

Security Code

Tokyo 5020

# Supplementary Information

~ JX Group A to Z ~

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Jul 31, 2015



The Future of Energy, Resources and Materials

**JX Holdings, Inc.**

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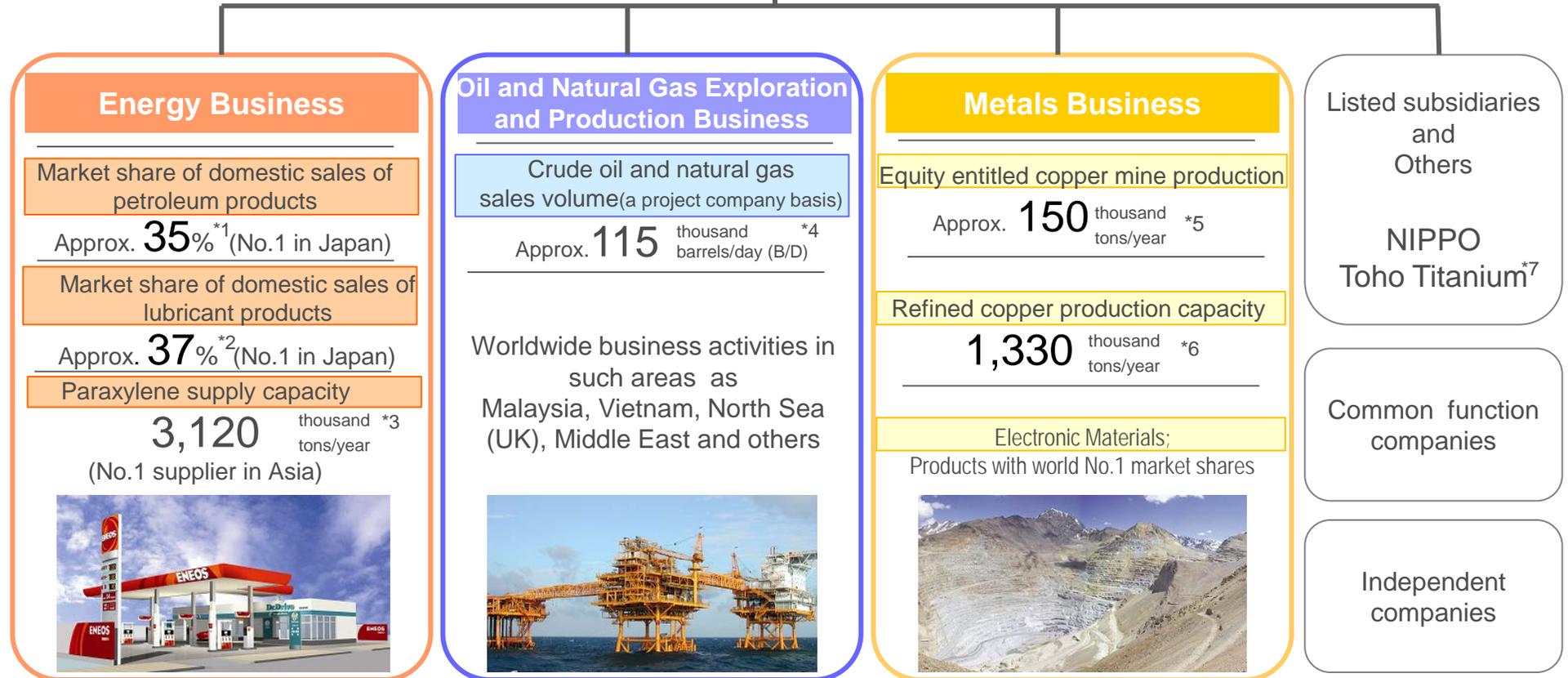


## Summaries of businesses and Financial Results



# Summary of JX Group's Businesses

## JX JX Holdings, Inc.



\*1 FY2014 actual

\*2 FY2014 actual

\*3 As of Mar. 2015

\*4 Crude oil equivalent (average daily production from Jan. to Dec. 2014 actual)

\*5 Equity entitled copper production contained in copper concentrate (CY2014 actual)

\*6 Pan Pacific Copper (67.6% equity stake) ; 650 thousand tons/year + LS-Nikko Copper (39.9% equity stake) ;680 thousand tons/year (As of Mar. 2015)

\*7 Profit and loss of Toho Titanium is included in the Metals Business.

# Forecast for FY2015

	FY2014 (Actual)	Forecast for FY2015(May. 2015)	2'nd Mid-term Mgt. Plan	
Key Factors (FY2015)	Exchange Rate	110 yen/\$	115 yen/\$	90 yen/\$
	Crude Price (Dubai spot)	83 \$/bbl	60 \$/bbl	110 \$/bbl
	Copper Price(LME)	297 ¢/lb	270 ¢/lb	360 ¢/lb
Index	Ordinary Income	-150.1 billion yen	310 billion yen	400 billion yen or more
	Ordinary Income Excl. inventory valuation	255.2 billion yen	290 billion yen	
	ROE	-13.6%	8%	10% or higher
	Net D/E Ratio	1.2 times	1.1 times	0.9 times or lower
	Capex	920 billion yen (FY2013-2014 total)	1,300 billion yen or less (FY2013-2015 total)	1,300+α billion yen (FY2013-2015 total)

- Setting forecast for FY2015 reflecting resource price decline, demand and margin of petroleum and petrochemical products, and delay of return from strategic investment
- Piling up profit by taking all measures and improving financial position by compressing investment in FY2015



Making this year preparation for  
3rd Mid-term Management Plan



# Financial Summary

(JPY billion)	FY2014			FY2015		
	1Q	1H	Full Year	1Q	1H	Full Year
	Actual	Actual	Actual	Actual	Forecast (Jul. 2015)	Forecast (May. 2015)
<b>Net Sales</b>	<b>2,640.9</b>	<b>5,442.4</b>	<b>10,882.5</b>	<b>2,304.1</b>	<b>4,730.0</b>	<b>9,660.0</b>
Energy	2,232.9	4,617.0	9,124.8	1,904.5	3,900.0	7,890.0
Oil and Natural Gas E&P	54.8	104.4	226.4	45.8	90.0	200.0
Metals	268.2	550.0	1,156.0	279.7	580.0	1,200.0
Others	85.0	171.0	375.3	74.1	160.0	370.0
<b>Operating Income (Loss)</b>	<b>2.7</b>	<b>14.3</b>	<b>(218.9)</b>	<b>79.7</b>	<b>115.0</b>	<b>250.0</b>
Energy	(28.0)	(46.9)	(365.3)	50.6	71.0	142.0
Oil and Natural Gas E&P	18.6	34.1	75.4	11.7	14.0	30.0
Metals	5.0	11.2	33.2	11.3	18.0	50.0
Others	7.1	15.9	37.8	6.1	12.0	28.0
<b>Ordinary Income (Loss)</b>	<b>14.9</b>	<b>42.0</b>	<b>(150.1)</b>	<b>97.0</b>	<b>140.0</b>	<b>310.0</b>
Energy	(24.3)	(35.3)	(334.6)	60.3	87.0	173.0
Oil and Natural Gas E&P	20.0	34.7	84.9	12.3	15.0	30.0
Metals	9.7	23.9	56.6	15.6	23.0	71.0
Others	9.5	18.7	43.0	8.8	15.0	36.0
<b>Profit attributable to owners of parent</b>	<b>14.2</b>	<b>17.7</b>	<b>(277.2)</b>	<b>53.3</b>	<b>70.0</b>	<b>160.0</b>
Energy	(6.3)	(14.3)	(292.2)	42.6	55.0	111.0
Oil and Natural Gas E&P	10.8	10.7	2.4	3.1	2.0	(21.0)
Metals	5.1	13.1	(5.7)	5.9	10.0	37.0
Others	4.6	8.2	18.3	1.7	3.0	33.0
Capex	111.0	215.0	420.0	81.0	-	380.0
Depreciation and Amortization	46.9	93.6	197.3	54.8	-	260.0

# Ordinary Income by segment

(JPY billion)	FY2014			FY2015		
	1Q	1H	Full Year	1Q	1H	Full Year
	Actual	Actual	Actual	Actual	Forecast (Jul. 2015)	Forecast (May. 2015)
<b>Ordinary Income (Loss)</b>	<b>14.9</b>	<b>42.0</b>	<b>(150.1)</b>	<b>97.0</b>	<b>140.0</b>	<b>310.0</b>
<b>Energy Business</b>	<b>(24.3)</b>	<b>(35.3)</b>	<b>(334.6)</b>	<b>60.3</b>	<b>87.0</b>	<b>173.0</b>
Petroleum Products	(24.2)	(14.0)	57.1	24.5	32.0	108.0
Petrochemicals	(1.9)	9.2	15.1	21.3	35.0	45.0
Inventory Valuation	1.8	(30.5)	(406.8)	14.5	20.0	20.0
<b>Oil and Natural Gas E&amp;P Business</b>	<b>20.0</b>	<b>34.7</b>	<b>84.9</b>	<b>12.3</b>	<b>15.0</b>	<b>30.0</b>
<b>Metals Business</b>	<b>9.7</b>	<b>23.9</b>	<b>56.6</b>	<b>15.6</b>	<b>23.0</b>	<b>71.0</b>
Resources Development	4.0	9.7	18.1	(0.3)	(2.5)	8.0
Smelting and Refining	3.7	7.4	16.8	7.7	10.5	30.0
Electronic Materials	2.7	6.3	16.6	5.5	11.0	22.0
Recycling and Environmental Services	1.1	3.4	6.7	1.8	3.0	8.0
Titanium	(2.0)	(3.8)	(3.1)	0.9	1.0	3.0
Inventory Valuation	0.2	0.9	1.5	0.0	0.0	0.0
<b>Others</b>	<b>9.5</b>	<b>18.7</b>	<b>43.0</b>	<b>8.8</b>	<b>15.0</b>	<b>36.0</b>



# Balance Sheets

	Jun. 2014	Mar. 2015	Jun. 2015
(JPY billion)	Actual	Actual	Actual
<b>Total assets</b>	<b>7,698.1</b>	<b>7,423.4</b>	<b>7,494.3</b>
Current assets	3,593.4	2,996.4	3,038.6
- Cash and deposits	290.3	329.3	287.1
Noncurrent assets	4,104.6	4,427.0	4,455.7
Property, plant and equipment	2,408.8	2,555.6	2,566.3
Intangible assets	129.7	136.2	133.8
Investments and other assets	1,566.2	1,735.2	1,755.6
<b>Liabilities</b>	<b>5,107.2</b>	<b>4,993.6</b>	<b>5,017.1</b>
Interest-bearing debt	2,882.6	2,620.3	2,814.3
Other liabilities	2,224.6	2,373.3	2,202.8
<b>Net assets</b>	<b>2,590.9</b>	<b>2,429.8</b>	<b>2,477.2</b>
Shareholders' equity	1,937.9	1,626.4	1,659.8
Accumulated other comprehensive income (loss)	170.5	310.4	318.5
Non-controlling interests	482.5	493.0	498.9



# Performance Indicators

	FY2014		FY2015
	1Q	Full Year	1Q
(JPY billion)	Actual	Actual	Actual
Cash flows from operating activities	51.8	737.2	(91.3)
(Working capital)	38.6	725.0	(162.6)
Cash flows from investing activities	(97.5)	(377.8)	(108.2)
Free cash flows	(45.7)	359.4	(199.5)
Dividend and others	(33.8)	(65.4)	(30.2)
Net cash flows	(79.5)	294.0	(229.7)
	Jun. 2014	Mar. 2015	Jun. 2015
	Actual	Actual	Actual
Net D/E Ratio (times)	1.23	1.18	1.28
Shareholders' equity ratio (%)	27.4	26.1	26.4



## Equity in earnings of unconsolidated subsidiaries and affiliates

	FY2014			FY2015		
	1Q	1H	Full Year	1Q	1H	Full Year
(JPY billion)	Actual	Actual	Actual	Actual	Forecast (Jul. 2015)	Forecast (May. 2015)
Energy	1.4	2.1	6.8	2.0	3.0	7.0
Oil and Natural Gas E&P	1.2	3.2	5.9	(0.3)	1.0	1.0
Metals	6.7	18.3	33.1	8.2	12.0	35.0
Resources Development	5.6	15.4	27.6	6.5	14.0	24.0
Smelting and Refining	1.1	2.9	5.5	1.7	(2.0)	11.0
Others	0.4	0.8	1.3	0.4	0.0	1.0
Total	9.7	24.4	47.1	10.3	16.0	44.0



# Shareholder Return Policy

## Basic Shareholder Return Policy

Redistribute profits by reflecting consolidated business results while striving to maintain stable dividends

## Indication of Shareholder Return for 2nd Medium-Term Management Plan Period

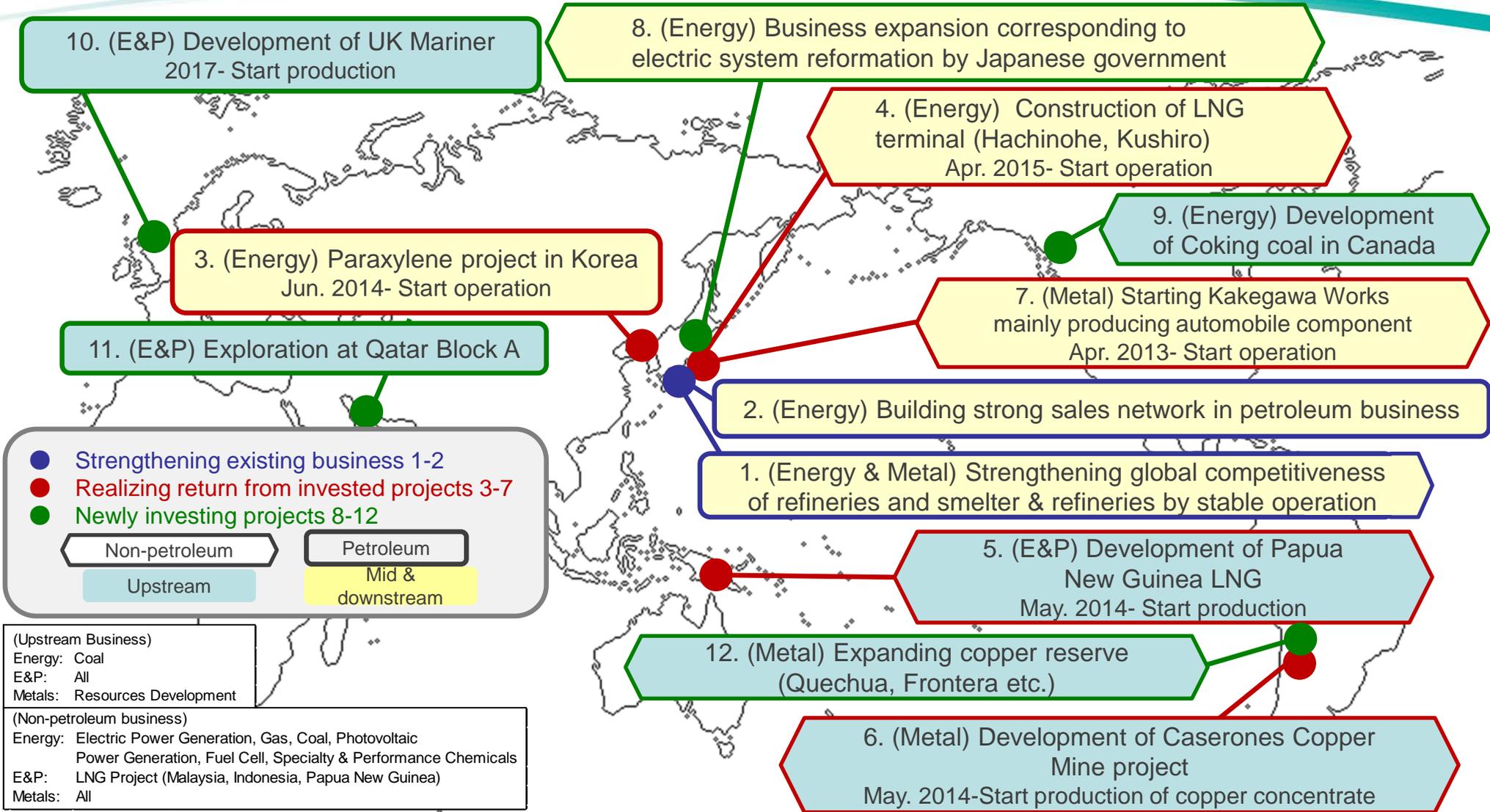
Based on the basic policy, during the 2nd medium-term management plan period (FY2013-2015), we will strive to maintain dividends of 16 yen per share per annum. When we secure stable profitability in existing business and foresee realization of return from strategic investments, we will expand shareholder return centering on increase of dividend.

### Reference) Dividend from FY2010-2015

	2010	2011	2012	2013	2014	2015 (Forecast)
Dividend (yen/share)	15.5	16.0	16.0	16.0	16.0	16.0
EPS (yen/share)	125	69	64	43	-111	64



# Highlight of Major Projects



- Strengthening existing business 1-2
- Realizing return from invested projects 3-7
- Newly investing projects 8-12



(Upstream Business)  
 Energy: Coal  
 E&P: All  
 Metals: Resources Development

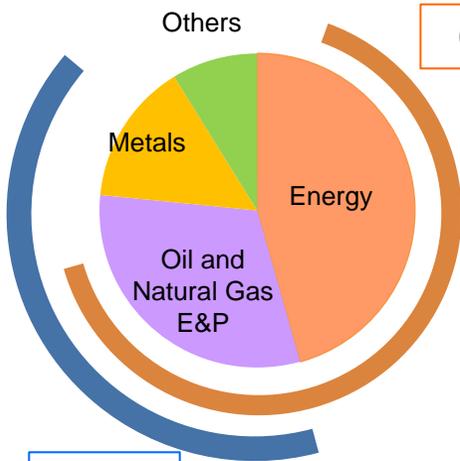
(Non-petroleum business)  
 Energy: Electric Power Generation, Gas, Coal, Photovoltaic Power Generation, Fuel Cell, Specialty & Performance Chemicals  
 E&P: LNG Project (Malaysia, Indonesia, Papua New Guinea)  
 Metals: All

# Target of JX Group (2020)

Well-balanced business portfolio  
petroleum and non-petroleum, upstream and mid & downstream business

Balance of ordinary income  
excl. inventory valuation

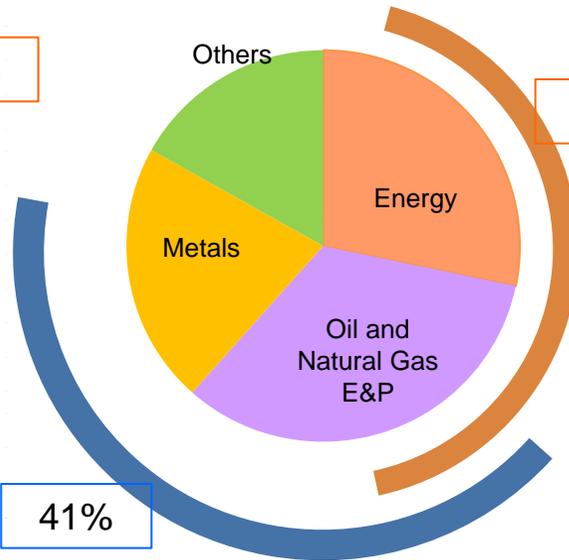
FY2012



65%

40%

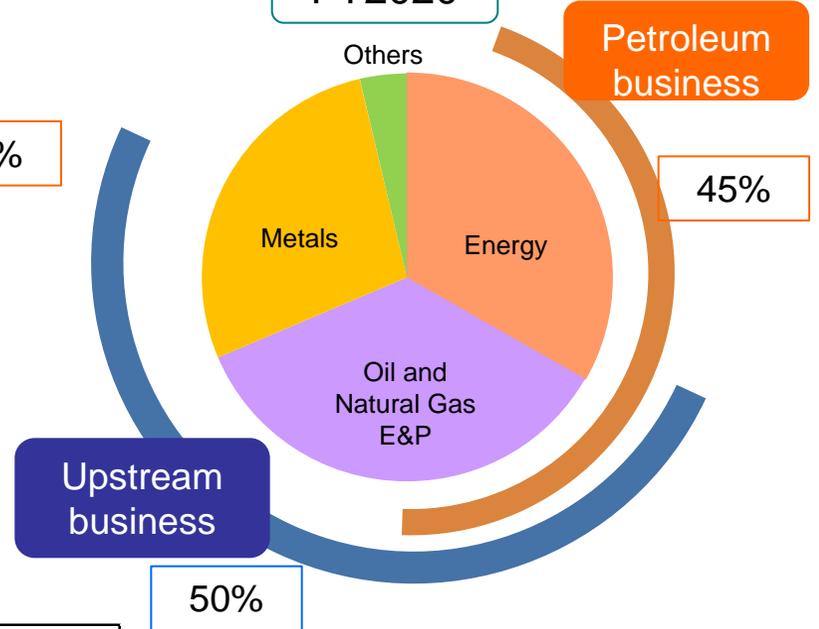
FY2014



42%

41%

FY2020



45%

50%

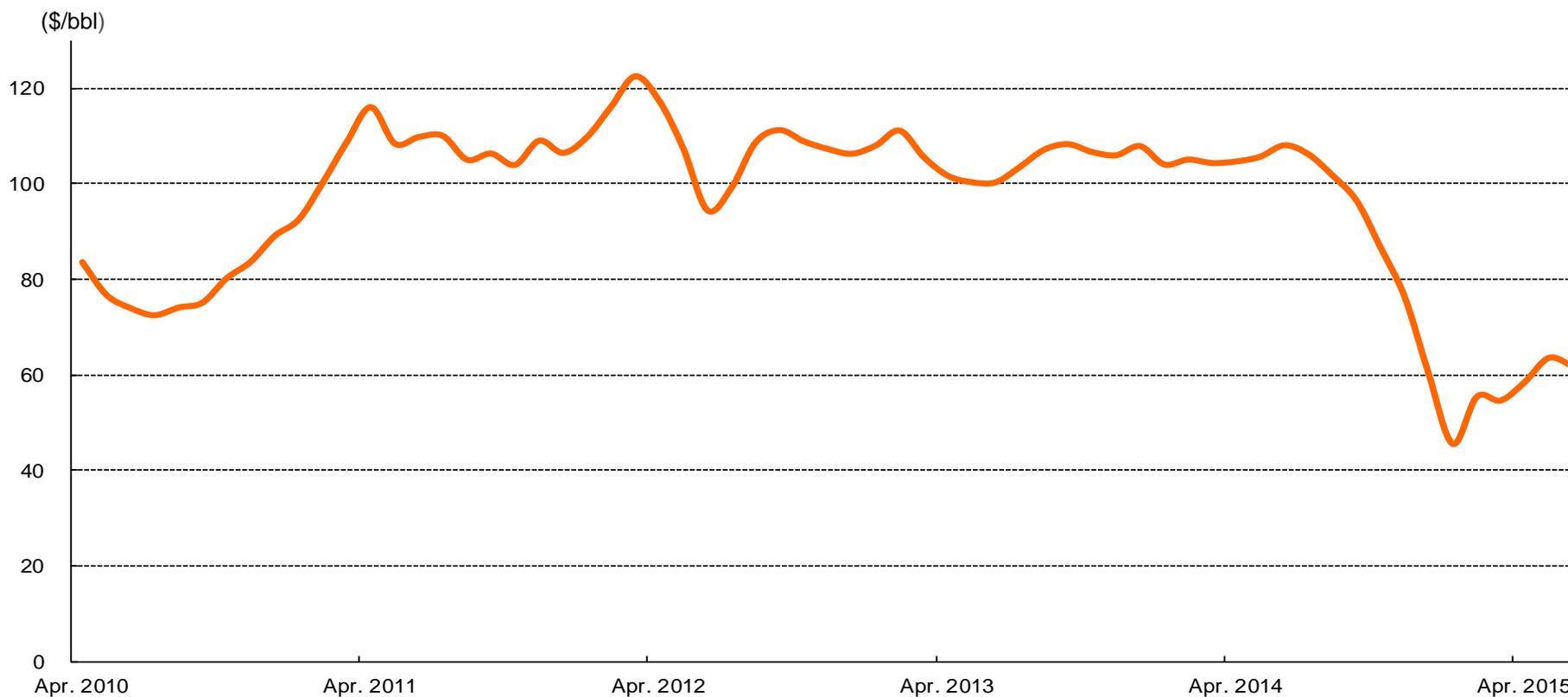
(Upstream Business)  
Energy: Coal  
E&P: All  
Metals: Resources Development

(Non-petroleum business)  
Energy: Electric Power Generation, Gas, Coal, Photovoltaic  
Power Generation, Fuel Cell, Specialty & Performance Chemicals  
E&P: LNG Project (Malaysia, Indonesia, Papua New Guinea)  
Metals: All



