

FY2010

Progress of Business Strategy

May 2011



SUMITOMO METAL MINING Co., Ltd.

Contents

I . Progress of 09 3-Yr Business Plan

II . External Environment

III . Business Results / Forecast for FY2011

IV . Financial Highlights and Information Materials

I. Progress of 09 3-Yr Business Plan



Kanki-ko (Pit of exultation), Besshi Copper Mine
First shaft dug in 1691

1) Mineral Resources

① Three methods to secure overseas mines

1) Exploration by SMM

SMM can secure the majority
Longer lead-time



(Border Project)

2) External project partnering

Shorter lead-time
Difficult to secure the majority
Competition among companies
Risk of cost increase



(Sierra Gorda Project)

3) Boost existing output

Leveraging partners' capacity
Few projects for output boosting
Difficult to increase ratio of interest



(Cerro Verde Mine)

1) Mineral Resources

② Progress of SMM Exploration— Border -

Border Project

Background

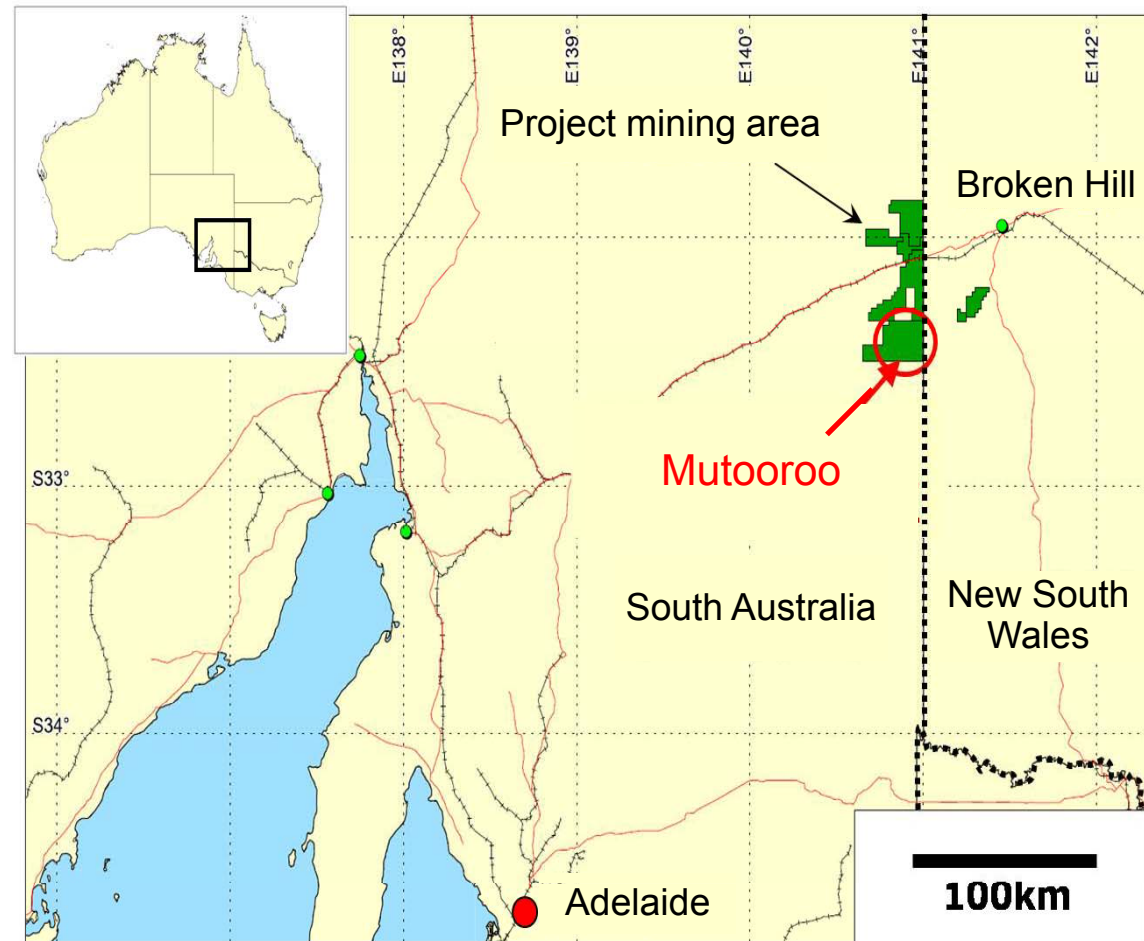
- 2005 JOGMEC and Minotaur commenced exploration
- 2007 SMM acquire exploratory rights of JOGMEC
- 2010 Exploration of magnetite ore was commenced in Mutooroo

Ratio of interests

SMM 59%
Minotaur 41%

Target minerals

Copper, zinc, magnetite ore



1) Mineral Resources

② Progress of SMM Exploration – Stone Boy –

Stone Boy Project

Background

Exploration started in 1991
(This project discovered Pogo Mine.)

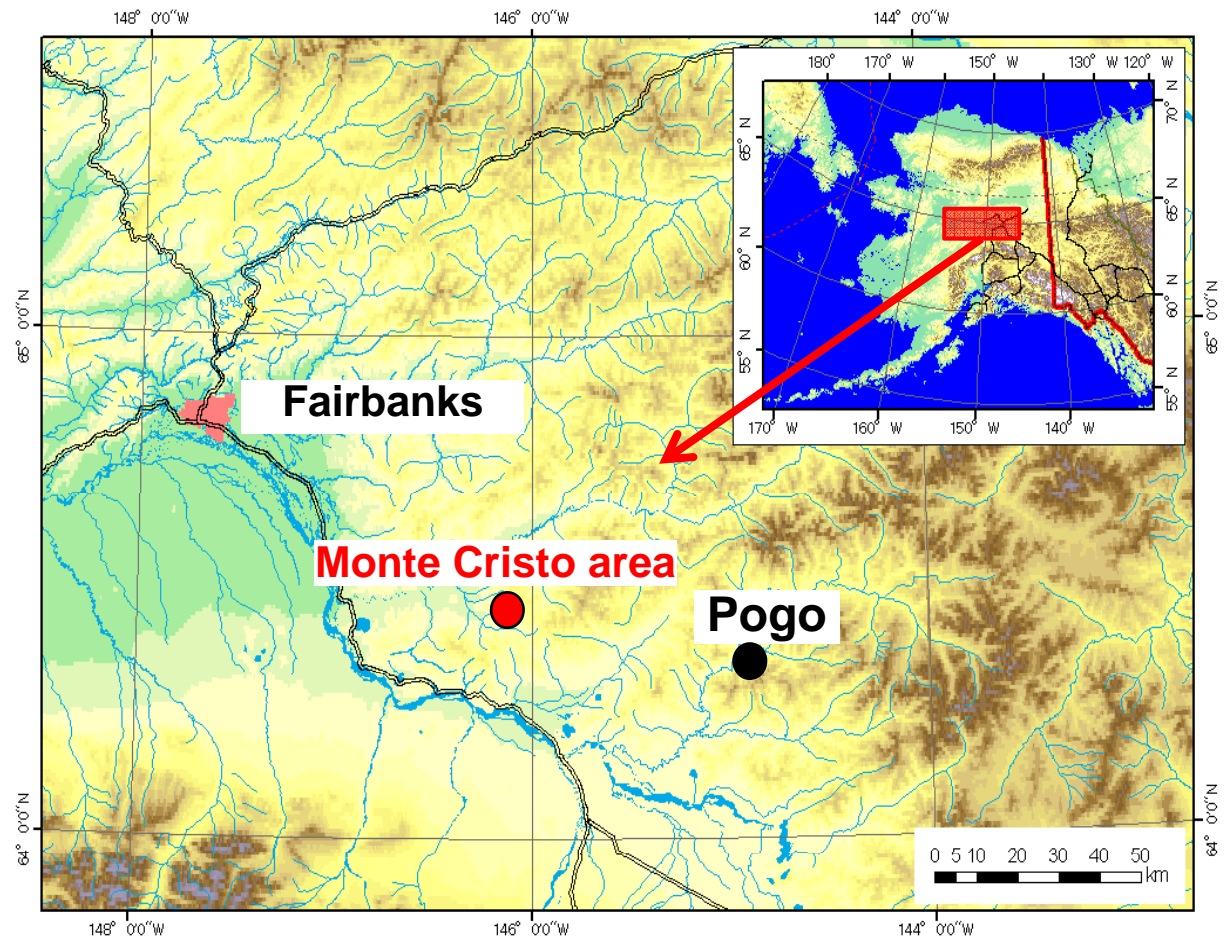
The exploration is currently
being conducted centrally
along **Monte Cristo area**.

Ratio of interests

SMM 95%
Sumitomo Corp 5%

Target minerals

Au • Sb



1) Mineral Resources

② Progress of SMM Exploration – Solomon Project –

Solomon Project

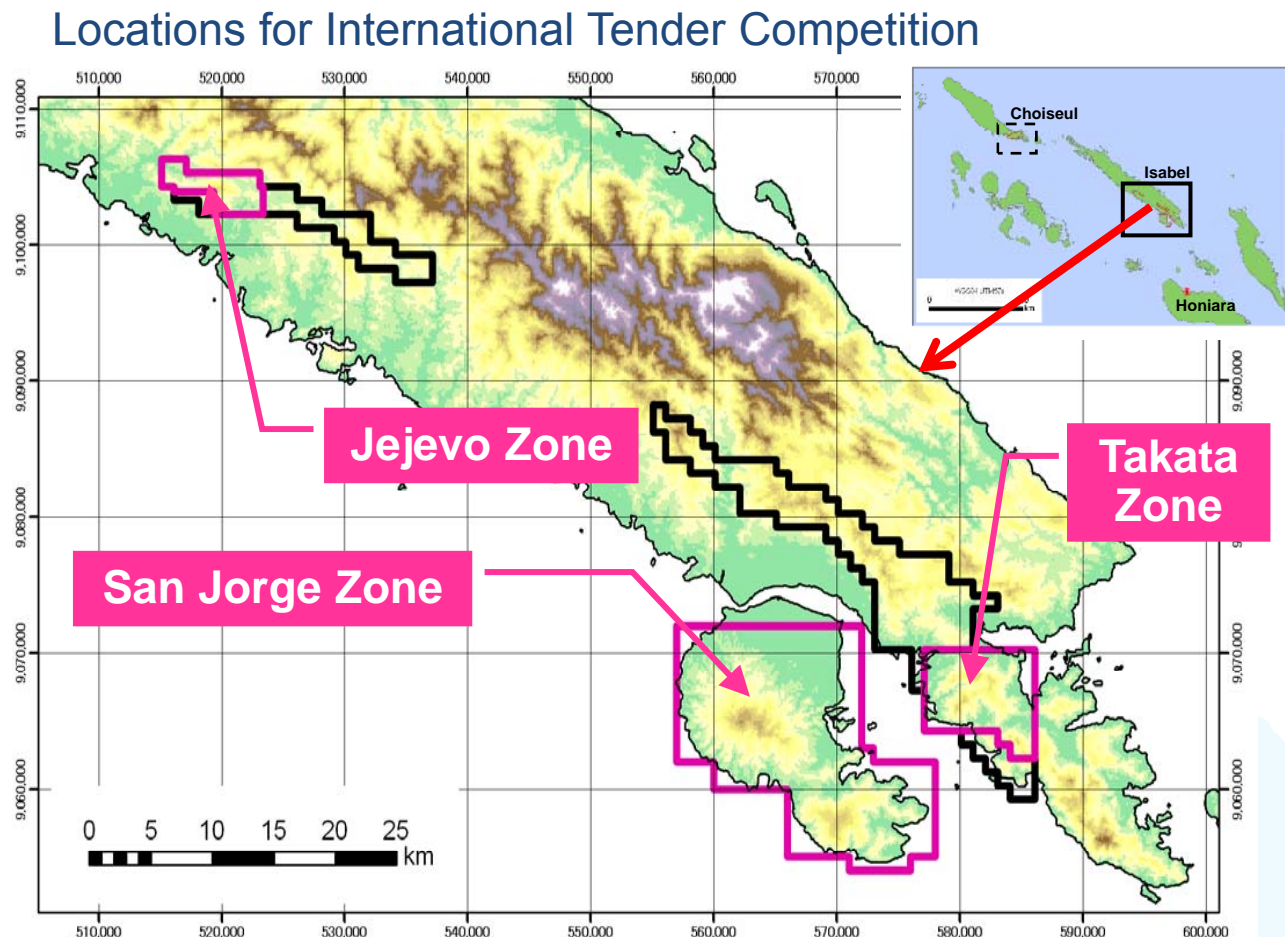
Current Status

Dec. 2010

Acquired exploratory rights for 3 mining zones through international tender competition

