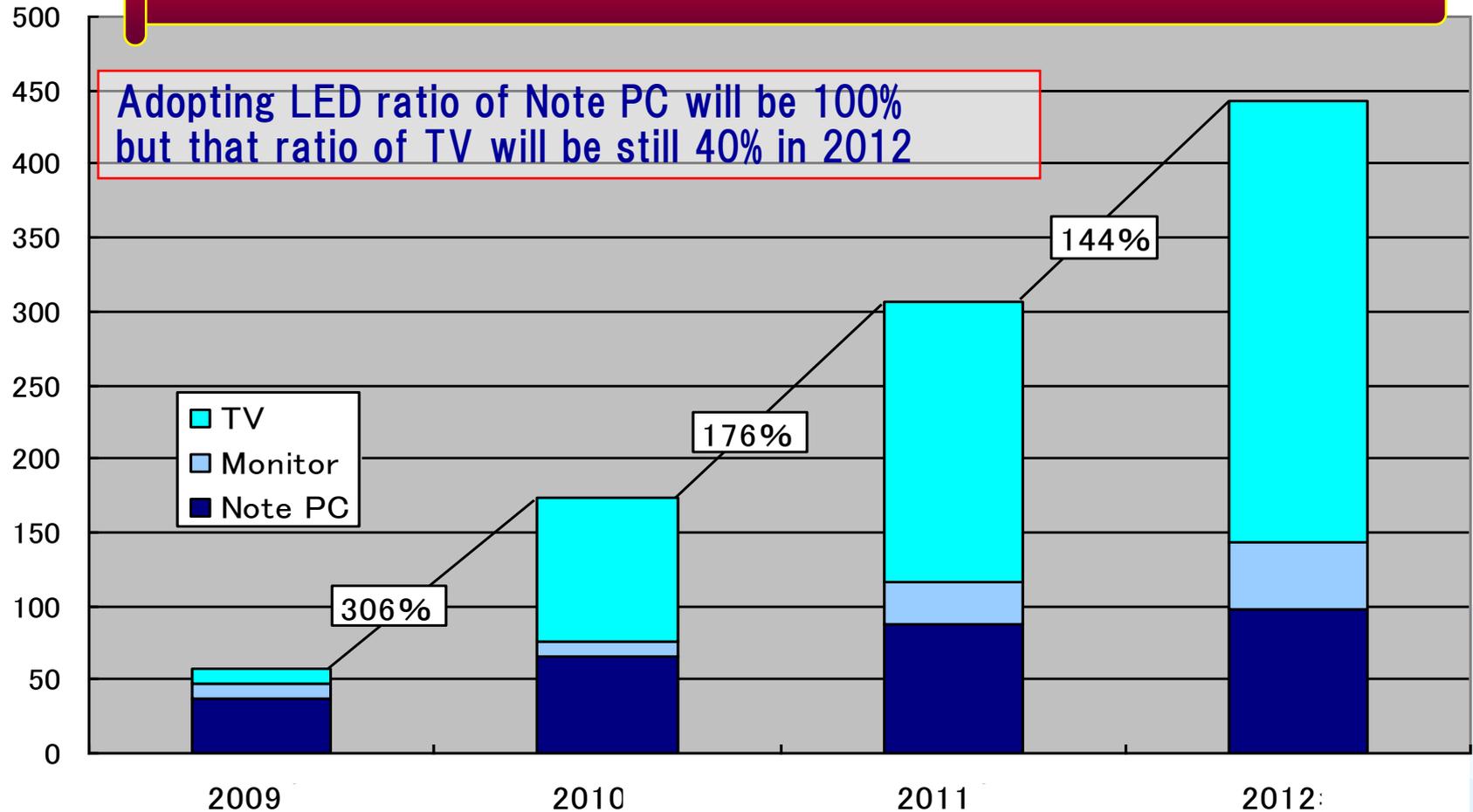
- Anode material for Li-ion consumer batteries: lithium nickel oxide (LNO)  
Top share in high-performance batteries **Supplying Panasonic**

# 4) Materials business

## Environment & energy sector (2) LED sapphire substrate <1>

[100M/Yr]

### LED demand prospect for LCD Note/Monitor/TV



Source: Information exchange between SMM and Displaybank Co., Ltd. (March 2010)