# Historical Dubai Crude Oil Price

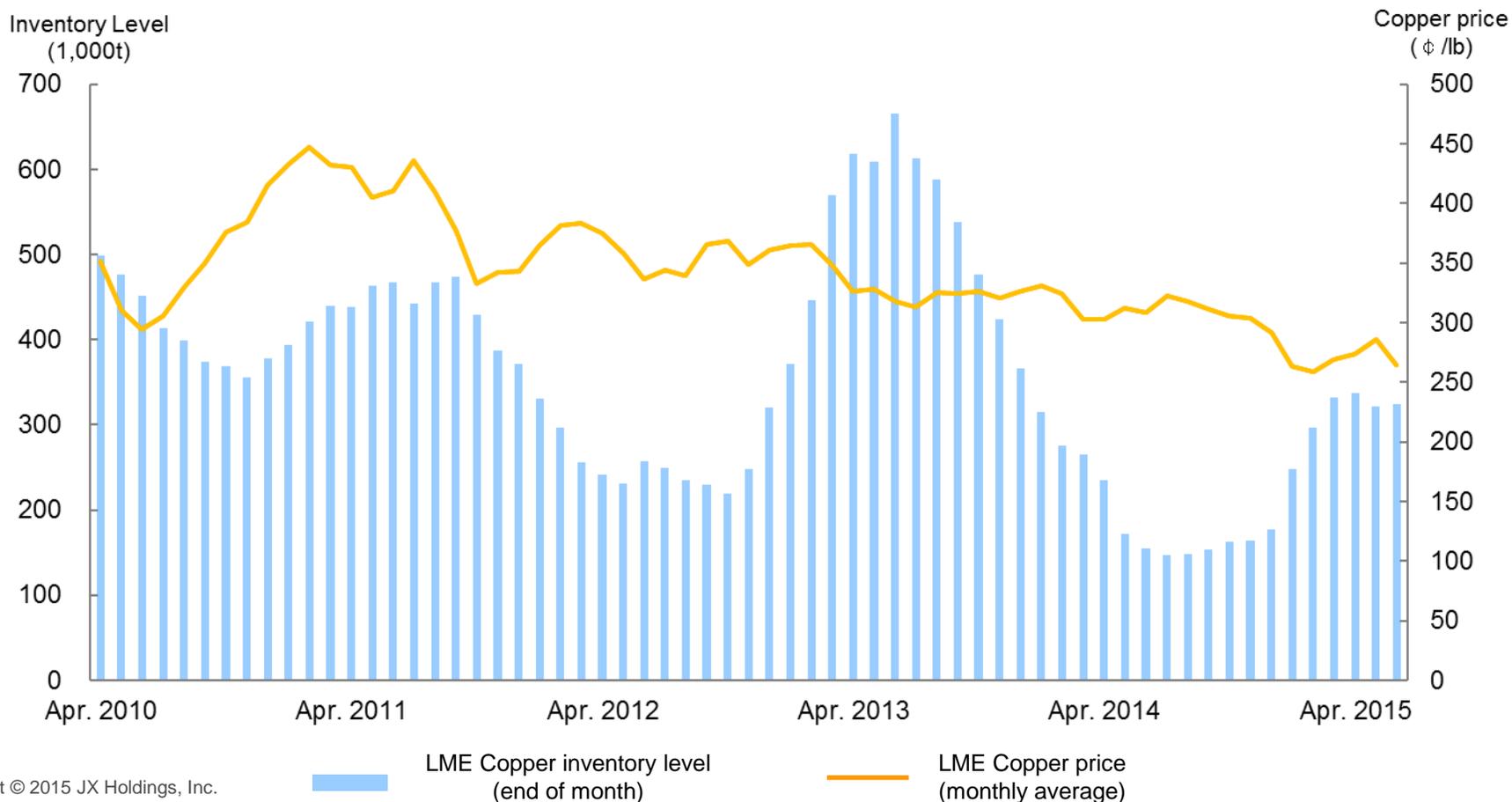
Average Price	FY2010	FY2011	FY2012	FY2013	FY2014					FY2015
					1Q	2Q	3Q	4Q	FY	1Q
Dubai Crude Oil	84	110	107	105	106	101	74	52	83	61





# Historical Copper Price and Inventory Level

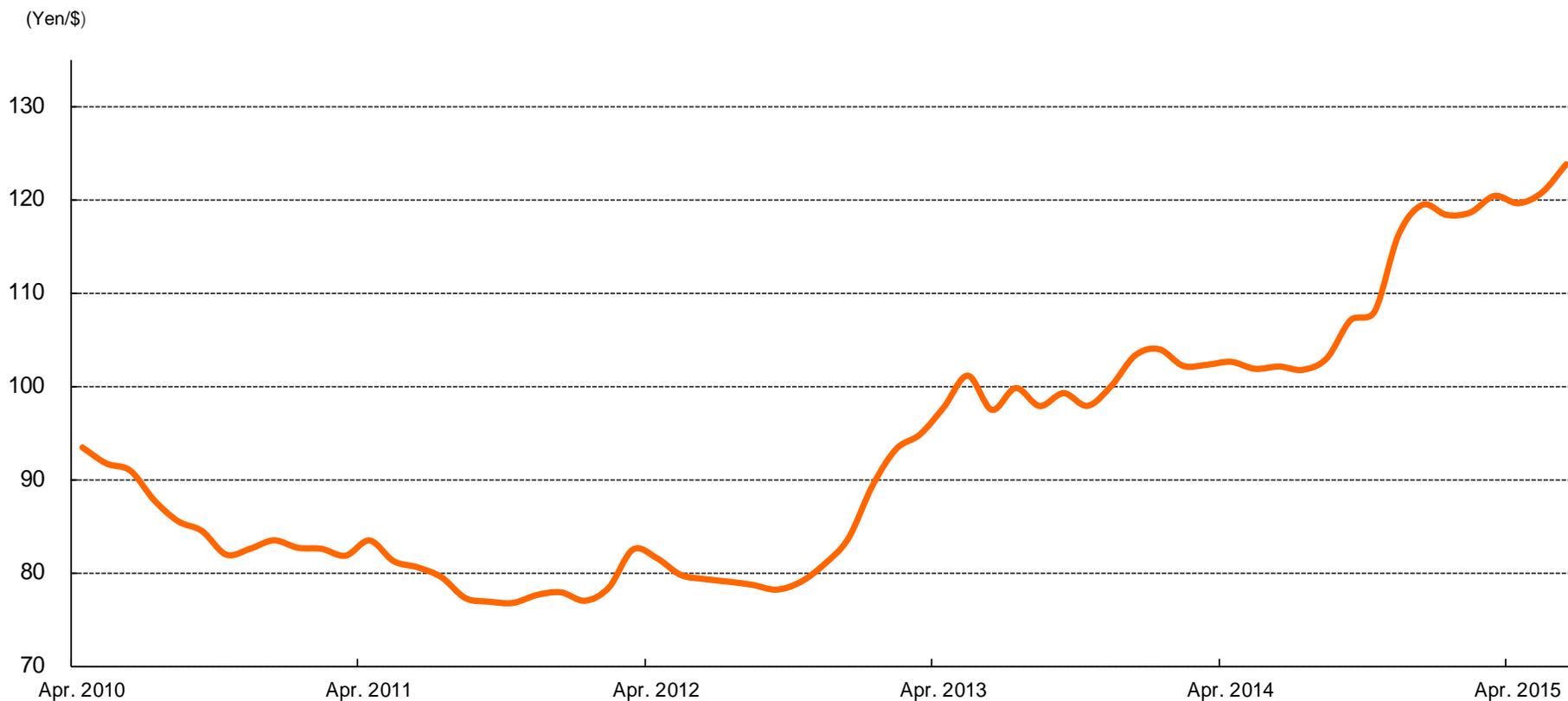
Average Price	FY2010	FY2011	FY2012	FY2013	FY2014					FY2015
					1Q	2Q	3Q	4Q	FY	
Copper	369	385	356	322	308	317	300	264	297	275





# Historical Exchange Rate

Average Price	FY2010	FY2011	FY2012	FY2013	FY2014					FY2015
					1Q	2Q	3Q	4Q	FY	1Q
Exchange Rate	86	79	83	100	102	104	115	119	110	121



# Strategies of Energy Business

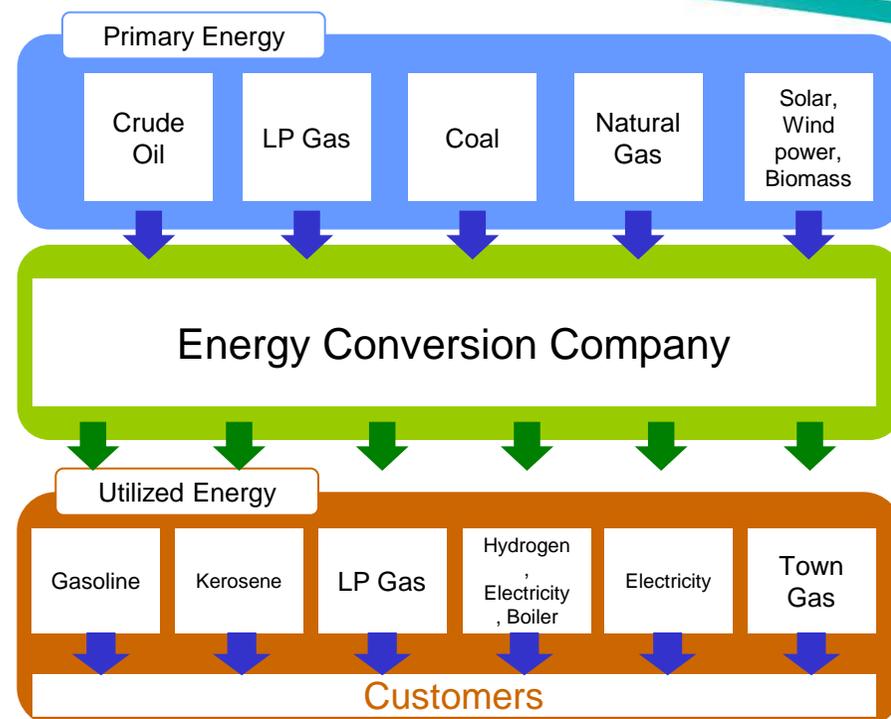
# Strategy and Action Plan

## Petroleum Refining & Marketing/Energy Conversion

Business Environment	Domestic petroleum demand decline and competition with import products continue
Basic Strategy	<b>Strengthening profitability of refining &amp; marketing</b>
<ul style="list-style-type: none"> <li>➤ Strengthening global competitiveness of refineries             <ul style="list-style-type: none"> <li>• Safe and Stable operation</li> <li>• Cost reduction (Energy saving, Utilizing for bottom oil)</li> <li>• Conversion to chemical factory</li> </ul> </li> <li>➤ Establishing strong supply chain             <ul style="list-style-type: none"> <li>• Building strong sales network</li> <li>• Improving brand value (Introduce new Dr. Drive brand, Card strategy, etc.)</li> </ul> </li> </ul>	

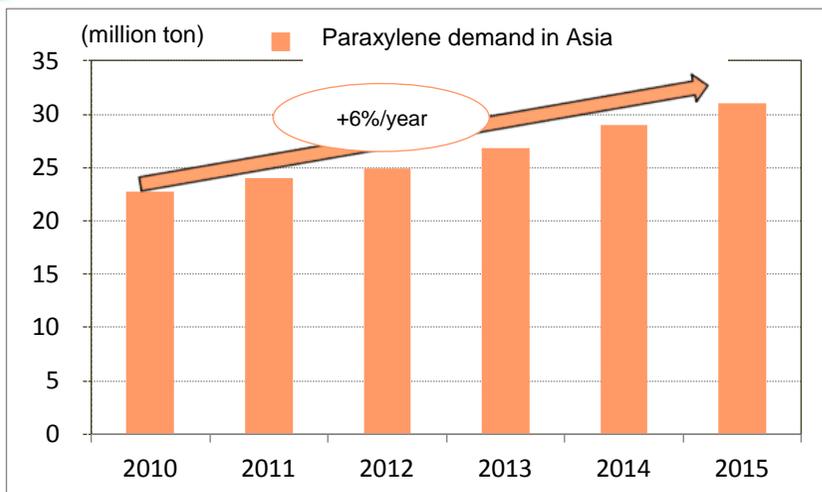
Business Environment	Reformation of energy policy by Japanese government progress
Basic Strategy	<b>Enhancing business as an energy conversion company</b>

- Electricity : Business expansion corresponding to electric system reformation by Japanese government
- Gas : Construction of LNG terminal (Hachinohe & Kushiro) starting operation from Apr. 2015 (Enhancing providing base, Acquiring new demand )
- Coal : Development of coking coal in Canada , Increasing domestic sales
- Solar, Fuel Cell : Mega solar project, fuel cell business (Challenge for realizing a society with independent and distributed energy system)
- Hydrogen : Bring forward demonstration test of providing infrastructure

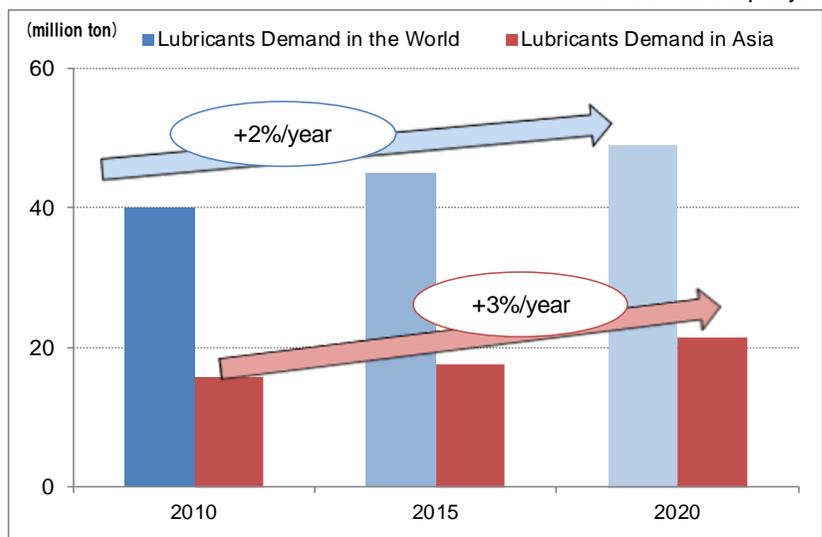


# Strategy and Action Plan

## Basic Chemicals/Lubricants/Specialty & Performance Chemicals



Source : company data



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Source : company data

### Business Environment

Energy and materials market continues to expand centering in Asia

### Basic Strategy

**Establishing presence in overseas market**

#### ➤ Basic Chemicals

- Paraxylene project in Korea (Starting operation in 2014)  
(Providing capacity of JX Group : 2,620 → 3,120 thousand ton)
- Corresponding to business environmental change in olefins and aromatics

#### ➤ Lubricants

- Enhancing business with base oil project in Korea
- Strengthening production and marketing network overseas

### Business Environment

Demand of high value-added products increases in emerging countries

### Basic Strategy

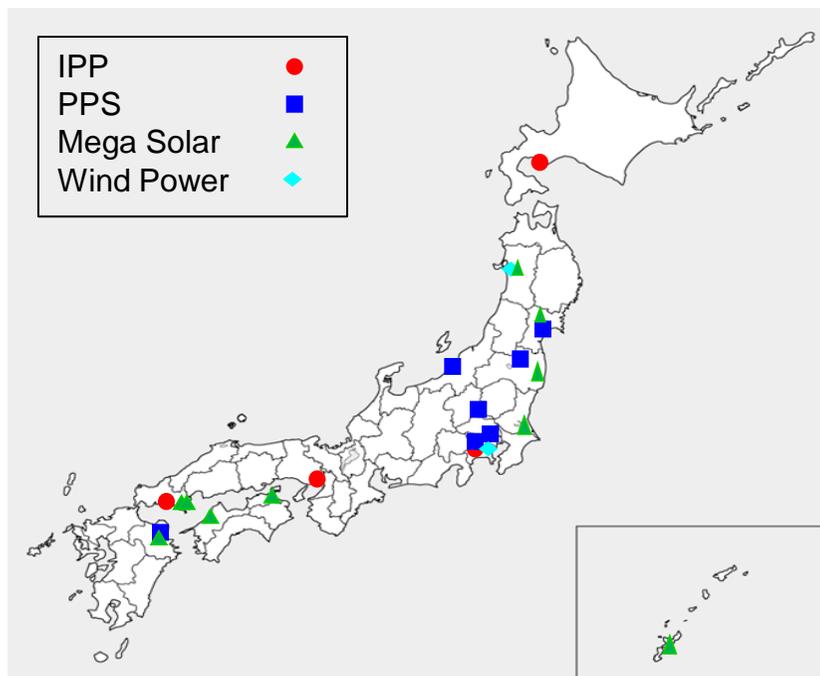
**Acquiring demand of high value-added products based on original technology**

#### ➤ Specialty and Performance Chemicals

- Expanding overseas production network
- Increasing sales volume of cell incubation and others

# Action for Energy Conversion Company (Electricity Business)

## ✓ Location of Electricity Business (As of Jul. 2015)



## ✓ Power Generating Capacity of each Business

IPP	4 stations	828 thousand kW
PPS	7 stations	664 thousand kW
Mega Solar	10 stations	28 thousand kW
Wind Power	2 stations	4 thousand kW
Total (equity basis)		1,524 thousand kW

## ✓ Expansion of Electricity Business

### PPS

- Started receiving electricity from Kawasaki Natural Gas Power Generation Co., Ltd, joint venture with Tokyo Gas Co., Ltd.(2008)
- Scheduled to establish the Solvent De-Asphalting equipment and the power generation facilities in the Kashima Refinery.(FY2015)
- Decided an entry to home electricity retail business.(FY2016)
- Scheduled to establish the power generation facilities in the Mizushima Refinery.(FY2018)

### Mega Solar

Started Operation		Startup Plan	
Sendai	Feb. 2013	Oga	Mar. 2016
Kudamatsu	Mar. 2013	Asaka	Mar. 2016
Kasumigaura	Nov. 2013	Hiroshima	Mar. 2016
Iwaki	Jul. 2014	Hitachi	Mar. 2016
2nd Kudamatsu	Sep. 2014		
Akita	Oct. 2014		
Masaki	Feb. 2015		
Takamatsu	Feb. 2015		
Uruma	Mar. 2015		
Oita	Mar. 2015		

### Wind Power

- Started operation of Wind Power at the Akita Oil Terminal.(2003)
- Started operation of Ohgishima Wind Power Station.(2010)

# Action for Energy Conversion Company (LNG Business)

## ✓ Hachinohe LNG Terminal Project

- Construction of LNG Terminal (Hachinohe & Kushiro) starting operation from Apr. 2015
  - Taking in the demand of city gas and industrial use in the region of northern Tohoku and eastern Hokkaido.
  - Supplying natural gas to general electric utility.  
(For Hachinohe Thermal Power Plant of the Tohoku Electric Power Co., Inc.)

### 【LNG supply system of JX】

#### Hachinohe and Kushiro LNG terminals

	Hachinohe (Import Terminal)	Kushiro (Satellite Terminal)
Operation start	Apr. 2015	
Tank capacity (thousand KL)	140x2 tanks	10x1 tank

#### Mizushima LNG Import Terminal

	Tank No.1	Tank No.2
Operation start	Apr. 2006	Apr. 2011
Tank capacity (thousand KL)	160	160
Ownership	JX Nippon Oil & Energy The Chugoku Electric Power Co., Inc.	50% 50%



# Action for Energy Conversion Company (Coal Business)

## ✓ Our Coal business

### 1. Main Upstream Businesses

- Acquired the interest of Bulga mine in Australia, through an investment to Oakbridge joint venture. (Sep. 1990)
- Started production and sales of Bulga coal. (Mar. 1991)
- Acquired of the interest and dealership of Sukunka /Suska coal deposits, through an investment to Xstrata Coal British Columbia, and started coking coal joint venture with Xstrata Coal. (Mar. 2012)
- Started to develop new mining areas in the Bulga Coal Mine in Australia. (Dec. 2014)

### 2. Sales

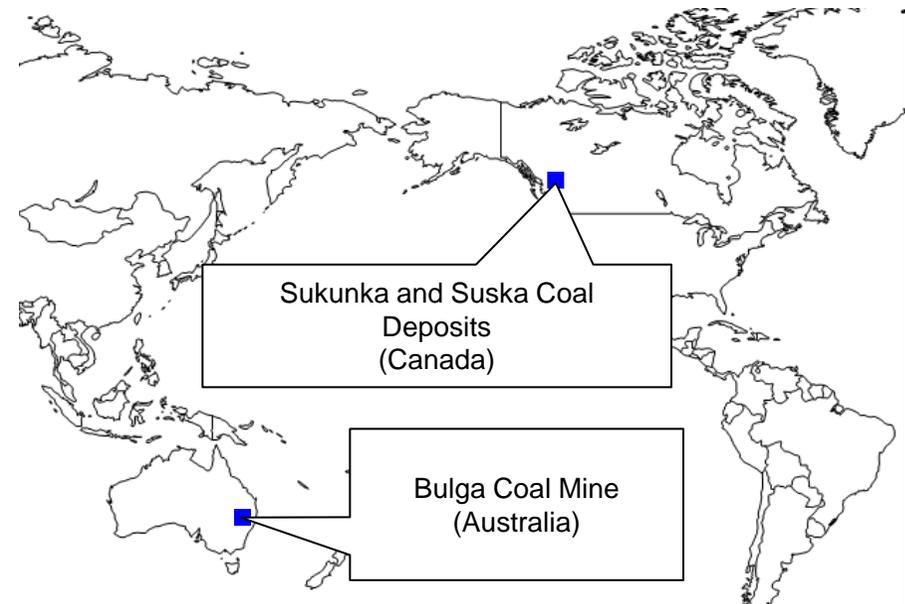
- Mainly supplying Bulga coal to customers. (Approx. 9 million tons/year)

### 3. Coal Transshipment Station

- Coal Transshipment Station was constructed on the site of former Kudamatsu Refinery, and started its operation. (May 2001)

## ✓ Our Interest of Coal Mine/Deposits

	Bulga Coal Mine	Sukunka and Suska Coal Deposits
Location	New South Wales, Australia	British Columbia, Canada
Interest	13.3%	25.0%
Production capacity	Approx. 11million tons/year	Approx. 9.5million tons/year (scheduled)



# Action for Energy Conversion Company (Hydrogen Business)

## ✓ Hydrogen supply system until 2015

- With hydrogen and fuel cell strategy road map gathered by METI, it announced the security of around 100 places of hydrogen supply places around four major urban areas before 2015.
- JX group will try to construct around 40 places equivalent to 40%.

## ✓ Construction situation of hydrogen station of JX group (As of Jul.2015, 12 places .)

### 【Metropolitan area】

- 1 Dr. Drive Self Takeishi inter
- 2 Dr. Drive Self Kasukabe-Chuou
- 3 Dr. Drive Owada
- 4 Dr. Drive Self Sayama-Negishi
- 5 Suginami-ku
- 6 Hachioji city
- 7 Asahi-ku, Yokohama city
- 8 Dr.Drive Kamiida
- 9 Dr.Drive Ebina-Chuou

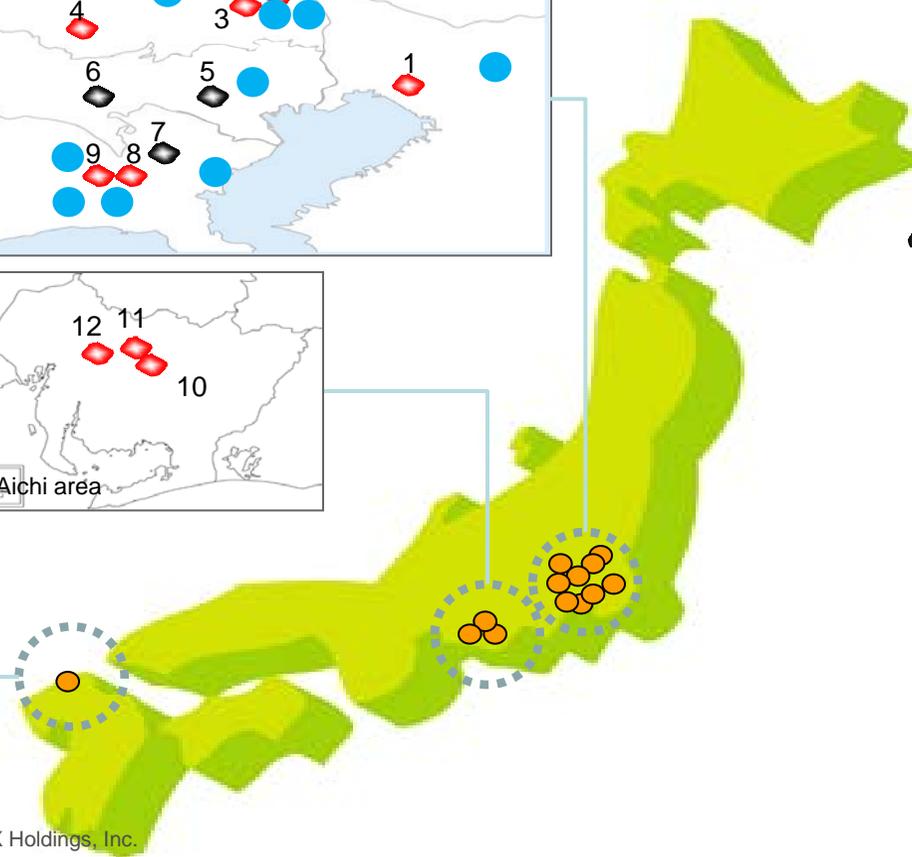
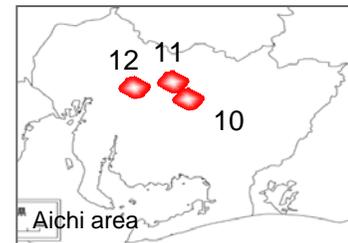
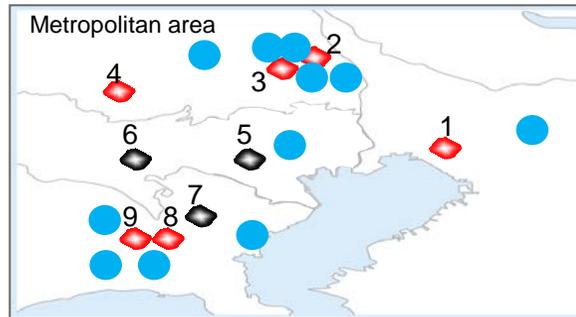
### 【Aichi area】

- 10 Dr.Drive Okazaki-Hane
- 11 Dr.Drive Self Miyoshigaoka
- 12 Dr.Drive Kaminokura

### 【Kitakyushu area】

- 13 Dr.Drive Yahata-Higashida\*1

\*1 Under open time adjustment



● : Built-in type



● : Independent type



● : Portable type\*2



\*2 Under base adjustment

# Enhance Overseas Businesses (Paraxylene)

## Main use of Paraxylene



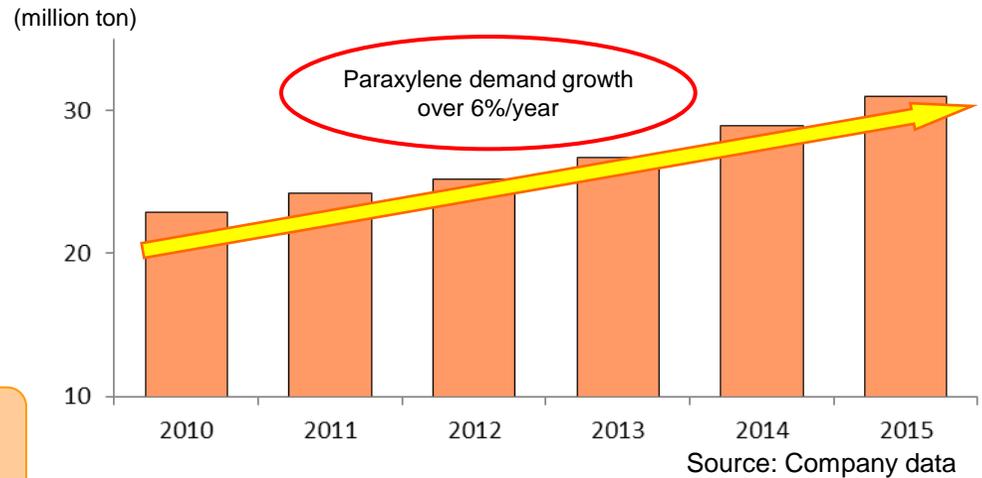
Polyester fiber



PET bottles

## Outlook for Paraxylene Demand in Asia

Group's current supply capacity of Paraxylene  
3,120 thousand tons /year = **No.1 in Asia**