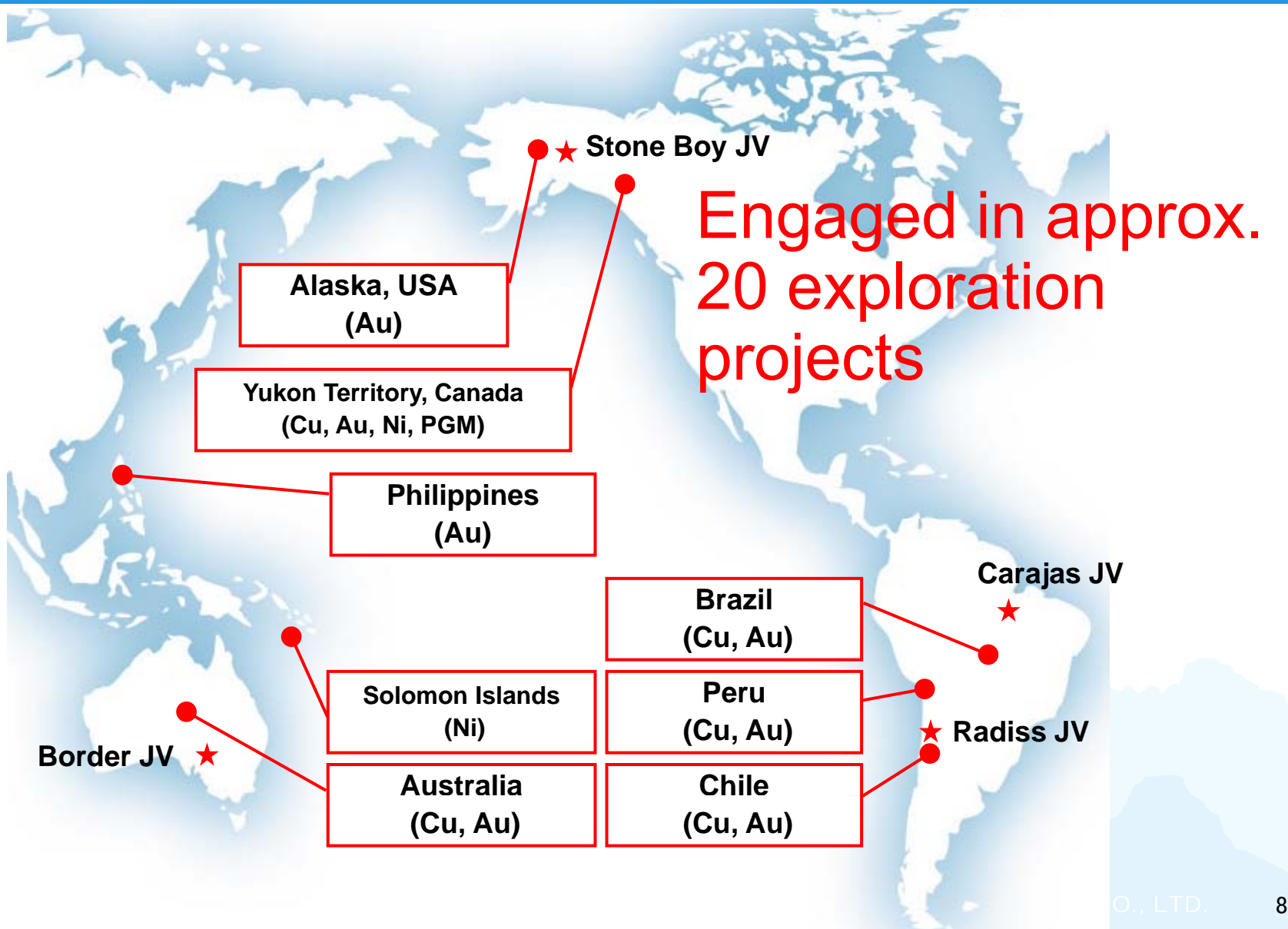
Negotiation to access to the local properties has been concluded and currently applying for exploratory right.

→Exploration will start as soon as obtaining approval.



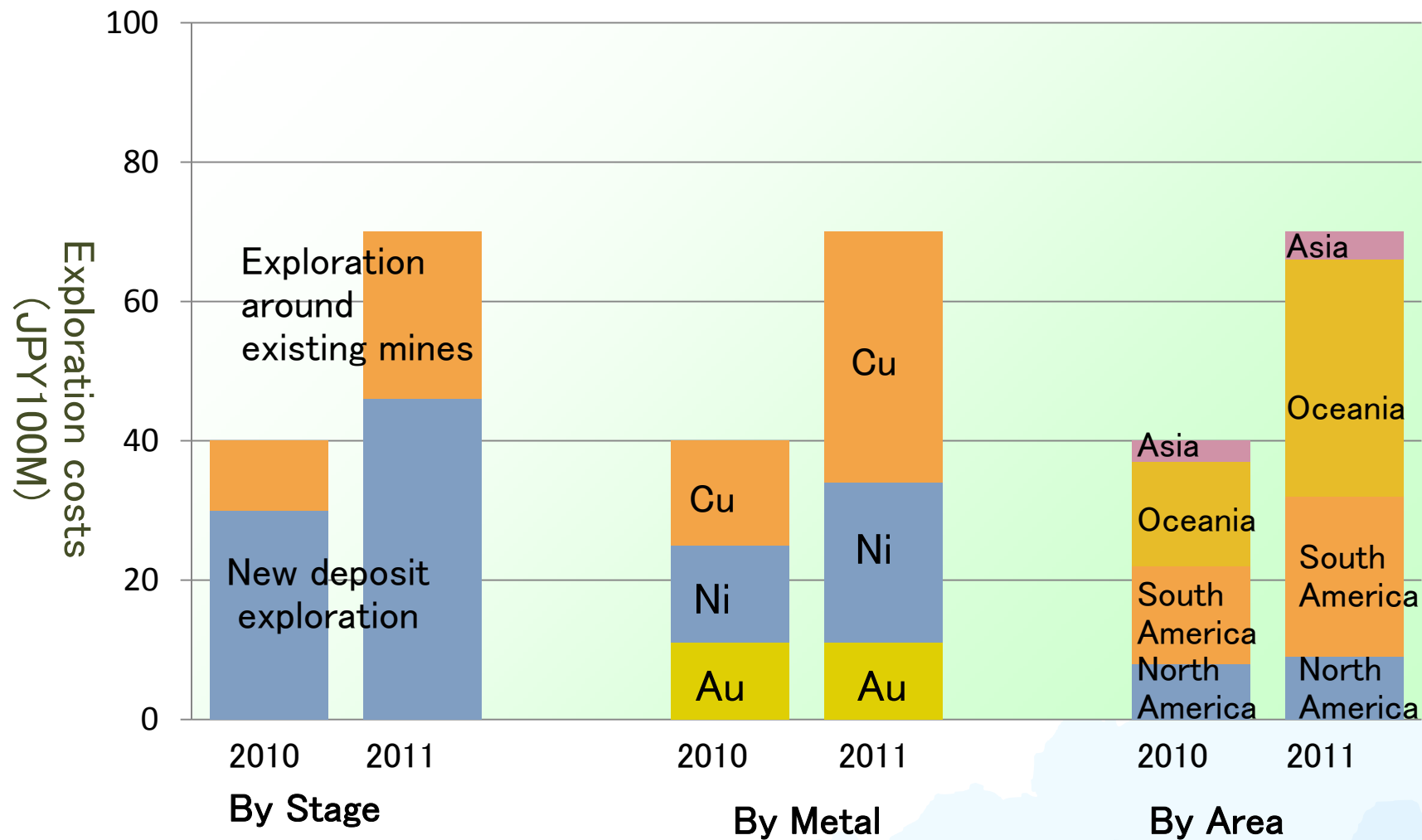
1) Mineral Resources

② Progress of SMM Exploration – Worldwide Exploration –



1) Mineral Resources

② Progress of SMM Exploration – Exploration Costs –



1) Mineral Resources

③ Participation in new mine development project - Sierra Gorda

Sierra Gorda copper mine development project Participation agreement signed May 15, 2011

Location

Region 2, Republic of Chile
Approx. 140km northeast
of Antofagasta
Altitude roughly 1,700 meters



Current owner

Quadra FNX Mining Ltd.

Ratio of interest

Quadra FNX – 55%
SMM – 31.5%
Sumitomo Corp.(SC) – 13.5%

**SMM gains
right to 50% of
produced copper
concentrate**

SMM and SC
will together
invest roughly
\$720M

Commencement of operations

2014 (tentative)

Sierra Gorda

Antofagasta

Santiago



1) Mineral Resources

③ Participation in new mine development project - Sierra Gorda

Sierra Gorda Project

Minable reserves

Approx. 1.3B tons; Expected mine life – 20 years

	Cu	Mo	Au
Metals contained	5,000kt	300kt	80t
Grade	0.4%	0.025%	0.06g/t

Special features

- Flat terrain
- Adjacent to highway and railway, close to port
Approx. 140km from Antofagasta, 60km from Calama
- Adjacent to currently operating Spence and Esperanza mines → Low risk
- Practically zero precipitation → will use seawater
- High molybdenum grade → revenue from byproducts expected



1) Mineral Resources

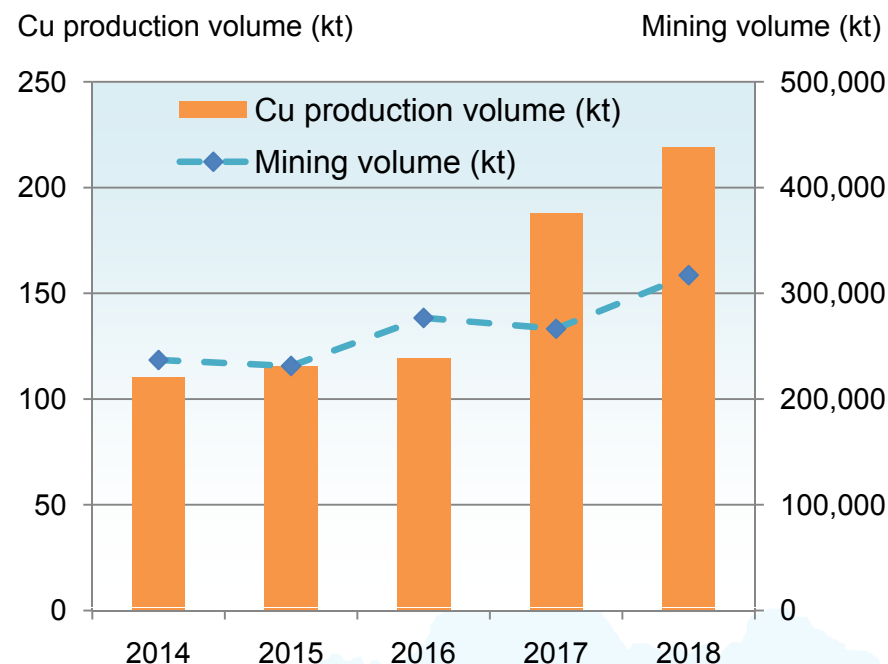
③ Participation in new mine development project - Sierra Gorda

Sierra Gorda Project

Development chronology

1991-97	Various companies carry out exploratory drilling
2004	Quadra acquires exploration rights
2010.3	Memorandum of Understanding (“MOU”) announced with State Grid Corporation of China (“SGCC”) for acquisition of exploratory rights
2010.6	Official contract with SGCC not concluded by MOU deadline, agreement annulled
2011.5	SMM acquires exploratory rights

Production plan



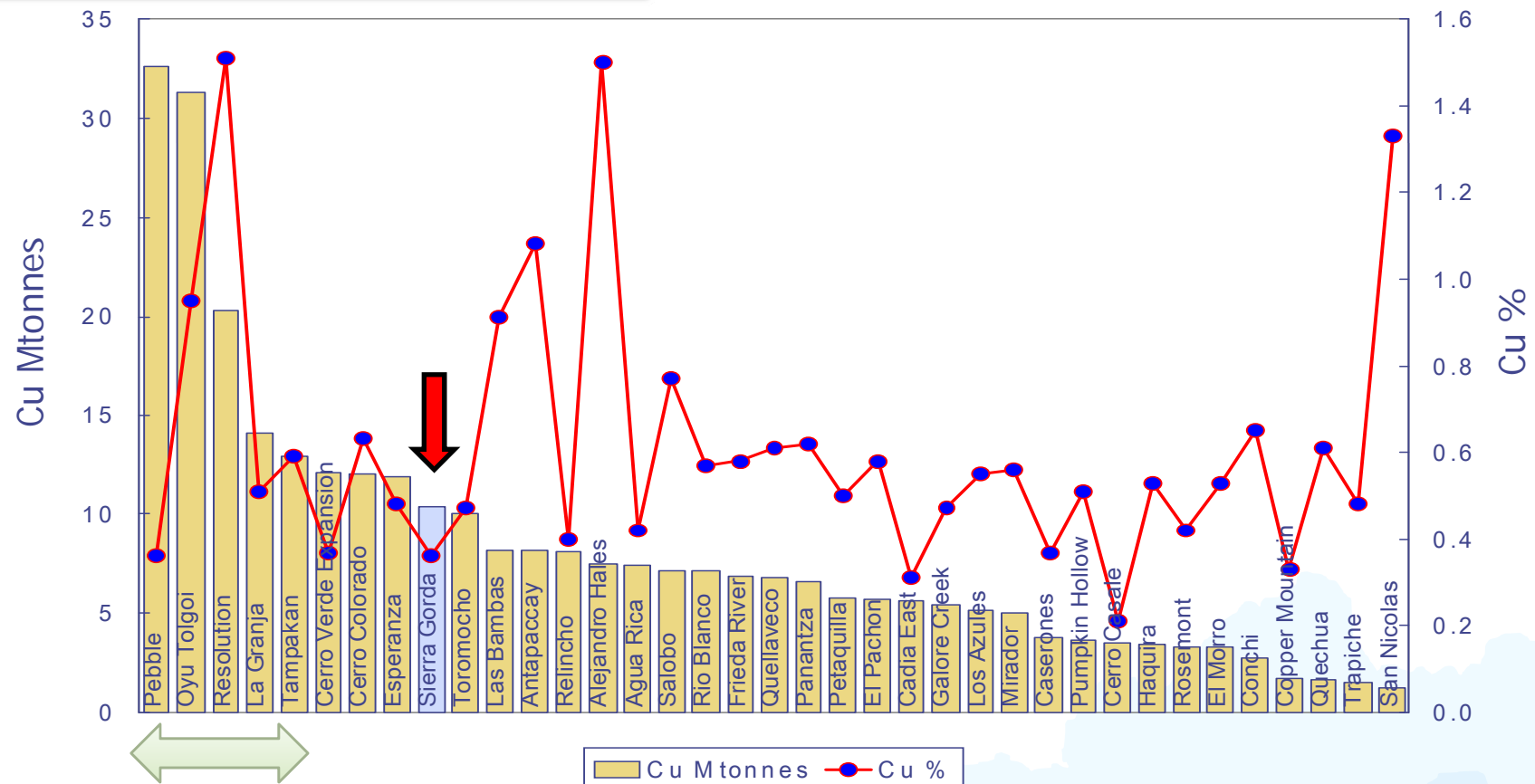
- All production will be concentrated.
- After the operation starts, the operation will expand till 2017.

