Security Code Tokyo 5020

## **Supplementary Information**

~ JX Group A to Z ~

May 9, 2014



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#### Oil and Natural Gas E&P Business

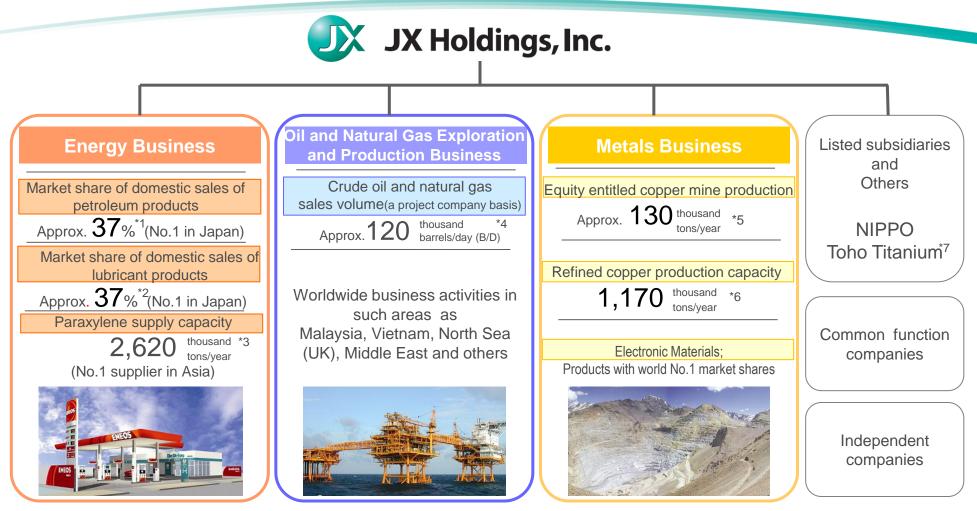
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## Summaries of businesses and Financial Results

# Summary of JX Group's Businesses





- \*1 FY2013 actual
- \*2 FY2013 actual
- \*3 As of Mar. 2014
- \*4 Crude oil equivalent (average daily production from Jan. to Dec. 2013 actual)
- \*5 Equity entitled copper production contained in copper concentrate (CY2013 actual)
- \*6 Pan Pacific Copper (66.0% equity stake); 610 thousand tons/year + LS-Nikko Copper (39.9% equity stake); 560 thousand tons/year (As of Mar. 2014)
- \*7 Profit and loss of Toho Titanium is included in the Metals Business.

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## **Financial Summary**



	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014
(JPY billion)	Actual	Actual	Actual	Actual	Actual	Forecast
Net Sales	9,008.0	9,634.4	10,723.9	11,219.5	12,412.0	11,720.0
Energy Oil and Natural Gas E&P Metals Others	7,607.6 145.9 780.7 473.8	8,131.9 148.8 940.6 413.1	9,147.5 187.8 997.2 391.4	9,699.6 173.1 964.9 381.9	10,755.0 202.2 1,039.1 415.7	9,970.0 230.0 1,120.0 400.0
Operating Income (Loss)	130.4	334.4	327.9	251.5	213.7	145.0
Energy Oil and Natural Gas E&P Metals Others	56.5 28.5 16.9 28.5	239.1 51.9 20.7 22.7	208.2 90.5 14.5 14.7	138.9 80.5 6.4 25.7	79.9 83.4 13.8 36.6	3.0 68.0 41.0 33.0
Ordinary Income (Loss)	187.3	413.7	407.8	328.3	302.3	210.0
Energy Oil and Natural Gas E&P Metals Others	66.0 49.0 47.4 24.9	253.7 59.5 70.7 29.8	232.5 97.5 60.0 17.8	161.6 93.6 44.0 29.1	108.2 105.5 47.4 41.2	30.0 73.0 70.0 37.0
Net Income (Loss)	73.1	311.7	170.6	159.5	107.0	110.0
Energy Oil and Natural Gas E&P Metals Others			105.8 53.2 23.8 (12.2)	117.1 33.9 (2.6) 11.1	52.2 53.4 (11.2) 12.6	23.0 43.0 26.0 18.0
Capex Depreciation and Amortization	300.0 249.9	200.0 204.6	286.0 198.1	472.0 180.4	500.0 183.6	460.0 220.0

\* Profit and loss of Toho Titanium is included in the Metals Business from FY2012. Copyright © 2014 JX Holdings, Inc.

## Ordinary Income by segment



	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014
(JPY billion)	Actual	Actual	Actual	Actual	Actual	Forecast
Ordinary Income (Loss)	187.3	413.7	407.8	328.3	302.3	210.0
Energy Business	66.0	253.7	232.5	161.6	108.2	30.0
Petroleum Products	(141.0)	169.2	74.6	56.1	(77.5)	47.0
Petrochemicals	5.2	27.3	38.2	46.7	69.6	43.0
Inventory Valuation	201.8	57.2	119.7	58.8	116.1	(60.0)
Oil and Natural Gas E&P Business	49.0	59.5	97.5	93.6	105.5	73.0
Metals Business	47.4	70.7	60.0	44.0	47.4	70.0
Resources Development	27.4	44.1	36.6	26.6	22.5	28.5
Smelting and Refining	4.9	12.8	15.5	11.1	12.5	23.5
Electronic Materials	5.4	9.4	5.4	6.3	9.0	15.0
Recycling and Environmental Services	4.9	4.0	5.7	2.5	5.6	8.0
Titanium	-	-	-	(1.0)	(5.4)	(5.0)
Inventory Valuation	4.8	0.4	(3.2)	(1.5)	3.2	-
Others	24.9	29.8	17.8	29.1	41.2	37.0

\* Profit and loss of Toho Titanium is included in the Metals Business from FY2012.

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## **Balance Sheets**



	Apr. 2010	Mar. 2011	Mar. 2012	Mar. 2013	Mar. 2014
(JPY billion)	Actual	Actual	Actual	Actual	Actual
Total assets	6,299.1	6,260.0	6,690.4	7,274.9	7,781.8
Current assets	2,854.9	3,067.7	3,554.6	3,737.8	3,765.6
- Cash and deposits	267.9	233.5	242.0	250.1	281.7
Noncurrent assets	3,444.2	3,192.2	3,135.8	3,537.1	4,016.2
Property, plant and equipment	2,019.4	1,940.3	1,940.4	2,190.7	2,389.2
Intangible assets	174.3	166.1	137.2	134.8	132.7
Investments and other assets	1,250.5	1,085.8	1,058.2	1,211.6	1,494.3
Liabilities	4,479.1	4,373.7	4,645.7	4,947.5	5,155.5
Interest-bearing debt	2,309.0	2,264.6	2,282.6	2,549.3	2,801.7
Other liabilities	2,170.1	2,109.1	2,363.1	2,398.2	2,353.8
Net assets	1,820.0	1,886.2	2,044.8	2,327.4	2,626.3
Shareholders' equity	1,588.1	1,644.5	1,776.6	1,896.4	1,962.3
Accumulated other comprehensive income (loss)	29.7	(16.2)	(32.3)	46.3	172.8
Minority interests	202.2	257.9	300.5	384.7	491.2

## **Performance Indicators**



	FY2009	FY2010	FY2011	FY2012	FY2013
(JPY billion)	Actual	Actual	Actual	Actual	Actual
Cash flows from operating activities	-	211.4	246.6	265.6	305.2
(Working capital)	-	(343.7)	(192.2)	(164.5)	(99.0)
Cash flows from investing activities	-	(170.9)	(198.6)	(426.1)	(479.8)
Free cash flows	-	40.5	48.0	(160.5)	(174.6)
Dividend and others	-	(31.5)	(56.1)	(18.0)	7.3
Net cash flows	-	9.0	(8.1)	(178.5)	(167.3)
	Apr. 2010	Mar. 2011	Mar. 2012	Mar. 2013	Mar. 2014
	Actual	Actual	Actual	Actual	Actual
ROE (%)	_	5.2	10.1	8.7	5.2
Net D/E Ratio (times)	1.26	1.25	1.17	1.18	1.18
Shareholders' equity ratio (%)	25.7	26.0	26.1	26.7	27.4

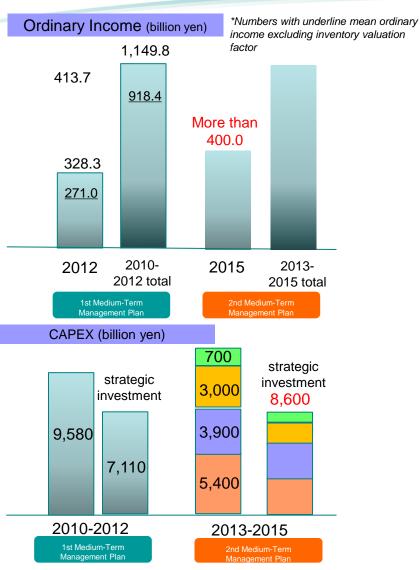
### Equity in earnings of unconsolidated subsidiaries and affiliates

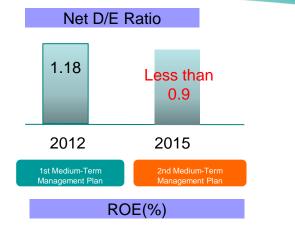


	FY2009*	FY2010	FY2011	FY2012	FY2013	FY2014
(JPY billion)	Actual	Actual	Actual	Actual	Actual	Forecast
Energy	0.9	5.4	3.6	5.9	6.9	6.0
Oil and Natural Gas E&P	6.5	7.8	6.4	9.4	6.6	5.0
Metals	33.3	55.8	51.0	43.5	39.6	40.0
Resources Development	28.8	48.8	41.2	35.0	32.0	30.0
Smelting and Refining	4.5	7.0	9.8	8.5	7.6	10.0
Others	0.4	7.0	1.1	0.9	1.5	1.0
Total	41.1	76.0	62.1	59.7	54.6	52.0