## Outline of a paraxylene joint venture project with SK Group of South Korea

Location : Ulsan, Korea

Capacity : 1,000 thousand tons / year One of the world's largest capacities

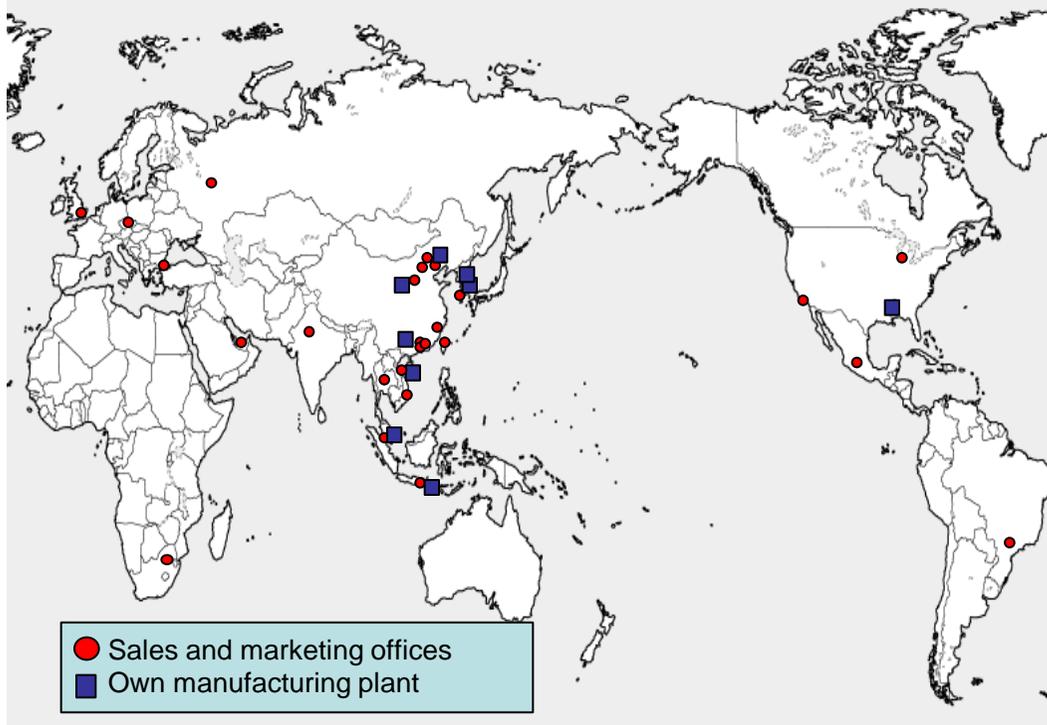
Production Start : June 2014

Investment : approx. 80 billions of yen

Ownership :  
 JX Nippon Oil & Energy 50% -1 share  
 SK Global Chemical 50% +1 share

# Enhance Overseas Businesses (Lubricants)

## ✓ Location of Overseas Lubricants Business (As of Jul. 2015)



### ➤ Expanding overseas business, especially in Asia.

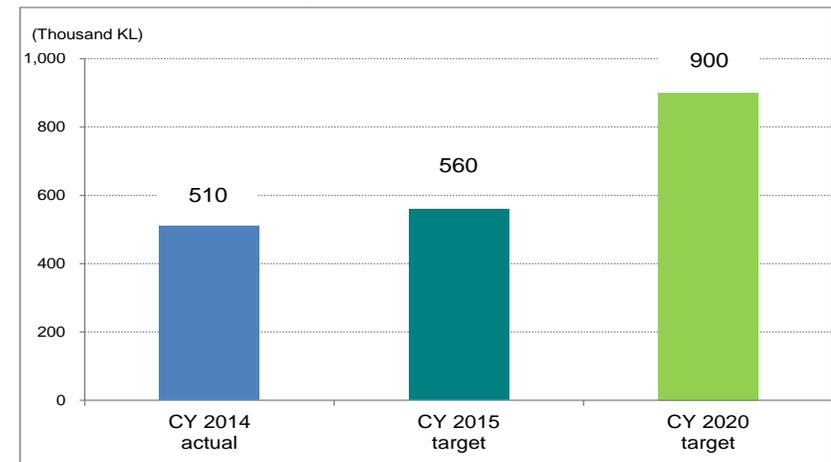
Sales and marketing offices      26  
 Manufacturing plant                      47  
 (Own manufacturing plant:9, Contractors:38)



## ✓ Expansion of Overseas Lubricants Business

- Established a lubricants marketing company in Dubai. (Jul. 2011)
- Lubricants manufacturing plant started its operation in Indonesia. (Apr. 2012)
- Lubricants manufacturing plant started its operation in Vietnam. (Feb. 2014)
- Started joint venture business for lubricants base oil with SK Group of South Korea. (Oct. 2012)
- Established a marketing office in Johannesburg. (Apr. 2014)
- Established a lubricants marketing company in India. (Aug. 2014)
- Established a lubricants marketing company in Mexico. (Jan. 2015)

## ✓ Medium-Term Target of Overseas Lubricants Sales





# Strategies of Oil and Natural Gas E&P Business

# Strategy and Action Plan

## Expanding Reserves and Production Volume Mainly through Exploration



### Business Environment

- Crude oil and natural gas demand increases firmly centered on emerging countries.
- Resources and energy prices remain temporarily stagnant but stay high in mid-and-long term.
- Competition for natural resources escalates.
- Development technologies become more challenging.

### Basic Strategy 1

### Expanding reserves and production volume mainly through exploration

Toward production volume of 200 thousand BD in 2020

- Shifting developing projects to production and projects before FID to developing

(Started production)

- Papua New Guinea LNG project

(On developing)

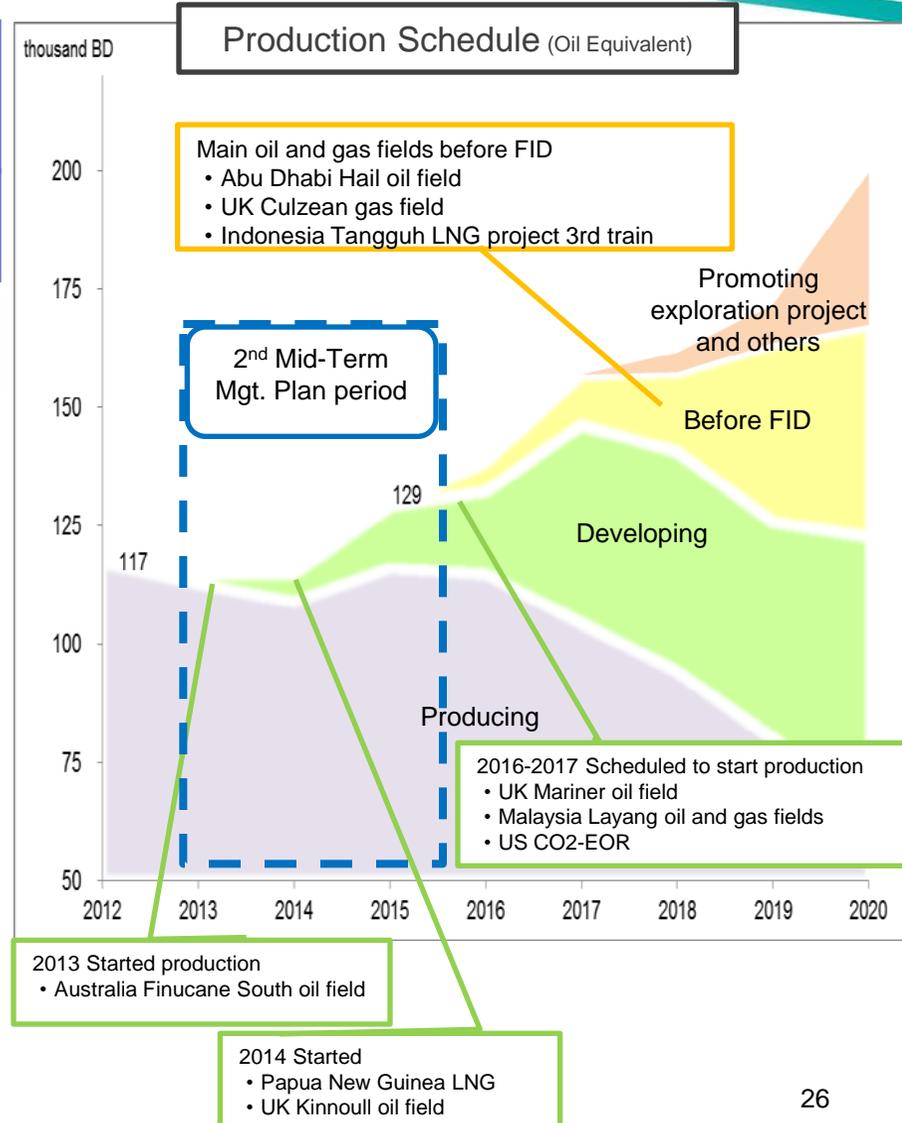
- UK Mariner oil field

(Before FID)

- UK Culzean gas field
- Indonesia Tangguh LNG project 3<sup>rd</sup> train

- Promoting large exploration operator projects (Investing 90billion yen in 3years)

- Malaysia : Deepwater Block R offshore Sabah
- Qatar : Block A



# Strategy and Action Plan

## Focusing on Core Business Area and Technology/Restructuring Business Portfolio

### Basic Strategy 2

#### Establishing superiority by focusing core business area and technology

Aiming to secure independence and increase access to business chance by allocating management resources to core and core candidate countries and accumulating technology through operator projects

#### Core Area

- Core countries: Malaysia, Vietnam, UK
  - Continuing exploration, development and resource acquisition utilizing knowledge and relationship with national petroleum companies etc.
- Core candidates : UAE/Qatar, Myanmar, Australia
  - To be developed as core countries acquiring business chance aiming for operatorship and strengthening business base

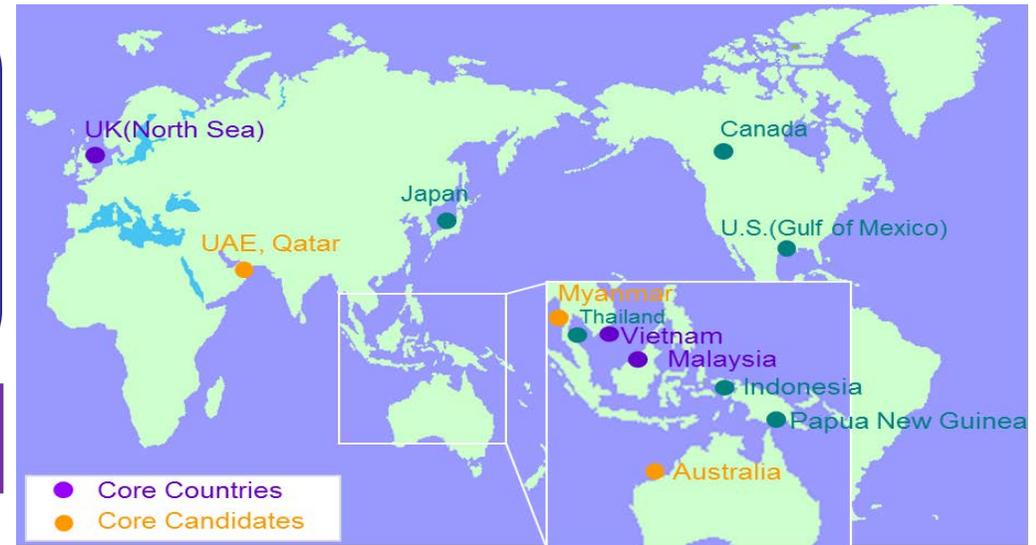
#### Core Technology

- Deepwater
  - Malaysia Deepwater Block R offshore Sabah
  - UK West of Shetland offshore
- Enhanced Oil Recovery
  - Vietnam Rang Dong Oil Field HCG-EOR
  - US CO2-EOR
- Tight Oil, Tight Gas, Heavy Oil
  - UK Mariner oil field

### Basic Strategy 3

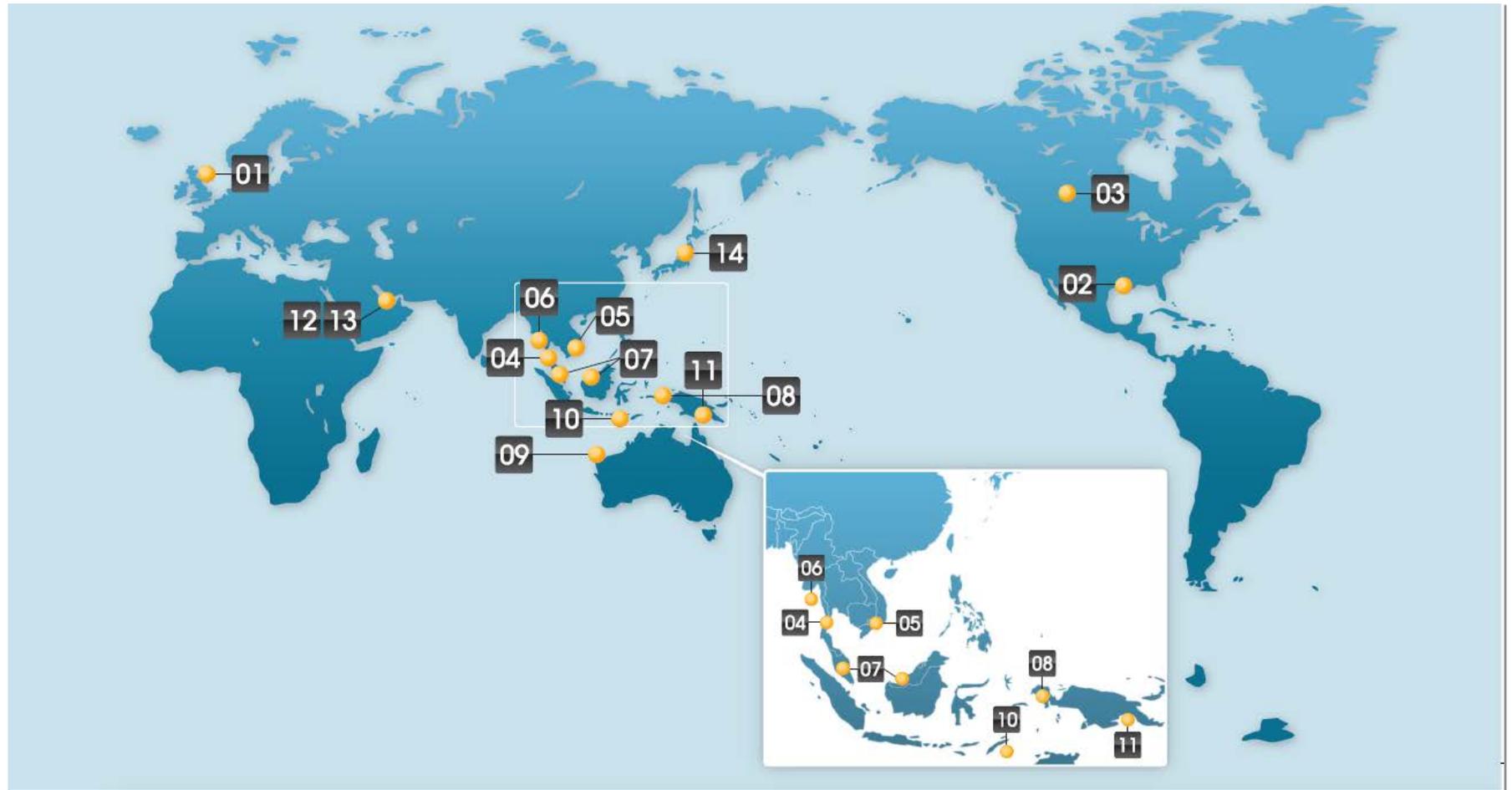
#### Restructuring business portfolio responding to business environmental change

Rearranging asset portfolio timely





# Business Area





# Business Activities

	▼ Project Company	In Production ●	Under Development ●	Under Exploration ●
01	The North Sea	JX Nippon Exploration and Production (U.K.) Ltd.	●	● ●
02	The U.S. Gulf of Mexico	JX Nippon Oil Exploration (U.S.A.) Ltd. JX Nippon Oil Exploration (EOR) Ltd. / Petra Nova Parish Holdings LLC	●	●
03	Canada	Japan Canada Oil Company / Mocal Energy	●	
04	Thailand	JX Nippon Oil & Gas Exploration Corp.		●
05	Vietnam	Japan Vietnam Petroleum Co., Ltd. JX Nippon Oil & Gas Exploration Corp.	●	● ●
06	Myanmar	Nippon Oil Exploration (Myanmar) Ltd.	●	● ●
07	Malaysia	JX Nippon Oil & Gas Exploration (Malaysia) Ltd. JX Nippon Oil & Gas Exploration (Sarawak) Ltd. JX Nippon Oil & Gas Exploration (Deepwater Sabah) Ltd. JX Nippon Oil & Gas Exploration (Offshore Malaysia) Sdn. Bhd.	●	● ●
08	Indonesia	Nippon Oil Exploration (Berau) Ltd.	●	●
09	Australia	JX Nippon Oil & Gas Exploration (Australia) Pty Ltd.	●	●
10	JPDA *	Japan Energy E&P JPDA Pty Ltd.		●
11	Papua New Guinea	Merlin Petroleum Company / Southern Highlands Petroleum Co., Ltd. Nippon Oil Exploration (Niugini) Ltd. / Murray Petroleum Co., Ltd. Nippon Papua New Guinea LNG LLC	●	● ●
12 13	U A E · Qatar	Abu Dhabi Oil Co., Ltd. United Petroleum Development Co., Ltd. JX Nippon Oil & Gas Exploration (Qatar) Ltd.	● ●	● ●
14	Japan	JX Nippon Oil & Gas Exploration Corp.	●	● ●

\* Joint Petroleum Development Area between Australia and East Timor



# Outline of Oil and Natural Gas E&P Projects

	Project Name/Company	Sales Volume(Jan.-Mar. 2015) (1,000BOED)			Reserves(million BOE) *1 *2			Reference pages
		* 1	Oil	Gas	As of the end of 2014	As of the end of 2013	As of the end of 2012	
1	(North Sea, U.K.) JX Nippon Exploration and Production (U.K). Limited	7	5	2	193	184	126	58 ~ 60
2	(Gulf of Mexico(U.S.A.)) JX Nippon Oil Exploration U.S.A. Limited	3	2	1	17	16	23	62 ~ 63
3	(Canada) Japan Canada Oil Company Limited	14	14	0	283	260	253	64
5	(Vietnam and other) Japan Vietnam Petroleum Company, Limited, other	6	6	0				66 ~ 67
6	(Myanmar) Nippon Oil Exploration (Myanmar) Limited	8	1	7				68
7	(Malaysia) JX Nippon Oil & Gas Exploration (Malaysia) Limited JX Nippon Oil & Gas Exploration (Sarawak) Limited	22 13	2 1	20 12				69 ~ 72
8	(Indonesia) Nippon Oil Exploration (Berau) Limited	14	1	13	<Sub Total> 213	<Sub Total> 196	<Sub Total> 233	73
9	(Australia and other) JX Nippon Oil & Gas Exploration (Australia) Pty Ltd., other	1	1	0				74 ~ 76
11	(Papua New Guinea) Merlin Southern Highlands Petroleum Co., Ltd.	13	6	7	<Sub Total> 92	<Sub Total> 95	<Sub Total> 99	77 ~ 78
12,13	(United Arab Emirates, Qatar and others) * 3 Abudhabi Oil Co., Ltd., United Petroleum Development Co., Ltd. and others	12	11	1	48	57	66	79 ~ 80
Total		113	50	63	846	808	800	

\*1 Project company basis.

\*2 Proved reserves and probable reserves , including reserves from projects currently under development.  
(Please refer P81 about our reserve standard.)

\*3 JX Group's equity basis

# Maintain and Expand Production Volume over the Medium/Long Term

## Latest Results

	Country(Block)	Type	Acquisition of Working Interest	Discovery of oil & gas strata	Final Investment Decision	Renewal of Contract	Commencement of Production
May. 2013	Australia (Finucane South Oil Field)	Crude Oil					●
Aug. 2013	Australia(WA-320-P) (WA-155-P2)	Natural Gas	●				
Jun. 2013	Vietnam(05-1b/c)	Oil / Gas		●			
Jul. 2013	Australia(WA-49-R)	Natural Gas		●			
Sep. 2013	Malaysia(Deepwater 2F)	Natural Gas	●				
Nov. 2013	Vietnam(15-2)	Crude Oil				●	
Dec. 2013	Malaysia(Deepwater 3F)	Crude Oil	●				
May. 2014	Malaysia ( Layang Oil/Gas Field)	Oil / Gas			●		
Apr. 2014	PNG LNG Project	Natural Gas					●
Jul. 2014	USA ( CO2-EOR )	Crude Oil	●				
Aug. 2014	Australia(WA-435/437-P)	Oil / Gas		●			
Aug. 2014	Vietnam(05-1b/c)	Oil / Gas		●			
Dec. 2014	UK(Acquisition of Oil Fields)	Oil / Gas	●				
Dec. 2014	UK(Kinnoull Oil Field)	Oil / Gas					●
Mar. 2015	UK (22/16, 17b)	Crude Oil		●			
Apr. 2015	Malaysia(Deepwater R)	Crude Oil		●			

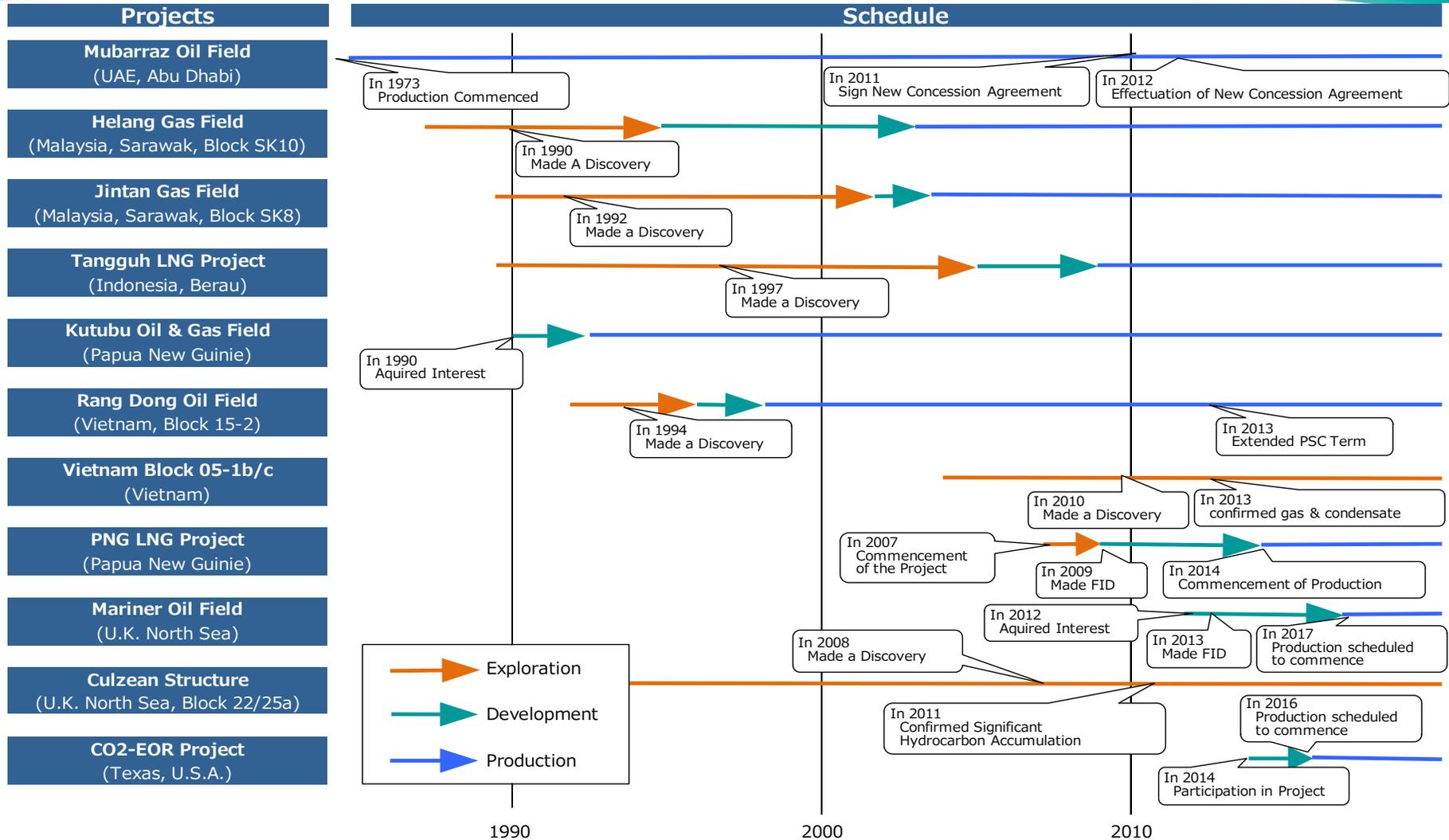
Production scheduled to Commence in 2016

2020~2025

Participation in the Project



# Production Schedule of Principal E&P Projects





# Strategies of Metals Business

# Strategy and Action Plan Resource Development

<b>Business Environment</b>	<ul style="list-style-type: none"> <li>Copper demand increases centered on Asia.</li> <li>Copper price stays at high level in mid-and-long term</li> </ul>
<b>Basic Strategy</b>	<b>Establishing highly profitable structure by enhancing copper mine interest</b>

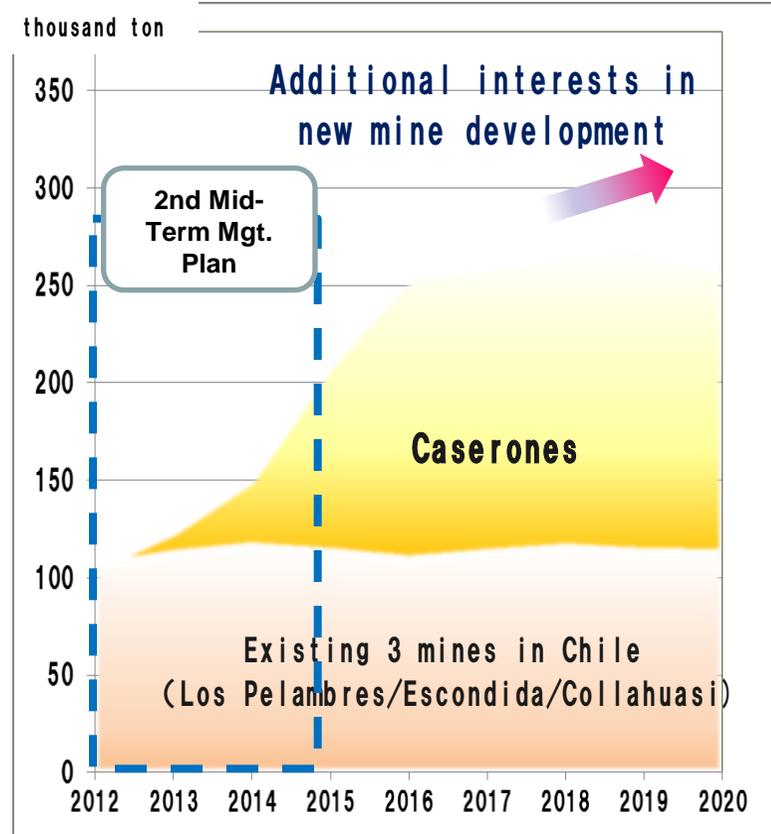
- Increasing copper mine interest
  - Caserones : Jan. 2014 - Start production of copper concentrate
  - Reconsidering Quechua (Peru) development
  - Promoting exploring Frontera(Chile)

	2006	07	08	09	10	11	12	13	14	15	16
Caserones		●	●		●				●		
		Acquired interest	Started FS		FID				Start production		Until 2040
Quechua		●		●		●					
		Acquired interest		Started FS		Finished FS					(Considering development)
Frontera								●			
								Acquired interest			(Additional exploring)

<b>Business Environment</b>	Capital intensification and oligopolization of resource developers proceeds more challenging technology and funds for mine development
<b>Basic Strategy</b>	<b>Acquiring mining interest utilizing original technology</b>

- Developing next-generation smelting technology
  - Nikko Chloride Process (N-Chlo Process): Continuing study for commercialization of achievement at pilot plant in Australia
  - Bio mining : Commenced commercial application of the technology at CODELCO's Radomiro Tomic copper mine in Chile (Feb. 2015)

Copper mine interest



# Strategy and Action Plan

## Smelting & Refining/Electronic Materials/Recycling & Environmental Services



### Smelting & Refining

**Business Environment** Drastic improvement of TC/RC is hardly expected though mine development proceeds.

**Basic Strategy** **Establishing business structure that has world top-class cost competitiveness**

- Safe and stable operation
- Improving smelting margin
  - Improving production efficiency using copper concentrate from Caserones.
  - Using high margin materials.
  - Starting 2 operation of 2<sup>nd</sup> copper concentrate and sulfuric acid carriers.