1) Mineral Resources

③ Participation in new mine development project - Sierra Gorda

Copper development projects (copper reserves and grade)

(includes estimated mineral volume)



Large development risk (environmental measures, insufficient infrastructure, political instability, high altitude, ore body deep underground)

(Reference: Metals Economics Group, SMM)

SUMITOMO METAL MINING CO., LTD.

1) Mineral Resources

③ Participation in new mine development project - Sierra Gorda

Sierra Gorda Project

Development schedule

	2011	2012	2013	2014	2015	2016	2017
Acquisition of required approvals	→						
Construction		→	→	→			
Operations at 110kt				→	→	→	
Expansion of operations to 190kt					→	→	
Operations at 190kt							→

Investment for development

- For 110kt operations - \$2,900M
- For expansion to 190kt - \$800M

Financing

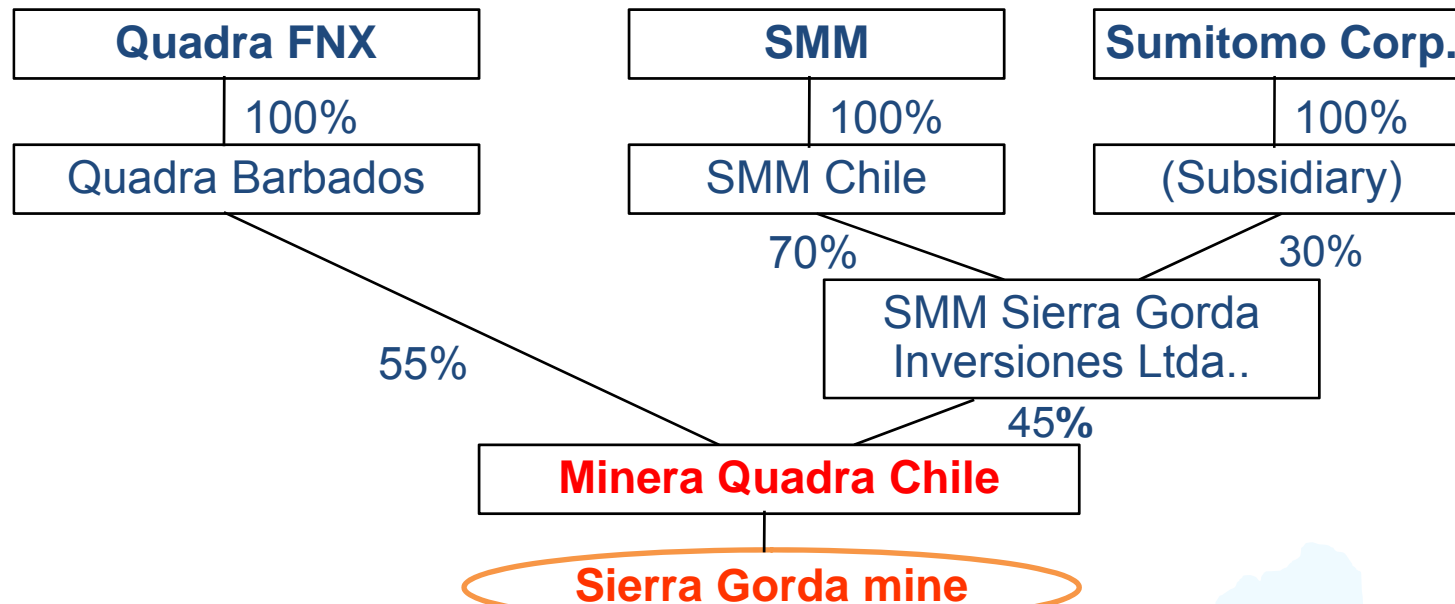
- Project finance, primarily through JBIC
- Remainder through investments and loans from 3 companies

1) Mineral Resources

③ Participation in new mine development project - Sierra Gorda

Sierra Gorda Project

Investment scheme



- Quadra is operator
- SMM will dispatch personnel (approx. 8 staff)
Will participate from construction stage

1) Mineral Resources

③ Participation in new mine development project - Sierra Gorda

Overview of Quadra FNX

Overview

Headquarters: Vancouver, Canada
Listed on the Toronto Stock Exchange

History

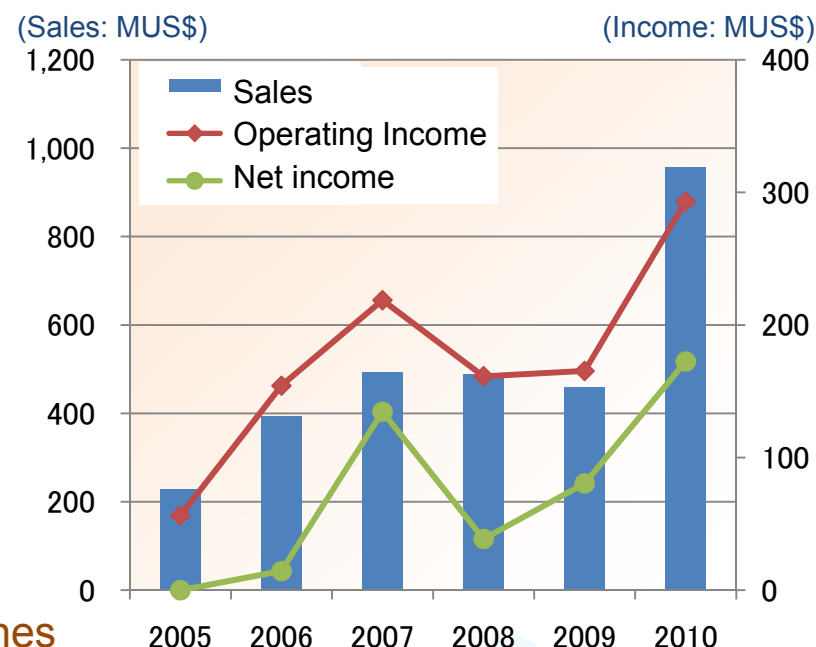
- 2002 Quadra Mining Ltd. Established
- 2004 Acquired Robinson mine
Acquired exploration rights to Sierra Gorda
- 2009 Acquired Centenario Copper Corporation, acquired Franke mine
- 2010 Acquired FNX Mining Company

Assets owned

Results of operations at copper mines

Project	Interest	Location	Production volume (2010, kt)	Reserves (kt)
Robinson	100%	Nevada, U.S.A.	49	554
Carlota	100%	Arizona, U.S.A.	13	190
Franke	100%	Chile	17	263
Podolsky	100%	Canada	11	15

Quadra FNX Business Performance



1) Mineral Resources

④ Boosting existing output – Cerro Verde –

Cerro Verde mine – Expansion project

Background

Dec. 2008 FS for Expansion Completed

Volume of concentration process doubles to 240kt/day from 120kt/day

→ Negative estimation based on the copper price in those days.

2Q 2011- Review of FS for expansion to be completed (expected)

- Aiming to triple the current volume of concentration process 120kt/day to 360kt/day
- Cost of operation launch shall be up to \$3.5b
Start proceeding with environmental impact assessment in late 2011



1) Mineral Resources

④ Boosting existing output – Morenci –

Morenci mine – Expansion project

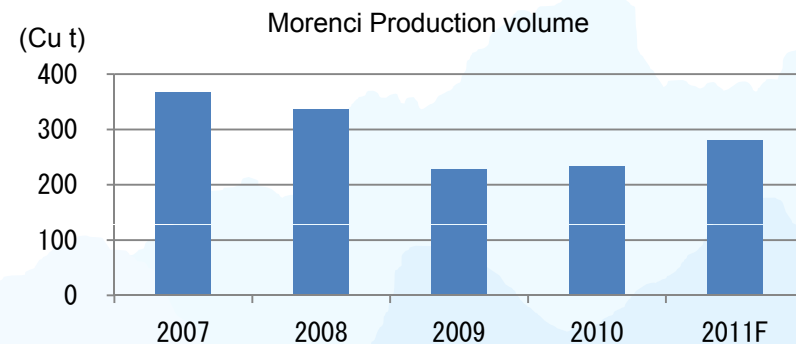
Increase of mining output

Mining output in 2010: 450kt/day
→ Increased to 650kt/day

Increase of concentration capability

Currently increased from 48kt/day to 50kt/day
→ Commenced F/S to boost it to 115kt/day

Cu production volume will be increased to approx. 70 - 90kt/year within 2 to 3 years



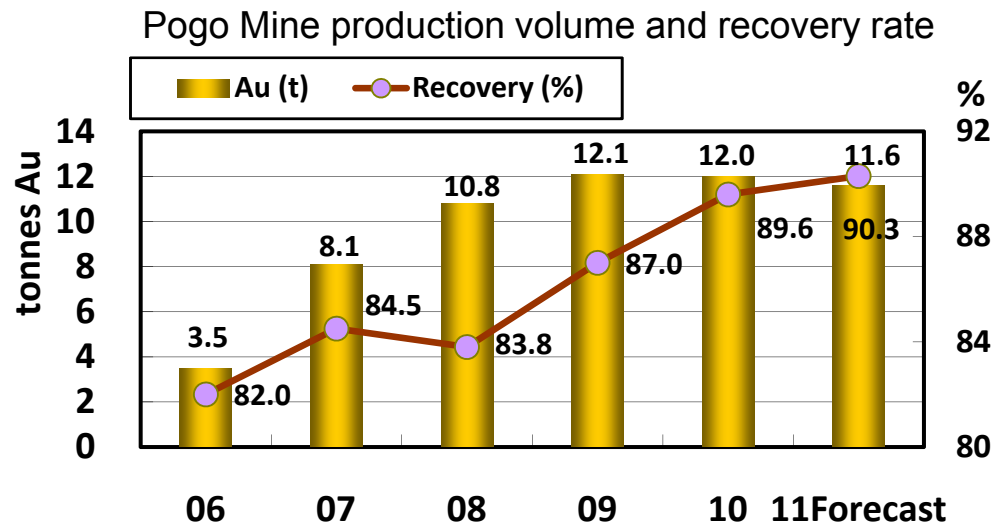
SUMITOMO METAL MINING CO., LTD.

1) Mineral Resources

⑤ Maintaining Au resources of 2 mines

Pogo Mine

Production volume in 2010: 12t
Reserves(as of end of Dec. 2010): 122t
Conducting field exploration to further reserves.



The recovery rate rose to 89.6% in FY2010.



Hishikari Mine

Sales volume in FY2010: 7.5t
Reserves (as of end of Dec. 2010): 149t

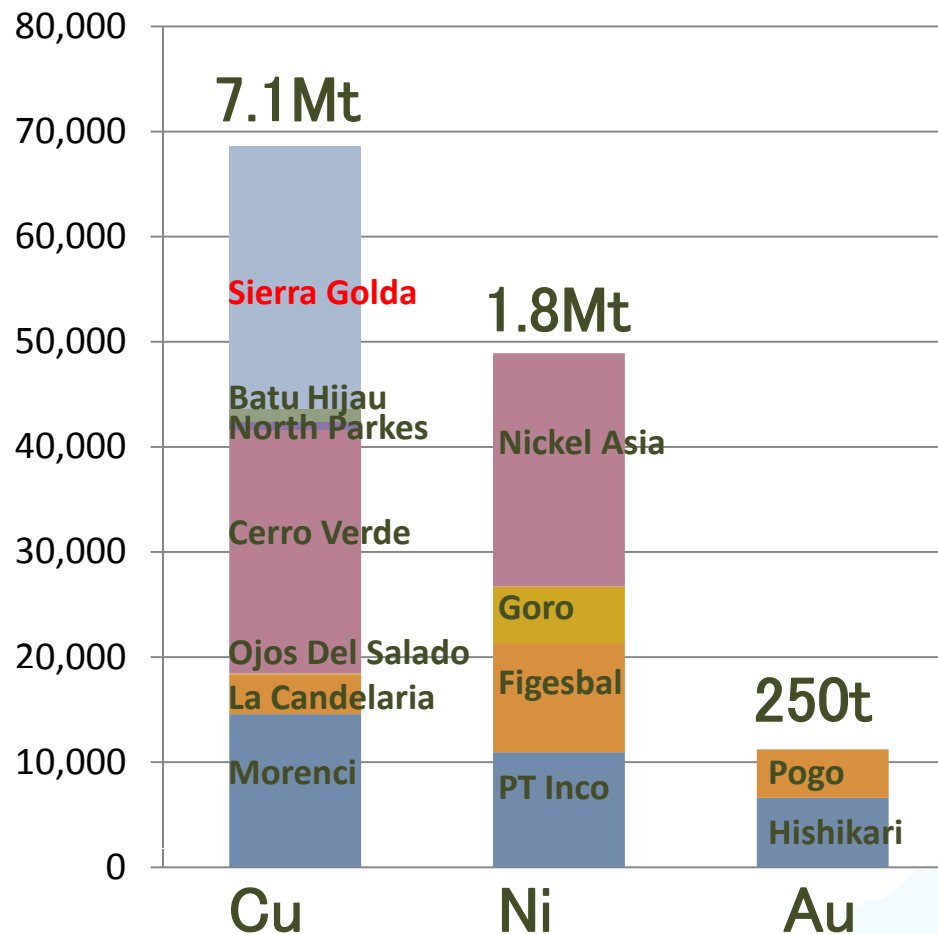
Maintaining reserves by carrying on the policy of “Explore the same amount we have mined”