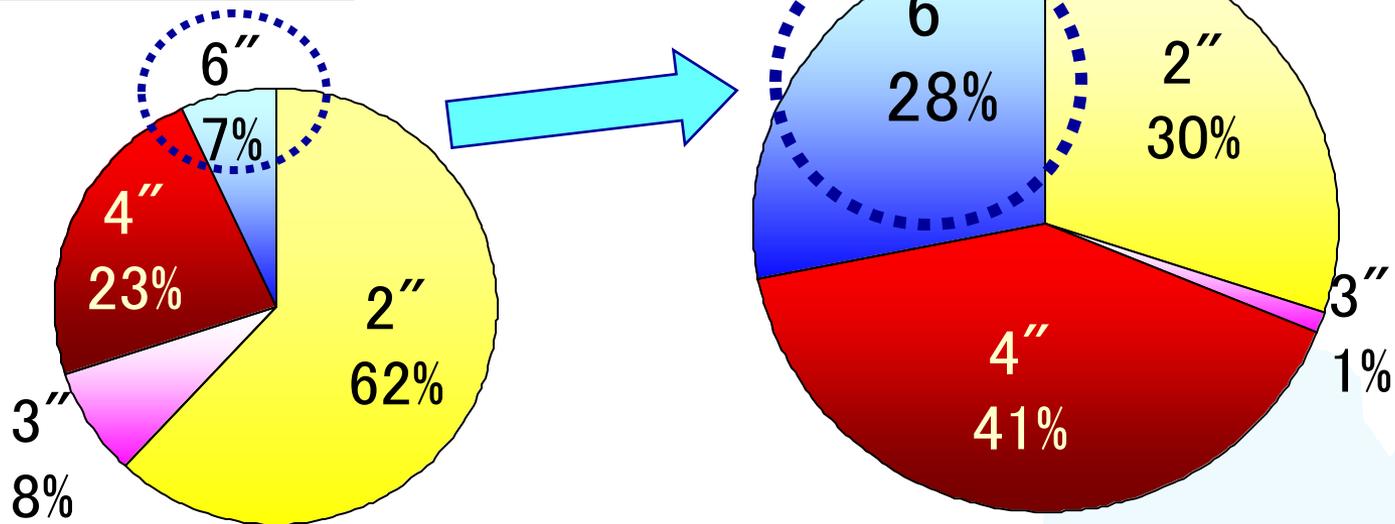
# 4) Materials business

## Environment & energy sector (2) LED sapphire substrate <2>

Sapphire substrates:

Targeting top share of large substrate market based on integrated large crystal fabrication/finishing processes

Forecast of WW Market



2010

1,100k/month (equivalent 3" base)

2012

2,400k/month (equivalent 3" base)

Source: Information exchange between SMM and Displaybank Co., Ltd. (March 2010)

