PTT Exploration and Production Public Company Limited

2015 Year-end Analyst Meeting
Bangkok
19 February 2016

PTTEP

MEMBER OF
Dow Jones
Sustainability Indices
In Collaboration with RobecoSAM

Safety Performance

Industry Highlights

Financial Results

Key Achievements and Outlook

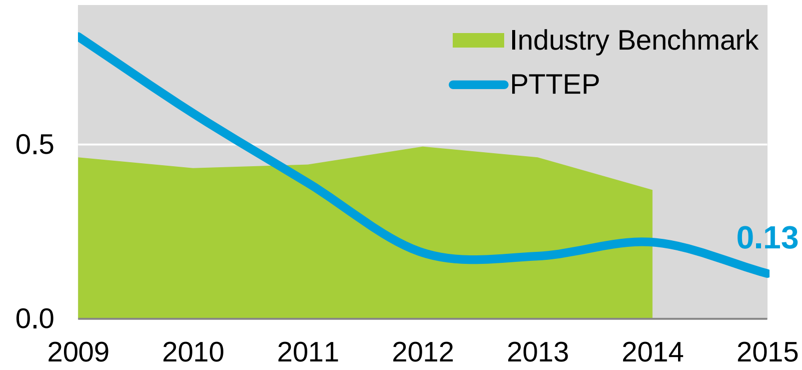
Second consecutive year as a DJSI listed company

Affirming our path to sustainable development

MEMBER OF
Dow Jones Sustainability Indices
In Collaboration with RobecoSAM

Above Industry Average Safety Record

of incidents per million man hours
(Lost time injury incident frequency, LTIF)



The safety of PTTEP employees and contractors in every aspect of our operations is the key success to achieve the goal of "Target Zero"

TARGET ZERO
NOBODY GETS HURT IN OUR OPERATIONS

Safety Performance

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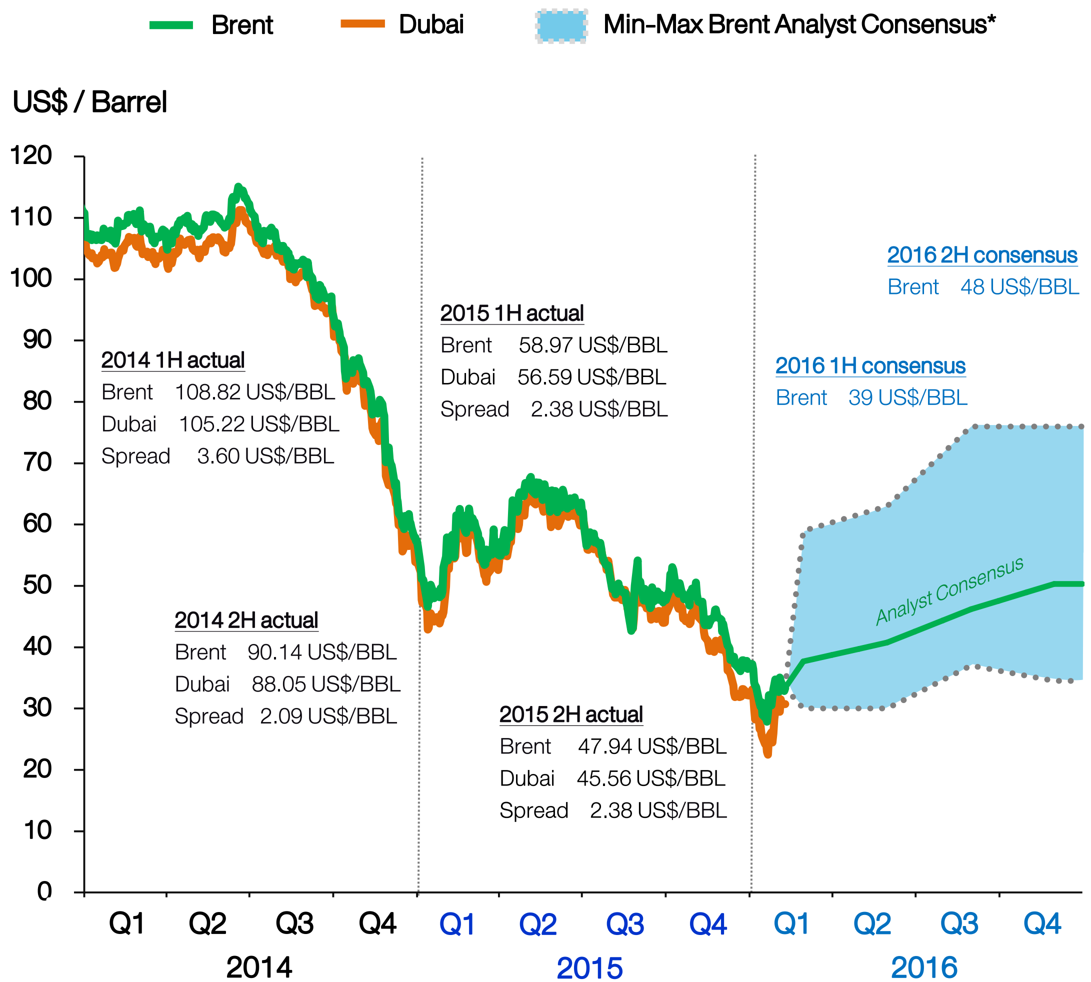
Oil Prices