## **Review of Target**





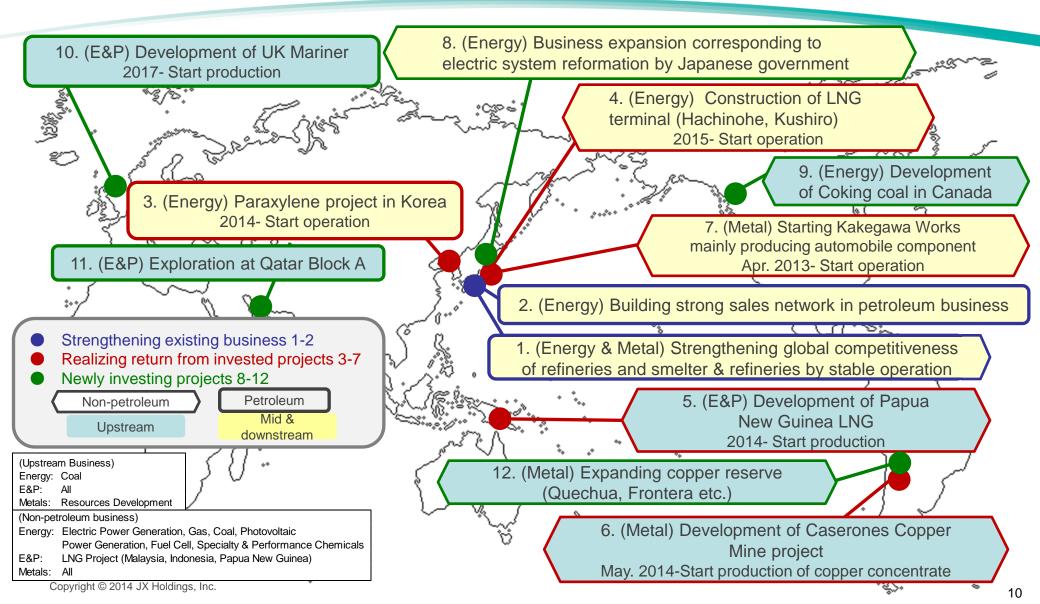


\*Excluding negative goodwill of marger for FY2010



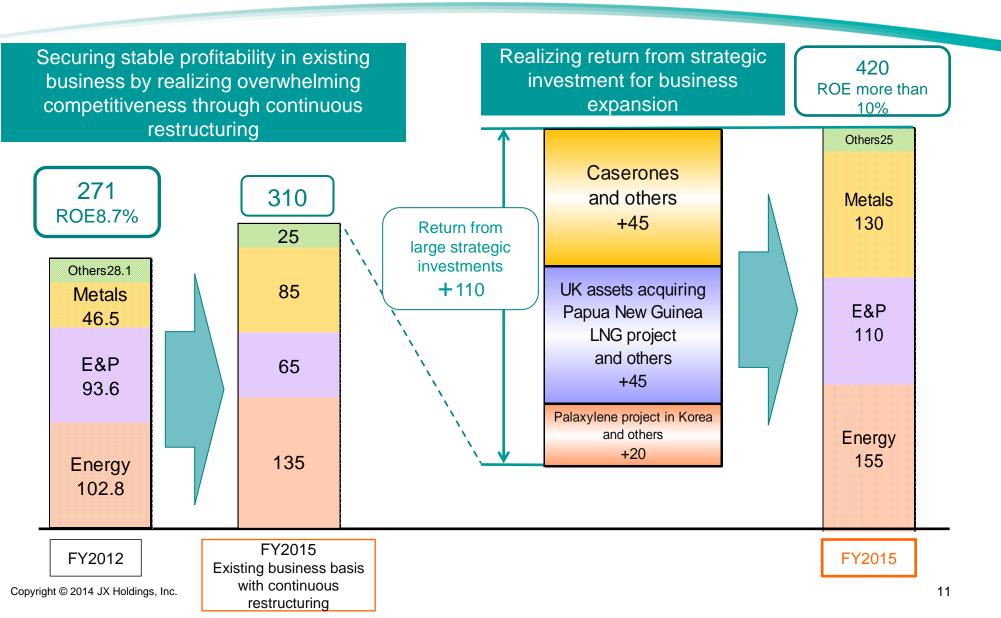
## Highlight of Major Projects





## Earnings Plan(Ordinary Income Excluding Inventory Valuation Factor) (Unit : billion yen)





## 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.

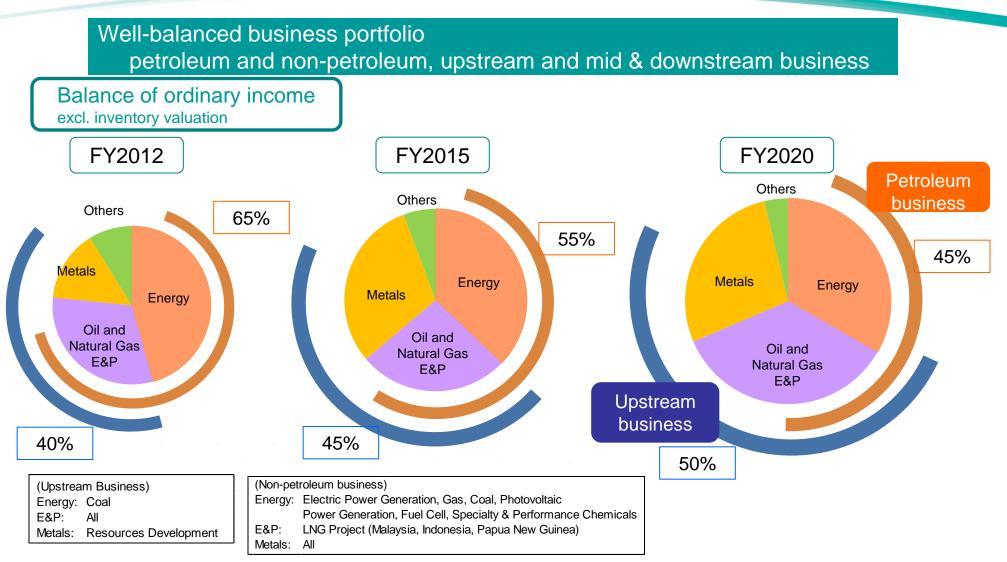
	2010	2011	2012	2013	2014 (Forecast)
Dividend (yen/share)	15.5	16.0	16.0	16.0	16.0
EPS (yen/share)	34*	69	64	43	44

### Reference) Dividend from FY2010-2014

\*Excluding impact of negative goodwill

## Target of JX Group (2020)





### Historical Dubai Crude Oil Price

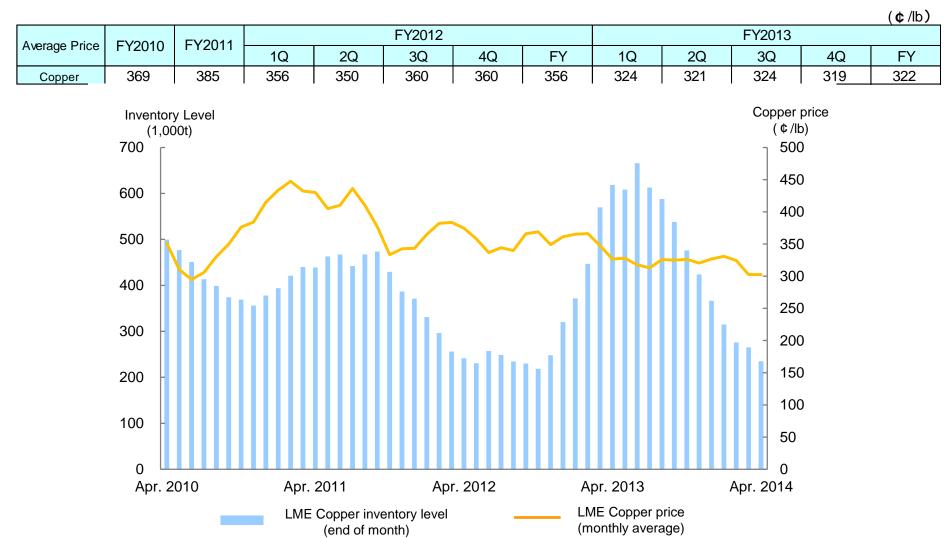


												<b>(</b> \$/bbl
Average Price	FY2010	FY2011			FY2012					FY2013		
Average i lice			1Q	2Q	3Q	4Q	FY	1Q	2Q	3Q	4Q	FY
Dubai Crude Oil	84	110	106	106	107	108	107	101	106	107	104	105
(\$/bbl)												
120			$\wedge$			$\wedge$						
100												
80												
60												
40												
20	•	— Dubai C	rude Oil <sup></sup>									
0	4.0		1			1			A 0010			
Apr. 20	10		Apr. 201	I		Apr. 2012			Apr. 2013		F	Apr. 2014

Apr. 2010

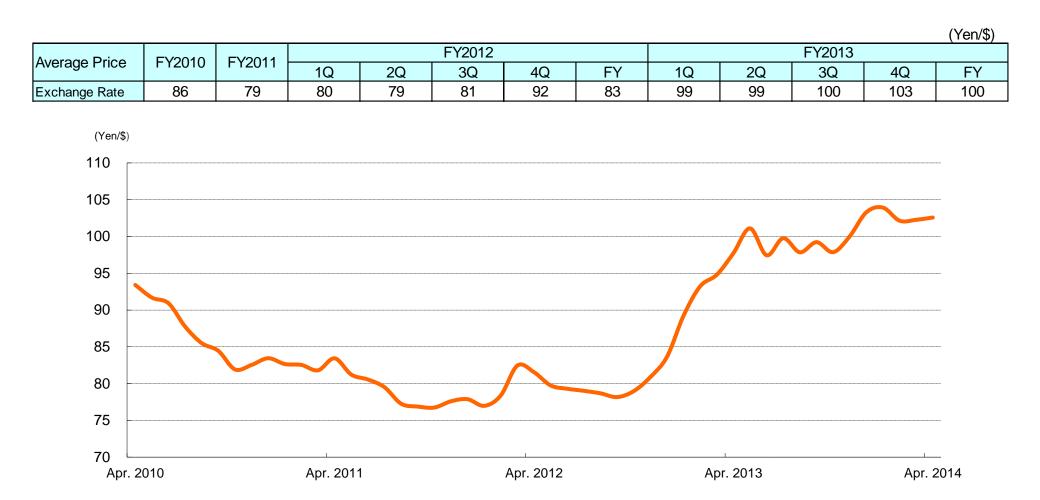
## Historical Copper Price and Inventory Level





### Historical Exchange Rate





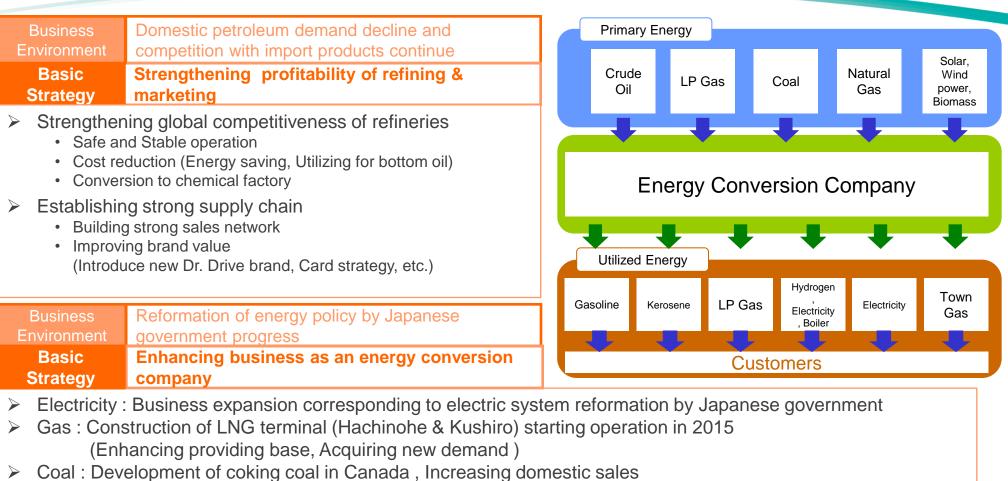


## Strategies of Energy Business

#### Energy Business

### Strategy and Action Plan Petroleum Refining & Marketing/Energy Conversion





Solar, Fuel Cell : Mega solar project, fuel cell business

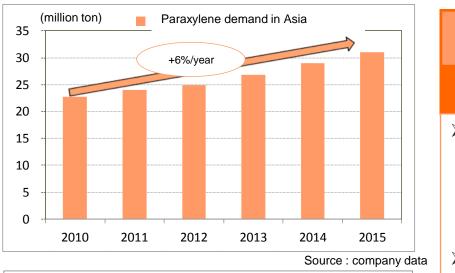
(Challenge for realizing a society with independent and distributed energy system)

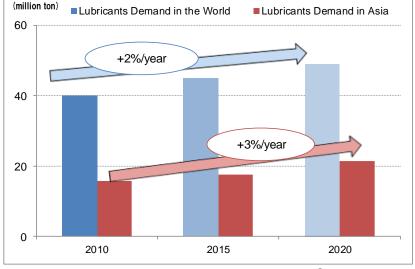
> Hydrogen : Bring forward demonstration test of providing infrastructure

#### Energy Business

### Strategy and Action Plan Basic Chemicals/Lubricants/Specialty & Performance Chemicals







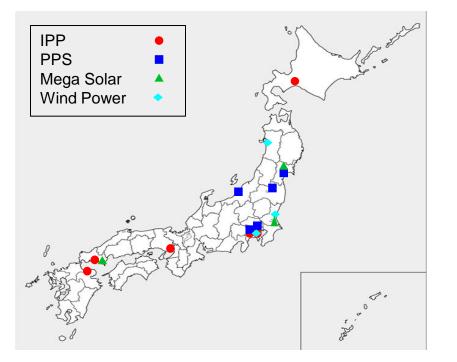
	Business Environment	Energy and materials market continues to expand centering in Asia				
	Basic Strategy	Establishing presence in overseas market				
а	<ul> <li>(Provid</li> <li>Corresp aromati</li> <li>► Lubricants</li> <li>Enhance</li> </ul>	ene project in Korea (Starting operation in 2014) ling capacity of JX Group : $2,620 \rightarrow 3,120$ thousand ton) bonding to business environmental change in olefins and				
	Business EnvironmentDemand of high value-added products increases in emerging countries					
	Basic StrategyAcquiring demand of high value-added products based on original technology					
	<ul> <li>Specialty and Performance Chemicals</li> <li>Expanding overseas production network</li> </ul>					