1) Mineral Resources

⑥ Mineral resources interests ~ Reserves

Value US\$130B

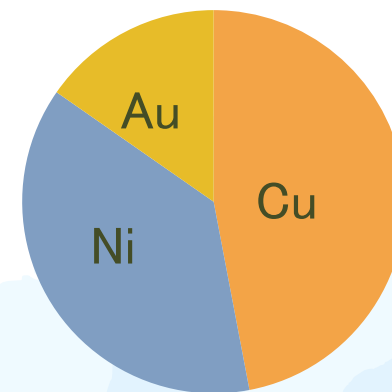
Value (M\$)



Notes:

1. Based on SMM equity interests
2. $\text{SMM share of reserves} = \text{reserves} \times \text{SMM equity interest in mine (\%)}$
3. $\text{Estimated Value} = \text{SMM share of reserves} \times \text{standard metal price}$
4. Standard metal price = average price in Jan - Mar, 2011
(Cu: \$9,650/t Ni: \$12.0/lb Au: \$1,380/toz)

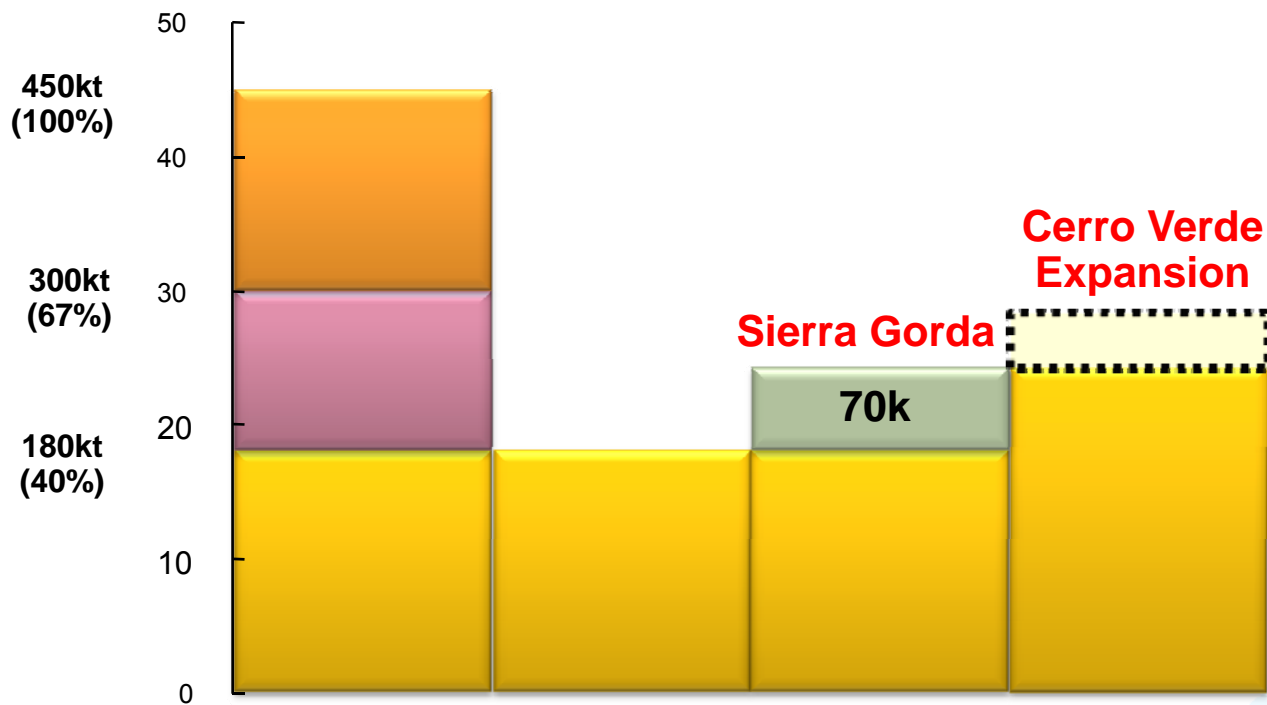
Portfolio of the amount of production by metal



1) Mineral Resources

⑦ Going forward aiming at Cu 300kt

Toyo capacity (ktpa)



Great progress to meet the target of proprietary ore ratio of two third.

2) Smelting & Refining

① Promotion of Taganito Project

Steady progress of the **2nd construction of world's most advanced HPAL plant** based on CBNC results

◆ Production capacity: Ni 30kt/year; Co 2.6kt/year

◆ Investment amount: US\$1.3bln

◆ Investment ratio: **SMM (62.5%),
NAC (22.5%), Mitsui & Co. (15%)**

◆ Expected operation life: 30yrs

◆ Schedule

Mar. 2010	Launch of construction
2013	Construction to be completed
	Test operation
	Commercial production will start



Dormitory construction (Mar. 2011)

Plant site construction in steady progress (Mar. 2011)



2) Smelting & Refining

② Preparation for electrolytic Ni 65kt production

Electrolytic Ni production capacity reinforcement

◆Capacity: 41kt/year
→65kt/year

◆Investment amount: ¥14bln

◆Schedule

Construction to be completed to enter mass production in 2013

→ In line with Taganito HPAL operation

Production capacity is to be Ni100kt /year

Facility Reinforcement

Technical Expertise Improvement

Operation in Conjunction with Taganito

Niihama Nickel Refinery

2) Smelting & Refining

③ Toyo Plant – Renovation of brickwork in flash furnace

Flash furnace will undergo complete brickwork renovation during its mandatory shutdown maintenance period (Sep. 13 – Nov. 11).

- ◆ The first complete brickwork renovation including bottom brick since its inauguration in 1971
- ◆ Strengthening and improving furnace cooling mechanism
- ◆ Improving operation environment



《Effect》

- ◆ Prevention of molten metal leakage
→ **Reduction of operation risk**
- ◆ Improvement of response capabilities to high-load operations
- ◆ Reduction of copper slag loss
→ **Increase profitability**



**Morning assembly during mandatory shutdown maintenance
(Conducted every day during the period)**

2) Smelting & Refining

④ Toyo Plant – Introduction of new smelting method

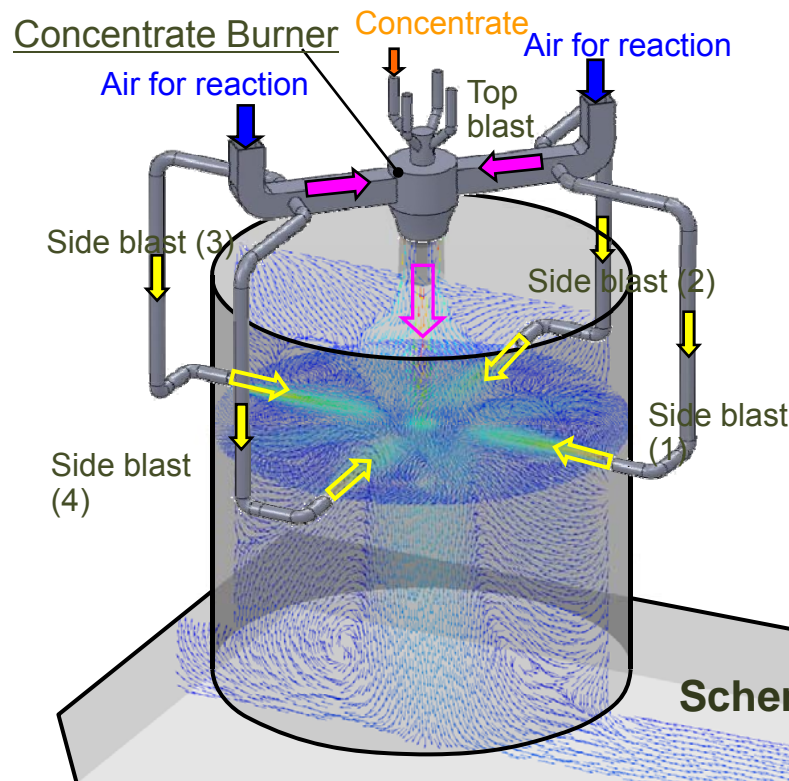
S.O.F (Side-blowing and Oxy-fuel Flash smelting) has been employed

→ Upgraded version of Sumitomo method concentrate burner

◆ Air for reaction is blasted from the side nozzles on the side walls of the shaft

《Effect》

◆ Lower dust generation rate, higher oxygen efficiency, less copper slag loss
→ Operational efficiency and productivity are improved



Schematic view of flash furnace shaft

Operation will start in Feb 2012

	Apr	May	to Aug	to Oct	to Dec	from Feb
Test operation	→					
Review of test results and study facility improvement		→				
Modification of cooling mechanism				→		
Application to operation						→

3) Materials

① Promote 'selection and concentration'

- ◆ Business sectors where SMM aims to promote growth

Materials for environment and energy fields

- ◆ Business sectors where basic operating platforms need to be reinforced

Pursue productivity improvement and cost reduction

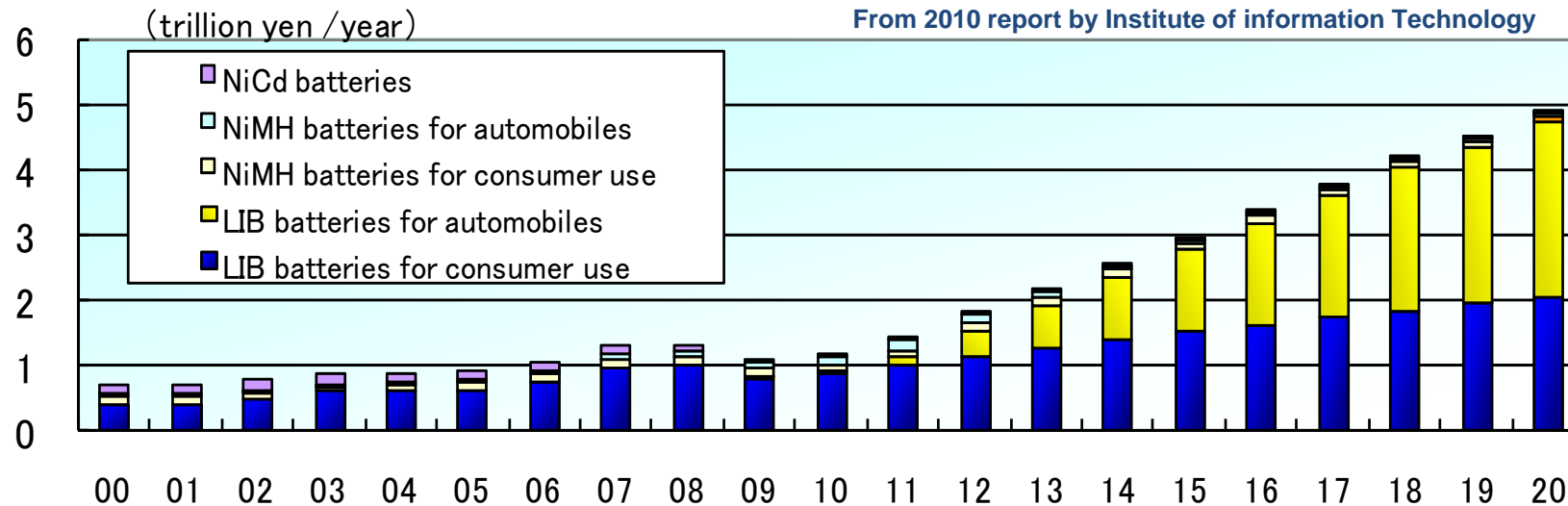
- ◆ Business sectors where SMM cannot pursue a growth strategy

Withdraw / Transfer



3) Materials

② Battery materials



Prioritized Strategy

“Expand market share in automotive sector”

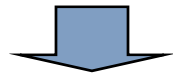
- ① Continuous development of nickel hydroxide for NiMH battery
- ② Acceleration of material development and commercialization of LIB for HEV and PHV
- ③ Gain market advantage with the strategy of battery material recycling



3) Materials

③ Sapphire substrates

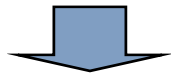
Customers' strong inquiries for large substrates



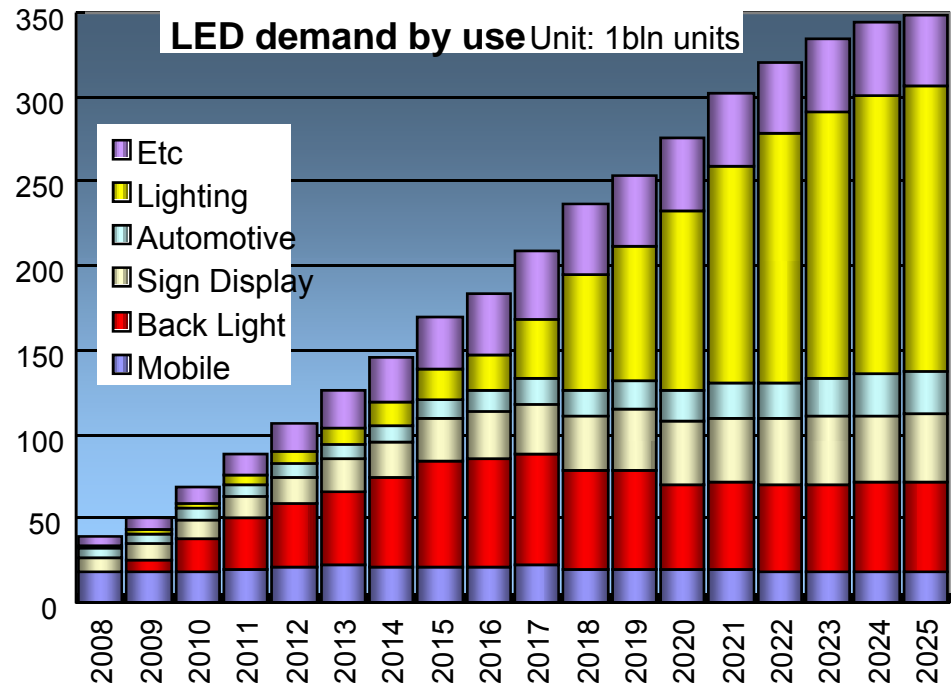
Establishment of stable mass production technology

◆ Crystal fabrication in large fabrication furnace

◆ Investment plan to boost 6in ϕ substrate production



Fabrication in large furnace is under testing process to establish the condition.
Have reached to the idea for process cost reduction.