### Electronic Materials

**Business Environment** Electronic materials demand increases in cutting-edge IT, automobile, medical fields etc.

**Basic Strategy** **Securing world's top share in each product market**

- Realizing early monetization of integrated connector production business (2013.4, Kakegawa Works started operation) and cathode materials business for lithium-ion batteries
- Improving profitability by developing new fields and materials
  - Ultra-thin electro-deposited copper foil, High-functional precision rolled products, Sputtering target for OELD, Sputtering targets for next generation LSIs, Materials for ray sensor

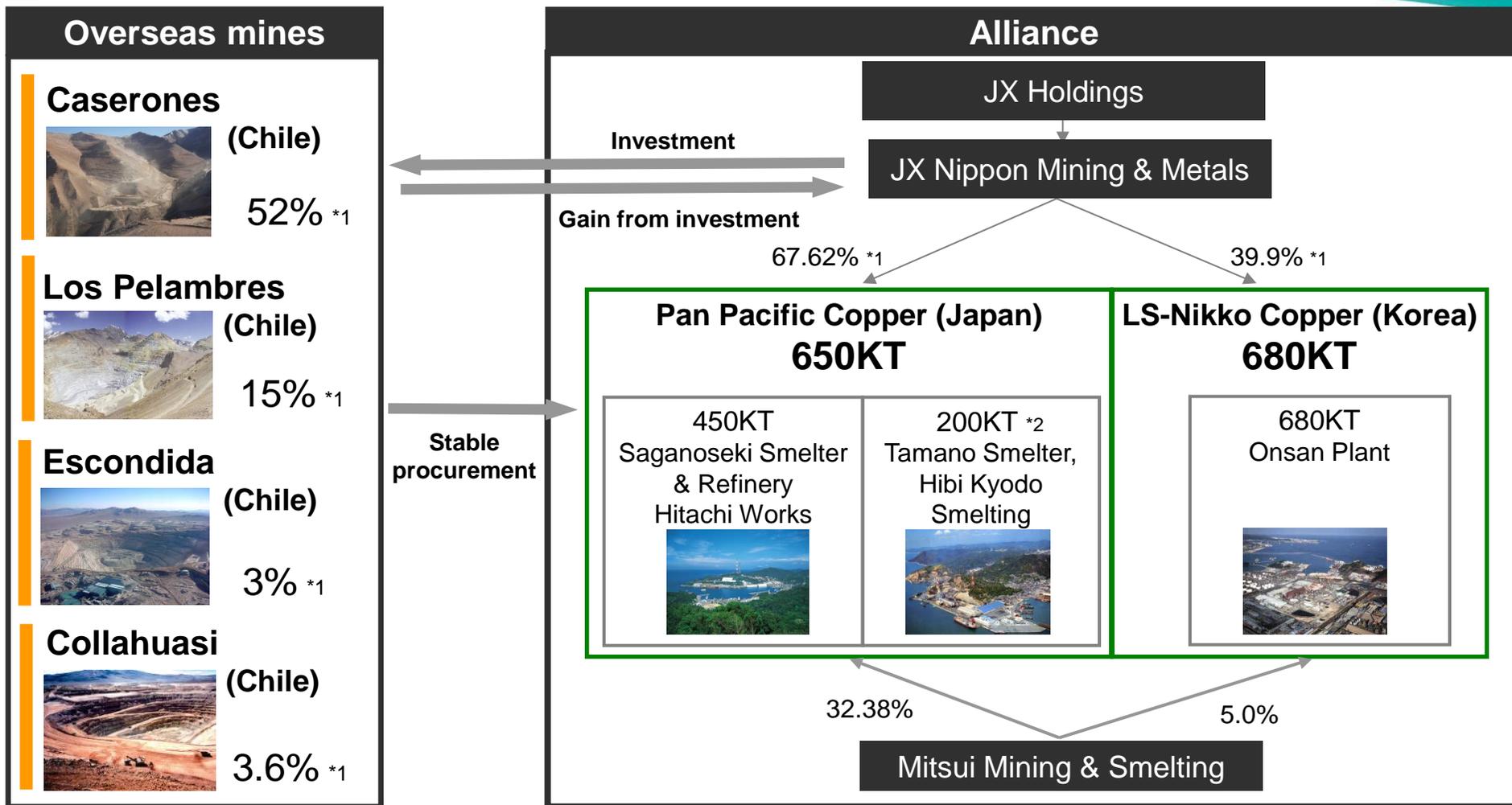
### Recycling & Environmental Services

**Business Environment** Demand for related materials and resource recycling expands in line with growing concerns for eco social needs

**Basic Strategy** **Building international resource recycling business with environmental-friendly zero emission system**

- Enhancing collecting ability of recycled materials overseas : Development to US market
- Enhancing new business : Recycling lithium-ion batteries. Detoxication of materials containing low-concentrated PCB
- Consolidating production site metal by metal and cost reduction

# Copper Business



\*1. Shares indirectly owned by JX Nippon Mining & Metals

\*2. Allocated to PPC. Total Capacity is 290KT.

# Overseas Copper Mine Development ①

## Caserones Copper Mine (Chile)



Acquisition date **May 2006**

Acquisition price **\$137 million**

Initial investment **\$ 4.20 billion**

In July 2011, project finance(\$1.1billion) and long-term loan(\$0.3billion) were concluded.

Ownership (As of Jun. 2015)

**Pan Pacific Copper (PPC)\* 77.37%**

- Jointly established by JX Nippon Mining & Metals (67.62%) and Mitsui Mining & Smelting (32.38%)
- Mitsui & Co., Ltd. 22.63%

Mine life **From 2013 to 2040 (28 years )**

Total production (28years)

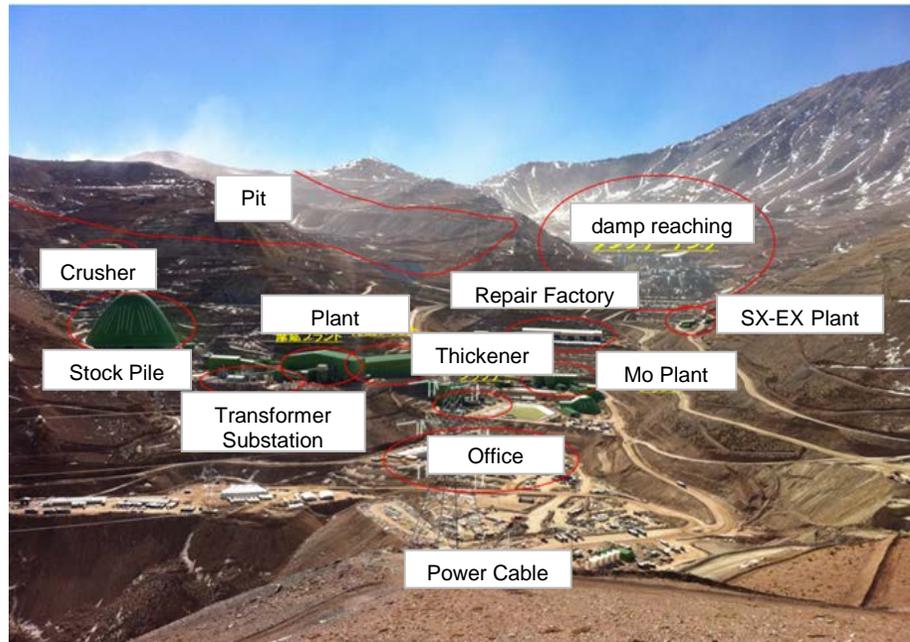
Copper : 3,550kt From Copper Concentrate 3,140kt  
From SX-EW Process 410kt

Molybdenum : 87kt

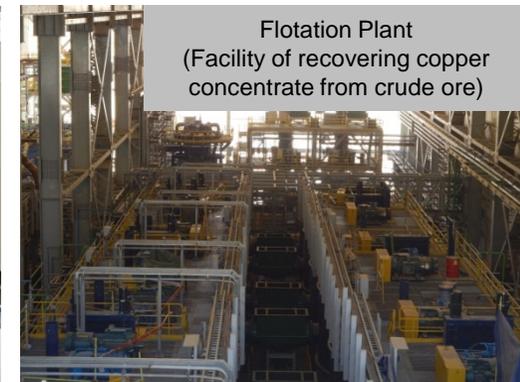
Production plan

In Mar. 2013, started to SX-EW Copper Cathode Production

In May. 2014, started to Copper Concentrate Production



		first 10 years	average (28years)	total (28years)
Copper	Copper Concentrate	150 kt/year	110 kt/year	3140 kt
	SX-EW Process	30 kt/year	10 kt/year	410 kt
	total	180 kt/year	120 kt/year	3550 kt
Molybdenum		3 kt/year	3 kt/year	87 kt



### Ownership

NGEx Resources Inc. (Canada) : 60%

Pan Pacific Copper (PPC) : 40%

\*PPC is Jointly established by JX Nippon Mining(67.62%) and Mitsui Mining & Smelting(32.38%)

September 2012, PPC acquired 40% exploration rights from JOGMEC (Japan Oil, Gas and Metals National Corporation)

### Exploration results for Los Helados

Existence of copper-gold deposit had been confirmed at the time of PPC's acquisition in 2012 through exploratory drilling since 2004.

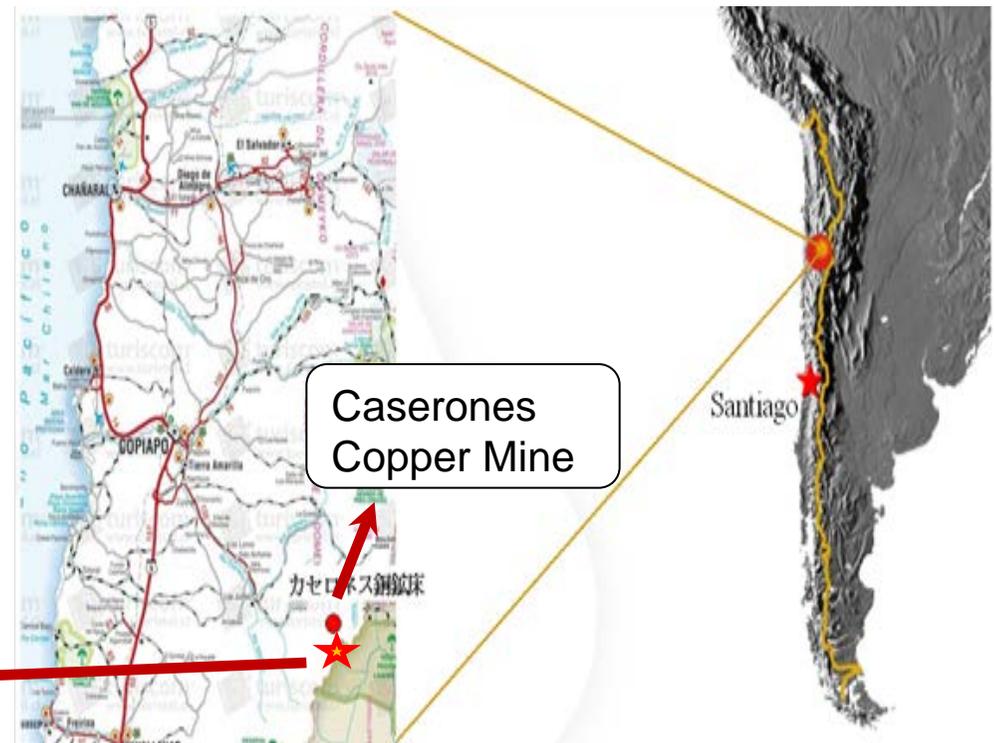
Exploratory works continued after 2012 and preliminary engineering study and economical evaluation have been completed.

Frontera Area Dimension : 24,000ha  
Altitude : 4,400-4,900m

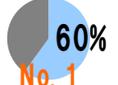
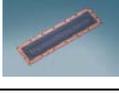
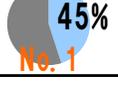
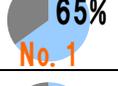
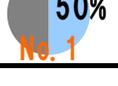
### Main deposits

Los Helados (Chile, 20km south of the Caserones Copper Mine )

\*Filo del Sol (Argentina) October 2014, PPC agreed to transfer all of its exploration rights to NGEx



# Electronic Materials

Main products	Global market share	Primary applications	End-use applications				
			PCs	Mobile phones / Smart phones	Digital, Avs	Telecom infra/ Data canter	Auto mobiles
 Treated rolled copper foil	 70% No. 1	Flexible printed circuit boards	○	⊙	⊙		○
 Semiconductor targets	 60% No. 1	CPUs, memory chips, etc.	⊙	⊙	⊙	○	○
 ITO targets for FPDs *	 30% No. 1	Transparent electrodes	⊙	⊙	⊙		○
 HD media targets	 55% No. 1	HDD (Hard disk drives), etc.	⊙		○	○	
 Phosphor bronze	 20% No. 1	Connectors	○	⊙	○		○
 Corson alloy (C7025)	 45% No. 1	Lead frames, Connectors	⊙	○	○	○	○
 Titanium copper alloy	 65% No. 1	High-class connectors, etc.	○	⊙	○		○
 In-P compound semiconductors	 50% No. 1	Optical communication devices High-speed IC			○	⊙	○

\* Flat Panel Displays

# Electronic Materials (JX Metals Precision Technology Co., Ltd. Kakegawa Works)

## ✓ Expansion of Automotive Related Business

- Eco-friendly car market which is applying full of environmental technology has a high potential of growth in near future.
- Demand for connectors used in electric components of eco- friendly car is expected to expand further.



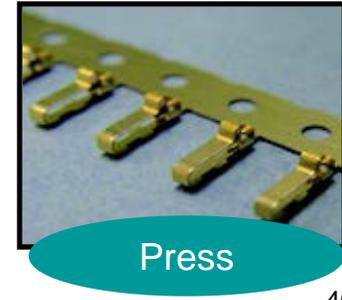
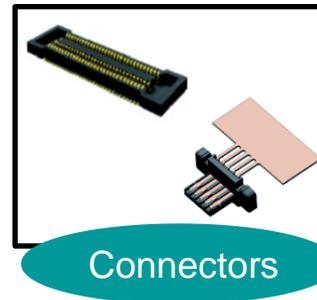
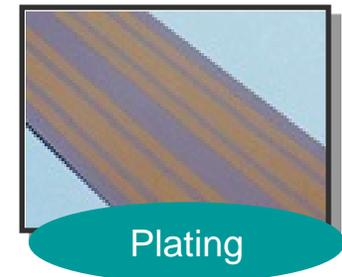
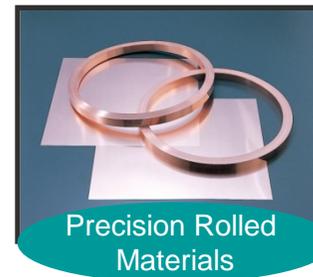
## ✓ OEM Construction of Integrated Plant of Connector (Kakegawa Works)

- Decided to construct a new plant in Kakegawa with integrated production system (press, plating and assembly) for connector (Feb. 2011).
- Started operation (Apr. 2013) .

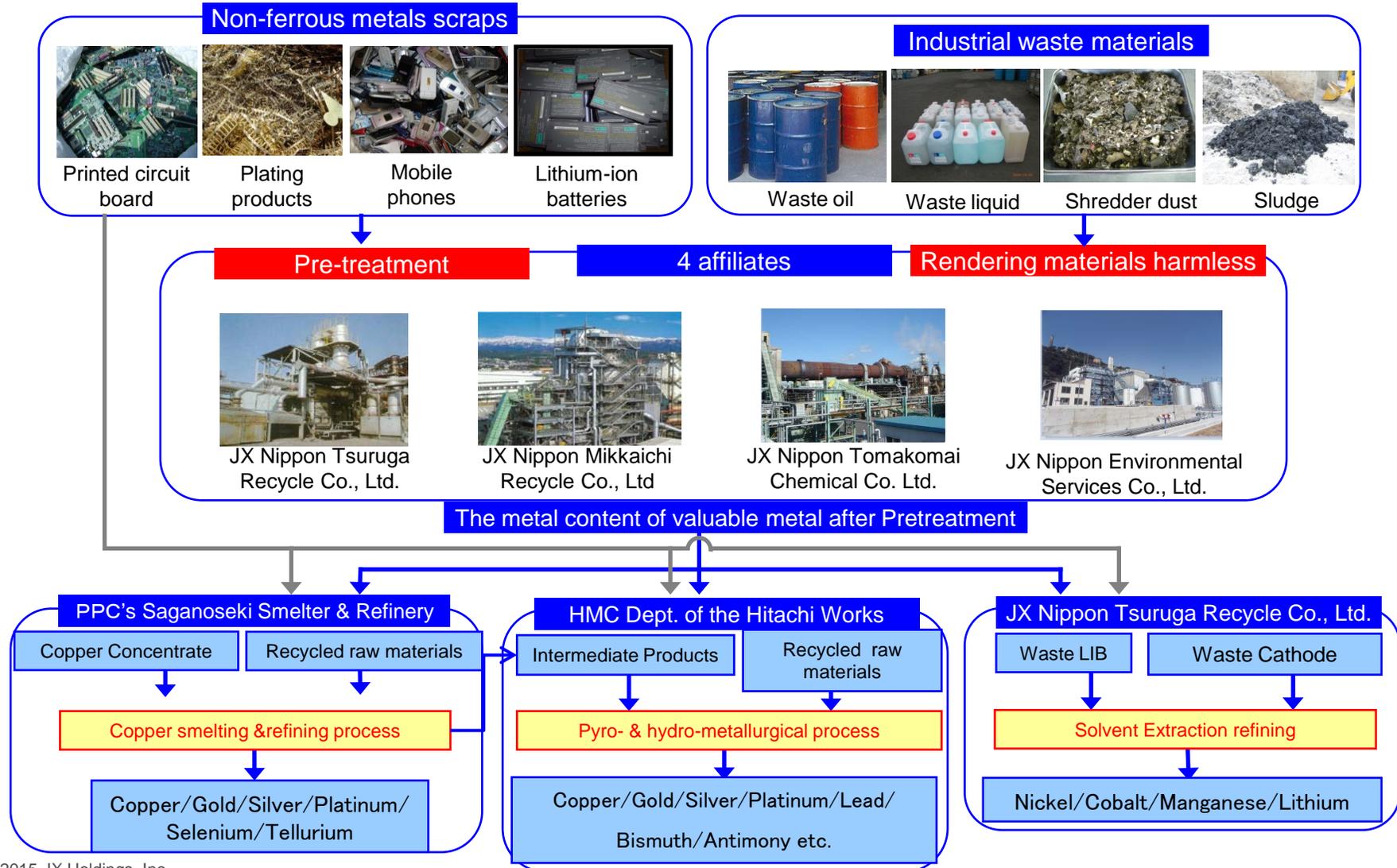


## ✓ Integrated Production System of Connector and Precision Materials

Process Use+Product	Press	Plating	Assembly
Connector for Automobile etc.	Kakegawa Works		
Connector for IT etc.	Nasu Works	Esashi Works Tatebayashi Works	Nasu Works

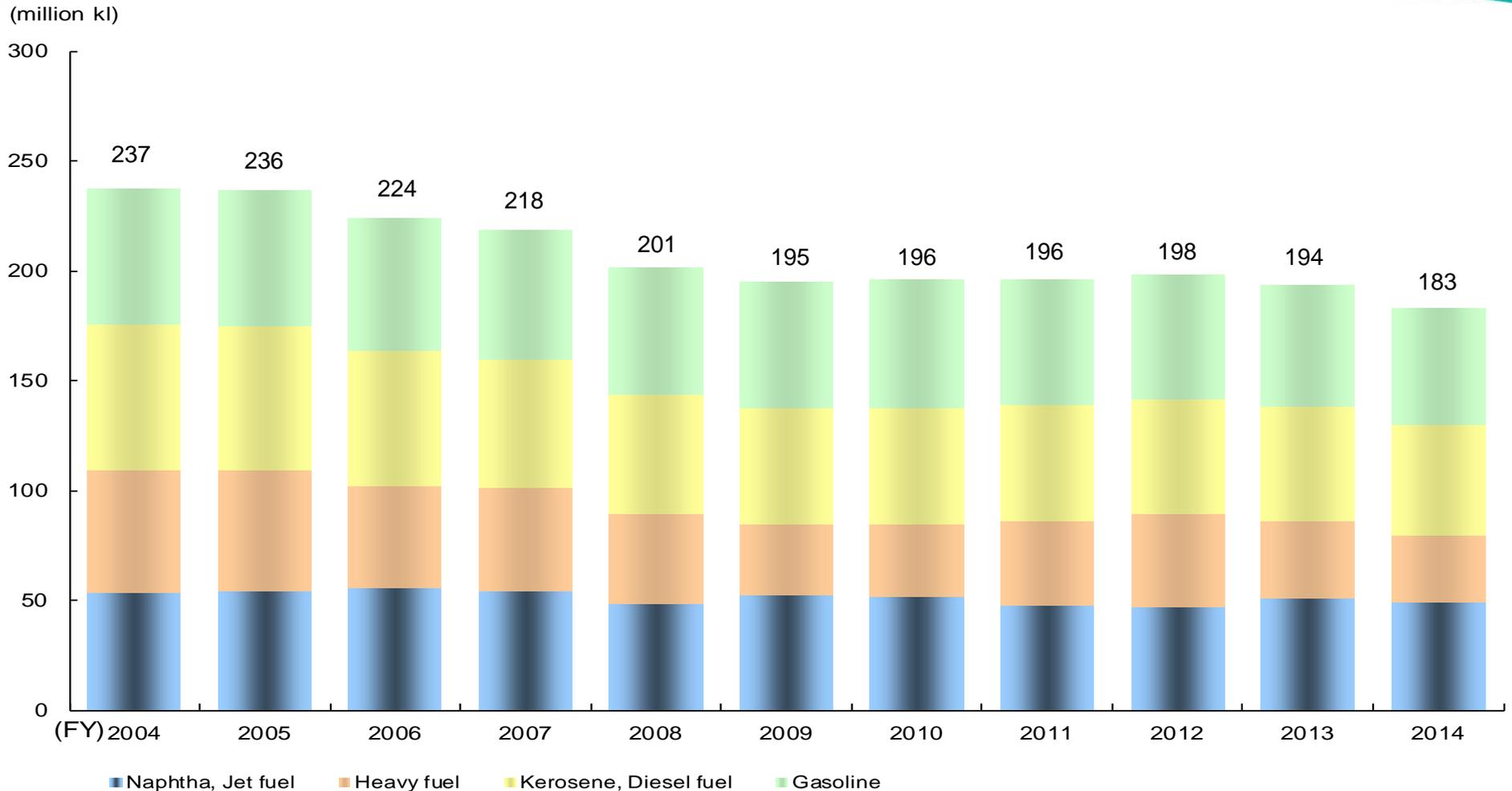


# Recycling and Environmental Services



# Business Environment and Data - Energy Business -

# Demand for Petroleum Products ( Japan )



Note: Excluding Crude Oil for electric power plants.