Increasing sales volume of cell incubation and others

### Action for Energy Conversion Company (Electricity Business, Fuel Cell)



#### ✓ Location of Electricity Business (As of Apr. 2014)



#### ✓ Power Generating Capacity of each Business

IPP	6 stations	840 thousand kW
PPS	5 stations	525 thousand kW
Mega Solar	3 stations	5 thousand kW
Wind Power	3 stations	5 thousand kW
Total (equity basis)		1.375 thousand kW

#### ✓ Expansion of Electricity Business

- Started receiving electricity from Kawasaki Natural Gas Power Generation Co., Ltd, joint venture with Tokyo Gas Co., Ltd.(2008)
- Started operation of the Sendai Mega Solar (Feb. 2013)
- Started operation of the Kudamatsu Mega Solar (Mar. 2013)
- Started operation of the Kasumigaura Mega Solar (Nov. 2013)
- Scheduled to start operation of the Iwaki Mega Solar (Jul. 2014)
- Scheduled to start operation of the 2<sup>nd</sup> Kudamatsu Mega Solar(Aug. 2014)
- Scheduled to start operation of the Akita Mega Solar (Aug. 2014)
- Scheduled to start operation of the Uruma Mega Solar (Mar. 2015)
- Started operation of Wind Power at the Akita Oil Terminal and the Kashima Refinery.(2003, 2005)
- Started operation of Ohgishima Wind Power Station.(2010)
- Scheduled to establish the Solvent De-Asphalting equipment and the power generation facilities in the Kashima Refinery.(FY2015)



#### ✓ Fuel Cell

Increasing sales volume by high attention to new energy after the earthquake.

### Action for Energy Conversion Company (LNG Business)



### ✓ Hachinohe LNG Terminal Project

- > Promoting construction of Hachinohe LNG Import Terminal and Kushiro LNG Satellite Terminal.
  - Taking in the demand of city gas and industrial use in the region of northern Tohoku and eastern Hokkaido.

Apr. 2011

160

50%

50%

• 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

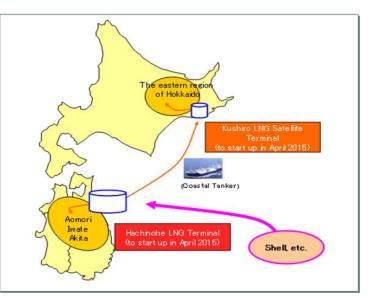
[Current]	Hachinohe (Satellite Terminal)						
Operation start	Mar. 2007						
Tank capacity (thousand KL)	4.5 ×1 tank						
【2015 <b>~</b> 】	Hachinohe (Import Terminal)	Kushiro (Satellite Terminal)					
Operation start	Apr. 2015 (	scheduled)					
Tank capacity (thousand KL)	140×2 tanks	10×1 tank					
Mizushima LNG Import Terminal							
	Tank No.1	Tank No.2					

Apr. 2006

160

The Chugoku Electric Power Co., Inc.

JX Nippon Oil & Energy



**Operation start** 

Tank capacity (thousand KL)

Ownership

### 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.

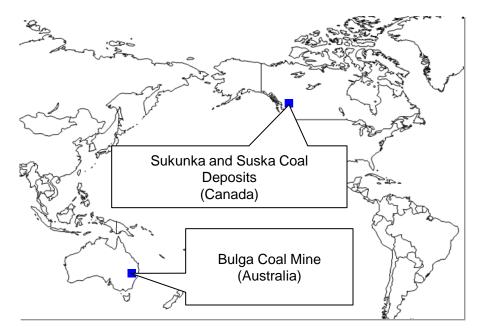
(Mar. 2012)

### 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 Kudamastu Refinery, and started its operation.(May 2001)

### ✓ Our Interest of Coal Mine/Deposits

	Bulga Coal Mine	Sukunka and Suska Coal Deposit		
Location	New South Wales, Australia	British Columbia, Canada		
Interest	13.3%	25.0%		
Reserves/ Resouces	Recoverable reserves more than 300 million tons	Resouces Sukunka Deposit Approx. 240million tons Suska Deposit Approx. 240million tons		
Production capacity	Approx. 11million tons/year	Apporox. 9.5 million tons/year (scheduled)		



## Action for Energy Conversion Company (Hydrogen Business)



- Demonstration Test at Service Stations (SS) that have both of Gasoline and Hydrogen Filling Machine Action for the future hydrogen supply infrastructure
  - Carrying out the demonstration, hydrogen supply test at SS sites 13 private enterprises (the energy industry, automotive industry) and governmental organization are jointly.
  - Examining development of infrastructure and business model for hydrogen supply utilizing nation-wide ENEOS SS network.

Service Station (SS) that has Gasoline and Hydrogen Filling Machine (in Kanagawa)



- ✓ Outline of JX's Demonstration Test
- ENEOS Service Station (Total 2 stations) Placed in Kanagawa Pref. and Aichi Pref.
- Period (Scheduled)
   Apr. 2013 ~ Mar. 2016
- Contents of the Demonstration Test
  - Short time filling of high pressure hydrogen
  - Hydrogen filling operation in parallel with gasoline and diesel fuel sale

### Enhance Overseas Businesses (Paraxylene)



### Main use of Paraxylene



Polyester fiber

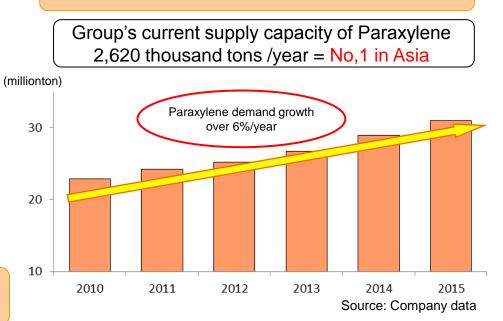
### PET bottles

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

Location : Ulsan, Korea thousand One of the world's capacity : 1,000 tons / year largest capacies

Production Start : 2014 (scheduled)

#### Outlook for Paraxylene Demand in Asia



Investment : approx. 80 billion JPY

Ownership :

JX Nippon Oil & Energy50% -1 shareSK Global Chemical50% +1 share

### Enhance Overseas Businesses (Lubricants)





Location of Overseas Lubricants Business (As of Apr. 2014)



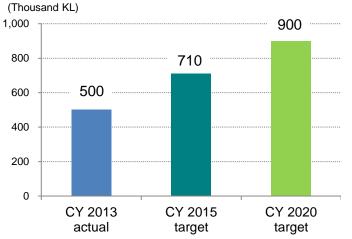
 Expanding overseas business, especially in Asia.

Sales and marketing offices	25
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)
- Determined the establishment of a lubricants manufacturing and marketing company in Vietnam. (established in Nov. 2012, scheduled to start production in 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)

#### ✓ Medium-Term Target of Overseas Lubricants Sales





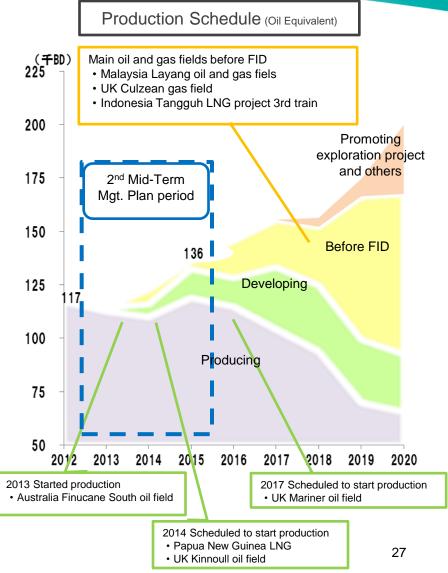
## Strategies of Oil and Natural Gas E&P Business

## Strategy and Action Plan



Expanding Reserves and Production Volume Mainly through Exploration

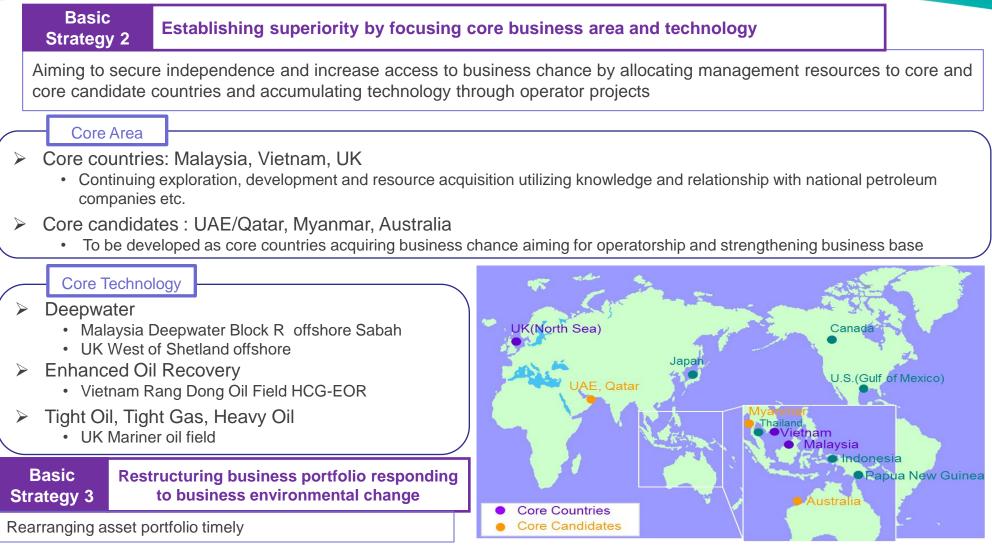
Business Environment	<ul> <li>Crude oil and natural gas demand increases firmly centered on emerging countries.</li> <li>Resources and energy prices stay high but volatile.</li> </ul>					
	<ul><li>Competition for natural resources escalates.</li><li>Development technologies become more challenging.</li></ul>					
Basic Strategy 1	Expanding reserves and production volume mainly through exploration					
Toward produ	ction volume of 200 thousand BD in 2020					
<ul> <li>Shifting developing projects to production and projects before FID to developing</li> <li>(On developing)         <ul> <li>Papua New Guinea LNG project</li> <li>UK Mariner oil field</li> </ul> </li> <li>(Before FID)         <ul> <li>UK Culzean gas field</li> </ul> </li> </ul>						
<ul> <li>Indonesia Tangguh LNG project 3<sup>rd</sup> train</li> <li>Promoting large exploration operator projects (Investing 90billion yen in 3years)</li> <li>Malaysia : Block SK333, Deepwater Block R offshore Sabah</li> <li>Qatar : Block A</li> </ul>						



### Strategy and Action Plan



Focusing on Core Business Area and Technology/Restructuring Business Portfolio



## **Business Area**





## **Business Activities**



	▼ Project Company In Production ● Under Development ● Un	der Exploration 🛑				
D1 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.					
03 Canada	Japan Canada Oil Company / Mocal Energy					
04 Thailand	JX Nippon Oil & Gas Exploration Corp.					
5 Vietnam	Japan Vietnam Petroleum Co., Ltd.	• • •				
	JX Nippon Oil & Gas Exploration Corp.	•				
06 Myanmar	Nippon Oil Exploration (Myanmar) Ltd.	• • •				
	JX Nippon Oil & Gas Exploration (Myanmar) Ltd.	•				
07 Malaysia	JX Nippon Oil & Gas Exploration (Malaysia) Ltd.	• • •				
	JX Nippon Oil & Gas Exploration (Sarawak) Ltd.	•				
	JX Nippon Oil & Gas Exploration (Peninsular Malaysia) Ltd.	•				
	JX Nippon Oil & Gas Exploration (Onshore 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.	• •				
	Japan Energy E&P 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 UAE · 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