Oil prices fell as market continues to be oversupplied



Remark: * Bloomberg Analyst Consensus (CPFC) as of 9 February 2016 (41 estimates)

2015 Highlights

- High levels of production from OPEC and U.S.
- Slowdown of global economy especially China's

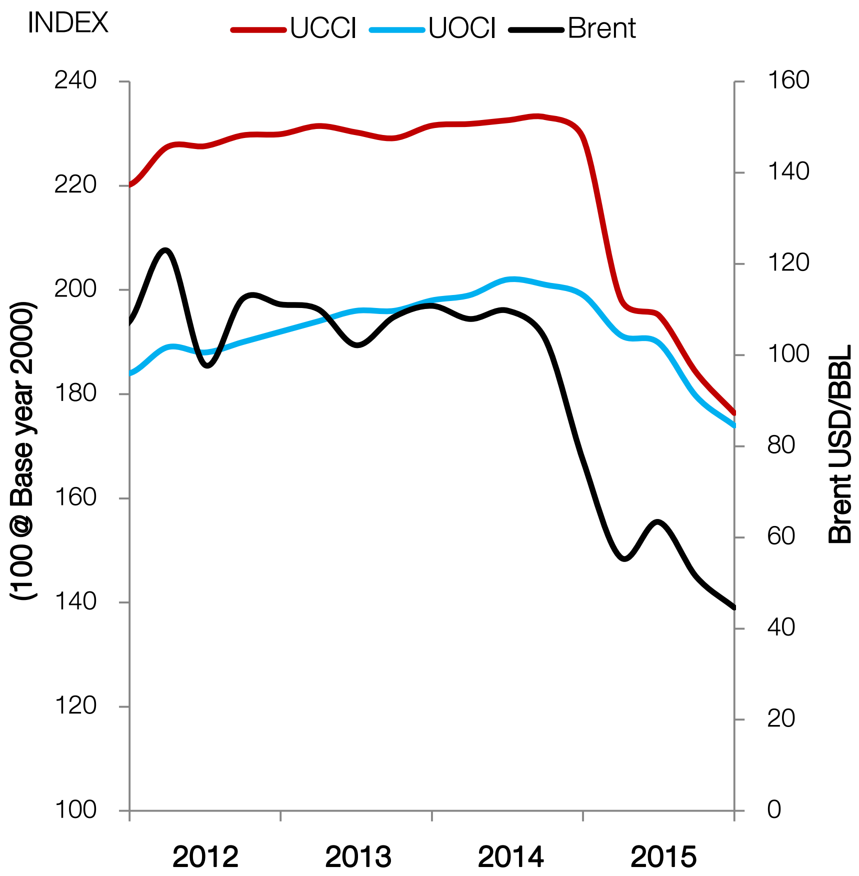
2016 Outlook

- Continued oversupply condition
- Additional supply from Iran after international sanctions lifted
- Possible slowdown of supply in 2H 2016

Cost & Industry Trend

Falling upstream cost indices as E&P companies focus on spending cuts

Upstream Capital and Operating Cost Indices



Remark: UCCI = Upstream Capital Cost Index ; UOCI = Upstream Operating Cost Index

Source: IHS CERA

Industry Responses to Low Oil Prices

Focus on cost and spending cuts to balance cash flows and revitalize through …

Cost & Investment Optimization

- Improve efficiency, standardize and simplify design, and lower costs
- Defer spending on higher-cost projects

Portfolio Rationalization

- Move back to core high-quality assets in the portfolio
- Divest non-core positions, most evidently in 2015 in less-oil price sensitive sector (e.g. midstream)

Consolidation

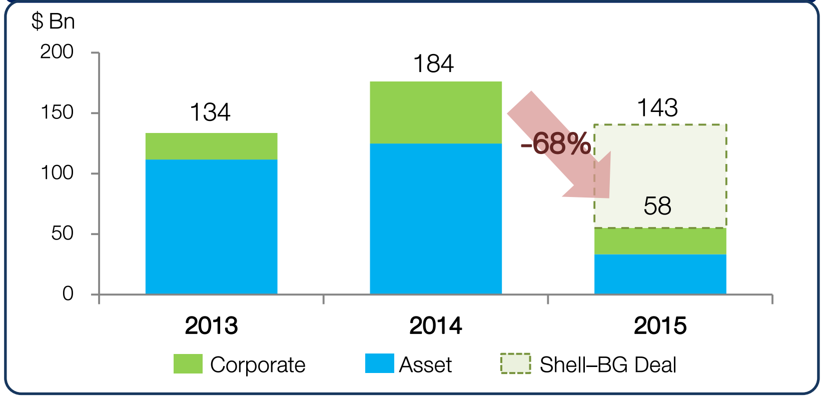
- Values through synergy and economies of scales
- Example: Shell-BG / Suncor-COS / intra-basin consolidation by US onshore players