Source: Petroleum Association of Japan and Company data

# Capacity Reduction Plan, Integration Synergies, Enhanced Efficiency of Refineries



## ✓ Capacity Reduction Plan

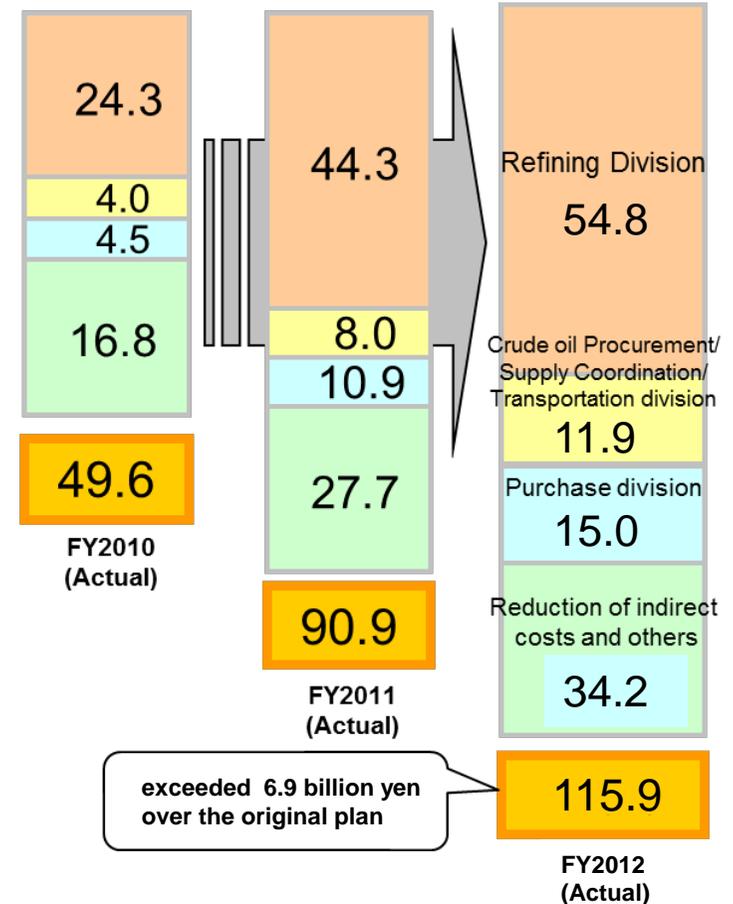
(JX)  
Dec.2008. Apr. 2014. \*  
1,891 ⇒ 1,426 thousand BD

(Japan)  
Dec.2008. Apr. 2014. \*  
4,934 ⇒ 3,947 thousand BD

Refinery	Due Date	Reduction Capacity	Completion
Toyama	March, 2009	(60) thousand B/D	✓
Kashima	May, 2010	(21)	✓
Oita	May, 2010	(24)	✓
Mizushima	June, 2010	(110)	✓
Negishi	October, 2010	(70)	✓
Muroran	March, 2014	(180)	✓
Subtotal		(465)	
Osaka	October, 2010	(115) Convert to exportation refinery	✓
Total		(580)	

Corresponded to Sophistication of Energy Supply Structure Act

## ✓ Integration Synergies and Enhanced Efficiency of Refineries

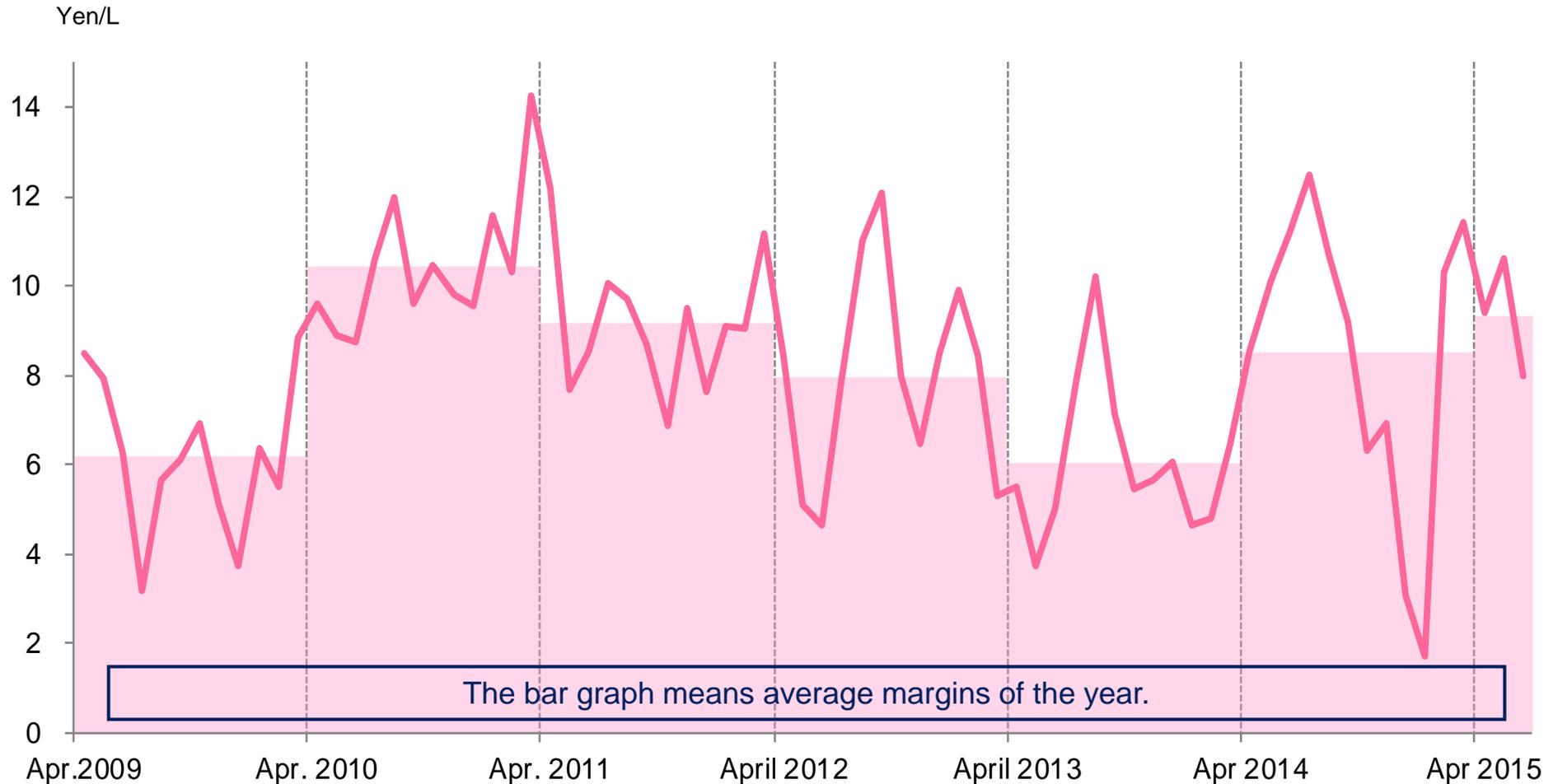


(billion yen; Accumulated effect vs. FY2009)

\* Includes Osaka International Refining Company, Limited, and the Mizushima refinery and Kashima refinery condensate splitters.



# Margins\* of Gasoline, Kerosene, Diesel Fuel and Fuel Oil A



\* Margin = Spot Price – All Japan Crude Oil CIF (including petroleum tax and interest)

# JX Group's Market Share and Demand in Japan, Historical CDU<sup>\*1</sup> Utilization Rate

## Domestic Market Share

	FY2013 (%)	FY2014 (%)
a) Gasoline	34.1	33.4
b) Kerosene	41.5	37.2
c) Diesel Fuel	38.7	36.4
d) Fuel Oil A	44.3	39.8
a+b+c+d	37.6	35.5
Total Domestic Fuel <sup>*2</sup>	36.9	35.0

## Domestic Demand

	FY2013 (1,000KL)	FY2014 (1,000KL)	Changes vs. FY2013 (%)
a) Gasoline	55,477	52,975	95.5
b) Kerosene	17,911	16,662	93.0
c) Diesel Fuel	34,089	33,583	98.5
d) Fuel Oil A	13,438	12,360	92.0
a+b+c+d	120,914	115,581	95.6
Total Domestic Fuel <sup>*2</sup>	193,596	182,951	94.5

## CDU<sup>\*1</sup> Utilization Rate (Excluding the impact of periodic repair and earthquake)

	FY2013	FY2014	FY2015 1Q
JX Group <sup>*3</sup>	89%	91%	94%

\*1 Crude Distillation Unit

\*2 Excluding crude oil for electric power plants

\*3 Excluding condensate splitters of Mizushima and Kashima

Source: Petroleum Association of Japan and Company data

# Number of Service Stations (Fixed-Type)

(As of the end of fiscal years)

	FY2012	FY2013	FY2014	FY2015.6 <sup>*5</sup>
JX Group	11,283	11,017	10,783	10,706
EMG <sup>*1</sup>	3,475	3,379	3,481	3,481
Idemitsu Kosan	3,861	3,786	3,725	3,725
Showa Shell Sekiyu	3,555	3,442	3,317	3,317
Cosmo Oil	3,325	3,228	3,133	3,133
Others <sup>*2</sup>	1,130	1,096	836	836
Oil Companies	26,629 (74.8%)	25,948 (74.6%)	25,275 (74.6%)	25,198 (74.6%)
Private Brands and Others <sup>*3</sup>	8,971 (25.2%)	8,852 (25.4%)	8,625 (25.4%)	8,602 (25.4%)
Total <sup>*3</sup>	35,600	34,800	33,900	33,800

**Notes:**

\*1. Figures are total of Esso, Mobil and Tonen General Sekiyu until FY2013.

Since FY2014, figures are total of Esso, Mobil, Tonen General Sekiyu and Mitsui Oil & Gas.

\*2. Figures are total of Taiyo Petroleum, Kygnus Sekiyu and Mitsui Oil & Gas until FY2013.

Since FY2014, figures are total of Taiyo Petroleum and Kygnus Sekiyu.

\*3. Estimated by JX Holdings.

\*4. Figures include only self-service retail outlets that are affiliated to oil companies.

\*5. Data except for JX Group is as of the end of Mar 2015.

## <Number of Company-Owned Service Stations>

	FY2012	FY2013	FY2014	FY2015.6
JX Group	2,487	2,433	2,404	2,391

## <Number of Self-Service Stations>

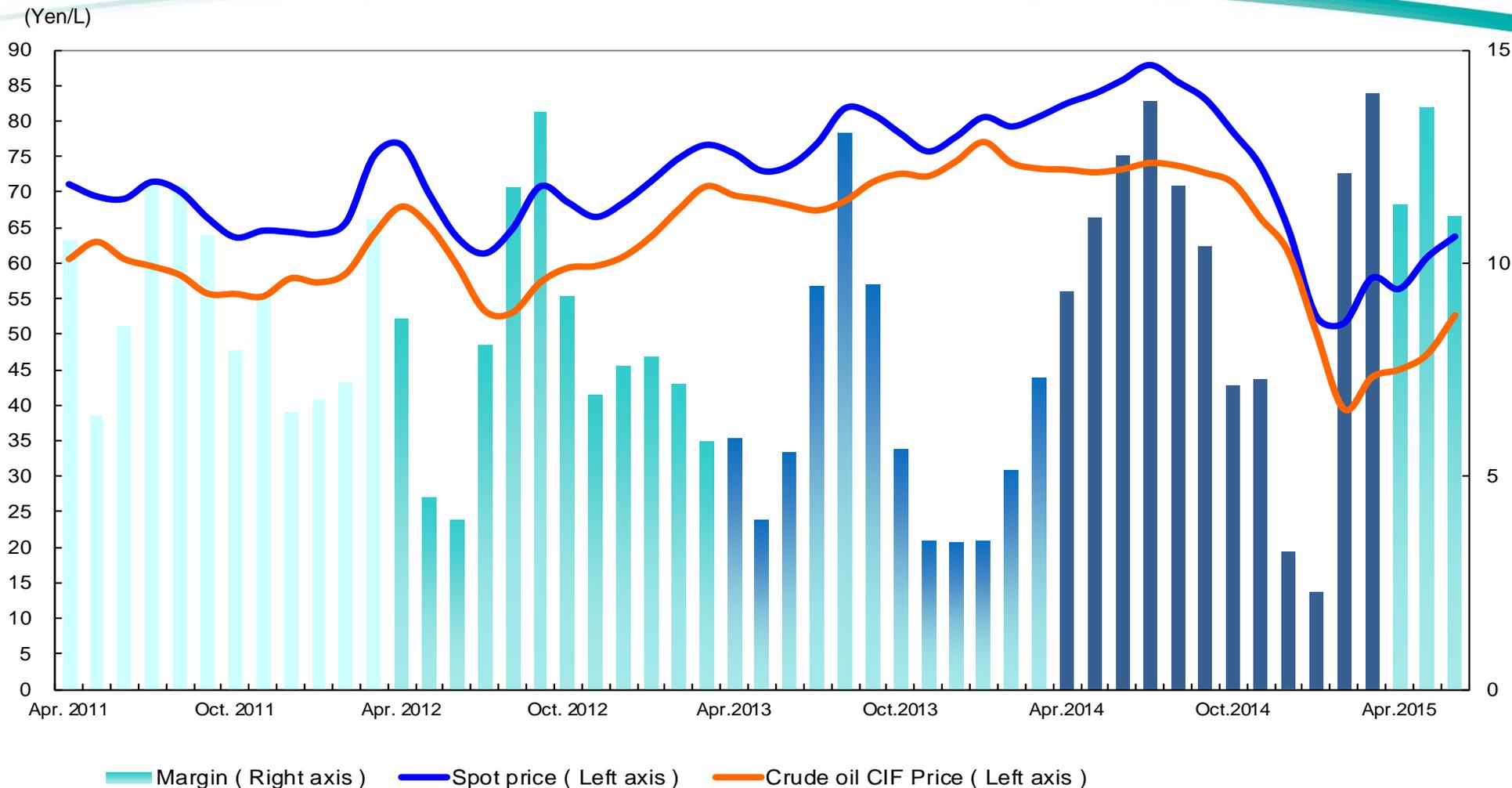
	FY2012	FY2013	FY2014	FY2015.6 <sup>*5</sup>
JX Group	2,535	2,654	2,752	2,757
Total for Japan <sup>*4</sup>	7,172	7,415	7,622	7,627

## Sales Volume by Product

	FY2014 1Q	FY2015 1Q	variation	Changes vs. FY2014 1Q
	ten thousand KL	ten thousand KL	ten thousand KL	
<b>Gasoline</b>	421	432	11	2.7%
Premium	50	51	1	1.8%
Regular	368	379	11	3.0%
<b>Naphtha</b>	76	85	9	12.4%
<b>JET</b>	41	35	-6	-14.1%
<b>Kerosene</b>	61	72	11	18.7%
<b>Diesel Fuel</b>	289	300	11	3.6%
<b>Fuel Oil A</b>	102	109	7	6.5%
<b>Heavy Fuel Oil C</b>	164	173	9	5.2%
For Electric Power	113	121	8	7.3%
For General Use	51	51	0	0.0%
<b>Total Domestic Fuel</b>	<b>1,154</b>	<b>1,206</b>	<b>52</b>	<b>4.5%</b>
<b>Crude Oil</b>	65	67	2	3.4%
<b>Lubricants &amp; Specialities</b>	64	63	-1	-1.6%
<b>Petrochemicals (ten thousand ton)</b>	135	156	21	15.8%
<b>Exported Fuel</b>	198	237	39	19.6%
<b>LPG (ten thousand ton)</b>	6	8	2	33.3%
<b>Coal (ten thousand ton)</b>	124	190	66	52.8%
<b>Total Excluding Barter Trade &amp; Others</b>	<b>1,746</b>	<b>1,927</b>	<b>181</b>	<b>10.4%</b>
<b>Barter Trade &amp; Others</b>	447	483	36	8.0%
<b>Total</b>	<b>2,193</b>	<b>2,409</b>	<b>216</b>	<b>9.9%</b>



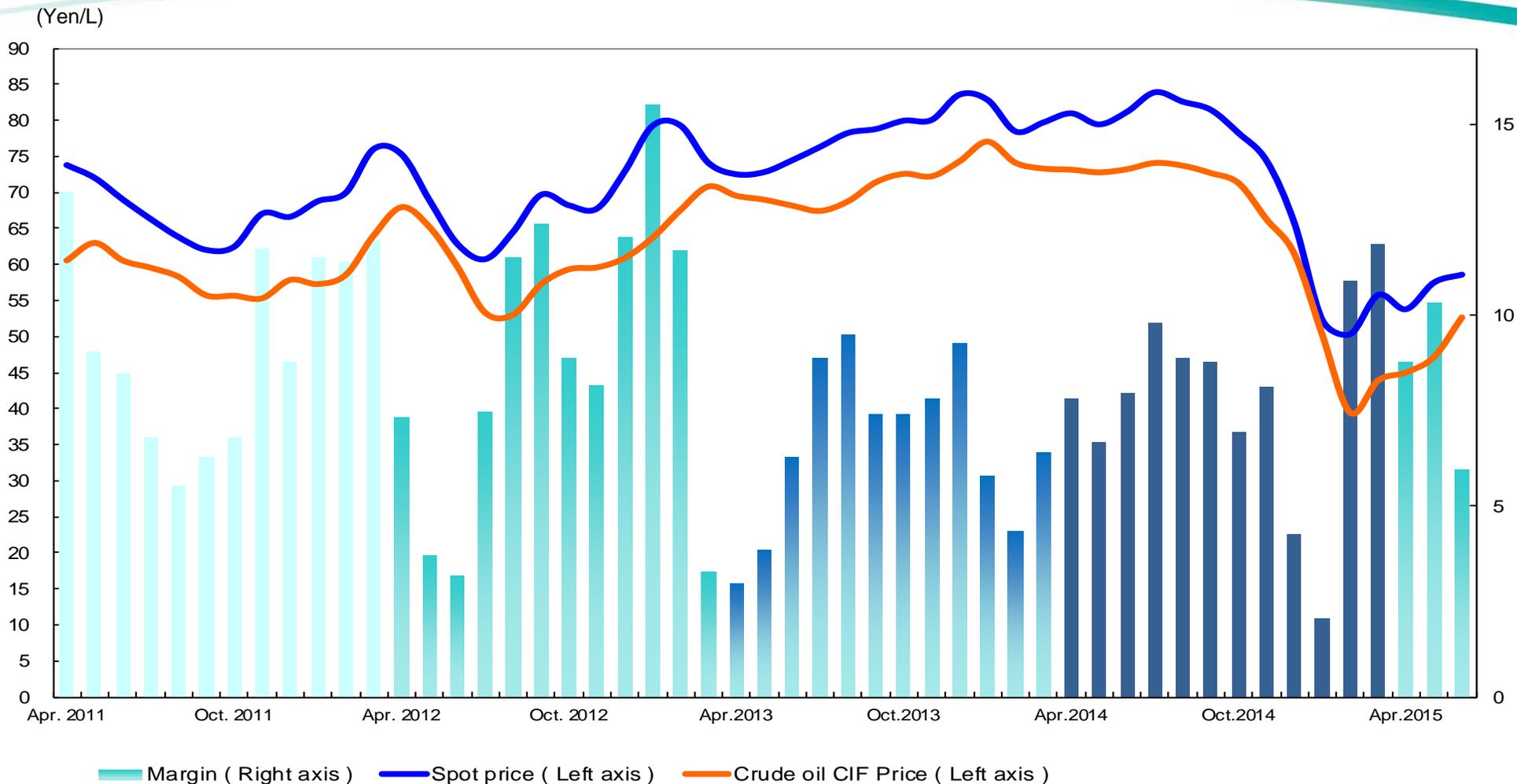
# Domestic Market Margin\* (Gasoline)



\* Margin = Spot Price – All Japan Crude Oil CIF (including petroleum tax and interest)    Source : Trade statistics (Ministry of Finance, Japan)



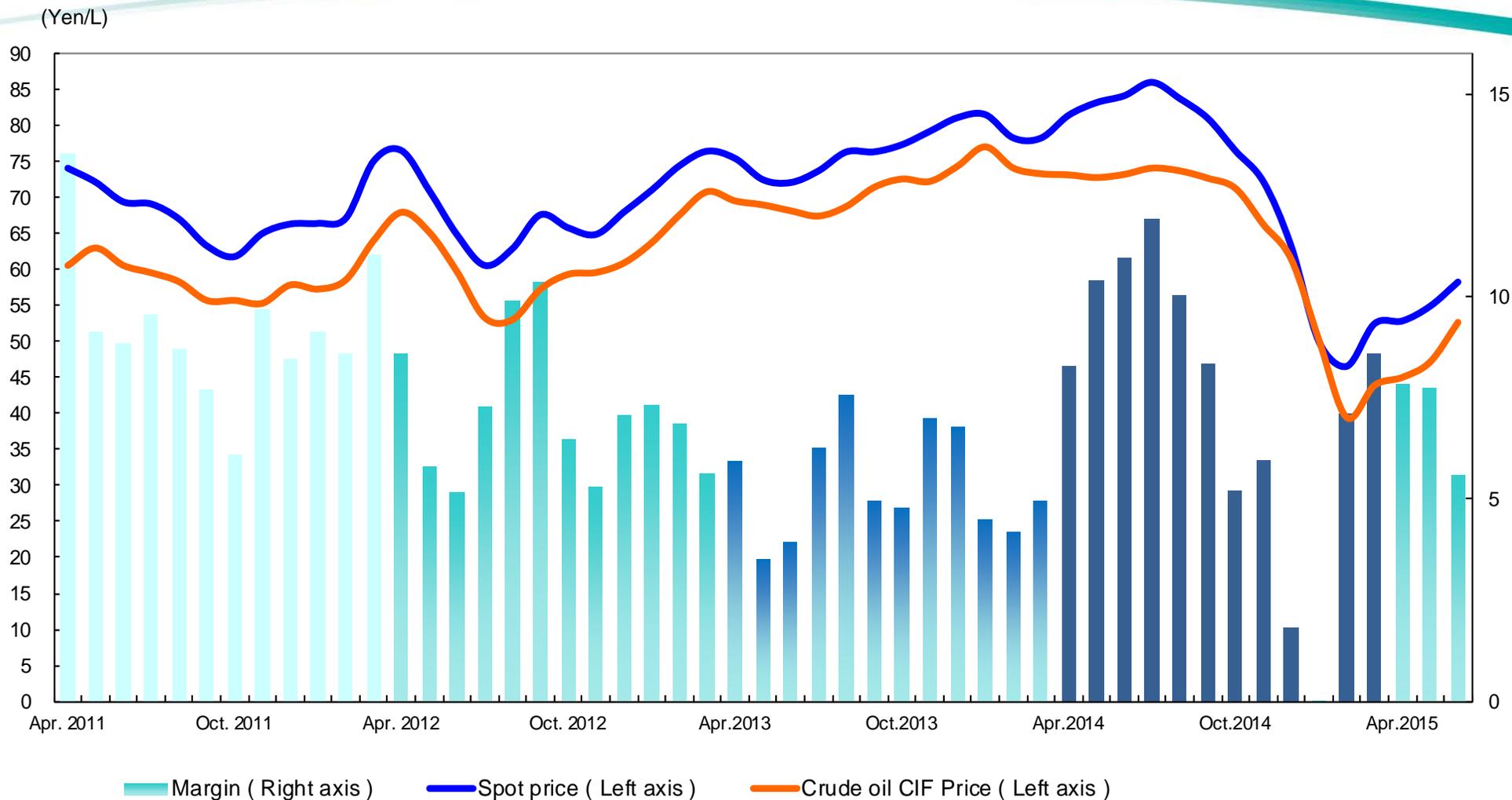
# Domestic Market Margin\* (Kerosene)



\* Margin = Spot Price – All Japan Crude Oil CIF (including petroleum tax and interest) Source : Trade statistics (Ministry of Finance, Japan)



# Domestic Market Margin\* (Diesel Fuel)

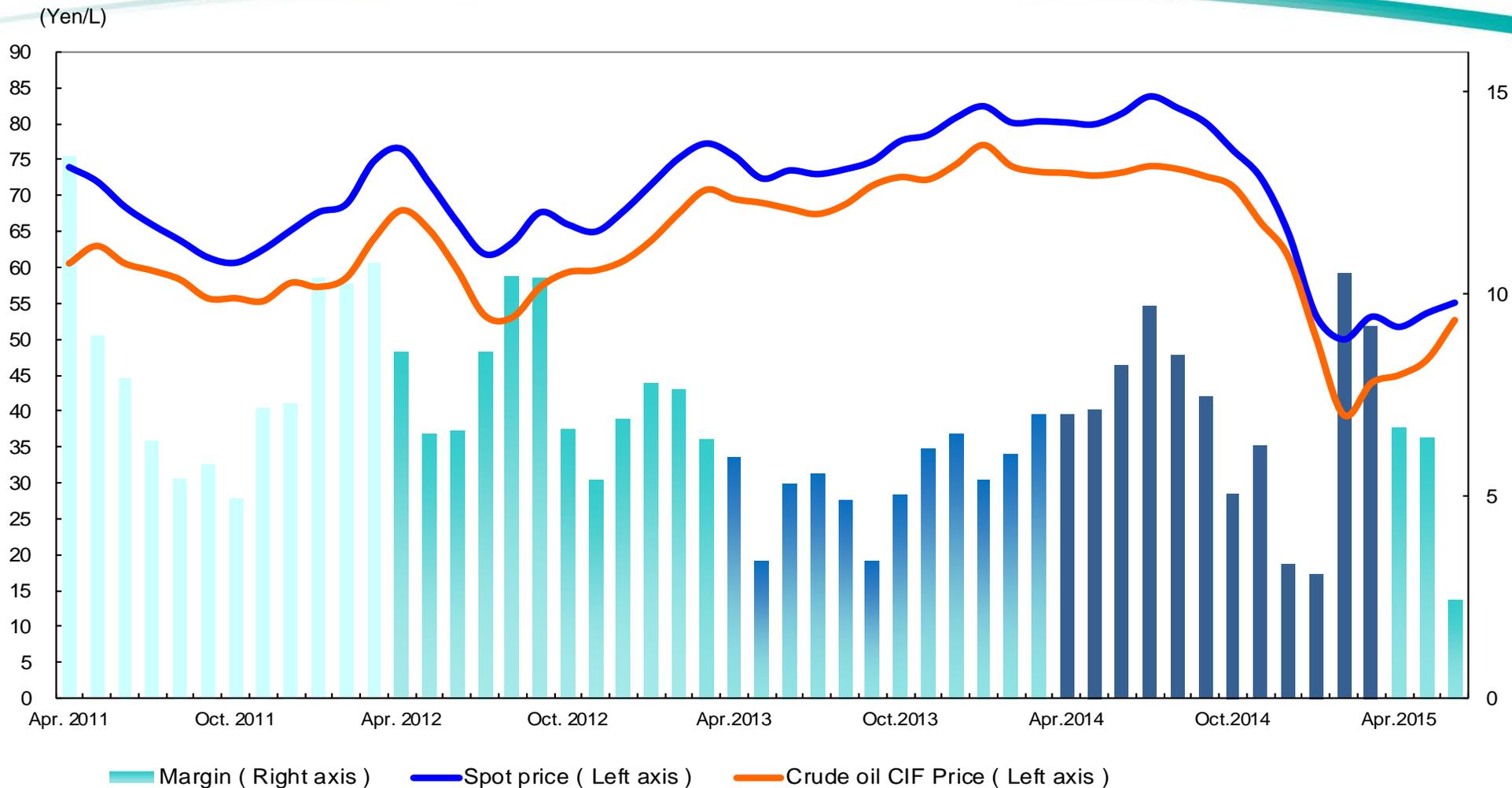


\* Margin = Spot Price – All Japan Crude Oil CIF (including petroleum tax and interest)