		Sales	Sales Volume(JanDec. 2013) (1,000BOED)		Reserves(million BOE) *1 *2		Reference	
	Project Name/Company	* 1	Oil	Gas	As of the end of 2013	As of the end of 2012	As of the end of 2011	pages
1	(North Sea, U.K.)							
I	JX Nippon Exploration and Production (U.K). Limited	5	4	1	184	126	47	58~60
2	(Gulf of Mexico(U.S.A.))							
2	JX Nippon Oil Exploration U.S.A. Limited	4	3	1	16	23	25	61
3	(Canada)							
3	Japan Canada Oil Company Limited	13	13	0	260	253	251	62
5	(Vietnam and other)							
Э	Japan Vietnam Petroleum Company, Limited, other	8	6	2				64 ~ 65
6	(Myanmar)							
0	Nippon Oil Exploration (Myanmar) Limited	9	1	8				66~67
	(Malaysia)							
7	JX Nippon Oil & Gas Exploration (Malaysia) Limited	20	3	17				
	JX Nippon Oil & Gas Exploration (Sarawak) Limited	19	2	17				68~71
8	(Indonesia)				<sub total=""></sub>	<sub total=""></sub>	<sub total=""></sub>	
8	Nippon Oil Exploration (Berau) Limited	18	0	18	196	233	259	72
9	(Australia and other)							
9	JX Nippon Oil & Gas Exploration (Australia) Pty Ltd., other	2	2	0				74~75
44	(Papua New Guinea)				<sub total=""></sub>	<sub total=""></sub>	<sub total=""></sub>	
11	Merlin · Southern Highlands Petroleum Co., Ltd.	6	6	0	95	99	99	76~77
	(United Arab Emirates, Qatar and others) * 3							
12,13	Abudhabi Oil Co., Ltd.,							
	United Petroleum Development Co., Ltd. and others	11	11	0	57	66	69	78~79
	Total	115	51	64	808	800	749	

\*1 Project company basis.

\*2 Proved reserves and probable reserves , including reserves from projects currently under development.

\*3 JX Group's equity basis

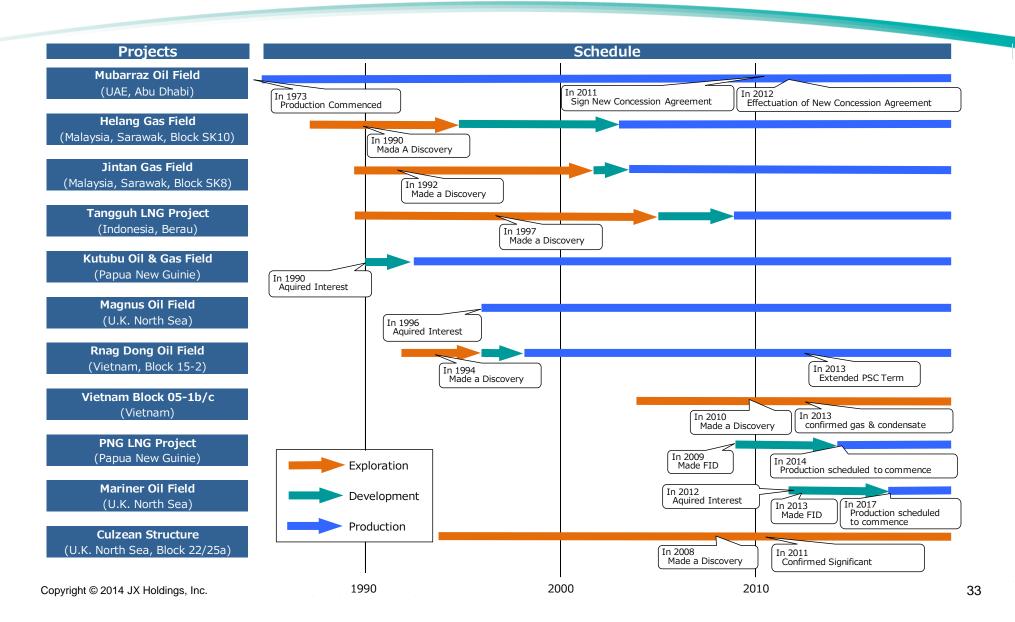
# Maintain and Expand Production Volume over the Medium/Long Term

#### Latest Results

	Country(Block)	Туре	Acquisition of Working Interest	Discovery of oil & gas strata	Final Investment Decision	Renewal of Contract
Jan. 2012	Australia(WA-191-P)	Crude Oil			Product	tion
	Malaysia(Deepwater R)	Crude Oil	•		Comme 2013	nced in May
Aug. 2012	UK(Kinnoull Oil Field)	Crude Oil		Production scheduled to		
Sep. 2012	Myanmar(M-11)	Natural Gas	Con	nmence in 2014		
Oct. 2012	Australia(WA-435/437-P)	Natural Gas	•			
	UK(License Round)	Oil / Gas	•			_
Dec. 2012	UK (Mariner Oil Field and others)	Oil / Gas	•		Production scheduled to Commence in 2017	
Jan. 2013	Malaysia(SK333)	Oil / Gas				
Feb. 2013	UK(Mariner Oil Field)	Crude Oil				
Jun. 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	•			2020~2025
Nov. 2013	Vietnam(15-2)	Crude Oil				
Dec. 2013	Malaysia(Deepwater 3F)	Crude Oil	•			

### Production Schedule of Principal E&P Projects



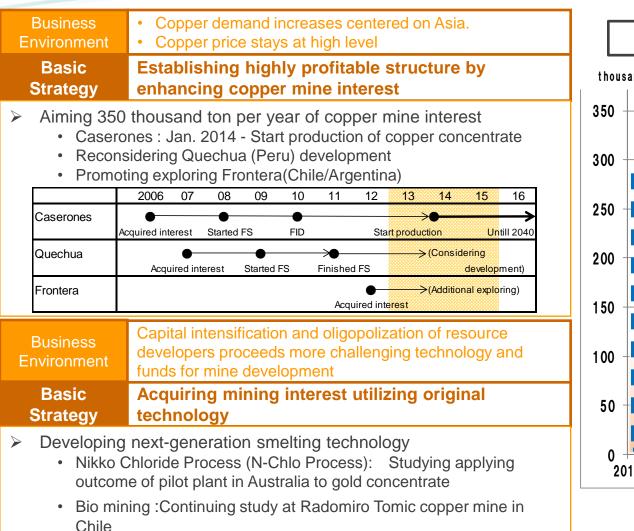


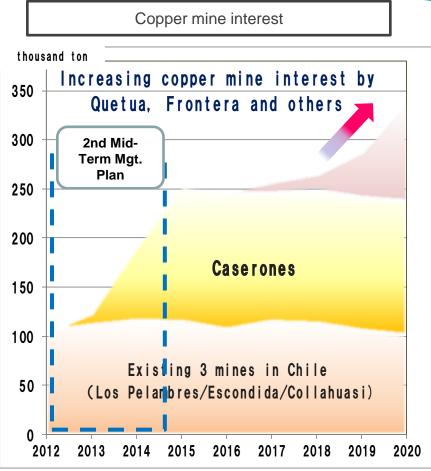


## Strategies of Metals Business

## Strategy and Action Plan Resource Development







# Strategy and Action Plan



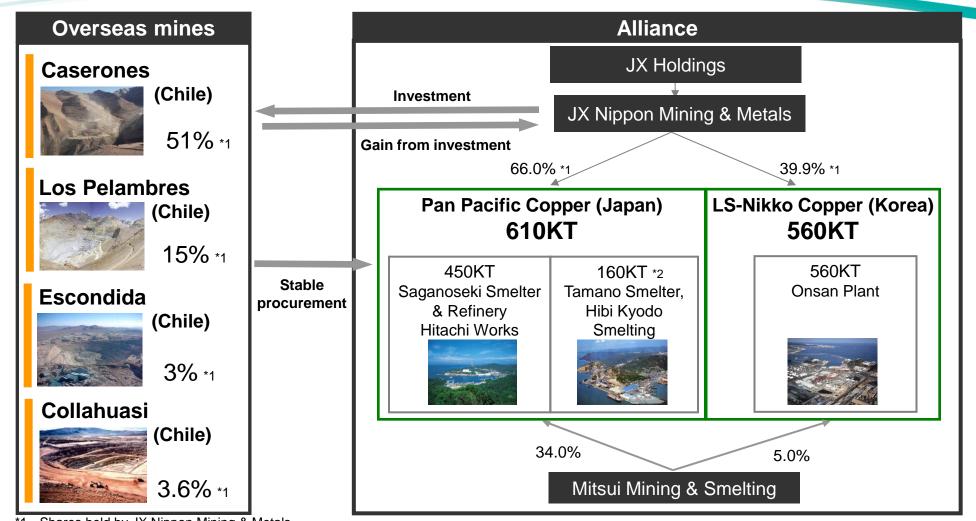
### Smelting & Refining/Electronic Materials/Recycling & Environmental Services

Smelting & Refi	ning
Business Environment	Drastic improvement of TC/RC is hardly expected though mine development proceeds.
Basic Strategy	Establish business structure that has world top-class cost competitiveness
<ul><li>Using high ma</li><li>Starting 2 oper</li></ul>	nargin duction efficiency using copper concentrate from Caserones. Irgin materials. ration of 2 <sup>nd</sup> copper concentrate and sulfuric acid careers.
Electronic Mate	
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
<ul> <li>cathode materials but</li> <li>Improving profitability</li> <li>Ultra-thin elect</li> </ul>	etization of integrated connecter production business (2013.4 Kakegawa Works start operation) and usiness for lithium-ion batteries y by developing new fields and materials tro-deposited copper foil, High-functional precision rolled products, Sputtering target for OELD, Sputtering tt generation LSIs, Materials for ray sensor
Recycling & Environmer	ntal 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
	ability of recycled materials overseas : Development to US market ness : Recycling lythium-ion batteries. Detoxication of materials containing a little PCB

Consolidating production site metal by metal and cost reduction

### **Copper Business**





\*1. Shares held by JX Nippon Mining & Metals

\*2. Total Capacity is 260KT. PPC has 63.51% equity.

### Overseas Copper Mine Development 1



Acquisition date May 2006	Vine life	From 2013 to	2040 (28 yea	ars)	
		started to produce start to Copper Co			14 (Scheduled)
Initial investment \$4.20 billion	al producti Coppe Molybe	on (28years) er : 3,550kt From ( From S denum : 87kt (3kt / y	Copper Conce SX-EW Proces	ntrate 3,140kt	х , , , , , , , , , , , , , , , , , , ,
	Product	ion plan	5	average	total
			first 10 years	(28years)	(28years)
		Copper Concentrate	150 kt/year	110 kt/year	3140 kt
	Copper	SX-EW Process	30 kt/year	10 kt/year	410 kt
Pit damp reaching		total	180 kt/year	120 kt/year	3550 kt
Comp recoving		Molybdenum	3 kt/year	3 kt/year	87 kt
Crusher     Repair Factory     SX-EX Plant       Plant     Thickene     Mo Plant       Stock Pile     Transformer     Office       Over Cable     Mo     Mo	SA	AG(Semi-autogenous Gri	inding)Mill	(Facility of	tation Plant recovering copper te from crude ore)

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### Overseas Copper Mine Development 2

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



Ownership

NGEx Resources Inc. (Canada): 60%

Pan Pacific Copper (PPC) : 40%

\*PPC is Jointly established by JX Nippon Mining(66%) and Mistui Mining & Smelting(34%)

PPC acquired the exploration rights in Sep. 2012 from JOGMEC (Japan Oil, Gas and Metals National Corporation)

#### Exploration results

Drilled exploring holes at Los Helados between 2004 and PPC's acquisition and confirmed existence of copper-gold deposit.

Now, additional prospecting for deposits grasp is on going.