PTTEP

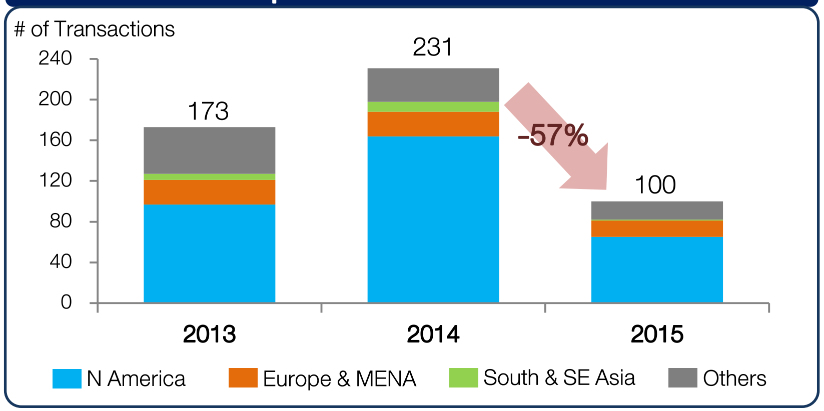
FY 2015 M&A Recap

Market relatively muted from valuation mismatch between buyers and sellers

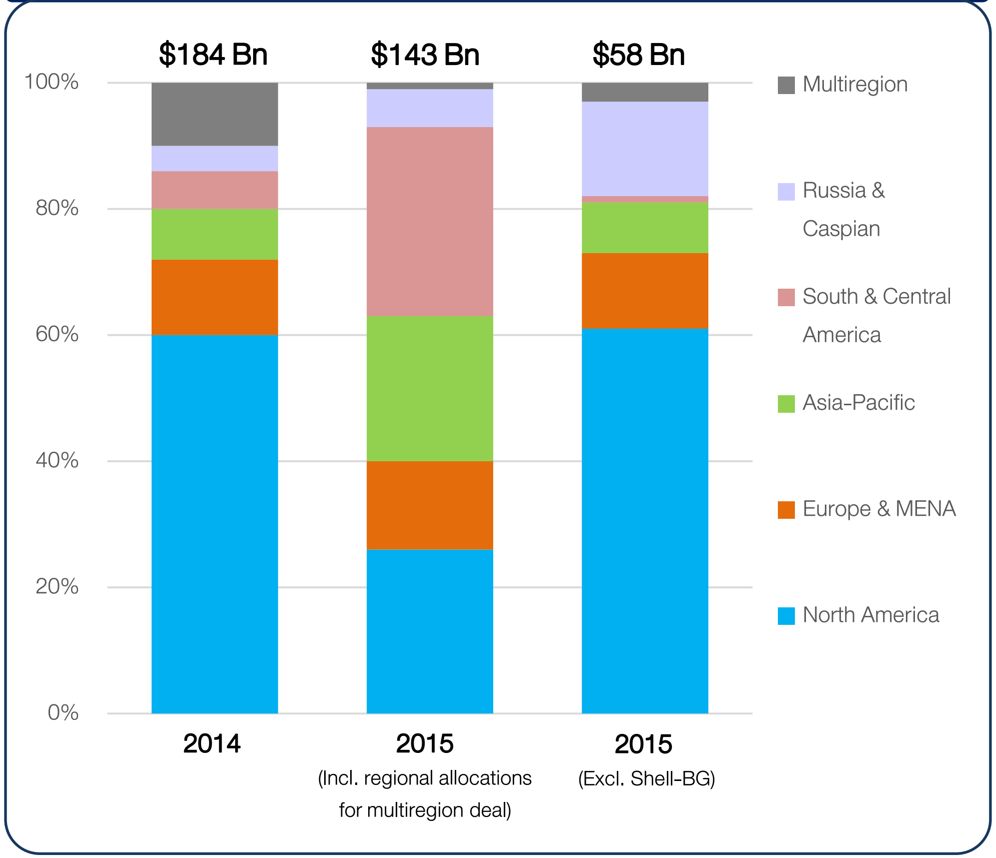
Global Upstream M&A Deal Value



Global Upstream M&A Deal Counts



Upstream Deal Value Distribution by Region



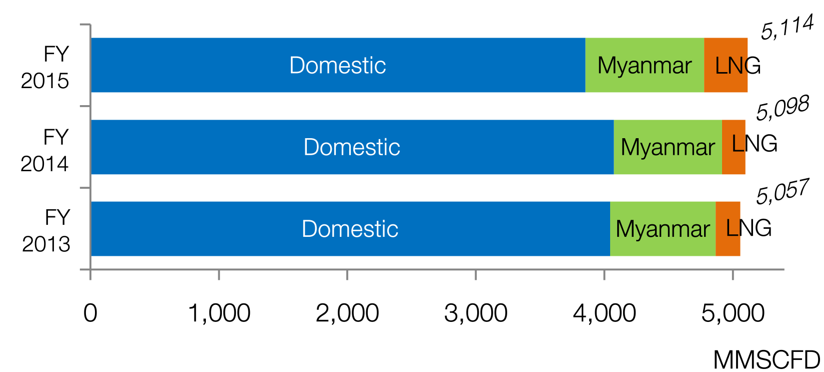
- Lack of consensus between sellers and buyers due to volatile and low oil prices
- Almost $60Bn (YTD) of high profile corporate deals cancelled due to rejection by key shareholders/BoD