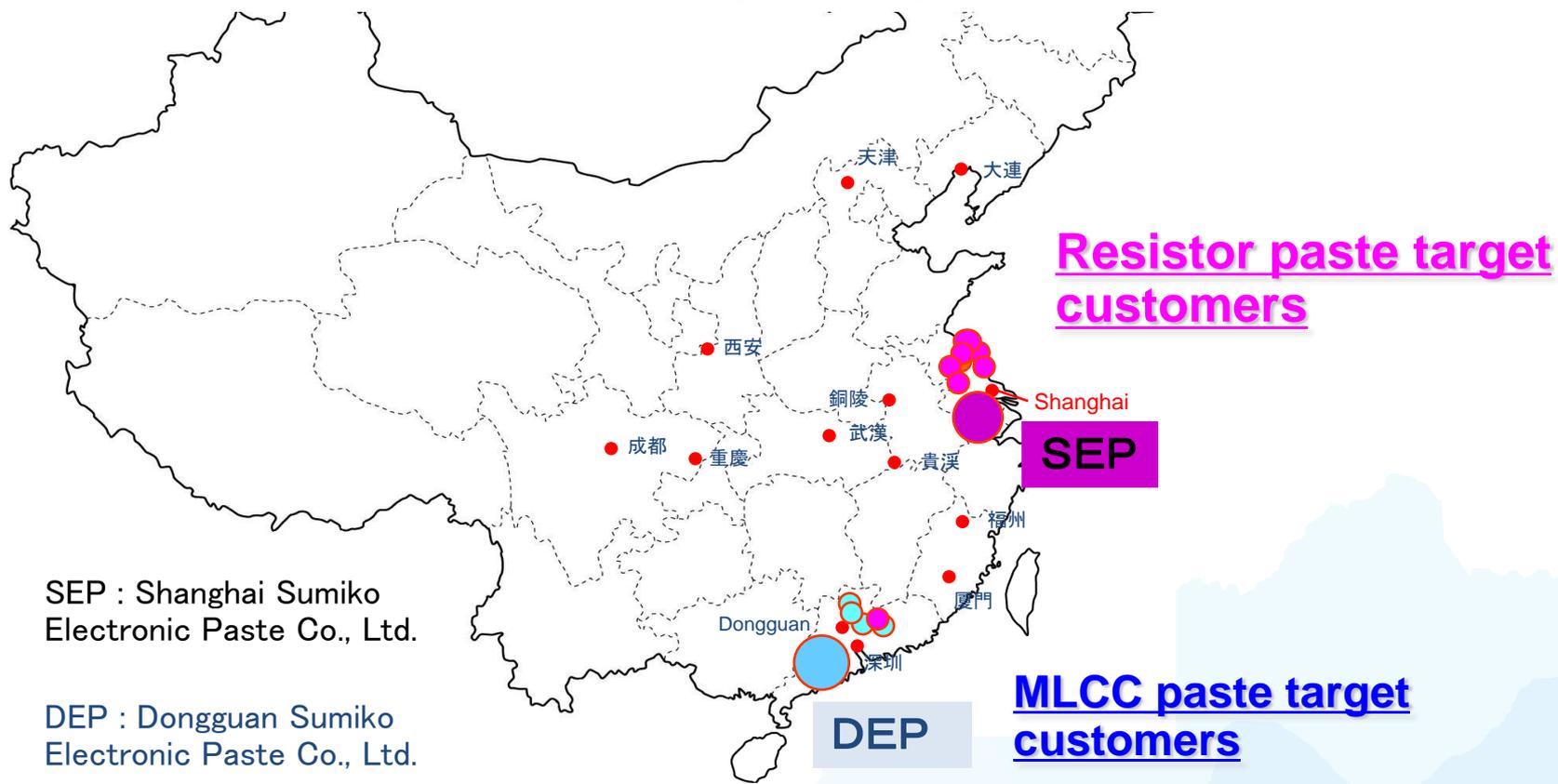
# 4) Materials business

## Reinforcement of business base (3) Thick film material

### Reinforcement of business base: Thick film material (paste)

(1) Supply chain leveraging from Ni raw materials to paste

(2) Tap China demand through shanghai SEP



# 5) Further reinforcement of management base: Human resources development

- HR development center “Oji-kan”  
Hazard awareness / facility engineering  
(completed in October 2009)



- HR development center “Hoshigoe-kan”  
(completed in April 2010)



- SMM Strategy Training Center  
(scheduled for completion in October 2010)

# IV. FY2009 Financial Highlights



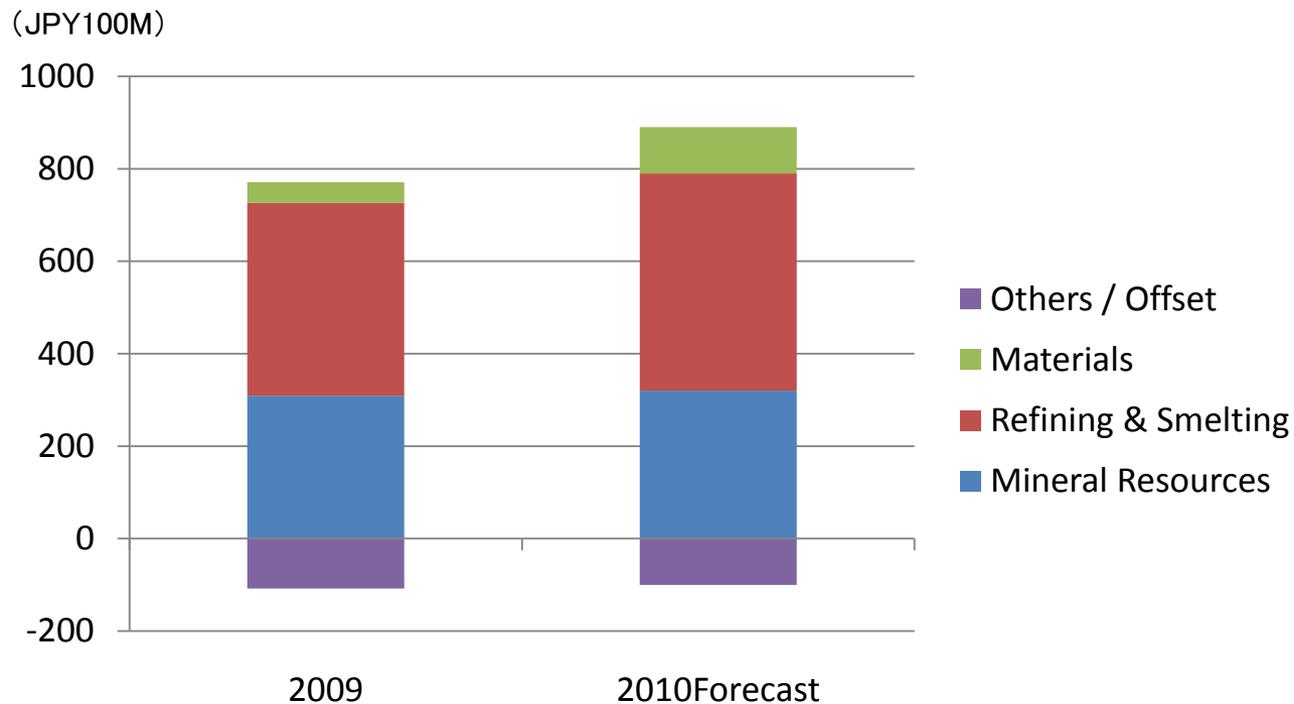
Chile : Exploration

# 1) Consolidated financial summary

(JPY100M)