[Plan]

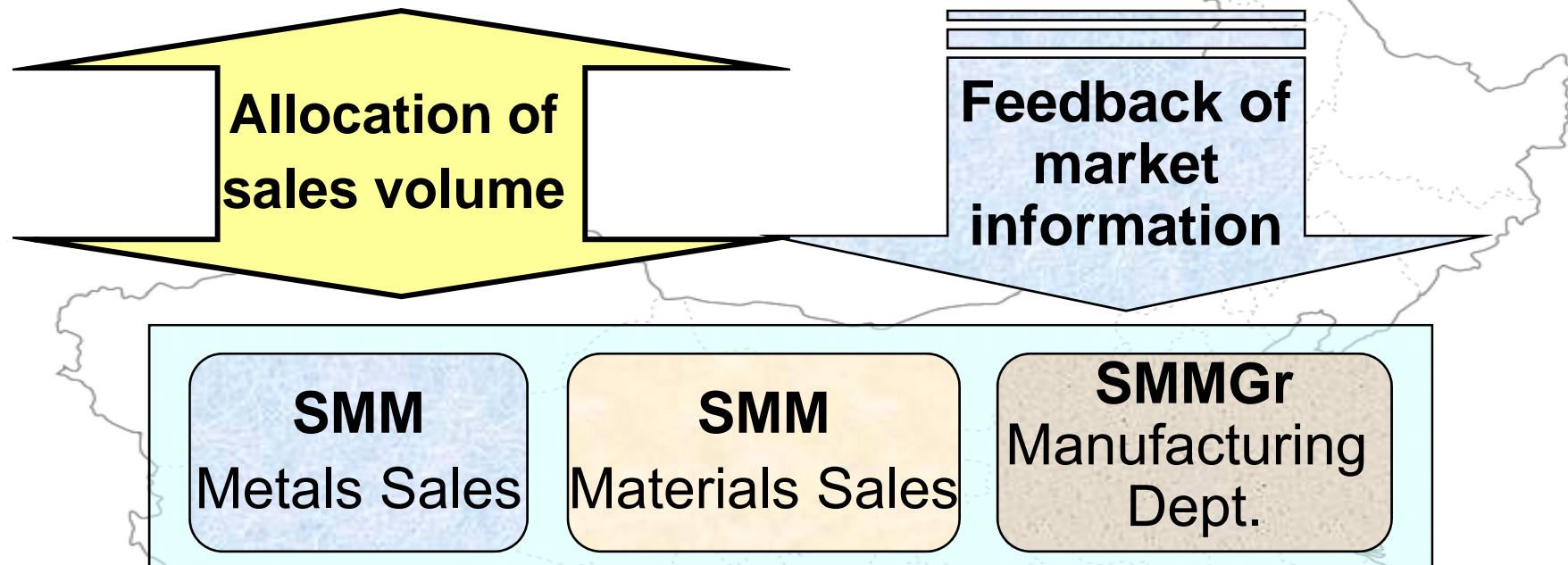
Autumn in 2011 – Operation launch

Aim to start mass production in 2012

3) Materials

④ Chinese sales headquarters

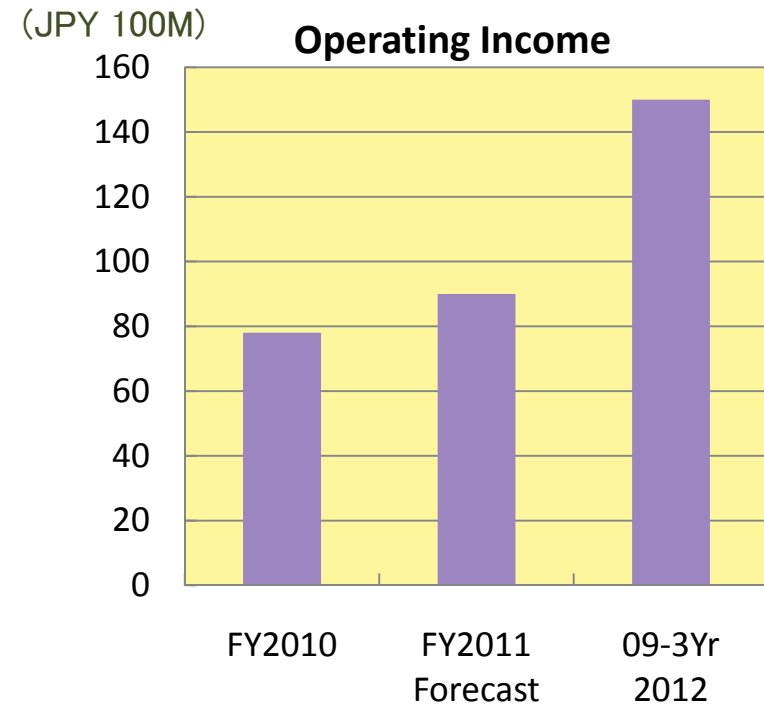
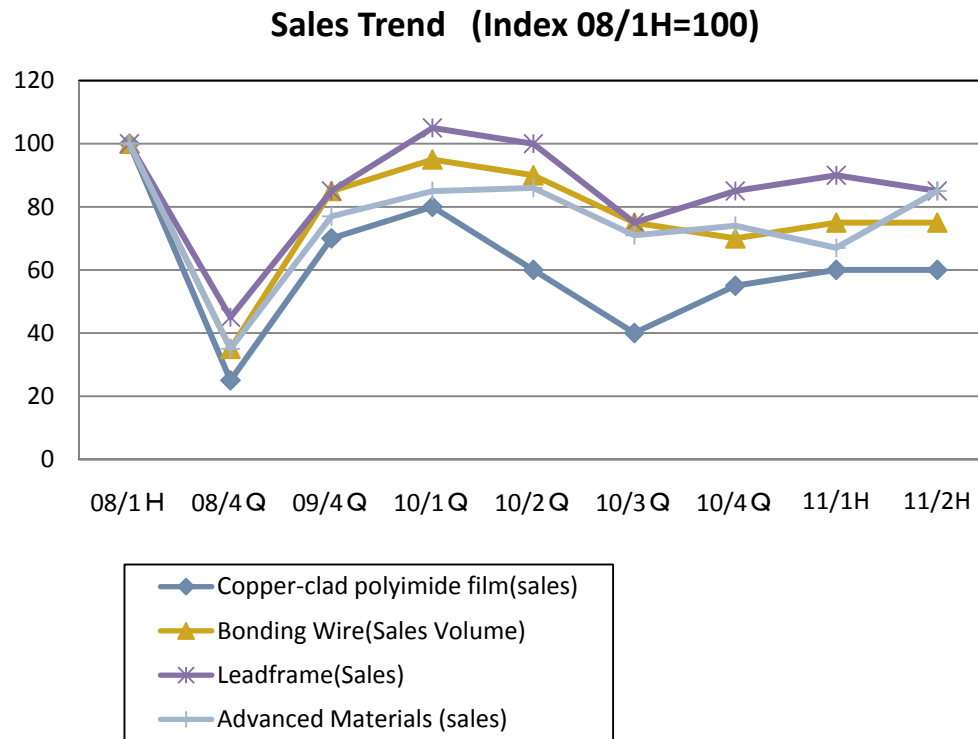
SMM Chinese Sales companies



- ◆ **China is the most important market** from the view point of both scale and growth potential.
- ◆ Gather up-to-date market information and accumulate the knowledge/expertise.
- ◆ Unique marketing approach based on the customer profile of Metals/Materials business.

3) Materials

⑤ Outlook for the achievement of 2009 3-Year business plan



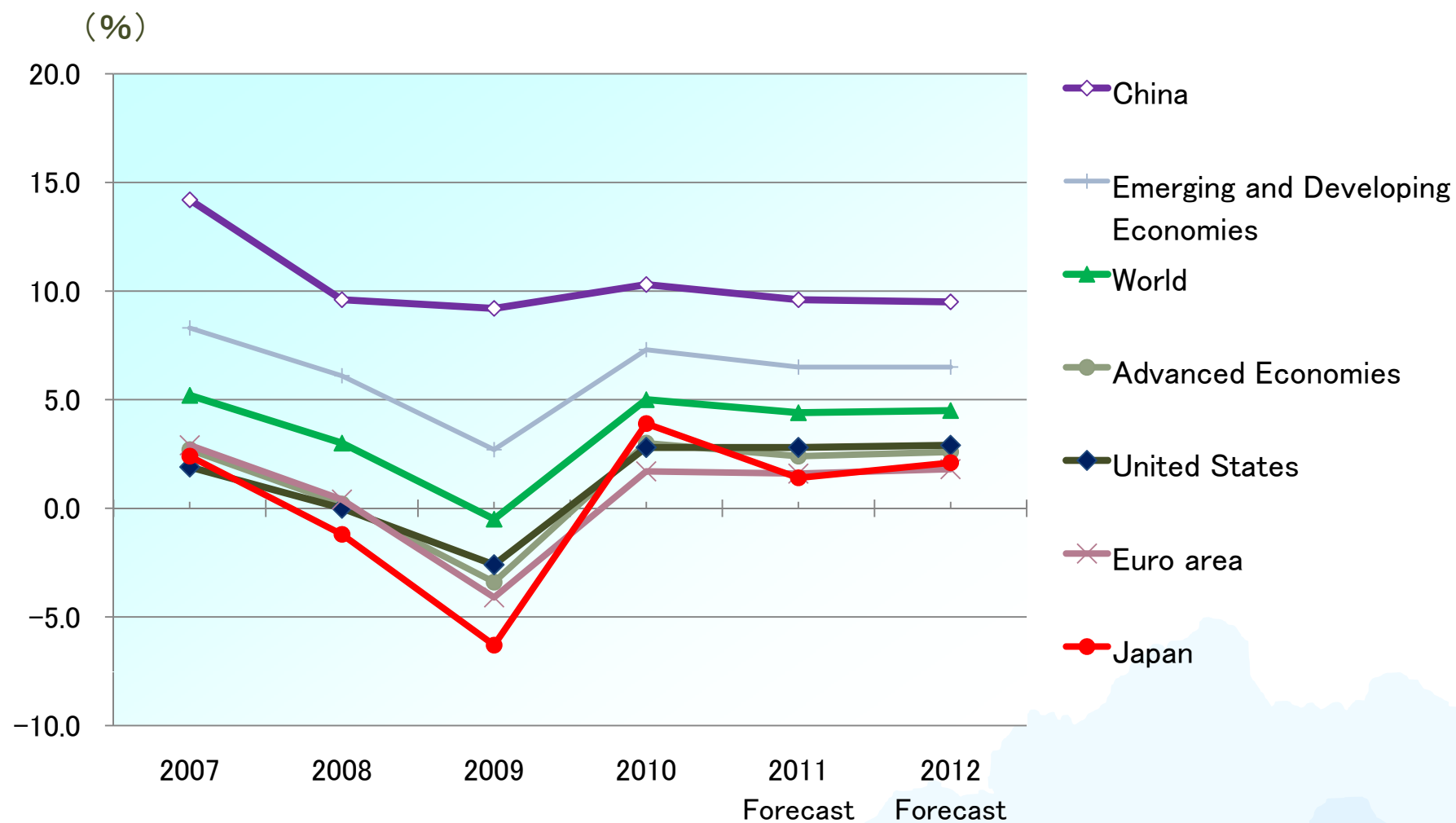
- ◆ **Battery/crystal (incl. sapphire)/thin and thick film/COF: Profit growth by volume increase**
- ◆ **Copper-clad polyimide Film/COF/Lead frame: Cost reduction through improvement of yield and productivity**
- ◆ **Other businesses: Promote 'selection and concentration'**