Source: IHS, 1Derrick, Company Website

Thailand Updates

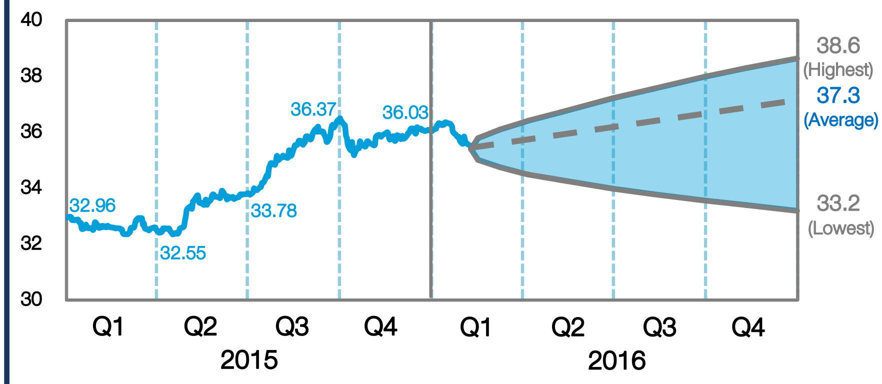
Continuing growth in gas demand whilst stagnant economy depreciated Baht

Thailand's Natural Gas Supply by Source



Source: EPPO

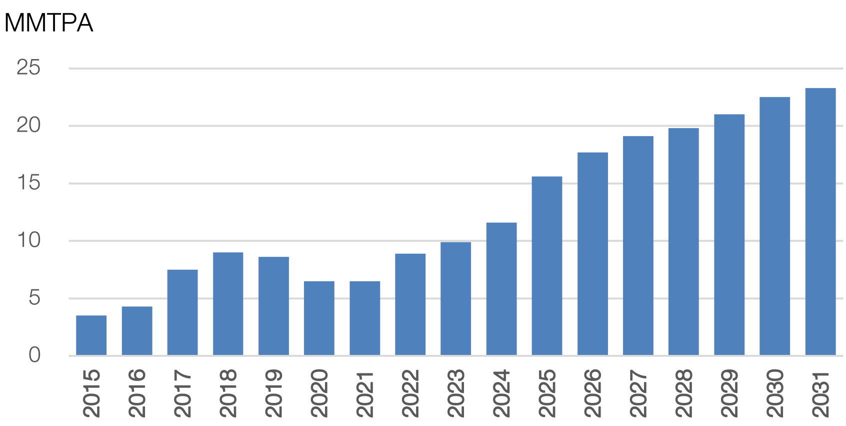
Exchange Rate Movement (THB/USD)



Source: Bank of Thailand, Bloomberg

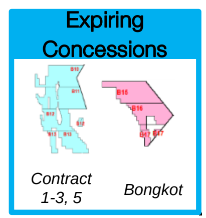
Forecast based on Bloomberg Consensus as of 9 February 2016

Domestic LNG Demand Projection



Source: Gas Plan 2015, EPPO

Upstream Energy Reform



- According to National Energy Policy Office meeting in May 2015, contractual management plan for expiring concessions to be concluded within one year
- Bidding round process could be resumed after amendments to Petroleum Act is finalized

Safety Performance

Industry Highlights

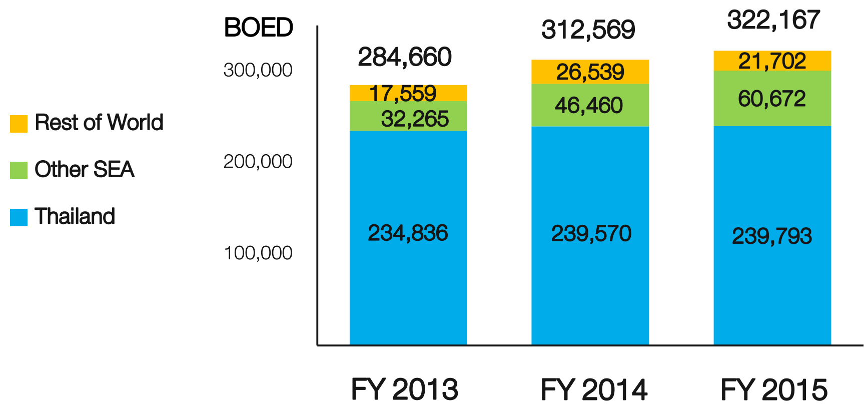
Financial Results

Key Achievements and Outlook

Sales Volume & Unit Costs

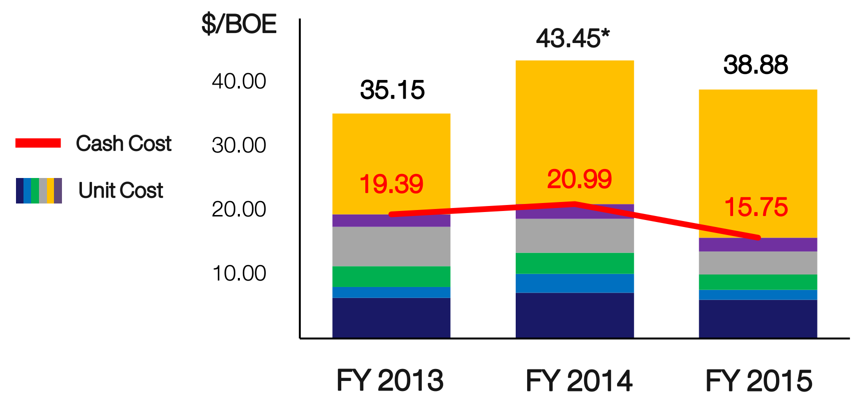
Continuing sales volume growth and improved unit cost performance