	FY2006	FY2007	FY2008	FY2009	FY2010 Forecast
<b>Sales</b>	9,668	11,324	7,938	7,258	7,400
<b>Operating Profit</b>	1,626	1,554	105	663	790
<b>Recurring Profit</b>	2,053	2,179	326	878	960
<b>Net Income</b>	1,261	1,378	220	540	670
<b>Dividend / Share (JPY)</b>	27.0	30.0	13.0	20.0	24.0

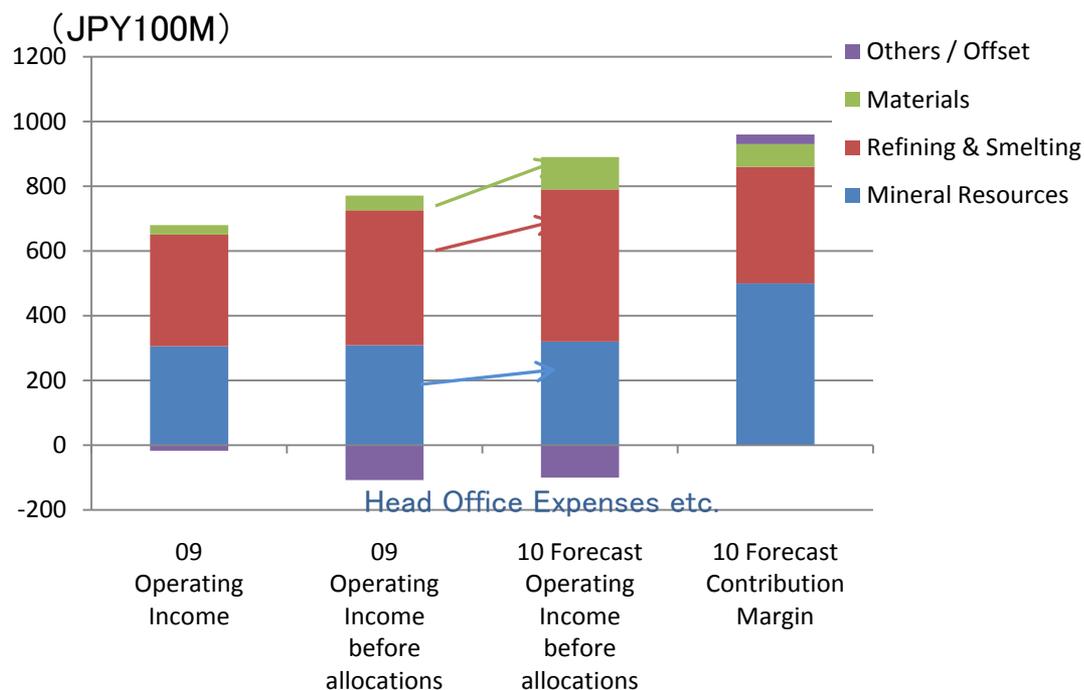
## 2)-(1) Operating income by segment through FY 2009



Segment	2006	2007	2008	2009
Metals	1,096	1,088	24	345
Mineral Resources	335	381	177	306
Electronics & Advanced Materials	136	82	△ 102	29
Others / Offset	59	3	6	△ 17
<b>Total</b>	<b>1,626</b>	<b>1,554</b>	<b>105</b>	<b>663</b>

(JPY 100M)

# 2)-(2) New segment profit from FY 2010



(JPY100M)

	Operating Income	Operating Income before allocations			Contribution Margin
	09 Result	09 Result	10 Forecast	Diff.	10 Forecast
Mineral Resources	306	309	320	11	500
Smelting & Refining	345	417	470	53	360
Materials	29	45	100	55	70
Differential Ajust	▲ 17	▲ 108	▲ 100	8	30
<b>Total</b>	<b>663</b>	<b>663</b>	<b>790</b>	<b>127</b>	<b>960</b>

## 【Application of New Segment Accounting Standards from FY2010】

1. Method for determining reported segments  
**“Mineral Resources”, “Smelting & Refining”, “Materials”**

The reported segments are identical in content to earlier business divisions.

2. Change profit from reported segments

Based on the purport of SMM’s management approach, from FY2010 “contribution margin”, which is determined in line with the company’s computational management system used in-house for performance management, is disclosed as segment profit.