II. External Environment



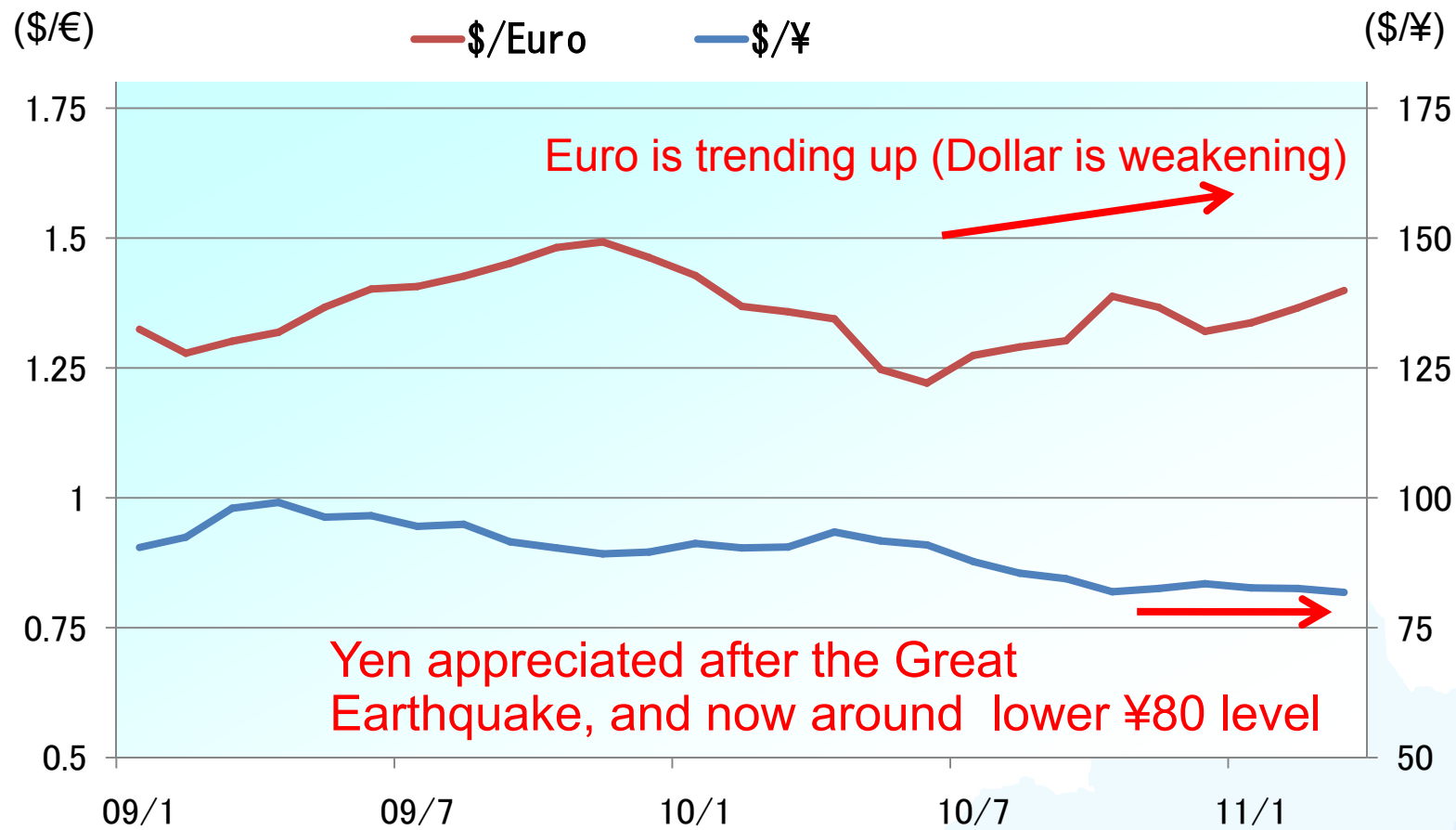
Current Besshi Copper Mine

1) GDP Outlook

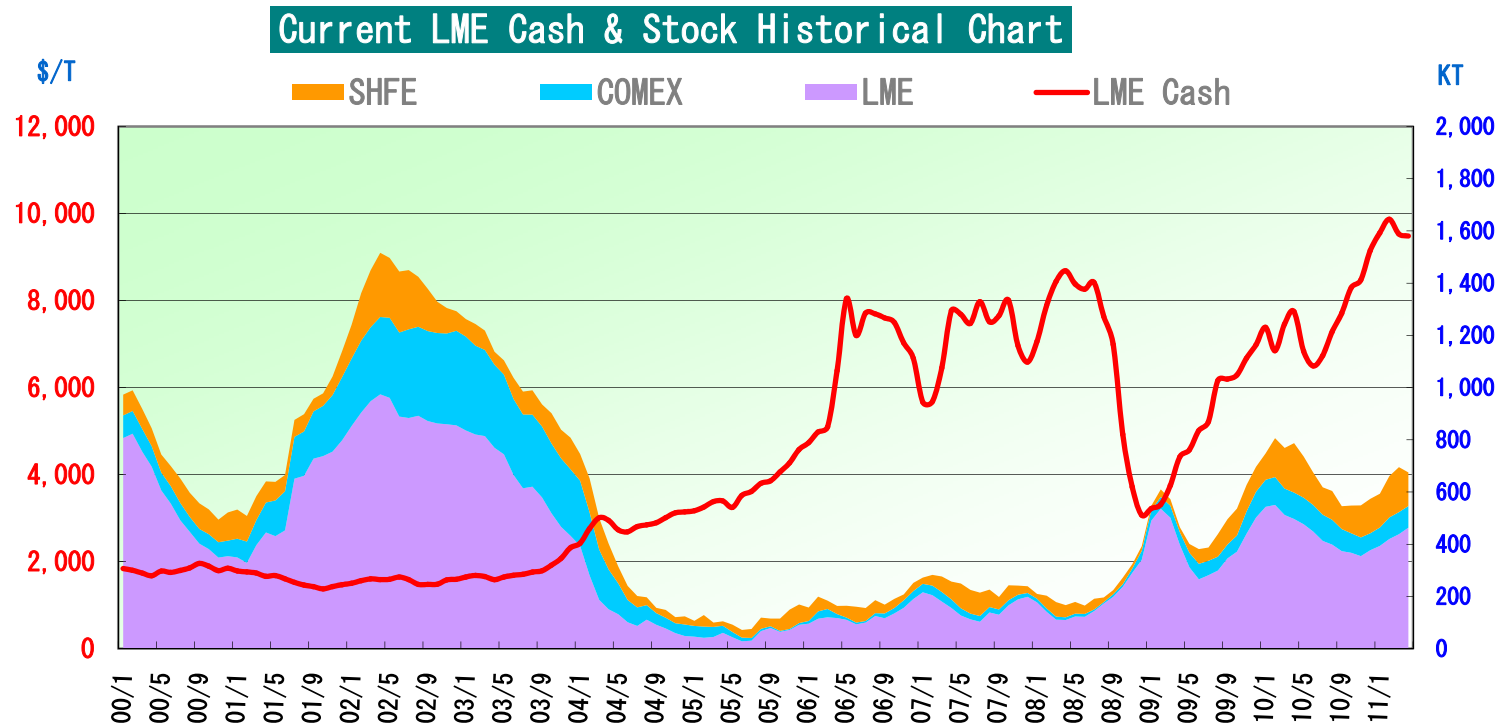


(Source: IMF2011/Apr)

2) Foreign Exchange trend

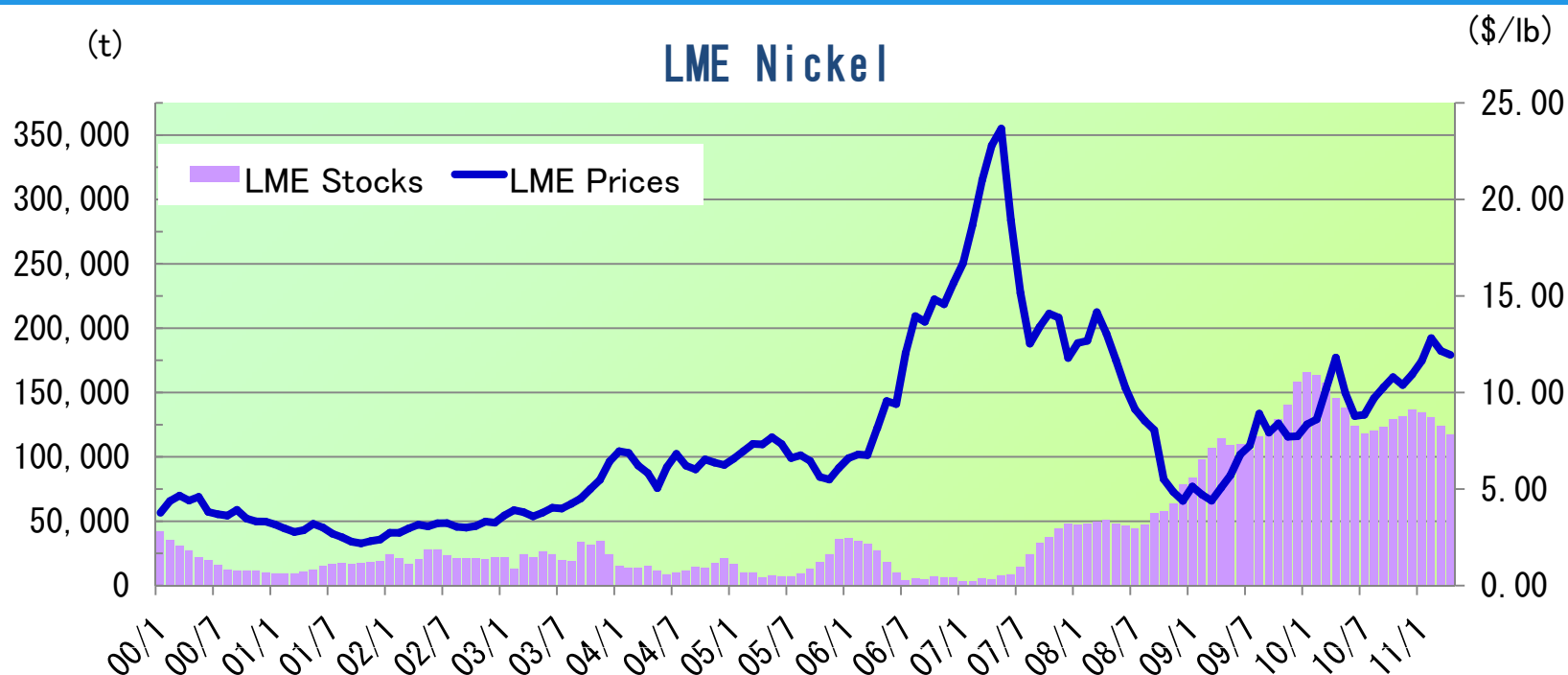


3) Copper – Supply & demand balance



(kt)	ICSG			Macquarie	
	2010	2011	2012	2010	2011
Production	19,061	19,724	20,686	18,776	19,308
Consumption	19,314	20,102	20,965	18,961	19,821
Balance	△ 253	△ 378	△ 279	△ 185	△ 513
Estimated Timing	2011.4			2011.1	

4) Nickel – Supply & demand balance



(Kt)	SMM			INSG			Macquarie
	2009	2010	2011	2009	2010	2011	2011
Output	1,292	1,416	1,592	1,329	1,439	1,600	1,596
Consumption	1,265	1,468	1,557	1,238	1,466	1,545	1,596
Balance	27	△ 52	35	91	△ 27	55	0
Estimated Timing	2011.04			2011.04			2011.04
Ni Pig Iron (Included)	95	160	180	—	—	—	217
Stainless steel	25,865	31,256	32,262	—	—	—	35,718

5) Au – Price

(\$/Toz)



Public gold reserves by country
(March 2011)

	Sectors	Gold reserves (t)	Gold / foreign reserves (%)
1	USA	8,134	73.8%
2	Germany	3,401	69.8%
3	IMF	2,814	–
4	Italy	2,452	68.0%
5	France	2,435	64.8%
6	China	1,054	1.6%
7	Switzerland	1,040	17.4%
8	Russia	789	3.0%
9	Japan	765	7.0%
10	Netherlands	613	57.3%
11	India	558	7.9%

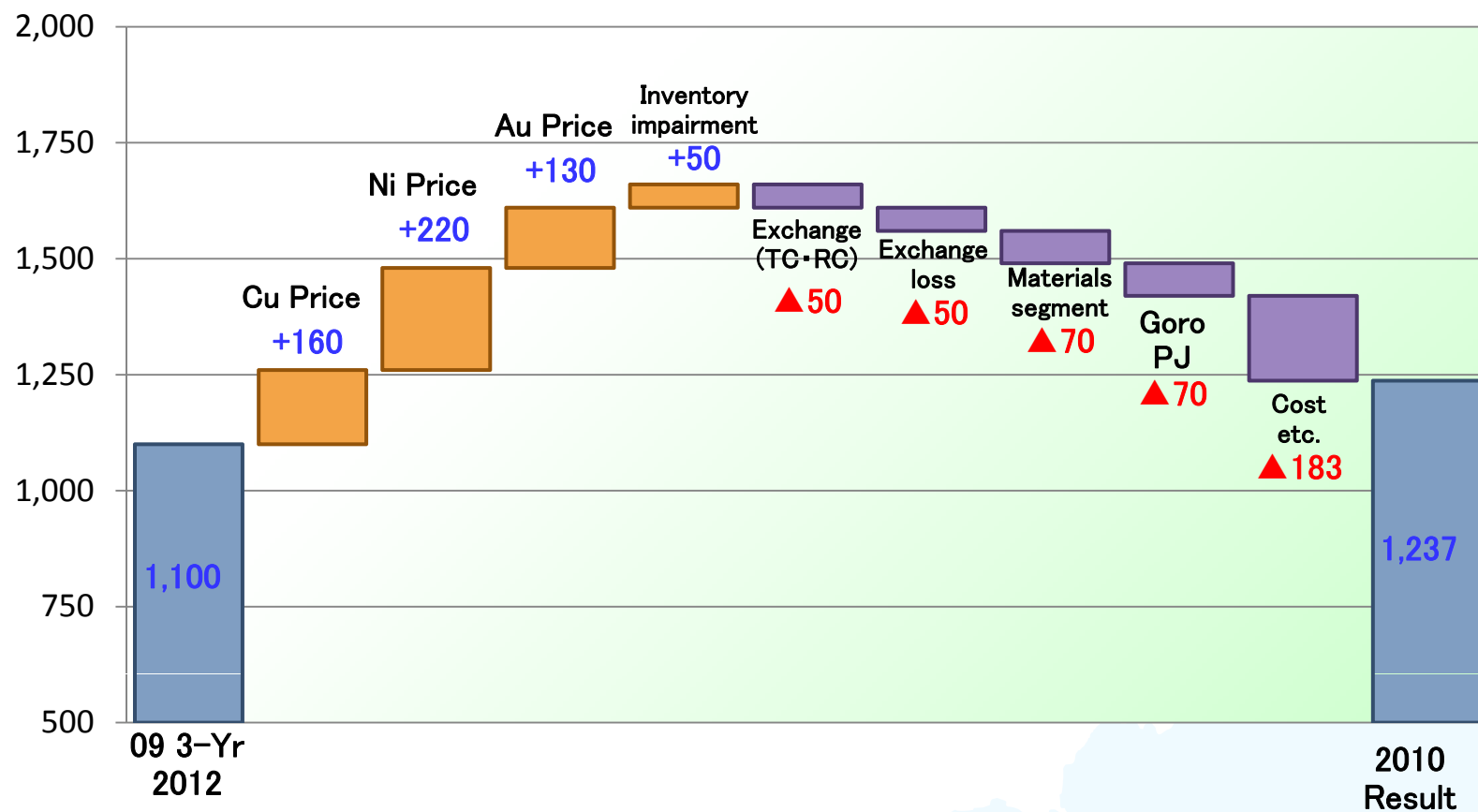
III. Business Results / Forecast for FY2011