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

# 

Main exploring areas

Filo del Sol (Argentina)

### **Electronic Materials**



					End	-use applicati	ons	
r	Vain IT-related products	Global market share	Primary applications	PCs	Mobile phones / Smart phones	Digital, Avs	Telecom infra	Auto mobiles
1	Treated rolled copper foil	70% No. 1	Flexible printed circuit boards	0	O	Ø		0
	Semiconductor targets	60% No. 1	CPUs, memory chips, etc.	O	0	O	0	0
	ITO targets for FPDs *	30%	Transparent electrodes	O	0	O		
	HD media targets	50%	HDD (Hard disk drives), etc.	O	0			
	Phosphor bronze	20%	Connectors	O	0	0		0
QQ	Corson alloy (C7025)	45%	Lead frames, Connectors	O	0	0		0
	Titanium copper alloy	70% No. 1	High-class connectors, etc.	0	O	0		
	In-P compound semiconductors	50%	Optical comunication devices High-speed IC			0	0	0

\* Flat Panel Displays

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# Electronic Materials (Kakegawa Works)



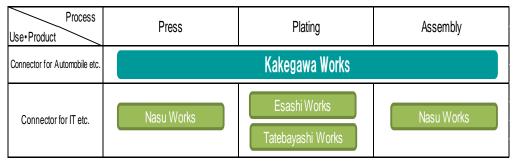
#### ✓ Expansion of Automotive Related Business

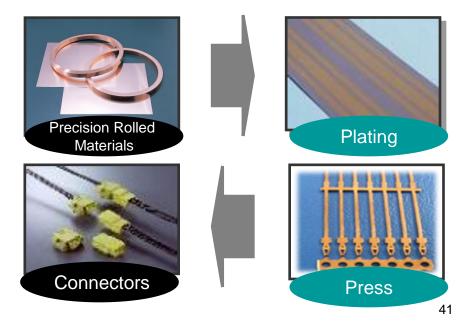
- Eco-friendly car market which is applying full of environmental technology has a high potential of growth in near future.
- Demand for connectors used in electric components of eco- friendly car is expected to expand further.
- OEM Construction of Integrated Plant of Connector (Kakegawa Works)
- Decided to construct a new plant in Kakegawa with integrated production system (press, plating and assembly) for connector (Feb. 2011).
- Started operation (Apr. 2013).



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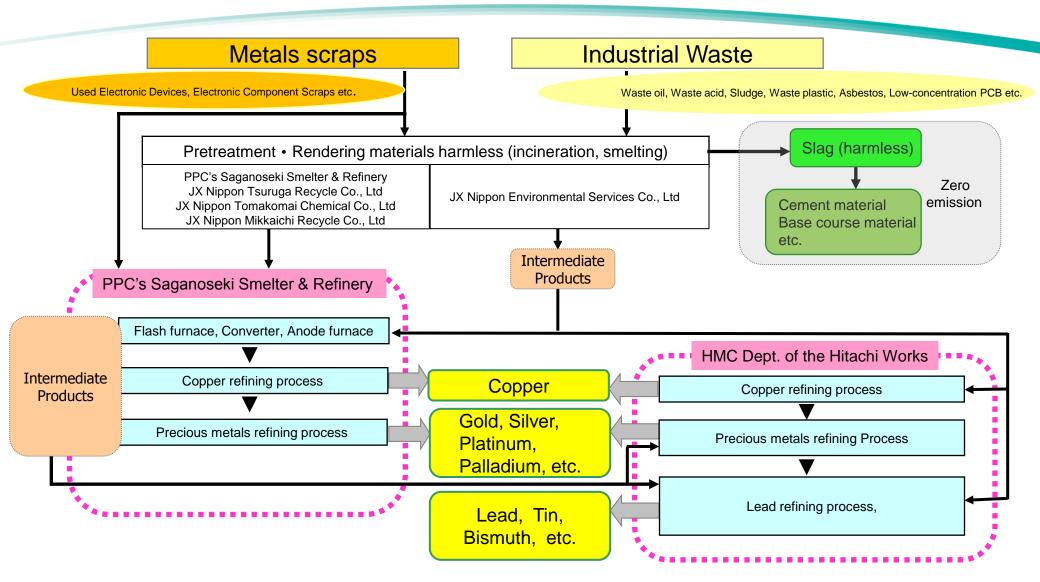
✓ Integrated Production System of Connector and Precision Materials





### **Recycling and Environmental Services**



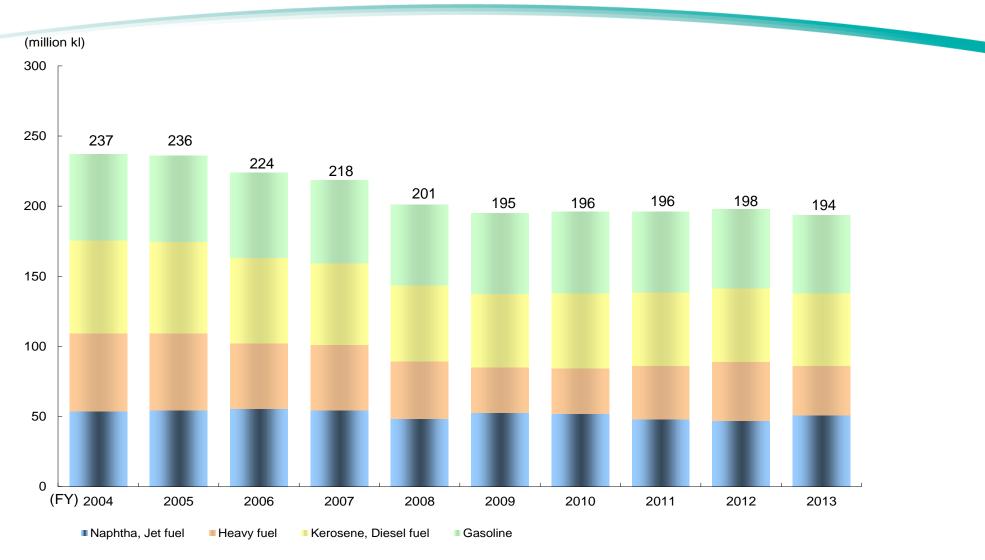




# Business Environment and Data - Energy Business -

Energy Business

### Demand for Petroleum Products (Japan)



Note: Excluding Crude Oil for electric power plants.

Source: Petroleum Association of Japan and Company data

Energy Business

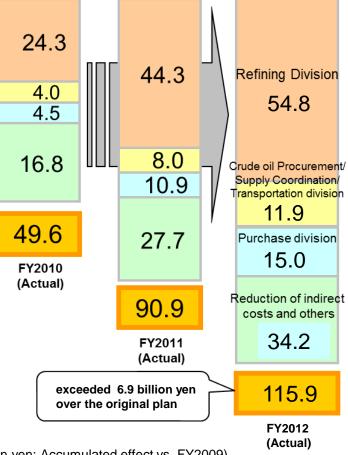
Capacity Reduction Plan, Integration Synergies, Enhanced Efficiency of Refineries



#### Capacity Reduction Plan

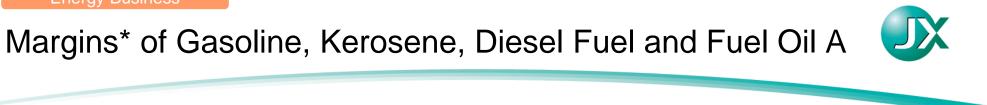
(J) De	ec.2008. A	pr. 2014. ,210 thousand E			Apr. 2014. 3,730 thousand BD
	Refinary	Due Date	Reduction	Capacity	Completion
STEP1	Toyama	March, 2009	(60)	thousand B/D	
	Kashima	May, 2010	(21)		$\mathbf{N}$
	Oita	May, 2010	(24)		
	Mizushima	June, 2010	(110)		<b>M</b>
	Osaka	October, 2010	(115)	Convert to expor refinery	tation
	Negishi	October, 2010	(70)		
	Subto	al	(400)		
STEP 2	Muroran	March, 2014	(180)		<b>X</b>
	Tota	I	(580)		
					onded to Sophistication y Supply Structure Act

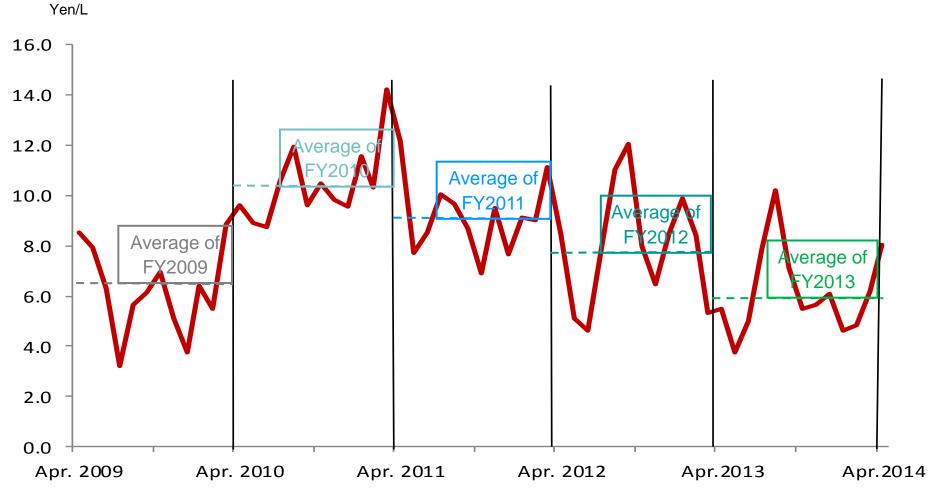
#### Integration Synergies and Enhanced Efficiency of Refineries



(billion yen; Accumulated effect vs. FY2009)

Energy Business





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

Energy Business

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



#### **Domestic Market Share**

Gasoline

Kerosene

**Diesel Fuel** 

Fuel Oil A

a+b+c+d

Total Domestic Fuel

a)

b)

C)

d)

	FY2010 (%)	FY2011 (%)	FY2012 (%)	FY2013 (%)			FY2010 (1,000KL)	FY2011 (1,000KL)	FY2012 (1,000KL)	FY2013 (1,000KL)	Changes vs.FY2012 (%)
	34.2	33.5	33.9	34.1	a)	Gasoline	58,158	57,209	56,207	55,419	98.6
	39.2	40.3	40.0	41.5	b)	Kerosene	20,347	19,623	18,884	17,894	94.8
	36.7	37.1	37.9	38.7	C)	Diesel Fuel	32,892	32,872	33,391	34,079	102.1
	41.6	43.6	44.6	44.3	d)	Fuel Oil A	15,424	14,680	13,759	13,438	97.7
	36.6	36.7	37.1	37.6		a+b+c+d	126,820	124,383	122,241	120,830	98.8
*2	32.7	35.9	36.4	36.9		Total Domestic Fuel *2	196,019	196,044	197,770	193,520	97.9

Domestic Demand

CDU<sup>'</sup> Utilization Rate (Excluding the impact of periodic repair and earthquake)

	FY2010	FY2011	FY2012	FY2013
JX Group <sup>*3</sup>	86%	88%	88%	89%

\*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)



	FY2010	FY2011	FY2012	FY2013 <sup>*5</sup>
JX Group	12,149	11,730	11,283	11,017
EMG <sup>*1</sup>	3,979	3,773	3,475	3,401
Idemitsu Kosan	4,148	3,997	3,861	3,786
Showa Shell Sekiyu	3,922	3,760	3,555	3,464
Cosmo Oil	3,609	3,498	3,325	3,256
Others *2	1,194	1,160	1,130	1,103
Oil Companies	29,001 (76.5%)	27,918 (75.7%)	26,629 (74.8%)	26,027 (74.8%)
Private Brands and Others *3	8,899 (23.5%)	8,982 (24.3%)	8,971 (25.2%)	8,773 (25.2%)
Total <sup>*3</sup>	37,900	36,900	35,600	34,800

<Number of Company-Owned Service Stations>

	FY2010	FY2011	FY2012	FY2013
JX Group	2,701	2,573	2,487	2,433

#### <Number of Self-Service Stations>

	FY2010	FY2011	FY2012	FY2013
JX Group	2,385	2,423	2,535	2,654
Total for Japan $^{*3}_{*4}$	6,935	7,001	7,172	7,400

Notes: \*1. Figures are total of Esso, Mobil and Tonen General Sekiyu.