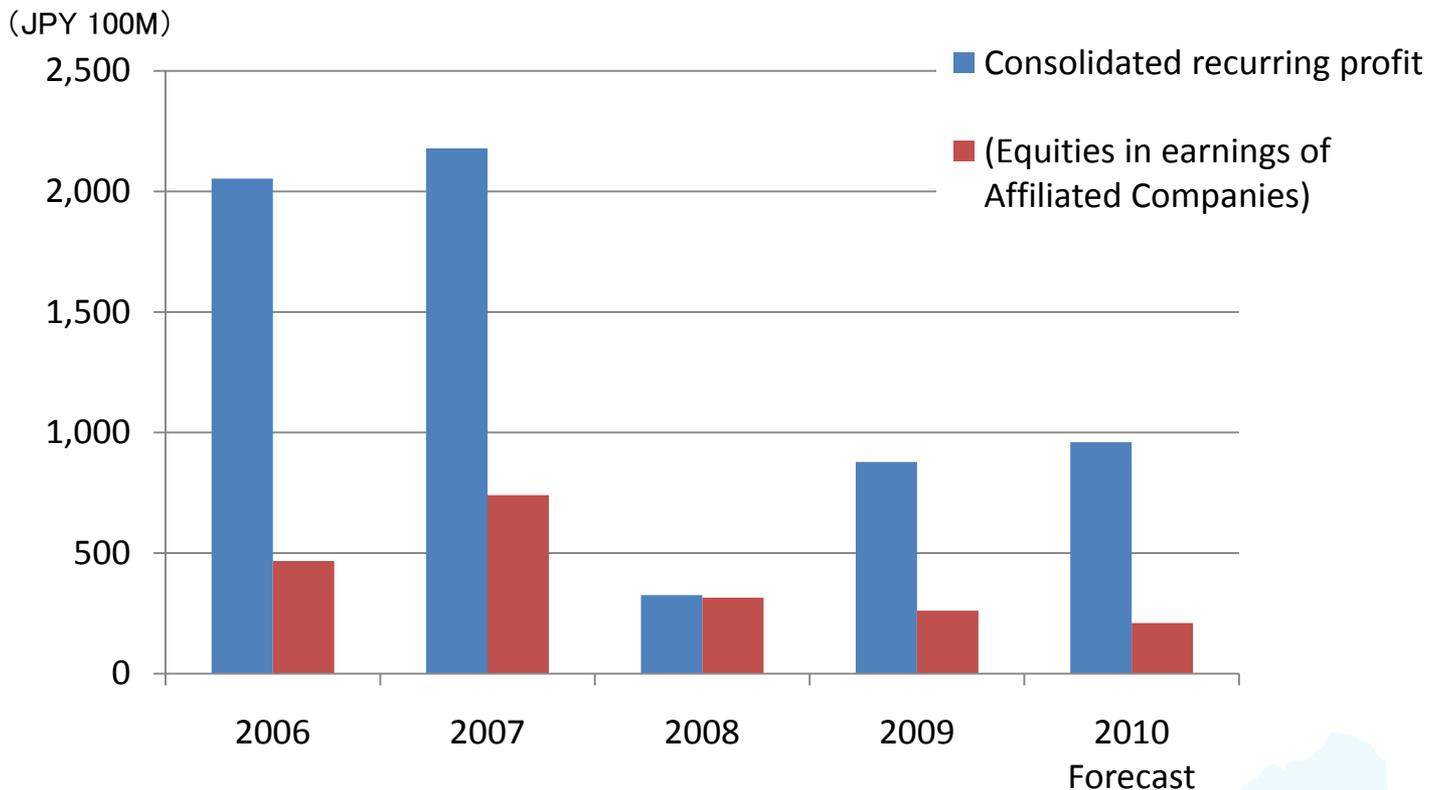
- 1) Through FY2009: Segment operating income =  
sales – cost of sales – segment SG&A costs  
– head office expenses and other allocations  
(equivalent to overall operating income inclusive of segment operating profit plus differential-adjusted elimination, etc.)

- 2) From FY2010: Segment contribution margin =  
sales – cost of sales  
– segment SG&A costs – capital costs  
+ equity-method investment profit/loss  
+ segment and other non-operating profit/loss  
(equivalent to overall recurring profit inclusive of segment contribution margin plus differential-adjusted head office expenses, elimination, etc.)

## 【Comparison】

FY2010 and FY2009 are compared by calculating their respective pre-allocation operating income, that does not include head office expenses and other allocations.