Source : Trade statistics (Ministry of Finance, Japan)



# Domestic Market Margin\* (Fuel Oil A)

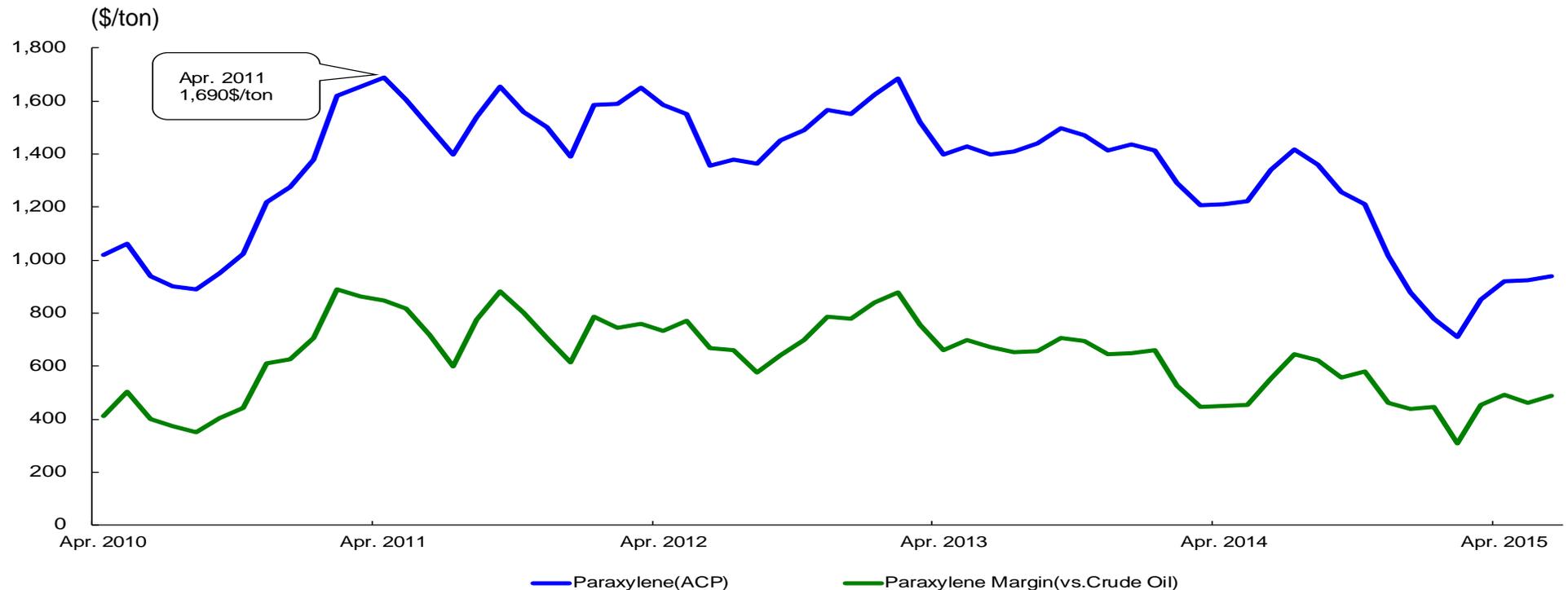


\* Margin = Spot Price – All Japan Crude Oil CIF (including petroleum tax and interest)

Source : Trade statistics (Ministry of Finance, Japan)

# Paraxylene Price and Margin (vs. Crude Oil)

Average Price	FY2010	FY2011	FY2012	FY2013	FY2014					FY2015
					1 Q	2Q	3Q	4Q	FY	1 Q
Asian Contract Price	1,162	1,555	1,510	1,401	1,259	1,345	1,035	780	1,105	927
Margin (vs. Crude Oil)	550	754	732	639	487	608	494	403	498	481



\* In case of ACP undecided, average price of spot market is adopted.

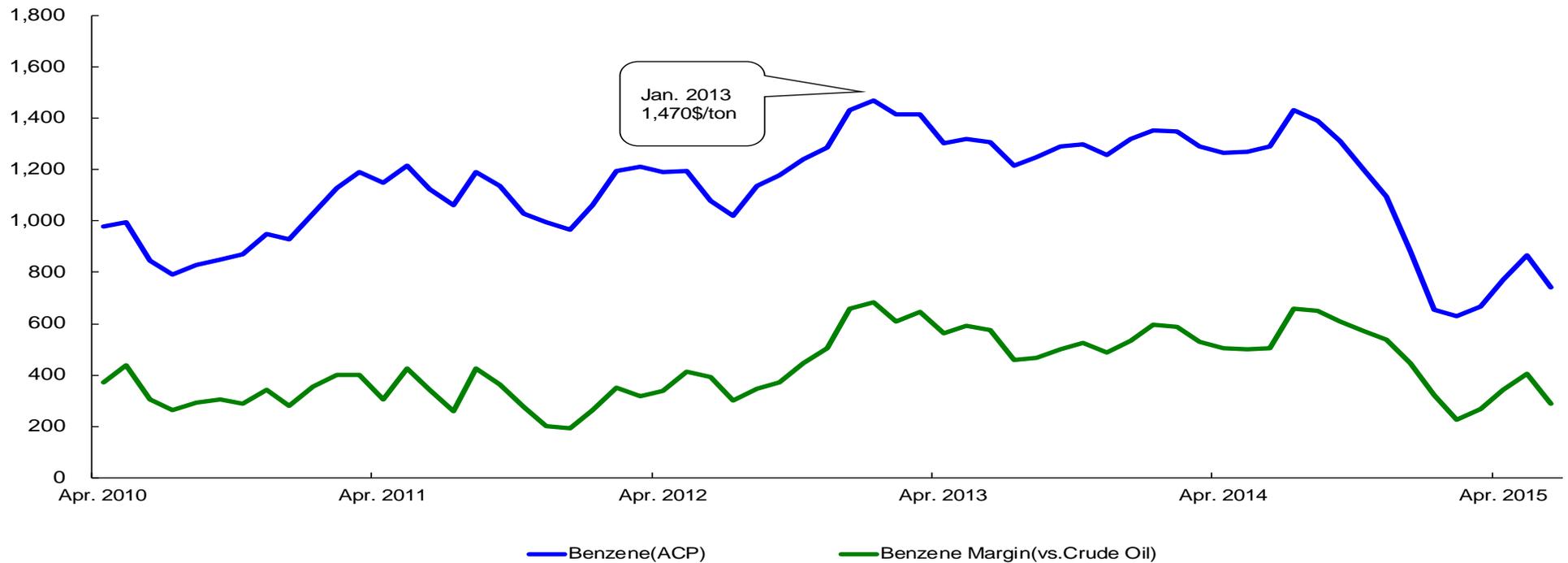


# Benzene Price and Margin (vs. Crude Oil)

Average Price	FY2010	FY2011	FY2012	FY2013	FY2014					FY2015
					1 Q	2 Q	3 Q	4 Q	FY	1 Q
Asian Contract Price	948	1,111	1,255	1,296	1,274	1,377	1,060	650	1,090	792
Margin (vs. Crude Oil)	336	310	476	535	503	639	519	273	483	346

(\$/ton)

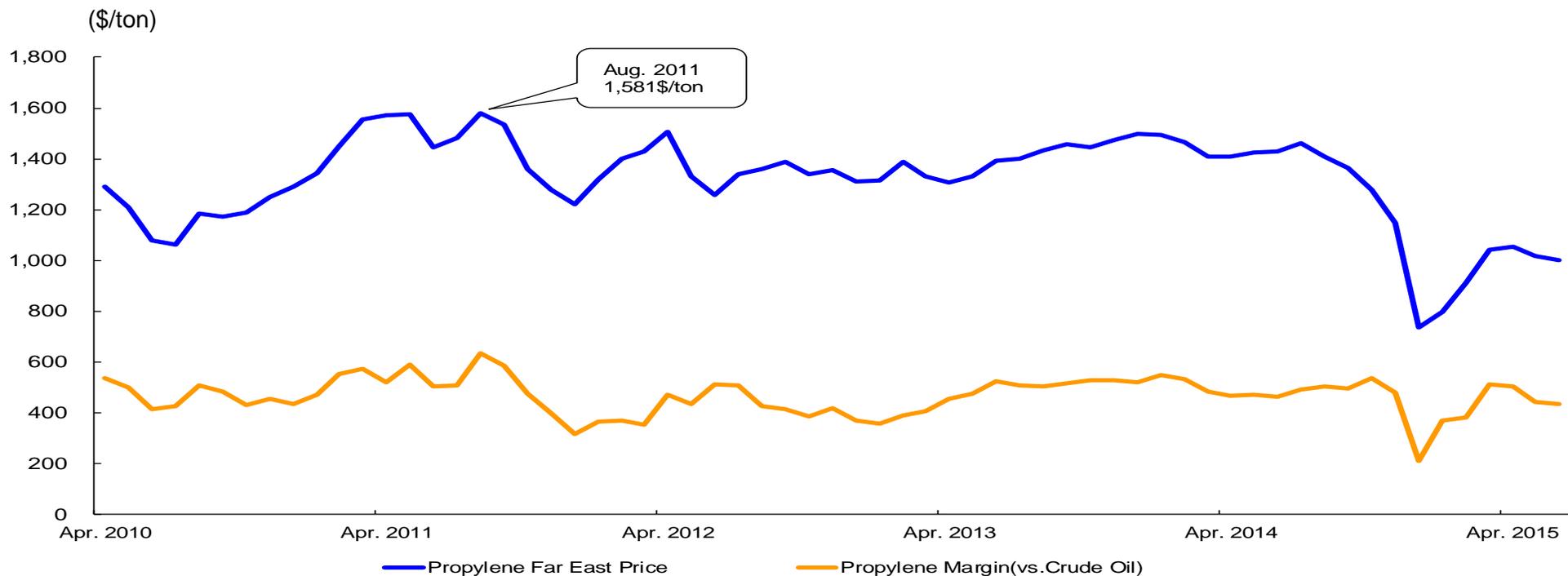
(\$/ton)





# Propylene Price and Margin (vs. Naphtha)

Average Price	FY2010	FY2011	FY2012	FY2013	FY2014					FY2015
					1Q	2Q	3Q	4Q	FY	1Q
Far East Spot Price	1,258	1,383	1,353	1,426	1,420	1,412	1,056	916	1,201	1,025
Margin (vs. Naphtha)	484	362	426	511	468	498	409	422	449	461



Business Environment  
- Oil and Natural Gas E&P Business -



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Oil and Natural Gas E&P Business

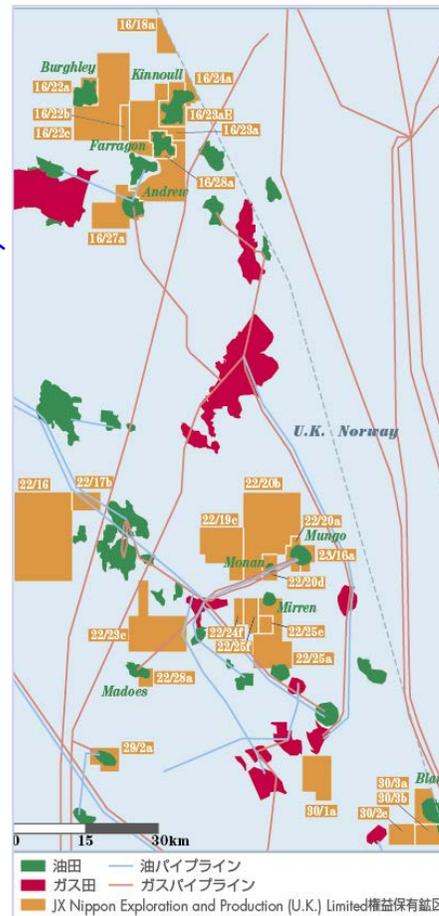
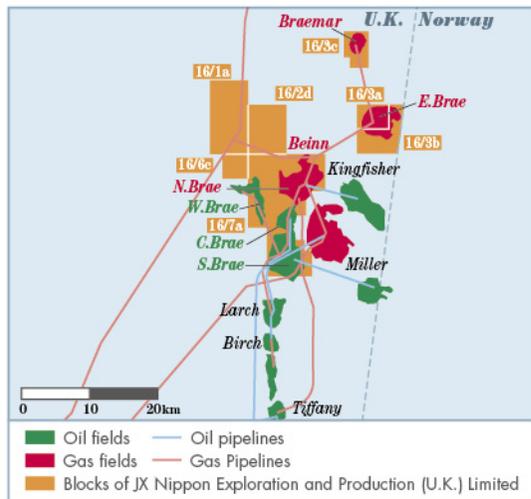
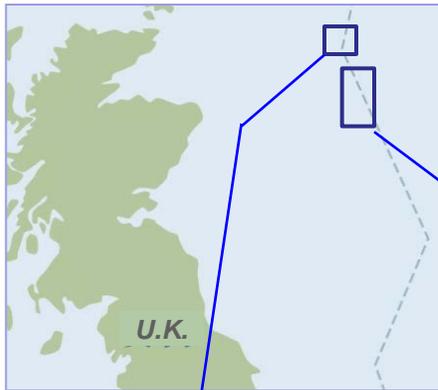
# Principal Individual E&P Project Overview (U.K.①)

# Principal Individual E&P Project Overview ( U.K. ① )

## U.K. North Sea ①

Production

Exploration



	Brea, Andrew, Blane, Kinnoull and other fields	Culzean Structure
Company Holding the Acreages	JX Nippon Exploration and Production (U.K.) Ltd.	
Shareholders(Holding Percentages)	JX Nippon Oil & Gas Exploration (100%)	
Project Status	Exploration/Production	Exploration
Interest	4.0%~100.0%	34.01%
Partners	BP, Shell, Marathon and others	Maersk(49.99%) BP(16.00%)
Operator	BP, Shell, Marathon and others	Maersk
Sales Volumes(Jan.~Mar. 2015)	6,800 boed (oil 5,200b/d, gas 9.3mmcf/d)	

UK (North Sea) is one of core countries with many opportunities to acquire exploration, development and production assets and the infrastructure related to them. We have over 10 fields currently producing oil and gas as well as several projects underway where development is envisaged to commence within the next few years. We are striving to acquire new acreages through open bid rounds as well as pursuing farm in and other opportunities.

### Production

#### Mining Area during the production Andrew, Kinnoull, Brae, Mirren / Madoes, Blane Oil and Gas Fields etc.

- From 1994 to 2002, acquired a working interest in individual blocks.
- In December 2012, acquired some interest in production of plural assets from ENI.
- In December 2014, Kinnoull started production

### Exploration

#### Mining Area during Exploration 22/25a (Culzean Prospect) etc.

- In March 2011, confirmed the presence of a significant hydrocarbon accumulation.
- In December 2012, acquired the additional interest from ENI.

# Principal Individual E&P Project Overview ( U.K. ② )

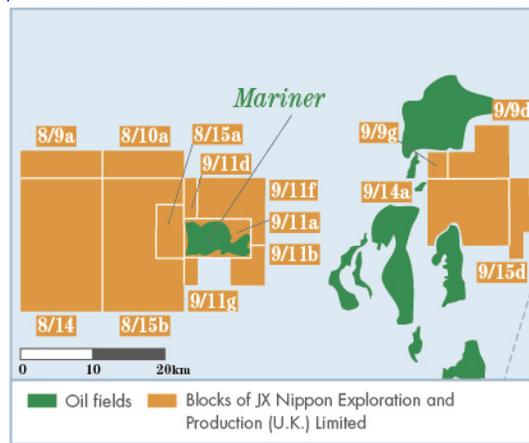
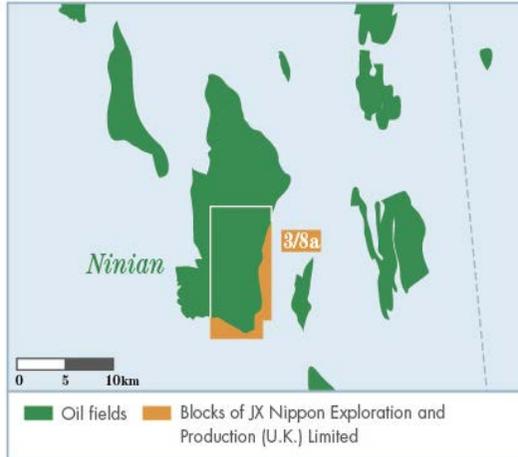
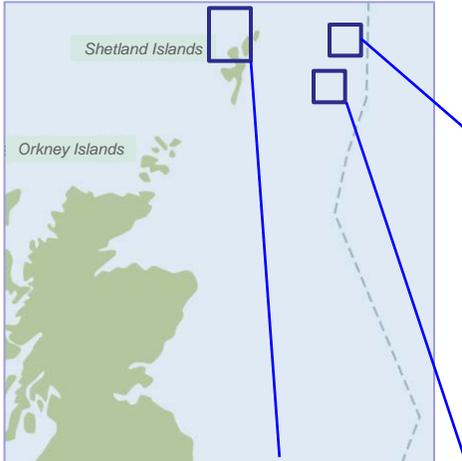


## U.K. North Sea ②

Development

Production

Exploration



	Mariner Field	Ninian Field	Exploration Areas
Company Holding the Acreages	JX Nippon Exploration and Production (U.K.) Ltd.		
Shareholders(Holding Percentages)	JX Nippon Oil & Gas Exploration (100%)		
Project Status	Development	Production	Exploration
Interest	28.89%	12.94%	17.5%~55%
Partners	Statoil (65.11%) Dyas (6.00%)	CNR(87.06%)	OMV, GDF and others
Operators	Statoil	CNR	JXNEPUK, OMV, GDF and others

### Development

#### Mining Area during Development : Mariner Oil Field

- In December 2012, acquired the explorational interest of Mariner Oil Field from ENI.
- In February 2013, decided to develop.  
In 2017 Production scheduled to commence.

### Exploration

#### Mining Area during Exploration West of Shetlands Area

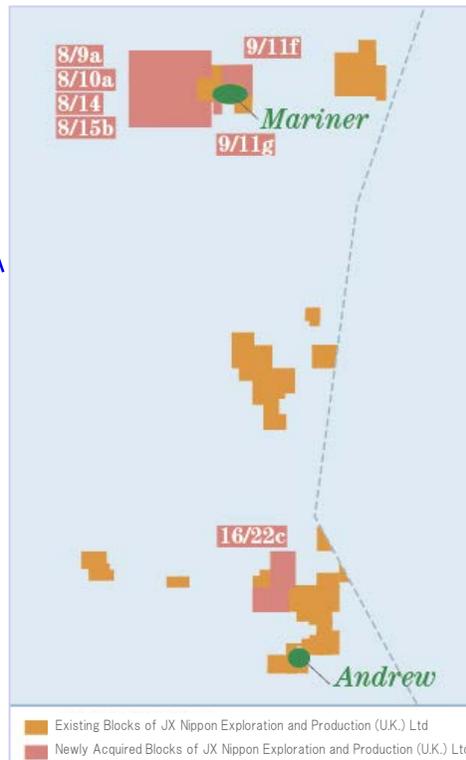
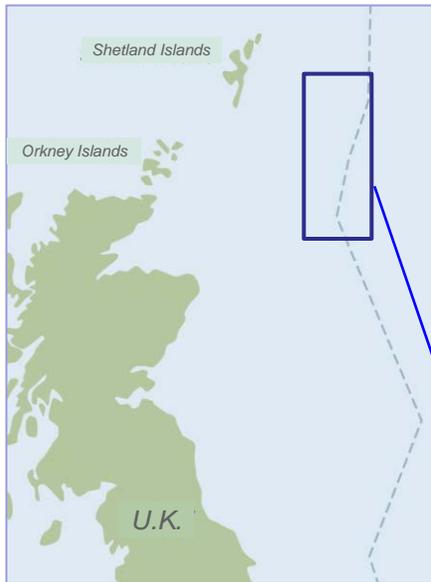
- In October 2012, new blocks are acquired by 27<sup>th</sup> round of governmental open tender.

# Principal Individual E&P Project Overview ( U.K. ③ )

## U.K. North Sea ③

Exploration

New blocks are acquired in 2014 by 28<sup>th</sup> round of governmental open tender .



	North Sea Central Area	North Sea Northern Area
	16/22c	8/9a, 8/10a, 8/14, 8/15b, 9/11f, 9/11g
Company Holding the Acreages	JX Nippon Exploration and Production (U.K.) Ltd.	
Shareholders (Holding Percentages)	JX Nippon Oil & Gas Exploration ( 100% )	JX Nippon Oil & Gas Exploration ( 100% )
Project Status	Exploration	
Interest	30.00%	28.89%
Partners	BP (70.00%)	Statoil (65.11%)
		Dyas (6.00%)
Operator	BP	Statoil

These areas are next to the Andrew oil field and developed Mariner oil field which are our main asset, in the case when oil and gas field were found, we expect developing cost reduction by using facilities in these oil fields.



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Oil and Natural Gas E&P Business

# Principal Individual E&P Project Overview (U.S.①)



# Principal Individual E&P Project Overview (U.S.①)

## Gulf of Mexico

Production



We hold assets in the Gulf of Mexico in the United States, which range from the continental shelf (less than 200meters in depth) to deep water area (more than 200 meter in depth).

	K2 (offshore)	Orchard North (onshore)	MP140,ST179, WC265/266 (offshore)
Company holding the Acreage	JX Nippon Oil Exploration(U.S.A.) Ltd.		
Shareholders(Holding Percentages)	JX Holdings (U.S.A.) Inc.(100%)		
Project Status	Production	Production	Production
Interest	11.6%	50.0%	35.0%~62.5%
Partners	Anadarko(41.8%) ENI(13.4%) ConocoPhillips(12.4%) MCX(11.6%) EcoPetrol(9.2%)	Hilcorp (50.0%)	Apache Fieldwood Ranger Tarpon
Operator	Anadarko	Hilcorp	Apache, Others
Sales Volumes(Jan.~Mar. 2015)	2,700 boed (Oil 1,800b/d, Gas 5.3mmcf/d)		

Production

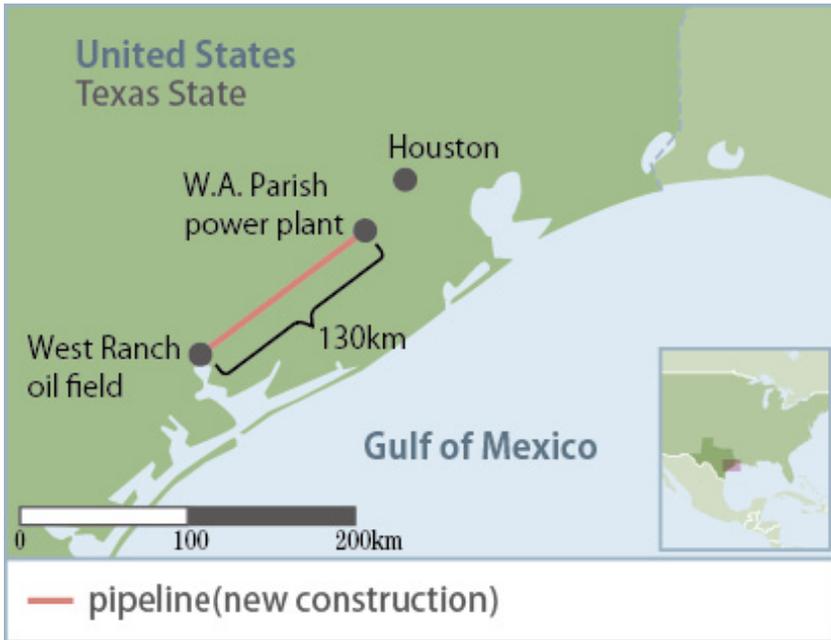
### Mining Area during the productionK2, Orchard North, MP140, ST179, WC265/266

- In 1990, began exploration, development, and production operations at an onshore field in Texas and offshore blocks in both deep as well as shallow waters in the Gulf of Mexico.
- In addition to continuing such existing operations as those in the Orchard North Gas Field, Aconcagua Gas Field, and Virgo Gas Field, purchased interests in certain producing assets in the Gulf of Mexico from Devon in 2005 and from Anadarko in 2007.

# Principal Individual E&P Project Overview (U.S.②)

Texas

Development



Constructing carbon capture system that captures 90% of carbon dioxide (CO<sub>2</sub>) in the processed flue gas from an existing unit at the WA Parish power plant, and by pressing captured carbon dioxide in West Ranch oil field, trying to increase crude oil production.

EOR is expected to boost oil production at the field from around 500barrels per day to approximately 12,000 barrels per day (average for project terms).

	CO <sub>2</sub> -EOR Project
Operating Company of JX NOEX	JX Nippon Oil Exploration (EOR) Ltd.
Shareholders (Holding Percentages)	JX Nippon Oil Exploration (U.S.A.) Ltd. (100%)
Project Status	Development
Interest	50.0%
Project Company	Petra Nova Parish Holdings LLC *

\* A company half-funded by JX Nippon Oil Exploration (EOR) Ltd. and NRG Energy Inc. Group

Development

## CO<sub>2</sub>-EOR Project

- In July 2014, participated in CO<sub>2</sub>-EOR business.
- In 4<sup>th</sup> quarter of 2016, scheduled to start production.



# Principal Individual E&P Project Overview (Canada)

Canada

Production

Development



Syncrude Project	
Company Holding the Acreages	Japan Canada Oil/Mocal Energy
Shareholders(Holding Percentages)	JX Nippon Oil & Gas Exploration (100%)
Project Status	Development / Production
Interest	5.0%
Partners	Canadian Oil Sands (36.7%) Imperial Oil Resources (25.0%) Suncor Energy (12.0%) Sinopec (9.0%) Nexen (7.2%) Murphy Oil Company (5.0%)
Operator	Syncrude Canada
Sales Volumes(Jan. ~ Mar. 2015)	14,700boed (oil 14,700b/d)

We are a partner in the Syncrude Project that produces synthetic crude oil from oil sand, the sand containing bitumen, huge deposits of which are found in Canada.