\*2. Figures are total of Taiyo Petroleum, Mitsui Oil & Gas 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 and Idemitsu Kosan are as of the end of Dec 2013.

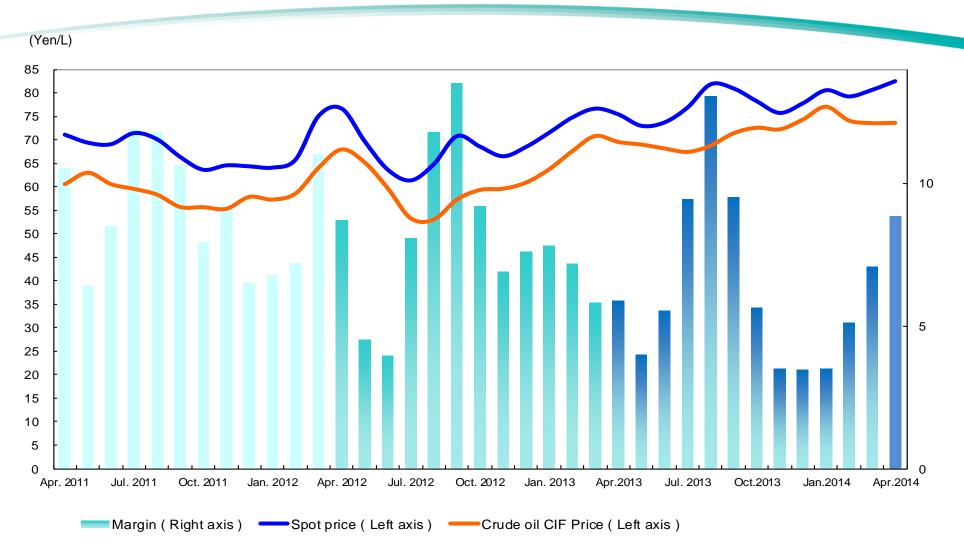
# Sales Volume by Product



_	FY2010	FY2011	FY2012	FY2013	Changes vs. FY 2012
	million KL	million KL	million KL	million KL	
Gasoline	1,990	1,919	1,904	1,889	-0.8%
Premium	279	253	239	229	-4.2%
Regular	1,700	1,654	1,654	1,650	-0.2%
Naphtha	376	366	393	419	6.6%
JET	145	144	156	164	5.1%
Kerosene	755	748	711	696	-2.1%
Diesel Fuel	1,198	1,216	1,264	1,318	4.3%
Fuel Oil A	641	640	614	595	-3.1%
Heavy Fuel Oil C	645	912	1,039	856	-17.6%
For Electric Power	366	617	777	627	-19.3%
For General Use	279	295	262	228	-13.0%
Total Domestic Fuel	5,750	5,945	6,082	5,936	-2.4%
Crude Oil	149	430	509	438	-13.9%
Lubricants & Specialities	358	334	317	307	-3.2%
Petrochemicals (ten thousand ton)	563	552	558	629	12.7%
Exported Fuel	1,020	880	1,019	1,119	9.8%
LPG (ten thousand ton)	188	32	28	34	21.4%
Coal (ten thousand ton)	566	533	564	691	22.5%
Total Excluding Barter Trade & Others	8,594	8,706	9,076	9,153	0.8%
Barter Trade & Others	2,348	2,081	1,931	1,909	-1.1%
Total	10,942	10,787	11,008	11,062	0.5%

# Domestic Market Margin\* (Gasoline)





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

(Yen/L)	
	- 15
50 -	- 10
45	
30	
25	- 5
20	
15	
5	
O         I	4pr.2014
Margin (Right axis) ——Spot price (Left axis) ——Crude oil CIF Price (Left axis) * Margin = Spot Price – All Japan Crude Oil CIF (including petroleum tax and interest) Source : Trade statistics (Ministry of Finance, Japan)	

# Domestic Market Margin\* (Kerosene)



(Yen/L) 85 80 75 70 65 60 55 50 45 40					<b>1</b> 5 10
35       -         30       -         25       -         20       -         15       -         10       -         5       -         0       -					5
Apr. 2011 Jul. 2011 G	Oct. 2011 Jan. 2012 Apr. 20 Right axis) ——Spot pr e – All Japan Crude Oil CIF (in	ice(Left axis)	Crude oil CIF Price ( Le	Jul. 2013 Oct.2013 ft axis ) Trade statistics (Ministry	Jan.2014 Apr.2014

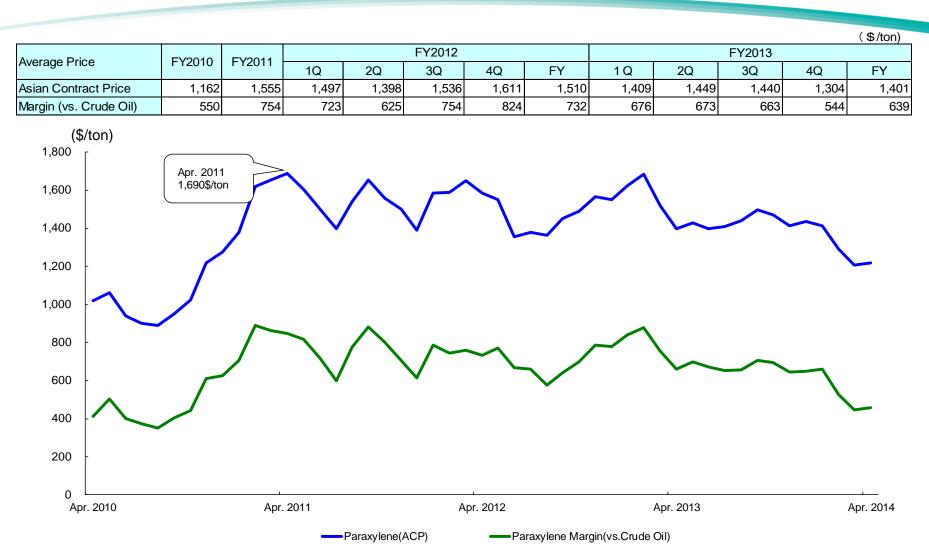
# Domestic Market Margin\* (Diesel Fuel)

n/L)			
-			$\sim$
	$\frown$	$\sim$	
		H	
-			
-			
or. 2011 Jul. 2011 Oct. 2	011 Jan. 2012 Apr. 2012 Jul. 20	12 Oct. 2012 Jan. 2013 Apr.2013	Jul. 2013 Oct.2013 Jan.2014 Apr.2
Margin ( Right	axis) Spot price (Left ax	s) — Crude oil CIF Price ( Let	t avia )

# Domestic Market Margin\* (Fuel Oil A)

### Paraxylene Price and Margin (vs. Crude Oil)





<sup>\*</sup> In case of ACP undecided, average price of spot market is adopted.

### Benzene Price and Margin (vs. Crude Oil)



Drine	FY2010 FY2011	FY2011			FY2012					FY2013		(\$/ton)
verage Price	FY2010	4Q	1Q	2Q	3Q	4Q	FY	1 Q	2 Q	3Q	4Q	FY
sian Contract Price	948	1,111	1,155	1,112	1,318	1,433	1,255	1,309	1,252	1,293	1,331	1,29
argin (vs. Crude Oil)	336	310	382	338	537	646	476	576	475	516	571	53
(\$/ton) 1,800 1,600 - 1,400 -				~		Jan. 1,470	2013 0\$/ton	$\overline{}$	~~		~	~
1,000 800 600								$\sim$	$\sim$			

### Propylene Price and Margin (vs. Naphtha)



varana Drian	EV2010 EV2011			FY2012					FY2013		(\$/t	
verage Price	FY2010	FY2011	1Q	2Q	3Q	4Q	FY	1Q	2Q	3Q	4Q	F١
ar East Spot Price	1,258		1,367	1,364	1,336	1,347	1,353	1,344	1,430	1,473	1,457	
argin (vs. Naphtha)	484	362	474	452	392	385	426	486	510	527	522	
,800 ,600 ,400 ,200		$\frown$		f	Aug. 2011 I,581\$/ton		~~	$\sim$		~	~	
- 000												
000 800 600 400 200 0		· · ·				~	~~~				~	_

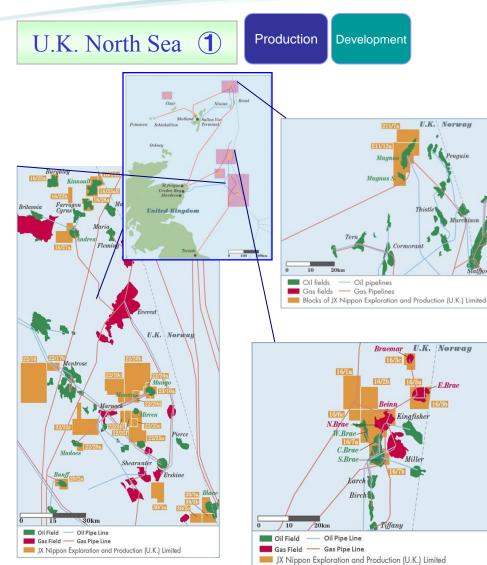
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# Business Environment - Oil and Natural Gas E&P Business -

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





	Magnus, Brae, Andrew, Blane and other fields	Kinnoull Oil Field
Company Holding the Acreages	JX Nippon Exploration and Pro	duction (U.K.) Ltd.
Shareholders(Holding Percentages)	JX Nippon Oil & Gas Explo	ration (100%)
Project Status	Exploration/Development/Production	Development
Interest	4.0% <b>~</b> 100.0 <b>%</b>	22.94 <b>%</b>
Partners	BP, Shell, Marathon, Others	BP(77.06%)
Operator	BP, Shell, Marathon, Others	BP
Sales Volumes (Jan.~Dec. 2013)	4,700 boed (oil 3,600b/d.gas 6.1mmcf/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

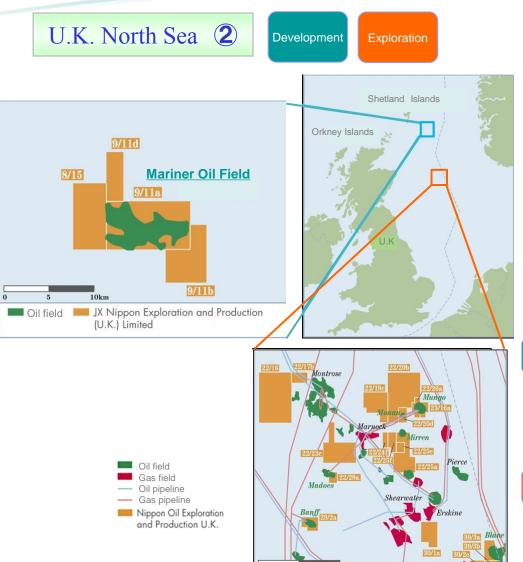
#### Andrew, Mungo / Monan, Mirren / Madoes, Blane

- Magnus Oil Fields, Brae Gas Field 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.

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

 In August 2012, acquired interest in Kinnoull Field which is under development, by exchanging interest in Pierce Field.
 In December 2012, acquired the additional interest of oil field from ENI. In 2014 Production scheduled to commence.