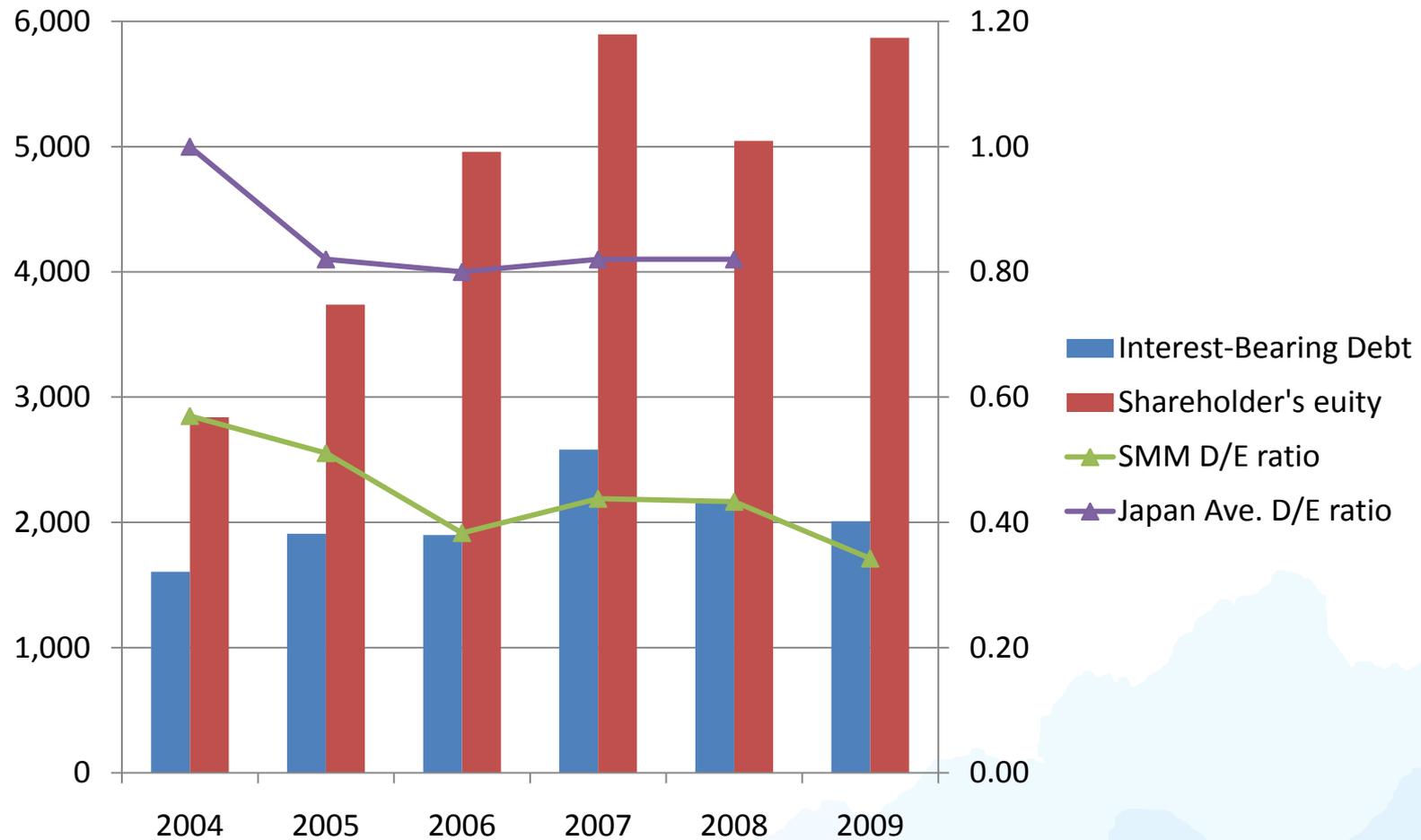
### 3) Earnings from Equity in Affiliated Companies



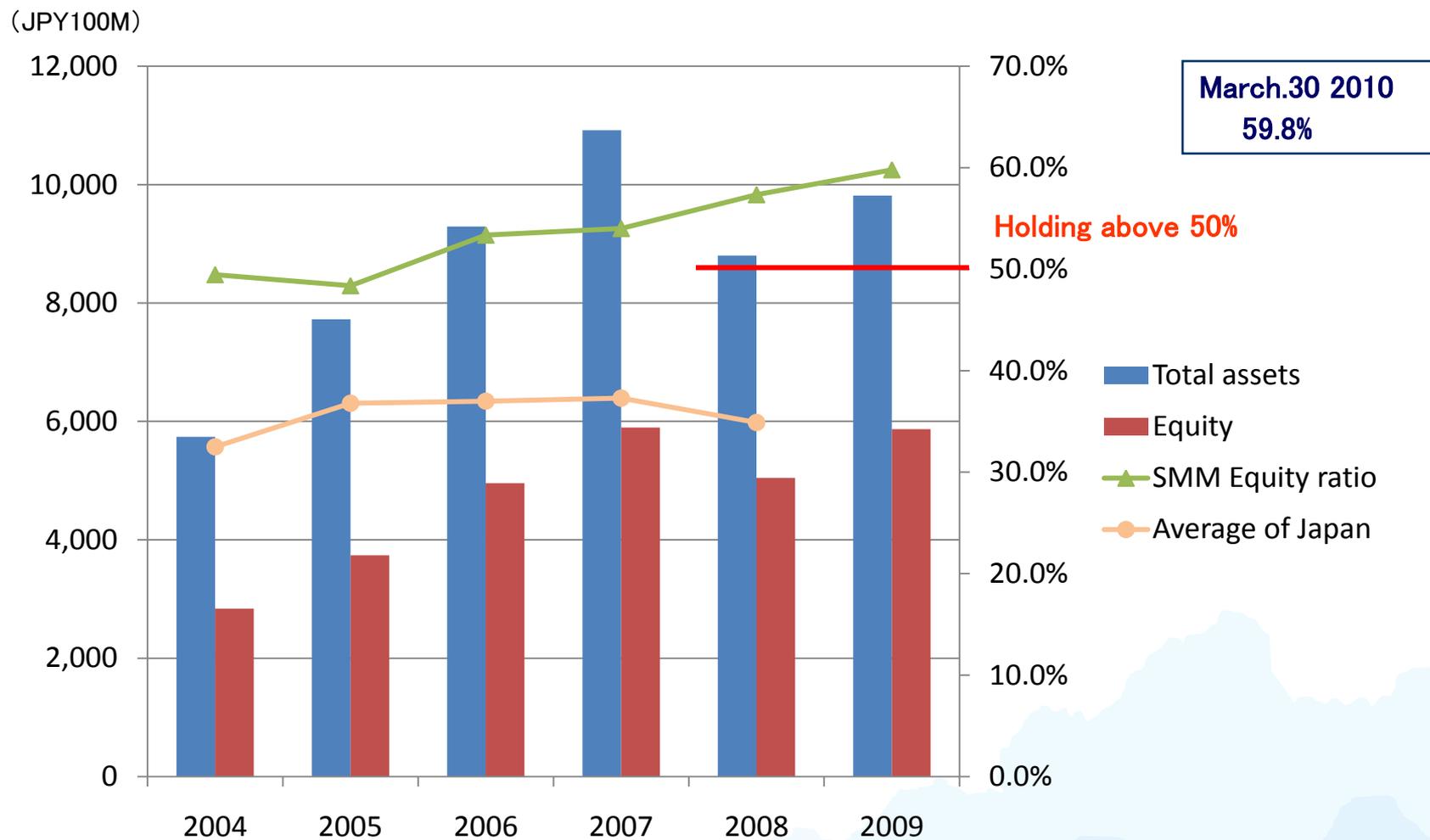
	2006	2007	2008	2009	2010 Forecast
Consolidated recurring profit	2,053	2,179	326	878	960
(Equities in earnings of Affiliated Companies)	467	740	315	261	210