Sales Volume and Price



	FY 2013	FY 2014	FY 2015
Gas ($/MMBTU)	7.93	8.06	**7.20**
Liquid ($/BBL)	99.97	94.82	**50.05**
Weighted Avg. ($/BOE)	65.73	63.71	**45.29**
Avg. Dubai ($/BBL)	105.54	96.60	**50.91**
Avg. HSFO ($/BBL) (High Sulphur Fuel Oil)	97.52	86.74	**44.86**
Volume Mix *(Gas:Liquid)*	65 : 35	67 : 33	**70 : 30**
Revenue Mix *(Gas:Liquid)*	46 : 54	51 : 49	**66 : 34**

Unit Cost



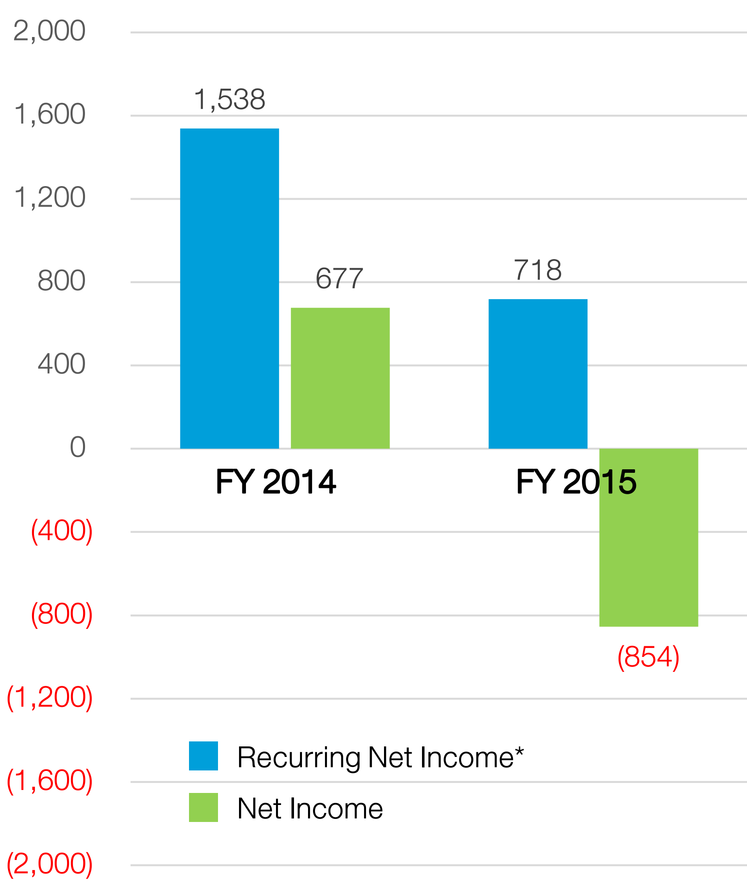
	FY 2013	FY 2014	FY 2015
DD&A	15.76	22.46	**23.13**
Finance Cost	1.93	2.27	**2.14**
Royalties	6.18	5.34	**3.62**
G&A	3.26	3.30	**2.39**
Exploration Expenses	1.66	2.92	**1.56**
Operating Expenses**	6.36	7.16	**6.04**
Lifting Cost	4.88	5.26	**4.62**
Drilling Success Ratio***	38 : 55	25 : 43	**31 : 47**

Remark: Sales Volume & Royalties: after reclassification of PSC royalty
* If exclude extra expense from Montara's Development well (H5): For 2014, Operating Exp: 6.73 $/BOE / Unit cost: 43.02 $/BOE
** Exclude diluent cost for blending bitumen in KKD Oil Sands project
*** Successful wells : Total wells (includes Exploration and Appraisal wells)