Production

- In 1978, Started Shipment of Synthetic Crude Oil.
- In 1992, acquired a working interest from PetroCanada.

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Oil and Natural Gas E&P Business

# Principal Individual E&P Project Overview (Vietnam ①)



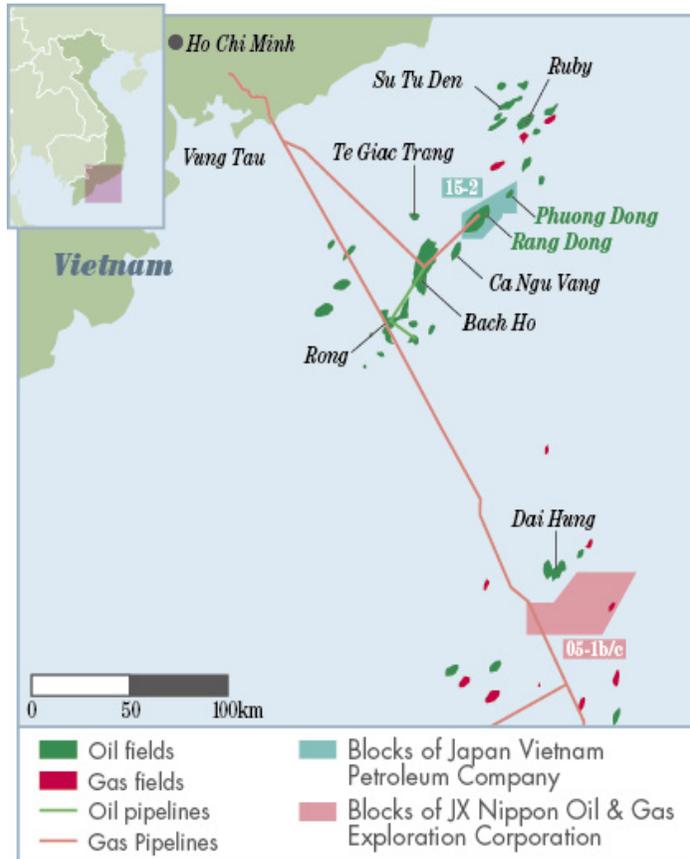
# Principal Individual E&P Project Overview (Vietnam ①)

Vietnam

Production

Development

Exploration



	Block 15-2		Block 05-1b/c
	Rang Dong Oil Field	Phuong Dong Oil Field	
Company Holding the Acreages	Japan Vietnam Petroleum Company		JX Nippon Oil & Gas Exploration
Shareholders(Holding Percentages)	JX Nippon Oil & Gas Exploration (97.1%) Mitsubishi Corporation (2.9%)		-
Project Status	Exploration/Development/Production		Exploration
Interest	46.5%	64.5%	35.0%
Partners	PVEP (17.5%) Perenco (36.0%)	PVEP (35.5%)	Idemitsu Kosan (35.0%) INPEX (30.0%)
Operator	Japan Vietnam Petroleum Company		Idemitsu Kosan
Sales Volumes (Jan.~Mar. 2015)	5,900 boed (oil 5,800b/d, gas 0.3mmcf/d)		-



## Principal Individual E&P Project Overview (Vietnam ②)

### Block 15-2 ( Rang Dong, Phuong Dong Oil Fields)

Production

Development

Exploration

Since the acquisition in 1992, the project has been one of our key operations. JVPC, our subsidiary, act as operator in the block. The Rang Dong Oil Field and The Phuong Dong Oil Field feature an unconventional fractured granite basement rock reservoir that is unique in the world. Our fracture evaluation technology is highly valued and receiving worldwide recognition. As part of our corporate activities, we have been promoting social welfare activities in Vietnam to improve the lives of the people of Vietnam, furthermore, we have been implementing a CDM project aimed at reducing greenhouse gas emissions.

- In 1992, JVPC acquired a working interest in block 15-2
- In 1994, JVPC discovered the [Rang Dong Oil Field](#) within block 15-2, and it began production in that field from 1998.
- In February 2008 and April 2011, Rang Dong CDM Project received CER (Certified Emission Reductions) issuance approval under the Kyoto Protocol.
- In July 2008, Rang Dong Oil Field achieved a cumulative production volume of 150 million barrels.
- In August 2008, JVPC began production in the [Phuong Dong Oil Field](#).
- In November 2013, determined on term extension of the Rang Dong Oil Field (5 years).
- In July 2014, block 15-2 achieved a cumulative production volume of 200 million barrels.
- In October 2014, JVPC began HCG-EOR project.

### Block 05-1b/c

Exploration

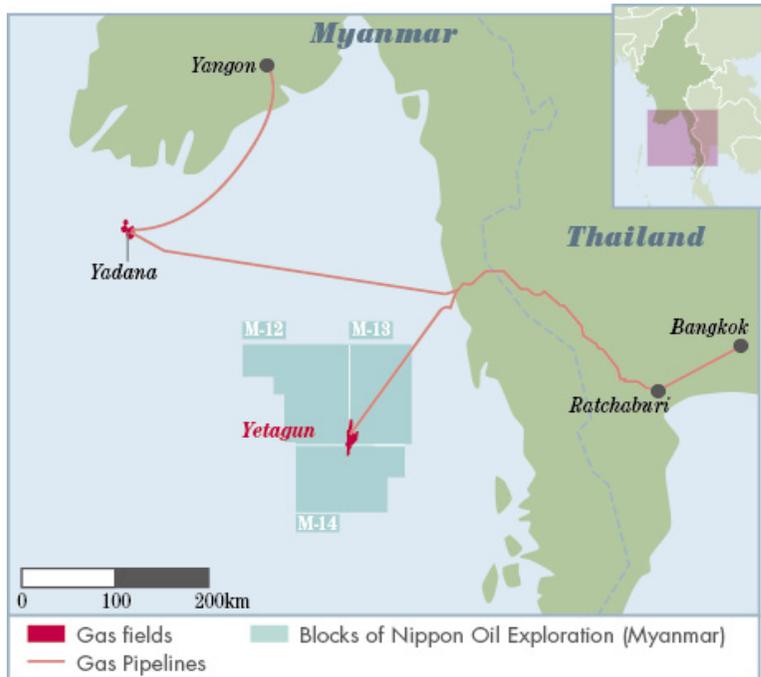
- In October 2004, acquired a working interest in [block 05-1b/c](#) offshore Vietnam.
- In February 2007, excavated test well No.1.
- In August 2010, excavated test well No.2, and discovered gas and oil.
- In August 2012, excavated appraisal well No.1.
- In June 2013, confirmed gas and condensate.
- In August 2014, discovered gas and condensate.

# Principal Individual E&P Project Overview (Myanmar)

Myanmar

Production

Exploration



We have been participating in the Yetagun project in Myanmar since exploration stage. After the appraisal activities and the construction of the production and shipping facilities, the project is now at a stable production stage.

	Bolock M-12, 13, 14
Company Holding the Acreages	Nippon Oil Exploration (Myanmar)
Shareholders (Holding Percentages)	JX Nippon Oil & Gas Exploration (40.0%) Mitsubishi Corporation (10.0%) Government of Japan (50.0%)
Project Status	Exploration / Development / Production
Interest	19.3%
Partners	Petronas Carigali (40.9%) MOGE(20.5%) PTTEP International (19.3%)
Operator	Petronas Carigali
Sales Volumes(Jan.~ Mar. 2015)	8,100boed (oil 700b/d, gas 44.3mmcf/d)

- In 1991, NOEX Myanmar acquired a working interest in [blocks M-13/14](#) offshore Myanmar.
- The following year, acquired a working interest in [block M-12](#) and discovered the Yetagun Gas Field in that block.
- In 2000, production at the Yetagun Gas Field commenced, with the produced gas supplied to the Ratchaburi power plants in Thailand.
- In December 2013, sold 10% of Nippon Oil Exploration (Myanmar)'s stock to Mitsubishi Corporation.
- In September 2014, excavated test well No.1.
- In October 2014, began production in the Yetagun North Gas Field.



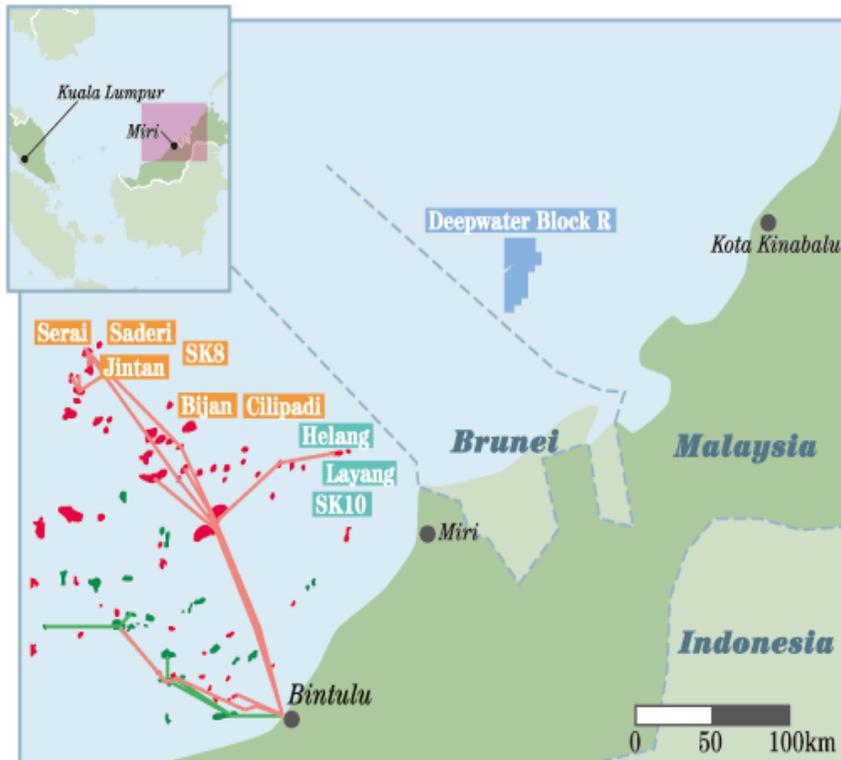
# Principal Individual E&P Project Overview (Malaysia ①)

Malaysia

Production

Development

Exploration



- Oil fields
- Gas fields
- Oil pipelines
- Gas Pipelines
- JX Nippon Oil & Gas Exploration (Malaysia)
- JX Nippon Oil & Gas Exploration (Sarawak)
- JX Nippon Oil & Gas Exploration (Deepwater Sabah)

	SK10 (Herang Gas Field, Others)	SK8 (Jintan, Cilipadi Gas Field, Others)
Company holding the Acreage	JX Nippon Oil & Gas Exploration (Malaysia)	JX Nippon Oil & Gas Exploration (Sarawak)
Shareholders (Holding Percentages)	JX Nippon Oil & Gas Exploration (78.7%) Inpex (15.0%) Mitsubishi Corporation (6.3%)	JX Nippon Oil & Gas Exploration (76.5%) Inpex (15.0%) Mitsubishi Corporation (8.5%)
Project Status	Exploration/Development/Production	Development/Production
Interest	75.0%	37.5%
Partnaers	Petronas Carigali (25.0%)	Shell Oil and Gas Malaysia (37.5%) Petronas Carigali (25.0%)
Operator	JX Nippon Oil & Gas Exploration (Malaysia)	Shell Oil and Gas Malaysia
Sales Volume (Jan. ~Mar. 2015)	21,800boed (Oil 2,000b/d, Gas 119.0mmcf/d)	12,800boed (Oil 1,300b/d, Gas 68.5mmcf/d)



# Principal Individual E&P Project Overview (Malaysia ②)

## Block SK10 (Helang Gas Field and others)

Since the acquisition of Block SK10 in 1987, the project has been one of our key operations. We act as the operator in the block. The natural gas from the block is exported in the form of liquefied natural gas (LNG) to various countries including Japan.

Production

Development

Exploration

### Mining Area during the production SK10 (Helang Gas Field)

- In 1987, acquired a working interest in Block SK10 offshore Sarawak, Malaysia.
- In 1990, discovered the Helang Gas Field, where production commenced in 2003.
- In 1991, discovered the Layang Oil and Gas Field.
- In 2014, decided to develop the Layang Oil and Gas Field.

## Block SK8 (Jintan, Cilipadi Gas Fields and others)

Production

Development

### Mining Area during the production SK8 (Jintan, Saderi, Cilipadi Gas Fields)

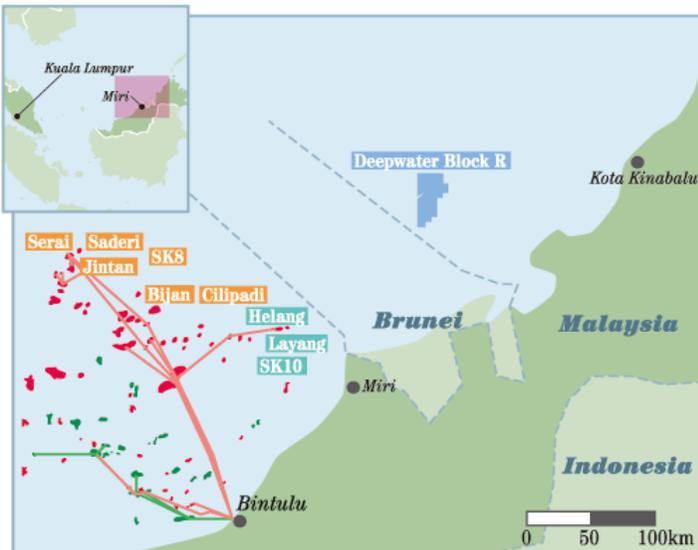
- In 1991, acquired a working interest in Block SK8 .
- From 1992 through 1994, the Jintan and other 6 gas fields were discovered in that block, and production of Jintan and Serai were commenced in 2004.
- In 2008, the Saderi Gas Field commenced production.
- In 2011, the Cilipadi Gas Field commenced production.



# Principal Individual E&P Project Overview (Malaysia ③)

Malaysia

Exploration



	Deepwater Block R	Deepwater Block 2F
Company holding the Acreage	JX Nippon Oil & Gas Exploration (Deepwater Sabah)	JX Nippon Oil & Gas Exploration (Offshore Malaysia)
Shareholders (Holding Percentages)	JX Nippon Oil & Gas Exploration (75.4%) JOGMEC (24.6%)	JX Nippon Oil & Gas Exploration (100%)
Project Status	Exploration	Exploration
Interest	27.5%	40.0%
Partners	Inpex Offshore South Sabah(27.5%) Petronas Carigali(25.0%) Santos Sabah BlockR(20.0%)	Petronas Carigali (40.0%) GDF Suez E&P Malaysia (20.0%)
Operator	JX Nippon Oil & Gas Exploration (Deepwater Sabah)	JX Nippon Oil & Gas Exploration (Offshore Malaysia)

	Deepwater Block 3F
Company holding the Acreage	JX Nippon Oil & Gas Exploration (Offshore Malaysia)
Shareholders (Holding Percentages)	JX Nippon Oil & Gas Exploration (100%)
Project Status	Exploration
Interest	40.0%
Partners	Petronas Carigali (40.0%) GDF Suez E&P Malaysia (20.0%)
Operator	Petronas Carigali



# Principal Individual E&P Project Overview (Malaysia ④)

## Deepwater Block R

### Exploration

- In January 2012, acquired a working interest in [Deepwater Block R](#) deep sea, offshore Sabah, Malaysia.
- In April 2015, discovered oil.

## Deepwater Block 3F

### Exploration

- In December 2013, acquired a working interest in [Deepwater Block 3F](#) deep sea, offshore Sarawak, Malaysia.

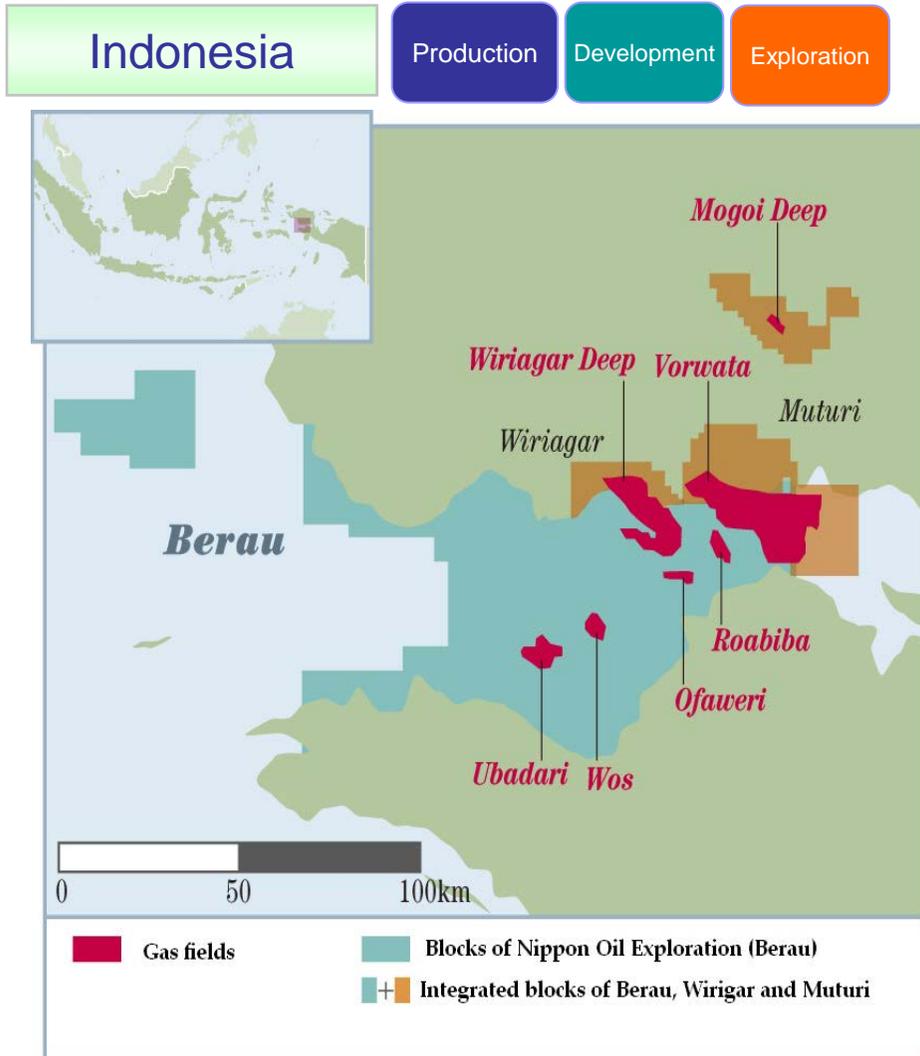
## Deepwater Block 2F

### Exploration

- In September 2013, acquired a working interest in [Deepwater Block 2F](#) deep sea, offshore Sarawak, Malaysia.



# Principal Individual E&P Project Overview (Indonesia)



	Tangguh LNG Project	
Company Holding the Acreages	Nippon Oil Exploration (Berau)	
Shareholders (Holding Percentages)	JX Nippon Oil & Gas Exploration (51.0%) JOGMEC (49.0%)	
Project Status	Exploration/Development/Production	
Interest	12.2%(After Unitization)	
Partners	BP(37.2%) MI Berau(16.3%) CNOOC(13.9%)	KG Berau / KG Wiriagar (10.0%) LNG Japan (7.3%) Talisman (3.1%)
Operator	BP	
Sales Volumes (Jan. ~Mar. 2015)	14,300boed (oil 600b/d, gas 82.3mmcf/d)	

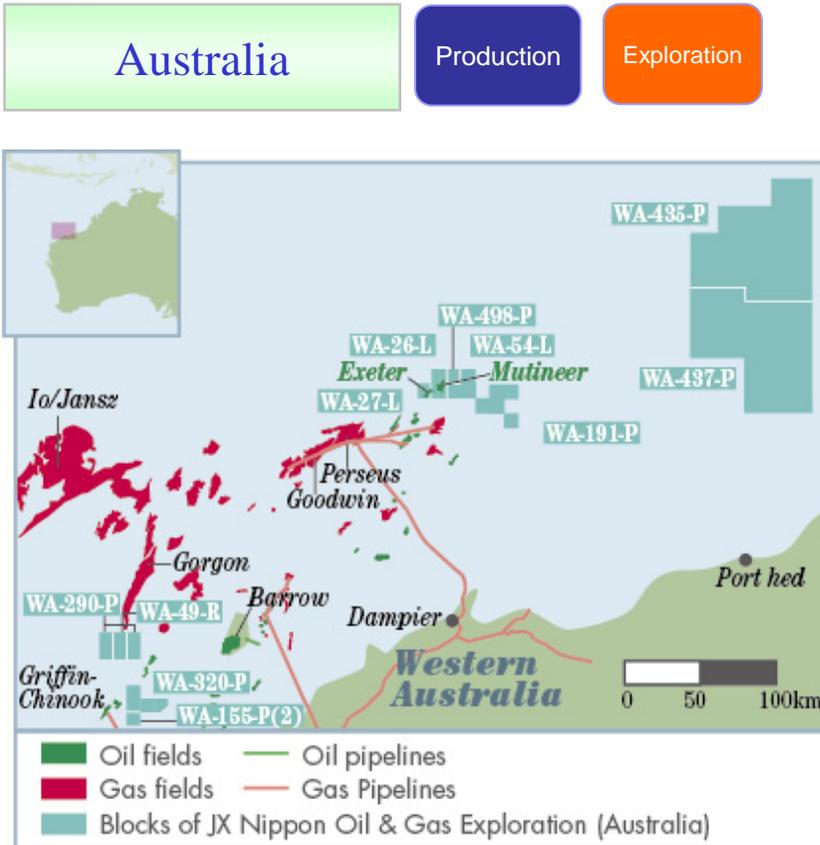
This is the second LNG project we have participated in, following the LNG Tiga project in Malaysia, and we are working to attain long-term and stable LNG production and revenue.

**Production** Project during the production :  
Tangguh LNG Project

- From 1990, excavated three test wells, natural gas was discovered in the area. Subsequently, discovered natural gas in the Vorwata Gas Field, Wiriagar Deep structure, and other gas field.
- From December 2002, those with interests in the Berau, Wiriagar, and Muturi blocks agreed to become partners in unitizing the blocks and undertake development work cooperatively.
- LNG production commenced in June 2009, and the first cargo was shipped in July 2009.



# Principal Individual E&P Project Overview (Australia①)



Production
Exploration

	Mutineer/Exeter Oil Field	Finucane South Oil Field Block WA-191-P
Company Holding the Acreages	JX Nippon Oil & Gas Exploration (Australia) Pty Ltd	
Shareholders(Holding Percentages)	JX Nippon Oil & Gas Exploration(100%)	
Project Status	Production	Exploration/Production
Interest	25.0%	25.0%
Partners	Santos (37.5%) Kufpec (37.5%)	Santos (37.4977%) Kufpec (37.5023%)
Operator	Santos	Santos
Sales Volumes (Jan. ~Mar. 2015)	600 boed(Oil 600b/d)	

We are producing high-quality low-sulfur crude oil from Mutineer / Exeter oil fields. Revenue from the sales of the crude oil is used for new exploration activities within Australia and in May 2014, newly started production from Finucane South Oil Field.

Production
Exploration

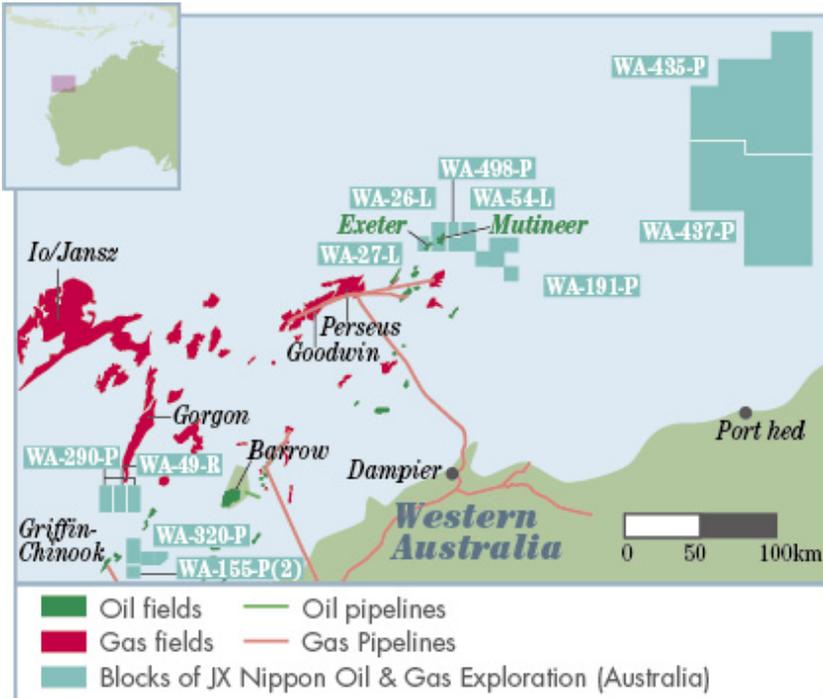
- In May 1997, acquired a working interest in Block WA-191-P (present Block WA-26/27-L)
- From 1997 to 2002, discovered Mutineer and Exeter Oil Fields
- In March 2005, oil production commenced in Mutineer and Exeter Oil Fields
- In May 2011, discovered oil in Finucane south structure.
- In May 2013, oil production commenced in Finucane South Oil Fields.