## 4) D/E Ratio ~ Sound Financial Status Maintained

(JPY100M)



# 5) Equity Ratio ~ Sound Financial Status Maintained



# 6) Sensitivity

## Sensitivity

		JPY100M/Year
	Fluctuation	FY2010 Profit up or down
Cu	± 100\$/t	5 / 11
Ni	± 10 ¢ /lb	8 / 10
Au	± 10\$/Toz	5 / 5
¥ / \$	± 1 ¥/\$	9 / 9

(Remarks)

### Operating income/Recurring profit

USD/JPY translation applied to RC-related only.

(Overseas profit effects excluded).

# Glossary

## Mineral resources and metals

### 1) Metal trading

#### London Metal Exchange (LME)

The LME specializes in trading of non-ferrous metals such as copper, nickel, aluminum, lead and zinc. The LME trading prices for metals are used as the international pricing benchmarks for sales of refined metal and purchases of refining ores.

#### TC/RC

Treatment Charge (TC) and Refining Charge (RC) are commonly used in the terms of purchase for copper concentrate or nickel ore for refining. They are amounts designed to cover refining costs. For example, copper concentrate contracts may define a purchase price based on the LME price at a certain date, minus the TC or RC being used at the time.

#### London fixing

Gold is not traded on the LME. Its price is determined for each transaction between market participants. The financial institutions in the London Bullion Market Association (LBMA) agree a standard price for gold based on these transactions and publish it on the morning and afternoon of each trading day. This “London fixing” price is the benchmark for trading in gold.

#### Pound (lb)

Part of the imperial system of measures, the pound is the standard unit of weight used in measuring and pricing base metals such as copper and nickel, and in TC/RC calculations. One pound is equal to 453.59 grams; an imperial ton equals 2,204.62lb.

#### Troy ounce (toz)

The troy ounce is the standard unit of weight for precious metals such as gold and silver. It equals approximately 31.1 grams. It is named after Troyes, a city in the Champagne region of central France that was the site of a major market in Europe in medieval times. Originally used as a unit of exchange for valuing goods in terms of gold or silver weights, the troy ounce is still used today in gold trading.

### 2) Metal refining

#### Smelting and refining

Refining processes extract valuable metals from ores or other raw materials. They fall into two basic types: hydrometallurgical (wet) and pyrometallurgical (dry). At SMM's Toyo facilities in Ehime Prefecture, the copper concentrate pre-processing undertaken at Saijo uses pyrometallurgical processes and the nickel refining at the Niihama site uses hydrometallurgical processes entirely. The term 'smelting' is used for the extraction of metal from ores using melting and heating (pyrometallurgy). The term 'refining' refers to any process that increases the grade or purity of a metal.

#### Pyrometallurgical refining

The precursor ore is melted at high temperature in a furnace, and refining techniques are applied to separate the metal in a molten state. Although large amounts of ore can be processed at one time, the equipment needs periodic maintenance for heat proofing.

#### Hydrometallurgical refining

The ore and impurities are dissolved in a solution, and chemical reactions are used to separate out the metal. This approach allows continuous and stable refining, but incurs additional costs due to the refining chemicals consumed.