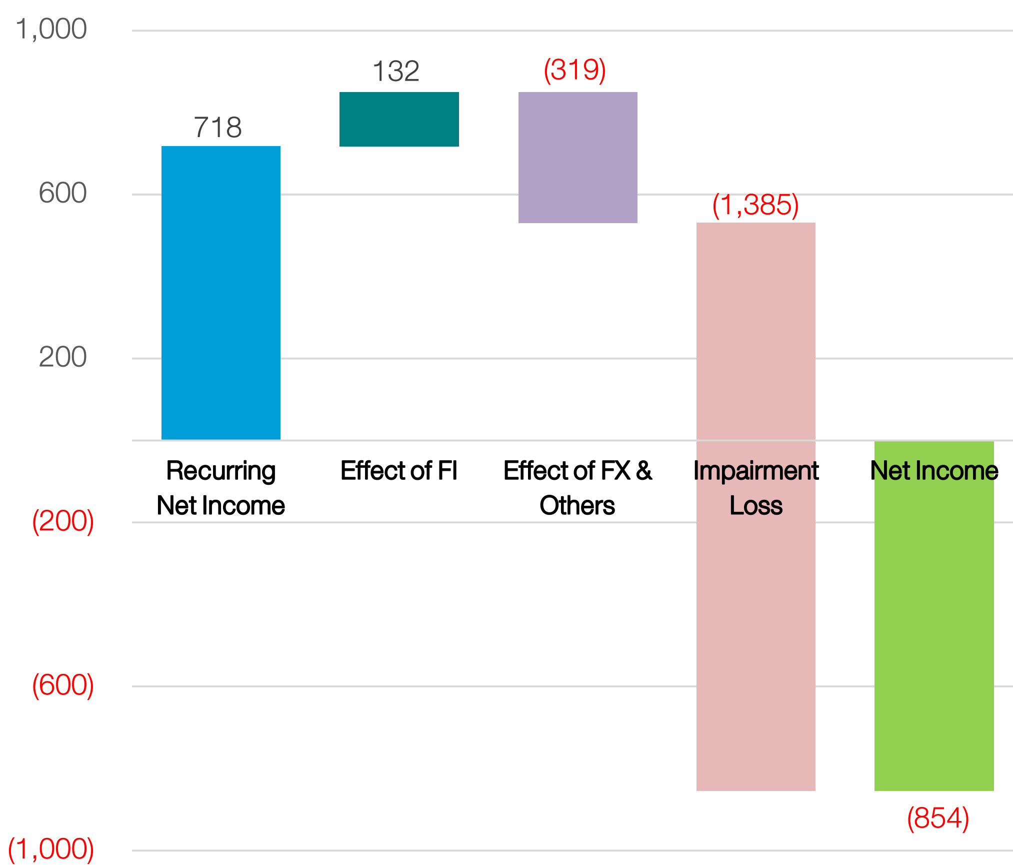
FY 2015 Net Income Breakdown

Net income primarily hurt by impairment loss

Net Income Comparison



Net Income FY 2015

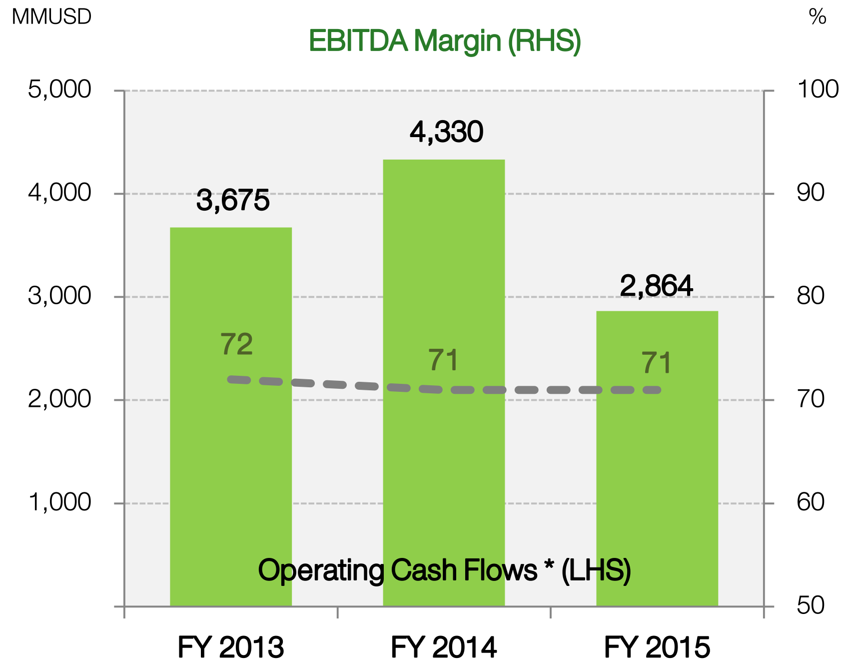


Remark: * Excludes Gain/(Loss) on FX, Deferred tax from Functional currency, Current Tax from FX Revaluation, Gain/(Loss) from Financial Instruments, Impairment Loss on Assets, and etc.

Cash Flow Performance

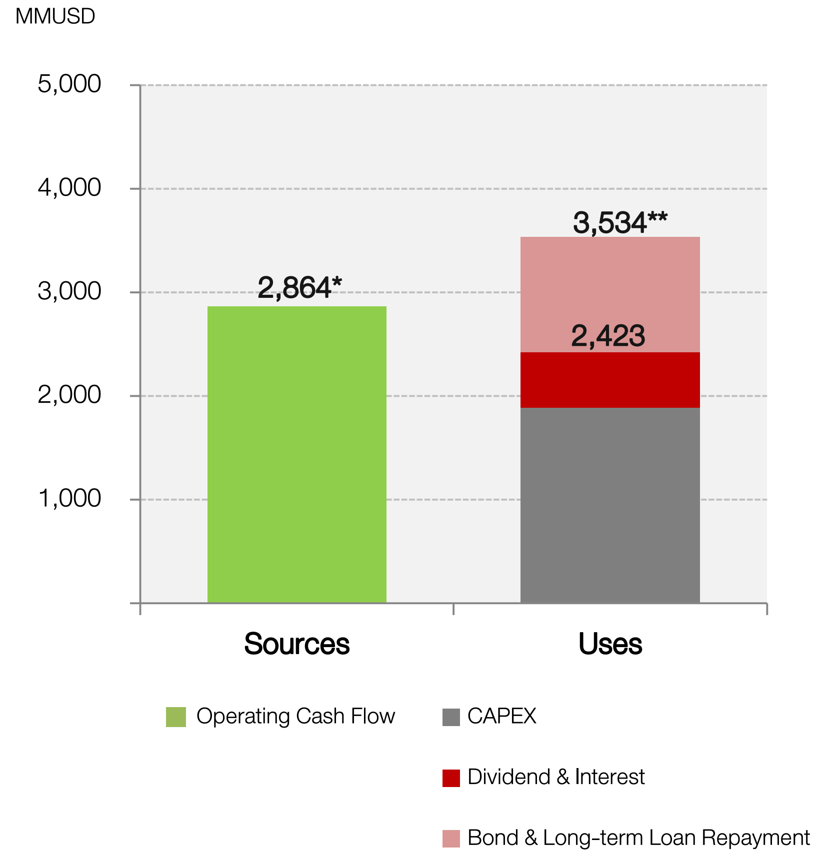
Robust liquidity to fund CAPEX and debt service