# Principal Individual E&P Project Overview (Australia②)

Australia

Exploration



	WA-290-P WA-49-R	WA-435-P WA-437-P	WA-320-P
Company Holding the Acreages	JX Nippon Oil & Gas Exploration (Australia) Pty Ltd		
Shareholders(Holding Percentages)	JX Nippon Oil & Gas Exploration (100%)		
Project Status	Exploration	Exploration	Exploration
Interest	15.0%	20.0%	10.0%
Partners	Apache (30.25%) Santos (24.75%) OMV(20.00%) Tap(10.00%)	Apache (40.0%) Finder (20.0%) Carnarvon (20.0%)	Apache (40.665%) OMV (39.557%) Tap (9.778%)
Operator	Apache	Apache	Apache

	WA-155-P(2)	WA-498-P
Company Holding the Acreages	JX Nippon Oil & Gas Exploration (Australia) Pty Ltd	
Shareholders(Holding Percentages)	JX Nippon Oil & Gas Exploration(100%)	
Project Status	Exploration	Exploration
Interest	7.0%	25.0%
Partners	Apache (40.665%) OMV(27.11%) Inpex (18.67%) Tap(6.555%)	Santos (75.0%)
Operator	Apache	Santos



# Principal Individual E&P Project Overview (Australia③)

## Block WA-290-P,Block WA-49-R

### Exploration

- In April 2011, excavated test well "Zola-1", and discovered Gas
- In July 2013, excavated appraisable well "Bianchi-1", and discovered Gas

## Block WA-320-P,Block WA-155-P(2)

### Exploration

- In June 2013, acquired working interests in Block WA-320-P and Block WA-155-P

## Block WA-435-P,Block WA-437-P

### Exploration

- In October 2012, acquired working interests in Block WA-435-P and Block WA-437-P
- In August 2014, discovered oil in Block WA-435-P

## WA-498-P

### Exploration

- In April 2014, acquired working interests in WA-498-P.



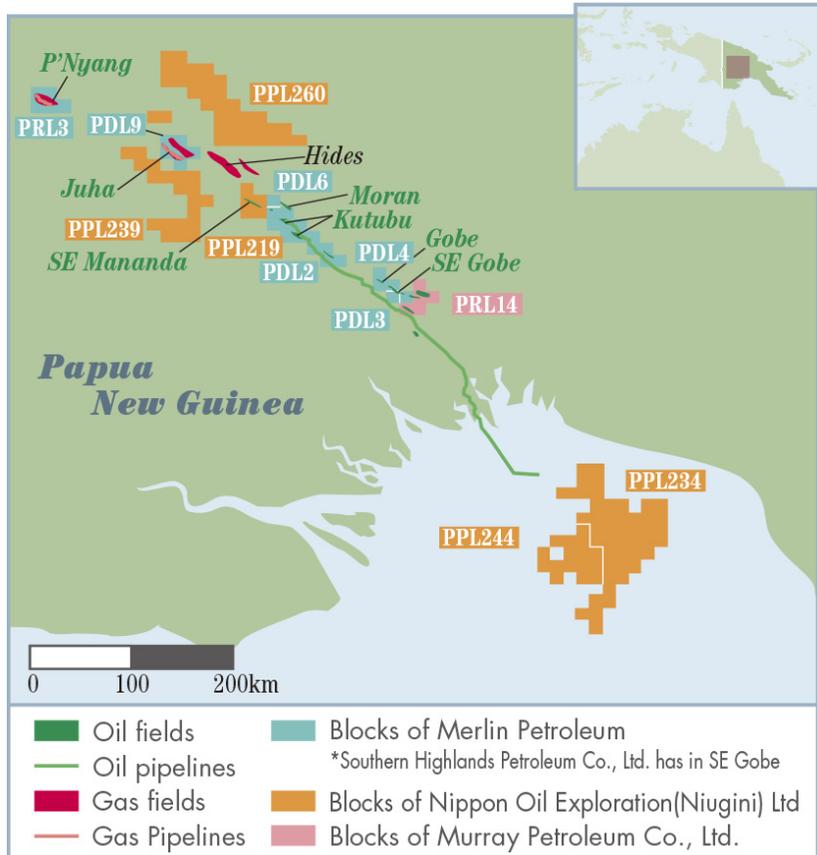
# Principal Individual E&P Project Overview (Papua New Guinea ①)

## Papua New Guinea

Production

Development

Exploration



	Kutubu, Moran, Gobe oil fields, Others	PNG LNG Project
Company Holding the Acreages	Merlin Petroleum Company (79.0%) Nippon Oil Exploration (Niugini) Pty LTD (33.3%) Southern Higjland Petroleum (80.0%) Murray Petroleum (29.6%)	Nippon Papua New Guinea LNG LLC (79.0%)
Project Status	Exploration / Development / Production	Production
Interest	8.6%~73.5%	4.68%
Partners	Oil Search ExxonMobil Santos Talisman Others	ExxonMobil (33.20%) Oil Search (29.00%) Santos(13.53%) PNG Government, Landowners (19.58%)
Operator	Oil Search, ExxonMobil, Others	ExxonMobil
Sales Volume (Jan.~Mar. 2015)	13,500 boed (oil 6,200b/d, gas 43.8mmcf/d)	



# Principal Individual E&P Project Overview (Papua New Guinea ②)

## Kutubu, Moran, Gobe oil fields and others

### Production

- In 1990, Japan Papua New Guinea Petroleum acquired Merlin and acquired original exploration rights of Merlin in Papua New Guinea. Subsequently, development, and production activities have been undertaken in the [Kutubu, Moran, Gobe, SE Gobe, and SE Mananda oil fields](#).
- In 2008, acquired additional equity of oil field from AGL Energy.

### Exploration

- In April 2011, excavated test well "Mananda-5" in [Block PPL219](#), and discovered oil.

## PNG LNG Project

### Development

#### Project during the development PNG LNG Project

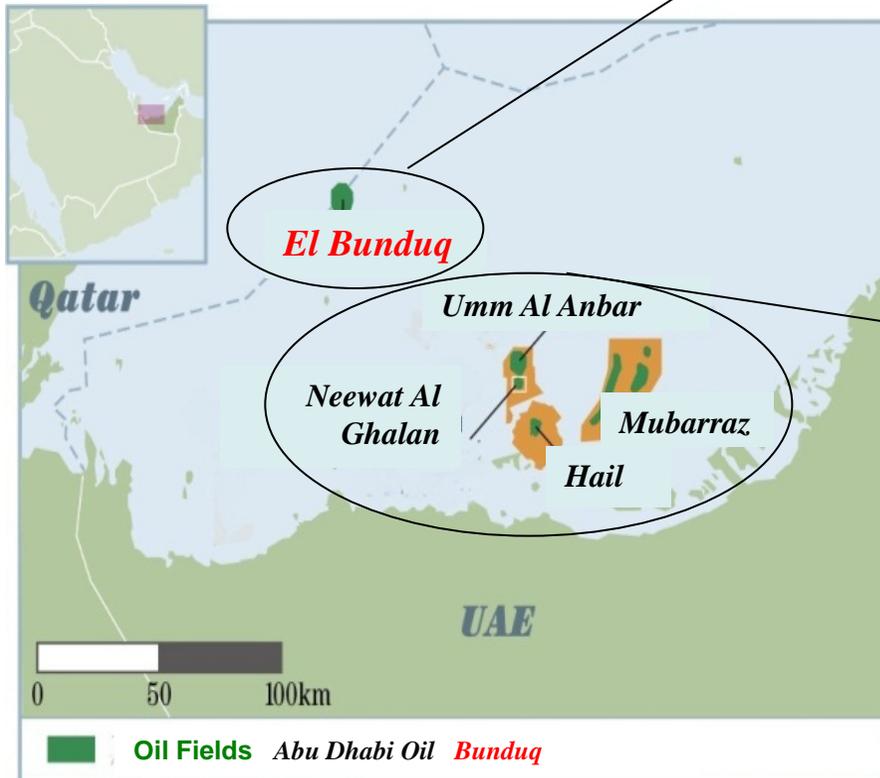
- We have been involved in PNG LNG Project since the beginning of the project. In December 2009, we made a Final Investment Decision on the Project, and the development work is in progress with the goal of starting shipments in 2014. PNG LNG Project has the full support of the PNG government, and we expect it to contribute to our revenues in the future.
- In December 2008, acquired the PNG LNG Project equity that AGL Energy owned.
  - In December 2009, PNG LNG Project was made a final investment decision to proceed with the development.
  - In May 2014, PNG LNG Project ships first LNG cargo.



# Principal Individual E&P Project Overview (UAE, Qatar ①)

UAE, Qatar

Production Development



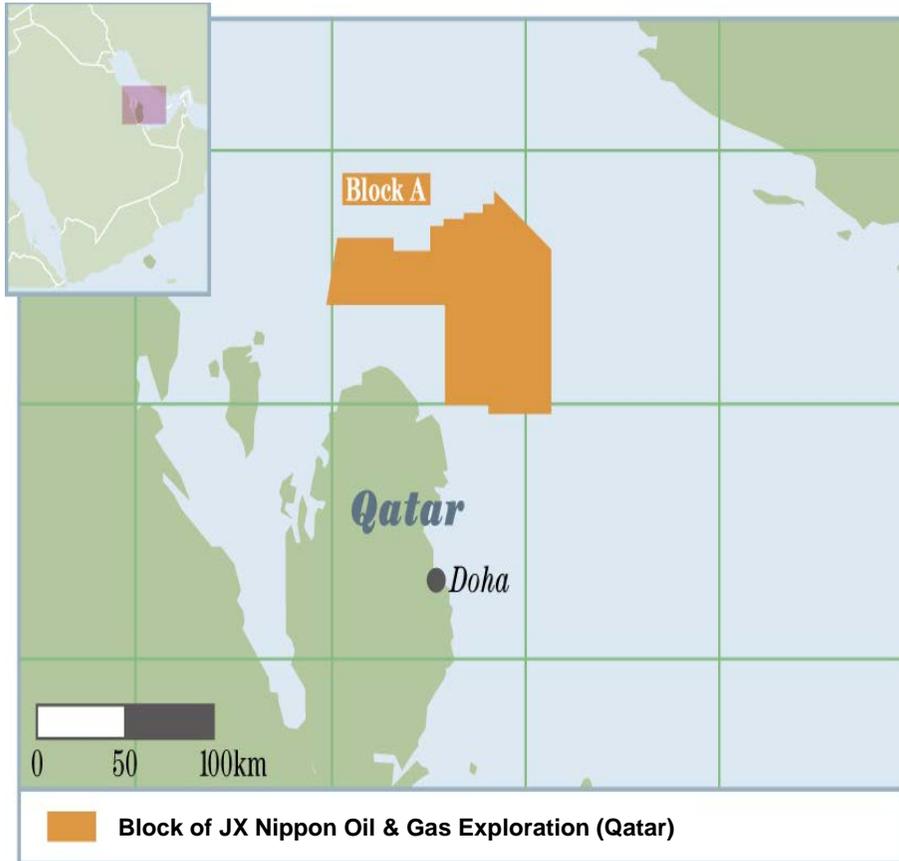
	El Bunduq
Company Holding the Acreages	United Petroleum Development (Bunduq Company Limited)
Partners	JX Nippon Oil & Gas Exploration (45.0%) Cosmo Energy Exploration & Production Co., Ltd. (45.0%) Mitsui Oil Exploration Co., Ltd.(10.0%)
Project Status	Exploration / Development / Production
Interest	97.0%
Partners	BP (3%)
Operator	Bunduq Company Limited
	<ul style="list-style-type: none"> <li>● In 1970, United petroleum Development acquired a working interest of El Bunduque Oil Field.</li> <li>● In 1975, oil production commenced in <a href="#">El Bunduq oil field</a>.</li> <li>● In 1983, oil production was resumed by a secondary recovery scheme using water injection.</li> <li>● In 2006, El Bunduque achieved a cumulative production volume of 200 million barrels.</li> </ul>
	Mubaraz, Umm Al-Anbar, Neewat Al-Ghalan
Company Holding the Acreages	Abu Dhabi Oil
Partners	JX Nippon Oil & Gas Exploration (32.1%) Cosmo Abu Dhabi Energy Exploration & Production Co., Ltd.(64.2%) Chubu Electric Power Co., Inc.(1.9%) Kansai Electric Power Co., Inc.(1.9%)
Project Status	Exploration / Development / Production
Interest	100.0%
Operator	Abu Dhabi Oil
	<ul style="list-style-type: none"> <li>● In 1967, acquired a working interest in block of Mubarraz.</li> <li>● In 1973, oil production commenced in <a href="#">Mubarraz Oil Field</a>.</li> <li>● In 1989, oil production commenced in <a href="#">Umm Al Anbar Oil Field</a>.</li> <li>● In 1995, oil production commenced in <a href="#">Neewat Al Ghalan Oil Field</a>.</li> <li>● In 2009, 3 fields achieved cumulative production volume of 300 million barrels.</li> <li>● In 2011, Sign a New Concession Agreement.</li> <li>● In 2012, Effectuation of New Concession Agreement.</li> </ul>

## Principal Individual E&amp;P Project Overview (UAE, Qatar ②)



Qatar

Exploration

**Project Company**

JX Nippon Oil & Gas Exploration (Qatar) Limited (51%)  
(%) = JX Group Shareholding

**Interest in Individual Fields**

100%

**Operator**

JX Nippon Oil & Gas Exploration (Qatar) Limited

**Exploration**

- In May 2011, acquired a working interest in **Block A** (Pre-Khuff), offshore Qatar .
- In March 2012, established interest in Block A (Pre-Khuff), offshore Qatar officially came into effect.
- In August 2014, began excavating test well No1.



# JX Group's Reserve Standards

JX Group's criteria for evaluating reserves conforms to the PRMS (Petroleum Resources management System) Standards, drafted by the SPE (Society of Petroleum Engineers), WPC (World Petroleum Congress), AAPG (American Association of Petroleum Geologists), and SPEE (Society of Petroleum Evaluation Engineers).

JX Group's reported reserves are in line with reserves as defined by the PRMS Standards. The degree of certainty of the reserve values is categorized, in order, as either Proved, Probable, or Possible. Following trends common at other industry firms, JX Group's has used Proven and Probable reserves to arrive at its total reserves.

## **Definition of Proved Reserves:**

Reserves judged to have a high level of certainty from analysis of geoscience and production/petroleum engineering data, based on economic conditions, operational methods and laws and regulations assumed by JX Group in light of discovered reservoirs—there is at least a 90% probability that actual recovered volume will equal or exceed estimates of oil and natural gas deposits reasonably evaluated as commercially recoverable.

## **Definition of Probable Reserves:**

There is at least a 50% probability that additional oil and natural gas reserves will equal or exceed actual recovered volume of the total of estimated proved and probable reserves. While these additional reserves are evaluated in the same manner as proved reserves, the probability of recoverability of probable reserves is lower than proved reserves, but higher than possible reserves.

# Business Environment and Data - Metals Business -

# Copper Production of JX Group's Mines

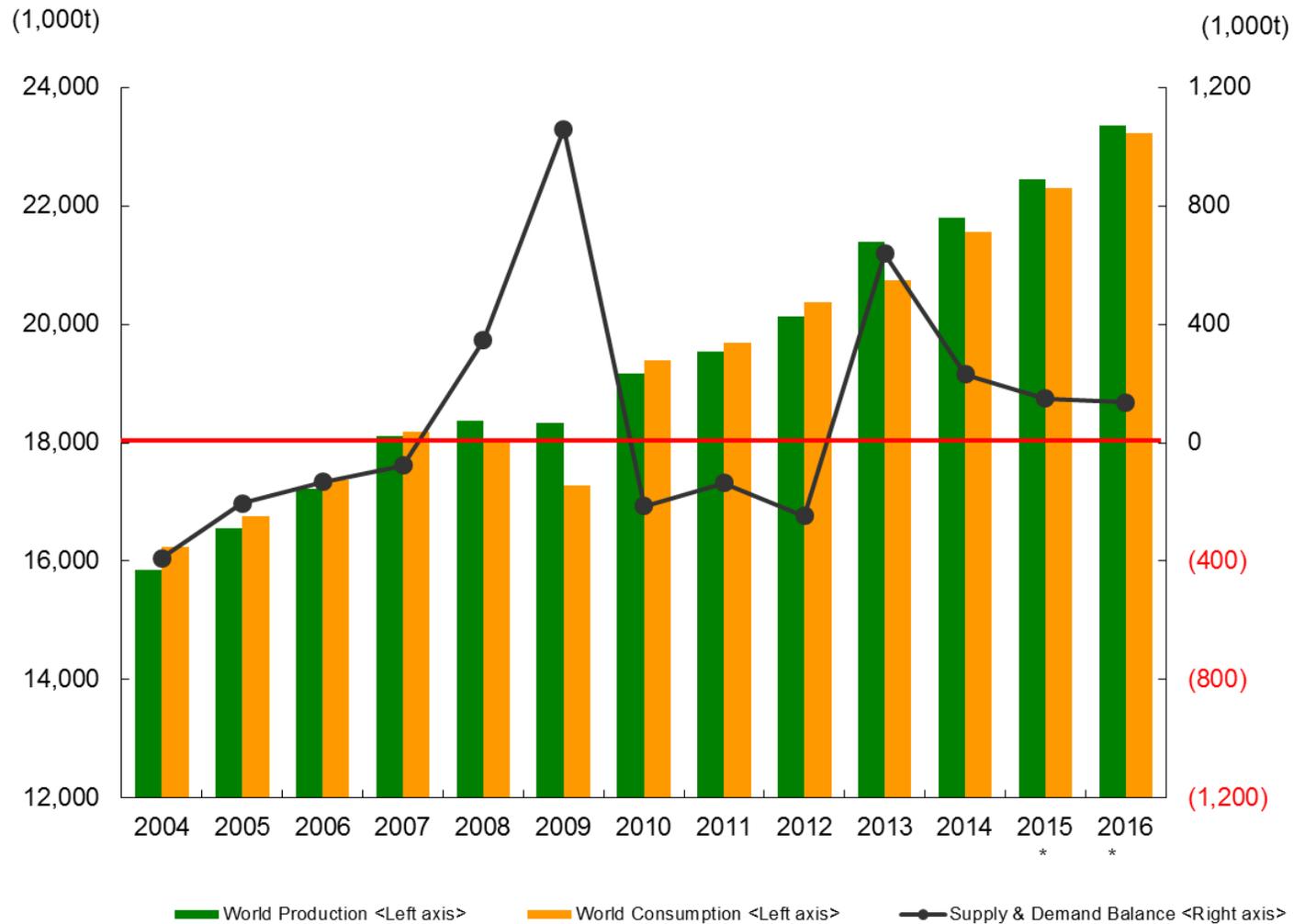
(Thousand Ton)		CY 2014	CY 2014	CY/FY 2015
		1Q	Full Year	1Q
		Actual	Actual	Actual
<b>Caserones</b>	*1 Copper concentrate	0	19	8
	SX-EW copper cathode	8	27	7
	Total	8	46	*2 14
<b>Los Pelambres</b>	*1 Copper concentrate	96	391	*2 93
	*1 Copper concentrate	110	430	95
<b>Collahuasi</b>	SX-EW copper cathode	5	25	7
	Total	115	455	102
	*1 Copper concentrate	190	830	261
<b>Escondida</b>	SX-EW copper cathode	76	302	77
	Total	266	1,132	338

\*1 Payable copper contained in concentrate

\*2 Due to a change of fiscal term, referring terms are different. 2014 1Q: Jan.-Mar., 2015 1Q: Apr.-Jun.



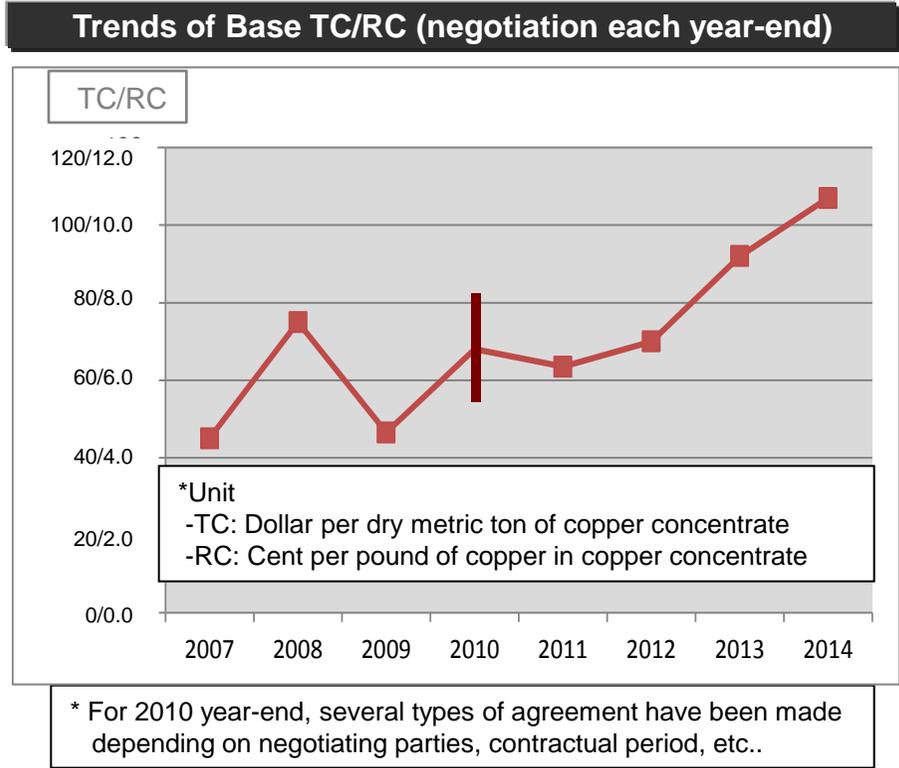
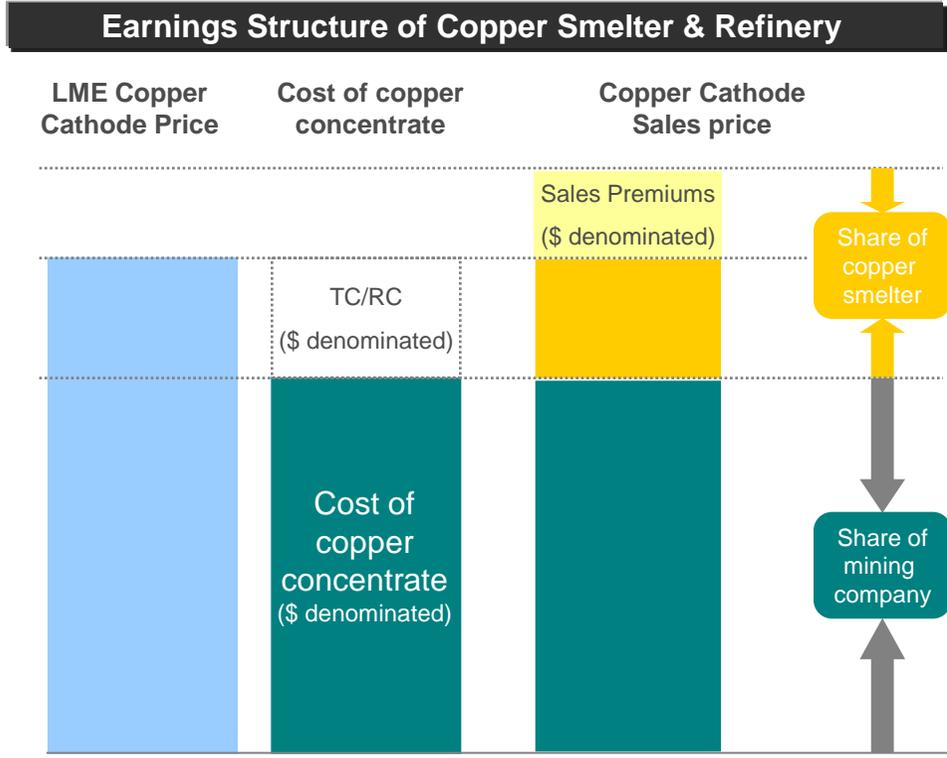
# World's Copper Cathodes Supply & Demand



\*Forecasts by JX.



# Earnings Structure of Copper Smelting and Refining Business



#### Cost of copper concentrate :

The price of copper concentrate, which custom smelters pay to mining companies, is LME copper cathode price less TC/RC, which is smelting and refining margins. TC/RC under long-term contracts is normally determined through annual negotiation between copper smelters and mining companies.

#### Copper cathode sales price :

Actual sales price of copper cathode produced by copper smelters is LME price plus sales premium, which is established by reference to various factors including importation costs, qualities and others.

# N-Chlo Process

## N-Chlo Process

The N-Chlo Process is a new hydro-metallurgical process that we have uniquely developed.

The process enables the effective recovery of not only copper from low-grade copper concentrate, but also such precious metals as gold and silver.

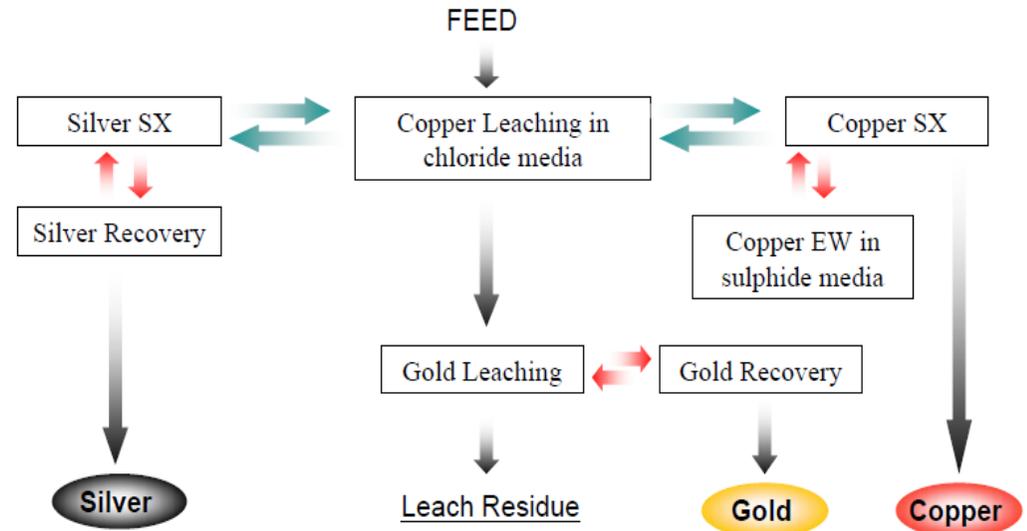
We constructed a pilot plant in Australia and had completed demonstration test FY2013, and we got a good result about copper and gold recovery.

We advance an effort to commercialize the process while searching the mines to apply the process.

Pilot plant in Perth, Australia (About 100t/year Cu recovery)



## Structure of N-Chlo Process



# Biomining



## Biomining

Biomining is a hydro-metallurgical method of extracting copper from copper ores in acidic condition accelerating the extraction by utilizing activity of microorganisms.

Low-grade primary copper sulfide ores have not been used enough as resources without economical recovery process. Biomining technology is mainly applicable to such ores and has great potential in future.

BioSigma S.A. was established in 2002 and started collaborative study of Biomining technology between JX Mining & Metals(33%) and CODELCO (67%).

Taking favorable results of the industrial test conducted at CODELCO's Radmido Tomic mine with low-grade primary copper sulfide ores, commercial application of the technology to the mine was commenced in February, 2015.

## Method of Biomining