### 3) Metal ores

#### Sulfide ores

These ores contain copper, nickel or other metals chemically bonded to sulfur. Since the application of heat breaks these bonds, releasing the sulfur, such ores are generally refined using pyrometallurgical techniques.

#### Oxide ores

These ores contain metals in oxidized forms. Unlike sulfide ores, oxides need much more energy to achieve melting. For this reason, the hydrometallurgical approach is generally used to refine these ores.

#### Copper concentrates

Used as raw materials in copper smelting, copper concentrates have a copper content of about 30% by weight. The remainder consists mostly of sulfur and iron. Copper concentrates are made mostly from sulfide ores. Ores extracted from overseas mines have a typical grade of about 1%. The ores are then “dressed” at the mine to increase the purity and produce concentrate. Most of the copper ores imported by SMM for smelting in Japan are concentrates.

#### Nickel oxide ores

Whilst the higher-grade sulfide ores are used predominantly in nickel refining, nickel oxide ores are more prevalent than nickel sulfides. The sulfide-oxide ratio in current nickel reserves is believed to be about 3:7. High refining costs and technical issues have limited use of oxide ores in nickel refining to date, but SMM has succeeded in refining nickel from low-grade oxide ores based on HPAL technology.

#### Mixed sulfide (MS) ores

CBNC produces a mixed nickel-cobalt sulfide intermediate containing about 55–56% nickel by weight. This is used as a raw material in electrolytic nickel production.

#### Matte

A matte is another term for metal sulfides. For raw material, electrolytic nickel production at SMM also uses a nickel matte (of about 77–78% purity) sourced from PT Inco.

#### Proprietary ore ratio

This ratio is the proportion by volume of ore procured from overseas mining interests relative to the overall volume of smelting ores used as raw materials. Typically, off-take rights are proportional to the equity interest in a mine. In the case of Cerro Verde, SMM has secured 50% off-take rights for the first ten years of production from 2006, based on a 21% equity interest.

# Glossary

## 4) Nickel production process

### Coral Bay Nickel Corporation (CBNC)

Based in the Philippines, this SMM subsidiary produces mixed nickel-cobalt sulfides using HPAL technology and exports the raw materials to the SMM Group's nickel refining facilities in Niihama, Ehime Prefecture.

### High Pressure Acid Leach (HPAL)

HPAL technology enables the recovery of nickel from nickel oxide ores that traditionally were difficult to process. SMM was the first company in the world to apply it successfully on a commercial scale. The oxide ores are subjected to high temperature and pressure and reacted under stable conditions with sulfuric acid to produce a nickel-rich refining intermediate.

### Matte Chlorine Leach Electrowinning (MCLE)

MCLE is the technology used in the manufacturing process at SMM's nickel refinery. The matte and mixed sulfide ores are dissolved in chlorine at high pressure to produce high-grade nickel using electrolysis. MCLE is competitive in cost terms, but poses significant operational challenges. Other than SMM, only two companies are producing nickel based on this kind of technology.

## 5) Main applications for metals

### Copper

Copper is fabricated into wires, pipes and other forms. Besides power cables, copper is used widely in consumer applications such as wiring in vehicles or houses, and in air conditioning systems.

### Electrolytic nickel

This form of nickel, which has a purity of at least 99.99%, is used in specialty steels, electronics materials and electroplating, among other applications. SMM is the only producer of electrolytic nickel in Japan.

### Ferronickel

Ferronickel is an alloy containing nickel (about 20%) and iron. Its main use is in the manufacture of stainless steel, which is about 10% nickel by weight. Based in Hyuga, Miyazaki Prefecture, SMM Group firm Hyuga Smelting produces ferronickel.

### Gold

Gold is in demand worldwide for investment and decorative purposes. Gold is widely used in Japanese industry within the electronics sector because of its high malleability and ductility. Part of SMM's gold production goes to SMM Group companies engaged in fabricating and selling bonding wire.

## Semiconductor and advanced materials

### Copper-clad polyimide film (CCPF)

CCPF is a polyimide film that is coated using a copper base. It is used as a material for making COF substrates. SMM commands a global market share of over 70% of the CCPF supplied for use in large liquid crystal displays.

### Chip-on-film (COF) substrates

COF substrates are electronic packaging materials used to make integrated circuits for LCD drivers. They connect these circuits to the LCD panel.

### Lead frames (L/F)

Lead frames are electronic packaging materials used to form connections in semiconductor chips and printed circuit boards. They contain thin strips of a metal alloy containing mostly nickel or copper.

### Bonding wire

Composed of gold wire that is just a few micrometers thick, bonding wire is used to make electrical connections between lead frames and the electrodes on semiconductor chips.

### Secondary batteries

Secondary batteries are ones that can be recharged and used again. SMM supplies battery materials that are used in the anodes of nickel metal hydride batteries and lithium-ion rechargeable batteries, which supply power for hybrid vehicles or notebook computers, among other consumer applications.

# Note

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