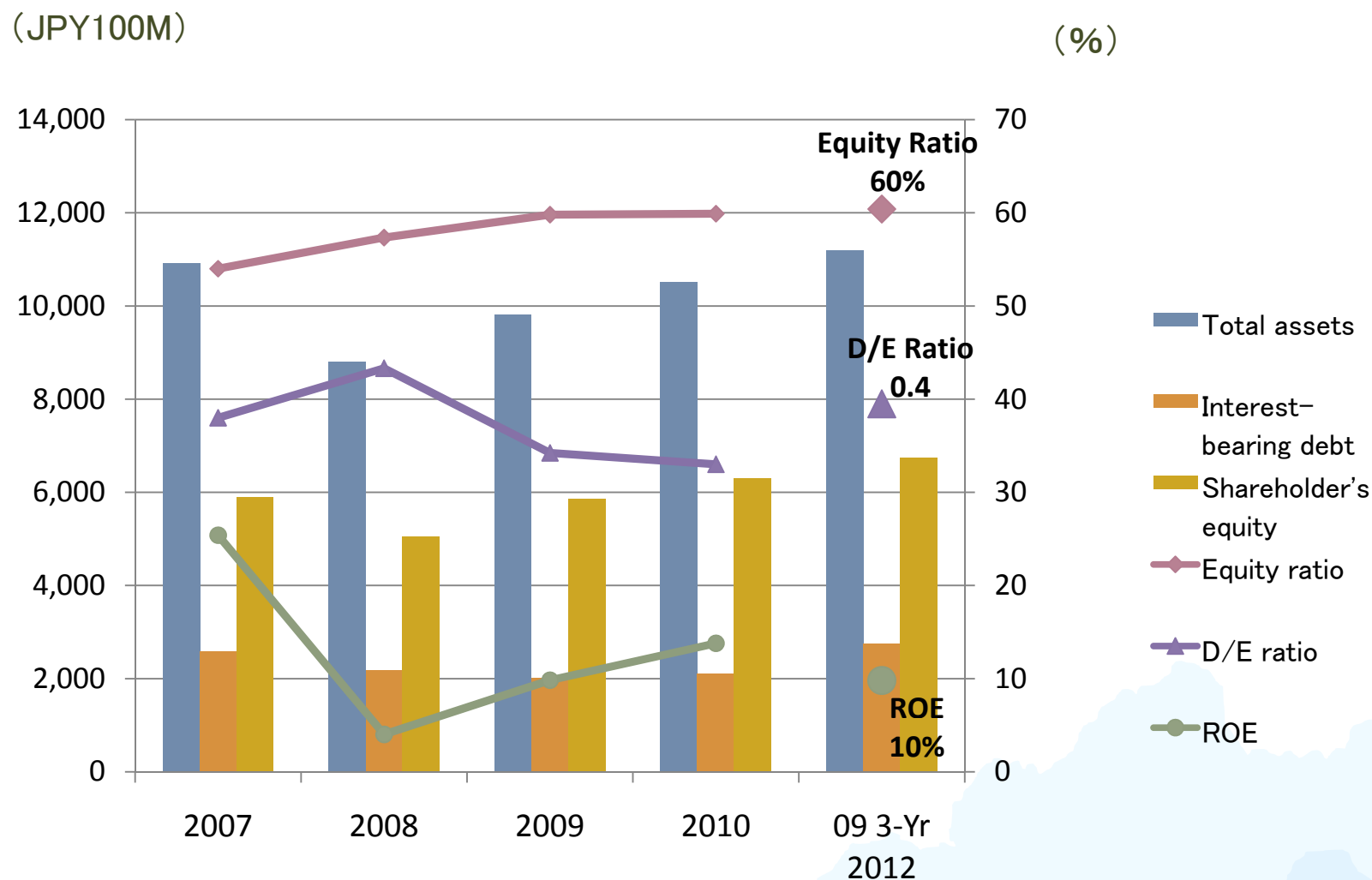
Tounaru Area, Besshi Copper Mine

1) 2010 Recurring Profit Effect of metal price

(JPY100M)



2) Maintenance and utilization of sound finances



Dividend payout ratio of +20% FY2009 20.8% FY2010 21.4%

3) Effect of the Great East Japan Earthquake

	FY2010	FY2011 (forecast)
Loss on direct damage (damage on properties)	- 400 mil. yen	- 100 mil. yen
Impact on earnings	- 300 mil. yen	- 1,400 mil. yen

Forecast as of
this point

【Damage on properties】

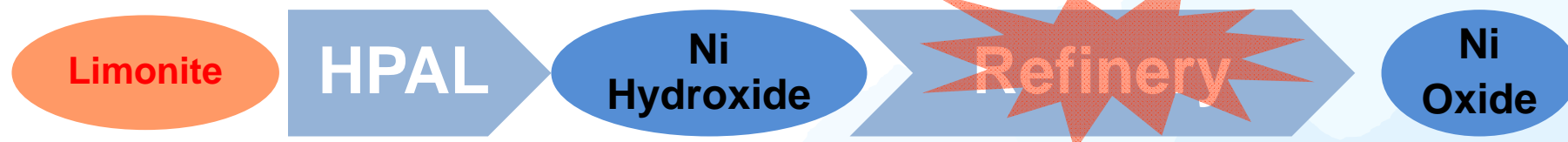
- ◆ Sumiko Teck Co., Ltd. : Partial damage on the inner wall, damage on mold/measurement equipment, etc.

【Business loss】

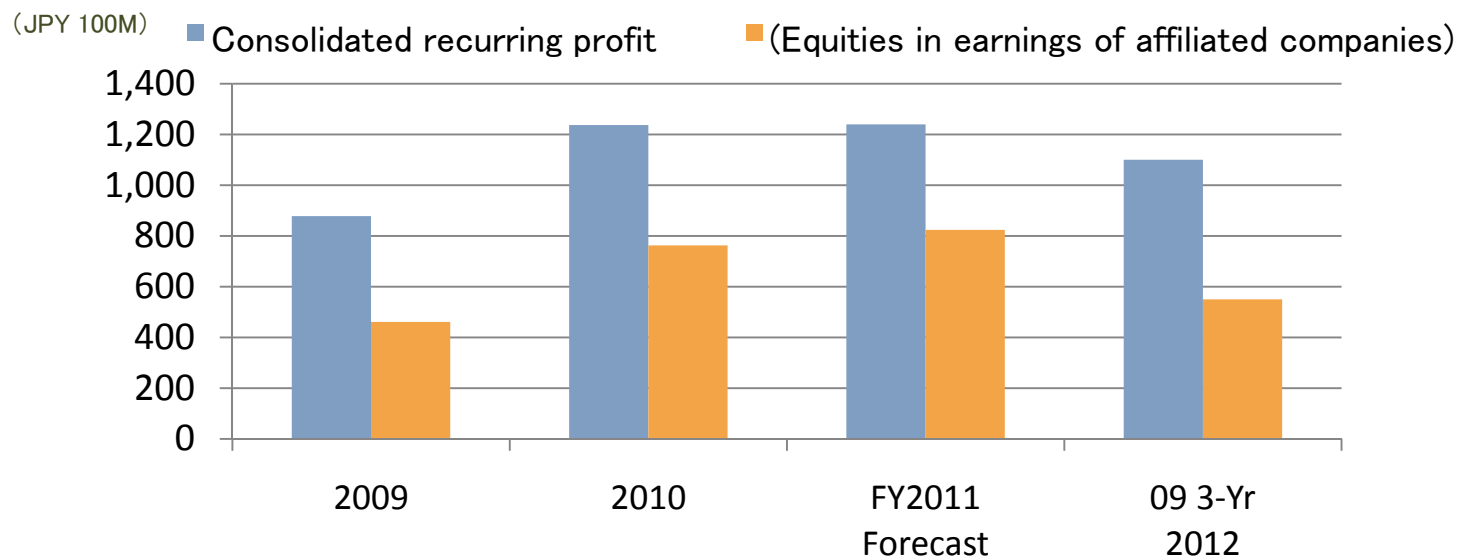
- ◆ Materials business etc
 - Effect of rolling blackout and **power restrictions during peak time**
 - Effect of the delay of supply chain restorations, etc.

4) Status of Goro Project

- Jan. 2010 Front-end process (HPAL) test operation started
- Mar. 2010 Back-end process (refining process) test operation started
- Apr. 2010 Refining process (solvent extraction)
Facilities partially damaged
- Aug. 2010 **First Metal Production**
- Dec. 2010 **First shipment of Nickel Hydroxide**
- 2011- Dispatch one executive level person, two process engineers and one facility engineer from SMM.
→ **Support for fundamental solution on the issue of solvent extraction facilities**
Establish production system to make final products (Ni Hydroxide) from intermediates promptly
- 2012- Large scale production of Nickel Oxide



5) Forecast of FY2011



(JPY 100M)	2009	2010	2011 Forecast	09 03-Yr 2012
Consolidated recurring profit	878	1,237	1,240	1,100
(Equities in earnings of affiliated companies)	461	763	820	550
Cu (\$/T)	6,101	8,140	8,500	6,000
Ni (\$/lb)	7.7	10.7	11.0	8.0
Au (\$/Toz)	1,023	1,294	1,400	1,000
Exchange	92.9	85.7	80.0	90.0

IV. Financial Highlights and Information Materials

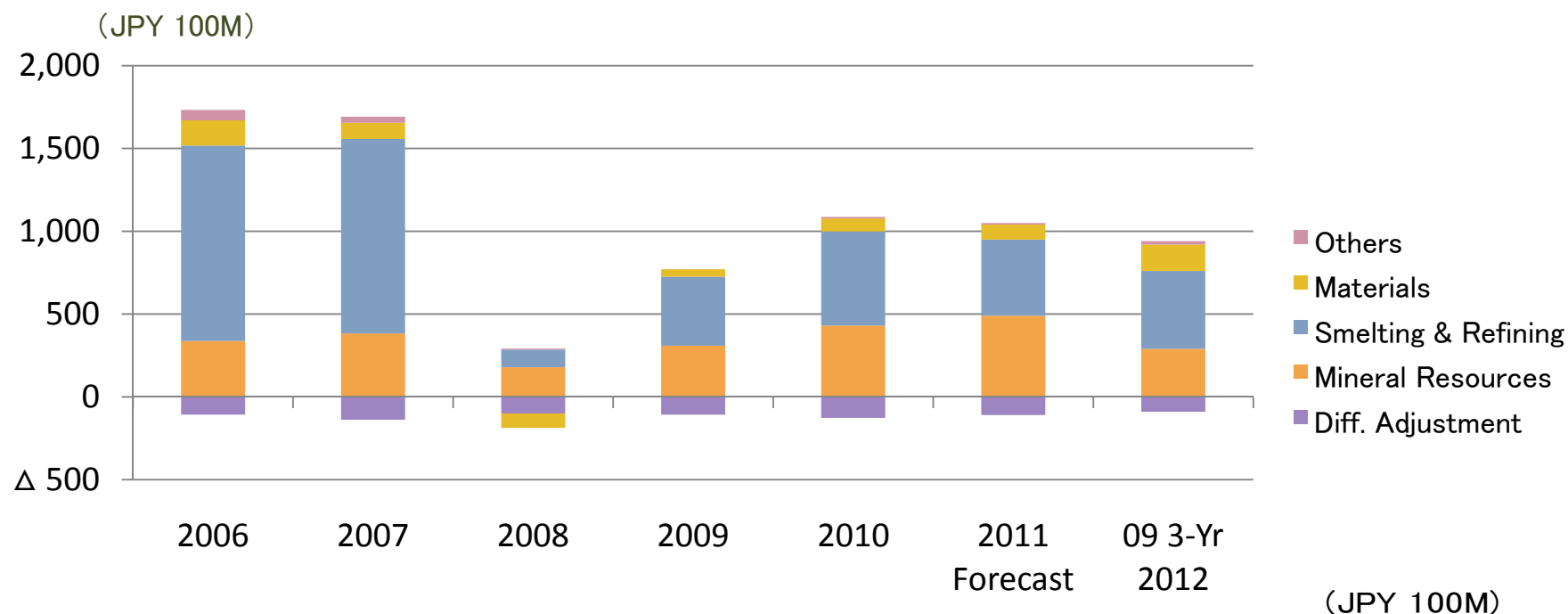


View of Seto Inland Sea
from Douzan-mine (peak of Besshi mine)