Cash Flow Performance



	FY 2013	FY 2014	FY 2015
Net Income	1,847	677	(854)
Recurring Net Income***	2,114	1,538	718

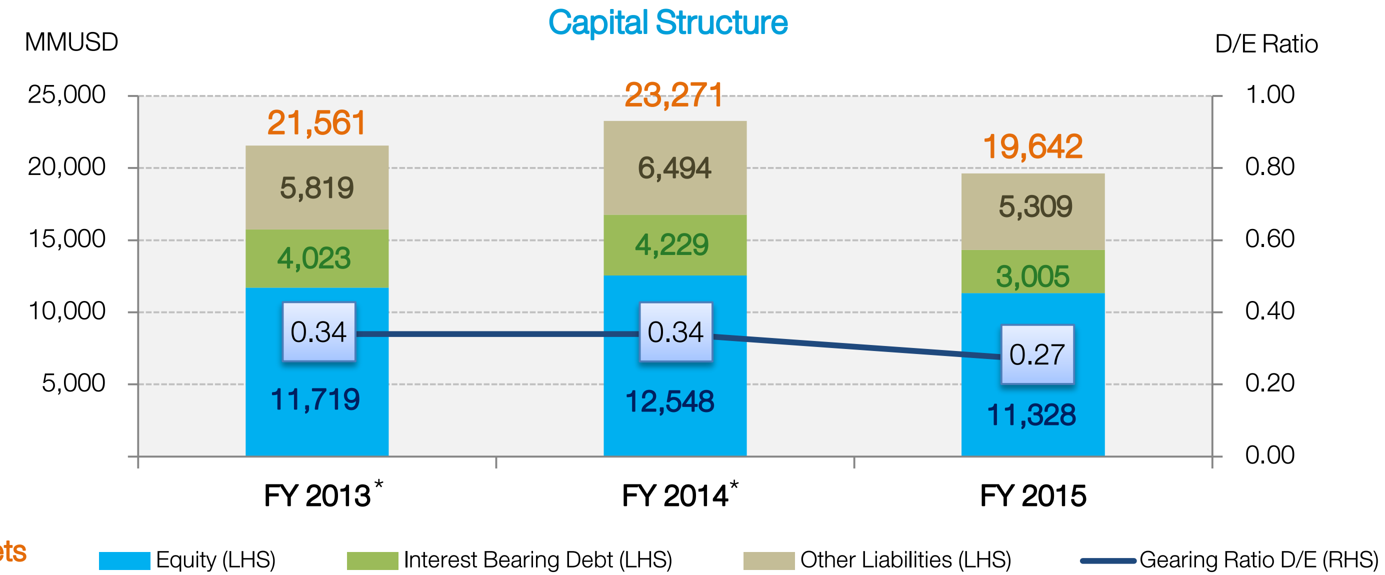
Source & Use of Funds in FY 2015



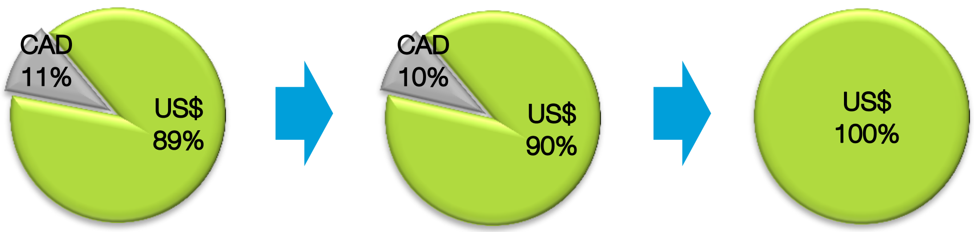
Remark: Sales Volume and sales revenue: after reclassification of PSC royalty
* Net of adjustment for the effect of exchange rate changes on cash and cash equivalents
** Excludes cash flows for investing in short-term investments (Fixed deposit > 3 months)
*** Excludes Gain/(Loss) on FX, Deferred tax from Functional currency, Current Tax from FX Revaluation, Gain/(Loss) from Financial Instruments, Impairment Loss on Assets, and etc.