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



**30km** 

15

	Mariner Oil Field	Culzean Gas Field	
Company Holding the	JX Nippon Exploration and		
Acreages	Production	(U.K.) Ltd.	
Company Holding the	JX Nippon Oil Exploratio	on and Production (U.K.)	
Acreages	Lt	d.	
Shareholders(Holding	IX Ninnon Oil & Gas	Exploration (100%)	
Percentages)	JX Nippon Oil & Gas Exploration (100%)		
Project Status	Development	Exploration	
Partners	Statoil (65.11%)	Maersk (49.99%)	
raimeis	Dyas (6.00%) BP (16.00%)		
Operator	Statoil	Maersk	

Development

Exploration

#### 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.

#### **Mining Area during Exploration**

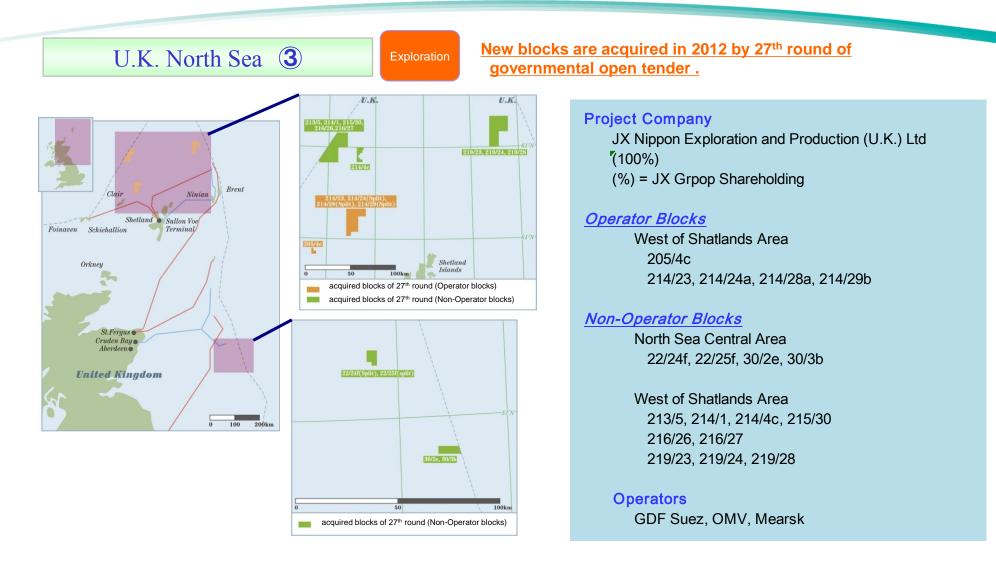
#### 22/25a (Culzean Prospect) etc

- 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. ③)





# Principal Individual E&P Project Overview (Gulf of Mexico)





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 (	Dil Exploration(U.S.A	.) Ltd.
Shareholders(Holding Percentages)	JX Nippon C	il & Gas Exploration	<b>(</b> 100 <b>%)</b>
Project Status	Production	Production	Production
Interest	11.6%	50.0%	35.0% <b>~</b> 62.5%
Partners	Anadarko(41.8%) ENI(13.4%) ConocoPhillips(12.4%) MCX(11.6%) EcoPetrol(9.2%)	Hilcorp (50.0%)	Fieldwood Dynamic Ranger Tarpon
Operator	Anadarko	Hilcorp	Fieldwood, Others
Sales Volume(JanDec. 2013)	3,600 boed (0	Dil 2,300b/d、Gas 7.	7mmcf/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.
- In September 2010, sold some assets of shallow water and deep water areas.

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# Principal Individual E&P Project Overview (Canada)





	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 Volume (JanDec. 2013)	13,300boed (oil 13,300b/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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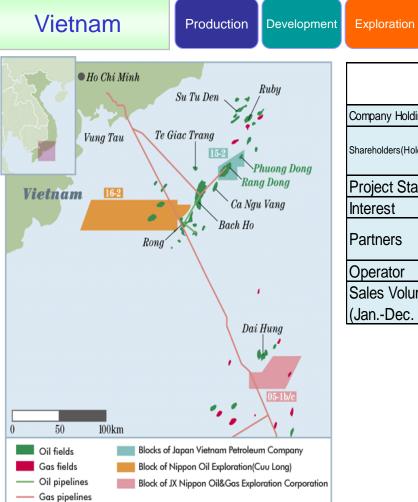
Next Page

Oil and Natural Gas E&P Business

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

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





	Block	: 15-2	Diack OF th/a
	Rang Dong Oil Field	Phuong Dong Oil Field	Block 05-1b/c
Company Holding the Acreages	Japan Vietnam Pe	troleum Company	JX Nippon Oil & Gas Exploration
Shareholders(Holding Percentages)	JX Nippon Oil & Gas I Mitsubishi Corporatior	· · · ·	-
Project Status	Exploration/Develo	opment/Production	Exploration
Interest	46.5%	64.5%	35.0%
Partners	PVEP (17.5%) Perenco (36.0%)	PVEP (35.5%)	Idemitsu Oil & Gas (35.0%) INPEX (30.0%)
Operator	Japan Vietnam Petroleum Company		ldemitsu Oil & Gas
Sales Volume (JanDec. 2013)	,	boed as 10.4mmcf/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 <u>Phuong Dong</u> Oil Field.
- In November 2013, determined on term extension of the Rang Dong Oil Field (5 years).

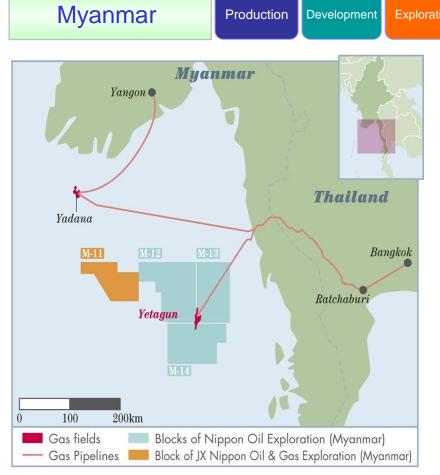
#### Block 05-1b/c

#### Exploration

- In October 2004, acquired a working interest in <u>block 05-1b/c</u> 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.

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





	Bolock M-12, 13, 14	Block M-11
Company Holding the Acreages	Nippon Oil Exploration (Myanmar)	JX Nippon Oil & Gas Exploration (Myanmar)
Shareholders(Holding Percentages)	JX Nippon Oil & Gas Exploration (40.0%) Mitsubishi Corporation (10.0%) Government of Japan (50.0%)	JX Nippon Oil & Gas Exploration (100.0%)
Project Status	Exploration / Development / Production	Exploration
Interest	19.3%	15.0%
Partners	Petronas Carigali (40.9%) MOGE(20.5%) PTTEP International (19.3%)	PTTEP International (45.0%) TOTAL (40.0%)
Operator	Petronas Carigali	PTTEP International
Sales Volume (JanDec. 2013)	9,100boed (oil 800b/d, gas 50.0mmcf/d)	-

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





We have been participating in the Yatagun 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.

- In 1991, NOEX Myanmar acquired a working interest in <u>blocks M-13/14</u> offshore Myanmar.
- The following year, acquired a working interest in <u>block M-12</u> 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 2012, Made the Final Investment Decision on the Yetagun North Gas Field.
  Development of the gas field are underway to

Development of the gas field are underway to commence of production in August 2014.

●In December 2013, selled 10% of Nippon Oil Exploration (Myanmar)'s stock to Mitsubishi Corporation.

 In September 2012, acquired a working interest in <u>blocks M-11</u>, offshore Myanmar.
 (Waiting for the approval of the Myanmar government)

● In January 2013, acquired the approval of the Myanmar government.

In Nobember 2013, excavated test well No1.

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



Malaysia Production Development Exploration			
Kuala Lumpur Miri		SK10 (Herang Gas Field, Others)	SK8 (Jintan, Cilipadi Gas Field, Others)
Deepwater Block R Kota Kinabal	Company holding the Acreage	JX Nippon Oil & Gas Exploration (Malaysia)	JX Nippon Oil & Gas Exploration (Sarawak)
Serai Saderi SKS Njintan Bijan Cilipadi Belasih Helang Brunei Malaysia	(Holding	Inpex (15.0%)	JX Nippon Oil & Gas Exploration (76.5%) Inpex (15.0%) Mitsubishi Corporation (8.5%)
SK10 J Miri SK333	Project Status	Exploration/Development/Production	Development/Production
	Interest	75.0 <b>%</b>	37.5%
Bintulu 0 50 100km	Partnaers	Petronas Caridali (25 (1%)	Shell Oil and Gas Malaysia (37.5%) Petronas Carigali (25.0%)
Oil Fields       Gas Fields of JX Nippon Oil & Gas Exploration (Malaysia)         Gas Fields       Gas Fields of JX Nippon Oil & Gas Exploration (Sarawak)         Oil Pipelines       Block of JX Nippon Oil & Gas Exploration (Onshore Sarawak)         Gas Pipelines       Block of JX Nippon Oil & Gas Exploration (Deepwater Sabah)		JX Nippon Oil & Gas Exploration (Malaysia)	Shell Oil and Gas Malaysia
	Sales Volume (JanDec. 2013)	20,000boed (Oil 3,400b/d、Gas 99.8mmcf/d)	18,500boed (Oil 1,800b/d,Gas 100.2mmcf/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.



#### 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.

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

Production D

#### Development

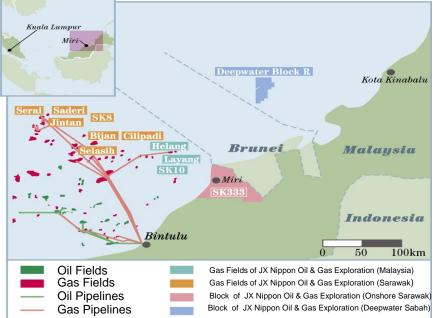
#### Mining Area during the production SK8 (Jintan, Saderi, Cilipadi Gas Fields)

- 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)







	PM308A	SK333
Company holding the Acreage	JX Nippon Oil & Gas Exploration (Peninsular Malaysia)	JX Nippon Oil & Gas Exploration (Onshore Sarawak)
Shareholders (Holding Percentages)	JX Nippon Oil & Gas Exploration (32.3%) JOGMEC (67.7%)	JX Nippon Oil & Gas Exploration (29.7%) JOGMEC (70.3%)
Project Status	Exploration	Exploration
Interest	40.0%	75.0%
Partners	Lundin Malaysia(35.0%) Petronas Carigali(25.0%)	Petronas Carigali (25.0%)
Operator	Lundin Malaysia	JX Nippon Oil & Gas Exploration (Onshore Sarawak)

	Deepwater Block R	Deepwater Block 2F	Deepwater Block 3F
Company holding the	JX Nippon Oil & Gas Exploration	JX Nippon Oil & Gas Exploration	JX Nippon Oil & Gas Exploration
Acreage	(Deepwater Sabah)	(Offshore Malaysia)	(Offshore Malaysia)
Shareholders	JX Nippon Oil & Gas Exploration	JX Nippon Oil & Gas Exploration	JX Nippon Oil & Gas Exploration
(Holding Percentages)	(100%)	(100%)	(100%)
Project Status	Exploration	Exploration	Exploration
Interest	37.5 <b>%</b>	40.0%	40.0%
Partners	Inpex Offshore South Sabah(37.5%)	Petronas Carigali (40.0%)	Petronas Carigali (40.0%)
	Petronas Carigali(25.0%)	GDF Suez E&P Malaysia (20.0%)	GDF Suez E&P Malaysia (20.0%)
Operator	JX Nippon Oil & Gas Exploration	JX Nippon Oil & Gas Exploration	Petronas Carigali
	(Deepwater Sabah)	(Offshore Malaysia)	

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



#### Block SK333

#### Exploration

- In December 2007, acquired a working interest in <u>Block SK333</u> onshore Sarawak, Malaysia.
- In January 2013, discovered gas and oil in Adong Kecil West Prospect.

#### Block PM308A

#### Exploration

 In April 2008, acquired a working interest in <u>Block PM308A</u> offshore peninsular Malaysia.

#### **Deepwater Block R**

#### Exploration

 In January 2012, acquired a working interest in <u>Deepwater Block R</u> deep sea, offshore Sabah, Malaysia.

#### **Deepwater Block 2F**

#### Exploration

 In September 2013, acquired a working interest in <u>Deepwater Block 2F</u> deep sea, offshore Sarawak, Malaysia.