1) Trends of financial summary

	2006	2007	2008	2009	2010	2011 Forecast	09 3-Yr 2012
Net Sales	9,668	11,324	7,938	7,258	8,641	8,090	7,800
Operating Income	1,626	1,554	105	663	960	940	850
Recurring Profit	2,053	2,179	326	878	1,237	1,240	1,100
Equity Method profit	467	740	315	261	348	340	300
Net Income	1,261	1,378	220	540	840	850	700
ROA(%)	14.8	13.6	2.2	5.8	8.3	N/A	6
ROE(%)	29.0	25.4	4.0	9.9	13.8	N/A	10
Dividend Per Share(¥)	27.0	30.0	13.0	20.0	32.0	32.0	N/A
Copper (\$/t)	6,970	7,584	5,864	6,101	8,140	8,500	6,000
Nickel (\$/lb)	14	15.5	7.5	7.7	10.7	11.00	8.0
Gold (\$/Toz)	629	766	867	1,023	1,294	1,400	1,000
Zinc (\$/T)	3,579	2,986	1,560	1,934	2,187	2,200	2,000
Exchange(¥/\$)	117.0	114.4	100.7	92.9	85.7	80.0	90.0

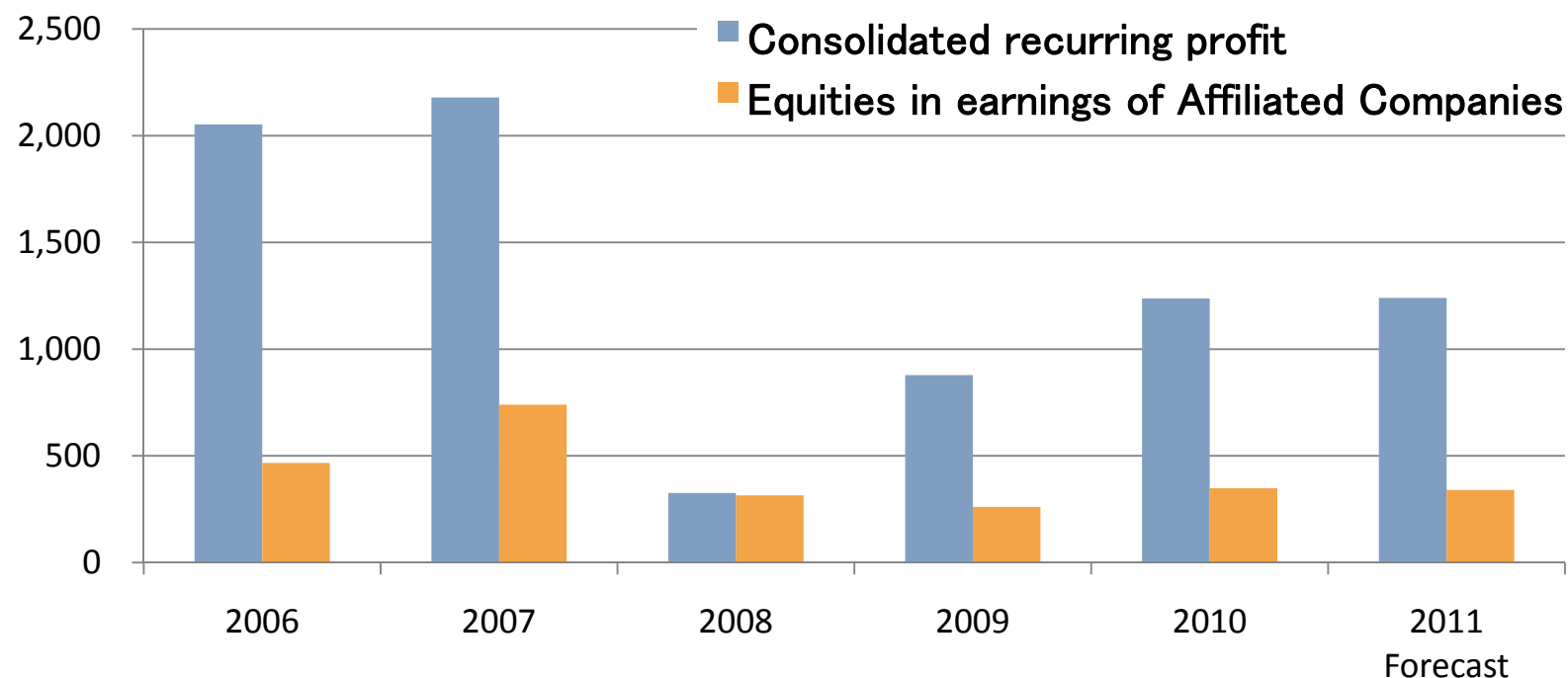
2) Operating income by segment



	2006	2007	2008	2009	2010	2011 Forecast	09 3-Yr 2012
Mineral Resources	337	383	179	309	430	490	290
Smelting & Refining	1,181	1,174	107	417	569	460	470
Materials	152	98	Δ 87	45	78	90	160
Others	63	37	6	Δ 1	10	10	20
Sub-total	1,733	1,692	205	770	1,087	1,050	940
Diff.Adjustment	Δ 107	Δ 138	Δ 100	Δ 107	Δ 127	Δ 110	Δ 90
Total	1,626	1,554	105	663	960	940	850

3) Earnings from Equity in Affiliated Companies

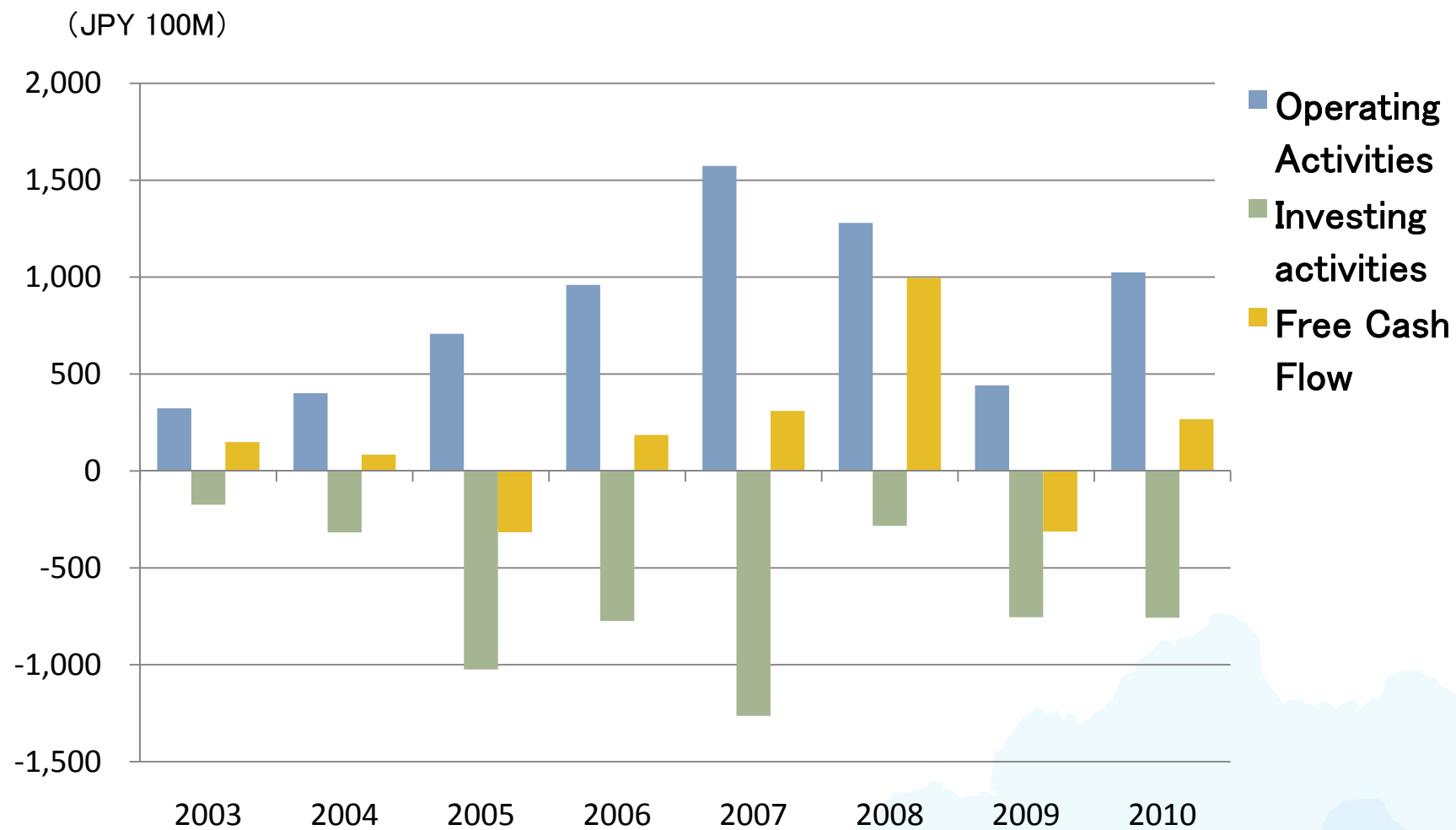
(JPY 100M)



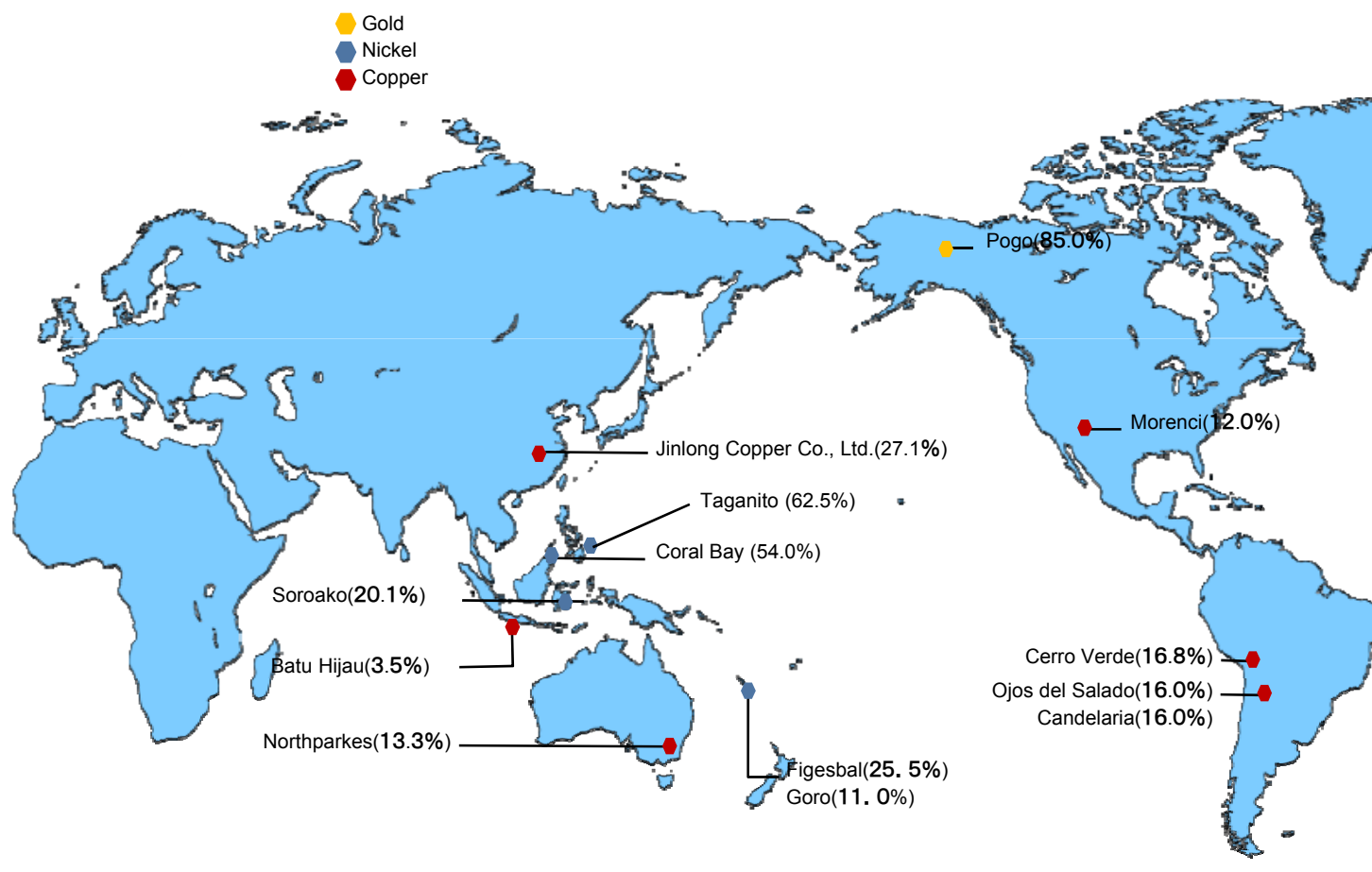
(JPY100M)

	2006	2007	2008	2009	2010	2011 Forecast
Consolidated recurring profit	2,053	2,179	326	878	1,237	1,240
(Equities in earnings of Affiliated Companies)	467	740	315	261	348	340

4) FCF



5) SMM's overseas mines / Refinery



6) Sensitivity

JPY100M/Year

	Fluctuation	FY2011 Profit up/down
Cu	±100 \$ /t	5/10
Ni	±10 ¢ /lb	7/9
Au	±10 \$/Toz	4/4
¥ / \$	±1 ¥/\$	12/12

(Remarks)

Operating income/Recurring profit

USD/JPY translation applied to RC-related only.

(Overseas profit effects excluded).

7) 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 60% 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 75-80% 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.

7) 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 CC PF 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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