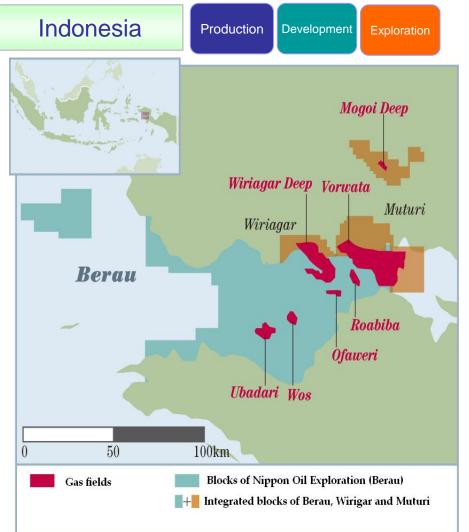
#### **Deepwater Block 3F**

#### Exploration

 In December 2013, acquired a working interest in <u>Deepwater Block 3F</u> 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 Dereenterse)	JX Nippon Oil & Gas Exploration (51.0%)			
Shareholders(Holding Percentages)	JOGMEC (49.0%)			
Project Status	Exploration/Development/Production			
Interest	12.2%(After Unitization)			
	BP(37.2%)	MI Berau(16.3%)		
Partners	CNOOC(13.9%)	KG Berau / KG Wiriagar (10.0%)		
	LNG Japan (7.3%)	Talisman (3.1%)		
Operator	BP			
Sales Volume	18,400boed			
(JanDec. 2013)	(oil 500b/d, gas 107.2mmcf/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.

#### Project during the production : Production <u>Tangguh LNG Project</u>

- 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.



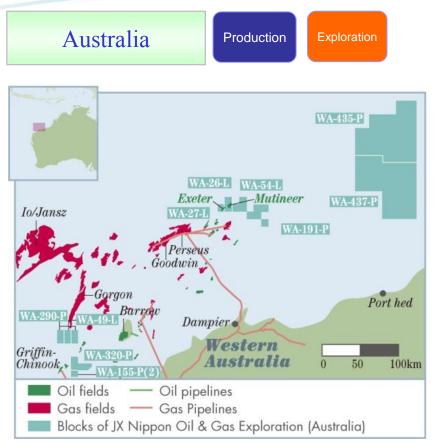
Next Page

Oil and Natural Gas E&P Business

## Principal Individual E&P Project Overview (Australia<sup>1</sup>)

# Principal Individual E&P Project Overview (Australia<sup>1</sup>)





	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. <b>∼</b> Dec. 2013)	2,000 boed(Oil 2,000b/d)			

	Block WA-290-P	Block WA-435-P	Block WA-320-P	Block WA-155-P(2)	
	Block WA-49-R	Block WA-437-P	BIOCK WA-320-P	BIOCK WA-155-F(2)	
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	Exploration	
Interest	15.0 <b>%</b>	20.0 <b>%</b>	10.0 <b>%</b>	7.0%	
Partners		Apache (40.0%) Finder (20.0%) Carnarvon (20.0%)	Apache (40.665%) OMV (39.557%) Tap (9.778%)	Apache (40.665%) OMV(27.11%) Inpex (18.67%) Tap(6.555%)	
Operator	Apache	Apache	Apache	Apache	

# Principal Individual E&P Project Overview (Australia<sup>(2)</sup>)



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.

#### Mutineer/Exeter Oil Field

#### Production

- 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

Block WA-54-L,Block WA-191-P (Finucane South Oil Field and others)



- In May 2011, discovered oil in the Finucane South prospect in Block WA-191-P.
- In May 2013, oil production commenced in Finucane South Field.

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



 In October 2012, acquired working interests in Block WA-435-P and Block WA-437-P

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

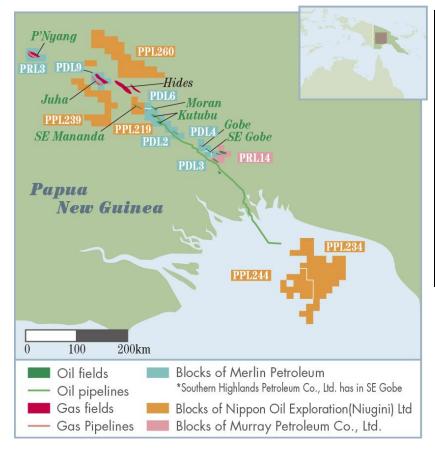


 In June 2013, acquired working interests in Block WA-320-P and Block WA-155-P

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







	Kutubu, Moran, Gobe oil fields, Others	PNG LNG Project		
Company Holding the Acreages	Merlin Petroleum Company (79.0%) Nippon Oil Exploration (Niugini) Pty LTD (29.8%) Southern Higjland Petroleum (80.0%) Murray Petroleum (29.3%)	Nippon Papua New Guinea LNG LLC (79.0%)		
Project Status	Exploration / Development / Production	Development		
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	5,500boed	_		
(JanDec. 2013)	(oil 5,500b/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.



 In April 2011, excavated test well "Mananda-5" in <u>Block PPL219</u>, 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.
   Development of the project are underway to commence of production in 2014.

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

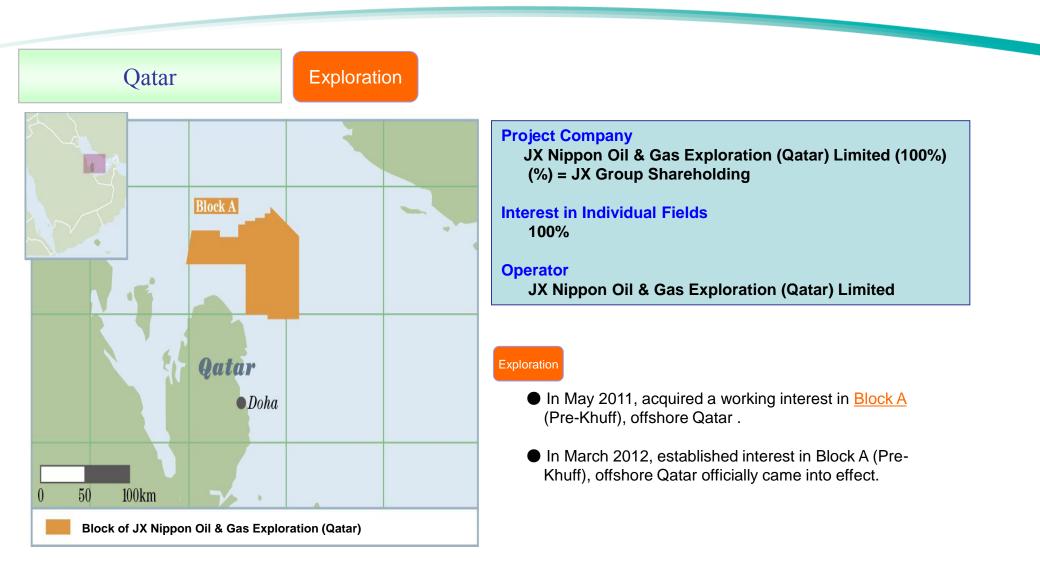


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UAE, Qatar Production Development Exploration	Company Holding the Acreages	United Petroleum Development (Bunduq Company Limited)		
	Partners	JX Nippon Oil & Gas Exploration (45.0%) Cosmo Energy Exploration & Production Co., Ltd. (45.0%) Mitsui Oil Exploration Co., Ltd (10.0%)		
	Project Status	Exploration / Development / Production		
	Interest	97.0%		
	Partners	BP (3%)		
	Operator	Bunduq Company Limited		
Qatar Umm Al Anbar	<ul> <li>In 1970, United petroleum Development acquired a working interest of El Bunduque Oil Field.</li> <li>In 1975, oil production commenced in <u>El Bunduq oil feld</u>.</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>			
	Company Holding the Acrea	iges Abu Dhabi Oil		
Neewat Al Ghalan Hail	Partners	JX Nippon Oil & Gas Exploration (32.1%) Cosmo 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%		
UAE	Operator	Abu Dhabi Oil		
0     50     100km       Oil Fields     Abu Dhabi Oil     Bunduq	<ul> <li>In 1973, oil production of</li> <li>In 1989, oil production of</li> <li>In 1995, oil production of</li> <li>In 2009, 3 fields achieve</li> <li>In 2011, Sign a New Comparison</li> </ul>	orking interest in block of Mubarraz. commenced in <u>Mubarraz Oil Field</u> . commenced in <u>Umm Al Anbar Oil Field</u> . commenced in <u>Neewat Al Ghalan Oil Field</u> . ed cumulative production volume of 300 million barrels. oncession Agreement.		
Copyright © 2014 JX Holdings, Inc.		~		

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





# 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

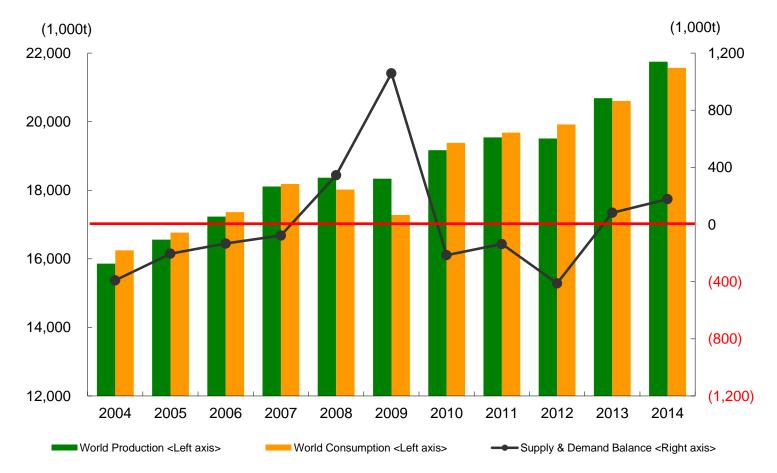


(Thousand Ton)		CY 2009	CY 2010	CY 2011	CY 2012	CY 2013
		Actual	Actual	Actual	Actual	Actual
Caserones	SX-EW copper cathode	-	-	-	-	16
Los Pelambres	Copper concentrate *	312	385	412	404	405
Collahuasi	Copper concentrate *	493	465	417	236	401
	SX-EW copper cathode	43	39	36	37	28
	Total	536	504	453	273	429
Escondida	Copper concentrate *	750	762	517	740	859
	SX-EW copper cathode	327	300	283	310	305
	Total	1, 078	1, 062	801	1, 050	1, 164

#### \*Payable copper contained in concentrate

## World's Copper Cathodes Supply & Demand



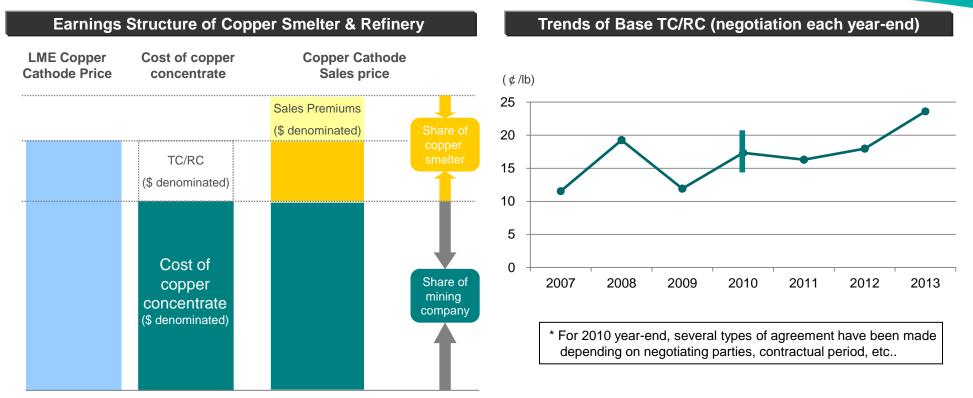


DATA : PPC

\* Expected in FY 2014 by JX Holdings

## 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 plat in Perth, Australia (About 100t/year Cu recovery)



## **Structure of N-Chlo Process**