Financial Position

Healthy balance sheet with low gearing ratio and $3.3bn cash on hand



Debt Profile **



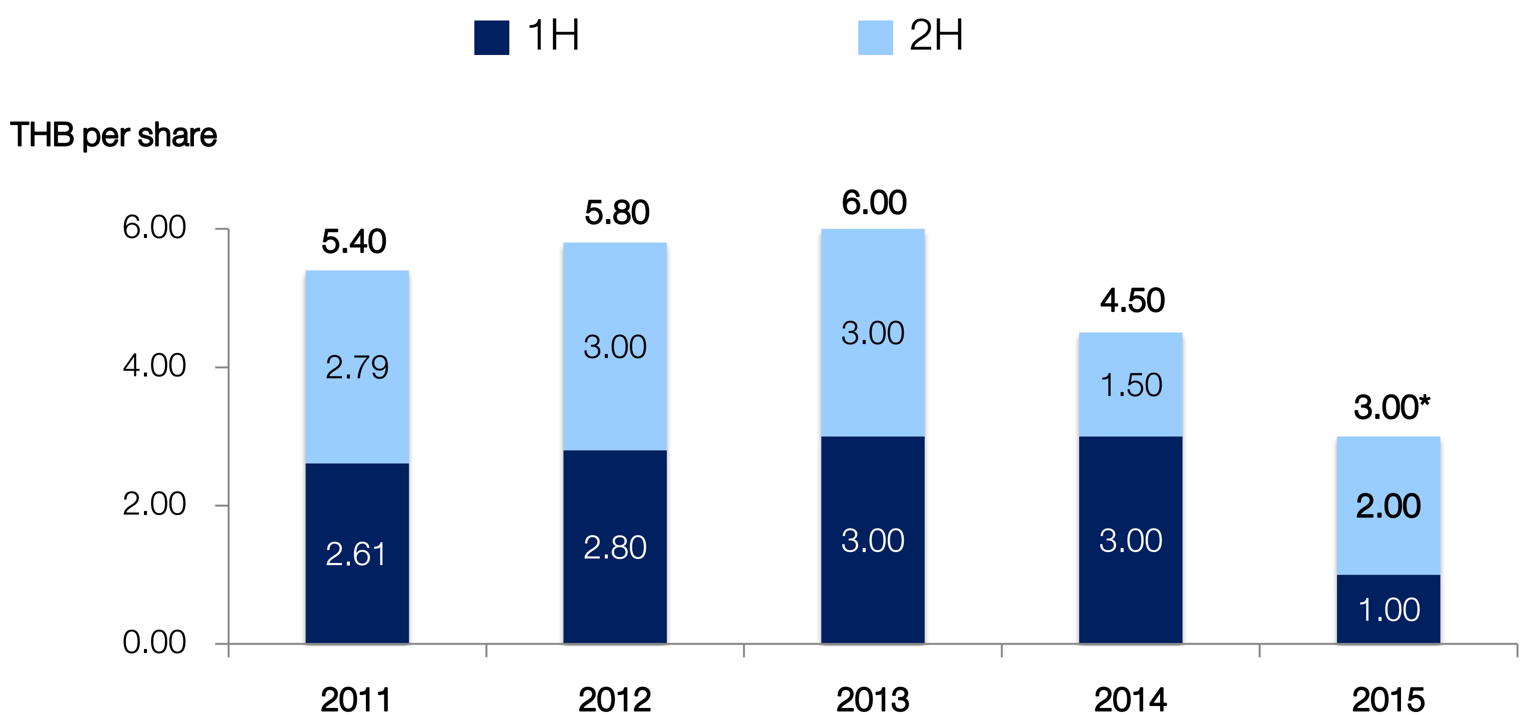
Weighted Average Cost of Debt ** (%)	3.99	4.14	**4.32**
[Fixed : Floating]	[75 : 25]	[77 : 23]	**[82 : 18]**
Average Loan Life ** (Years)	6.81	7.05	**8.17**

Remark: * Restated
** Excludes Hybrid bonds

Dividends

Demonstrating our dividend commitment to shareholders

Dividend Payment History (Policy : No Less Than 30% of Net Income)



	2011	2012	2013	2014	2015
Payout Ratio (%)	40	38	40	82	N/A

Remark: * Subject to the Annual General Shareholders' Meeting approval

Safety Performance

Industry Highlights

Financial Results

Key Achievements and Outlook

2015 Key Achievements

Sustaining financial strength through rigorous cost reduction

Sales volume target delivered

- ☑ Domestic volumes maintained
- ☑ First production from Algeria

Significant cost reduction

- ☑ Investment prioritization
- ☑ Efficiency improvement

Advantageous financial position

- ☑ Liquidity preservation
- ☑ Robust capital structure

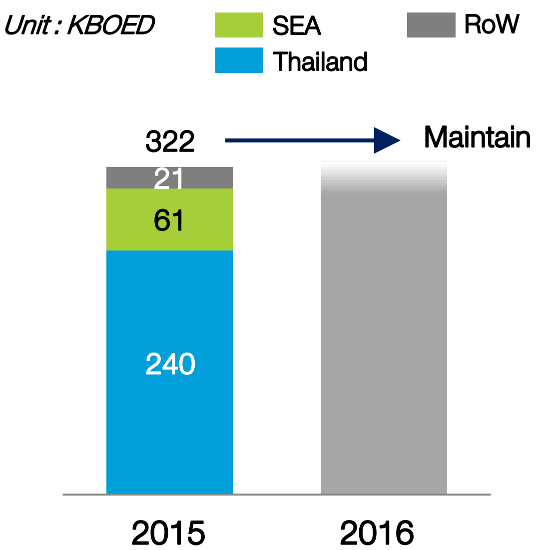
3 %	Sales volume growth vs. 2014
11 %	Reduction in unit cost vs. 2014
30 %	Reduction in total expenditure vs. plan
2.9 billion USD	Operating cash flow
3.3 billion USD	Cash on hand
0.27 x	Total debt/equity ratio
3 Thai Baht per share	Full-year dividend

RESET to Survive in the Low Oil Price Environment

Primary focus on cost reduction and maintain reliable operations

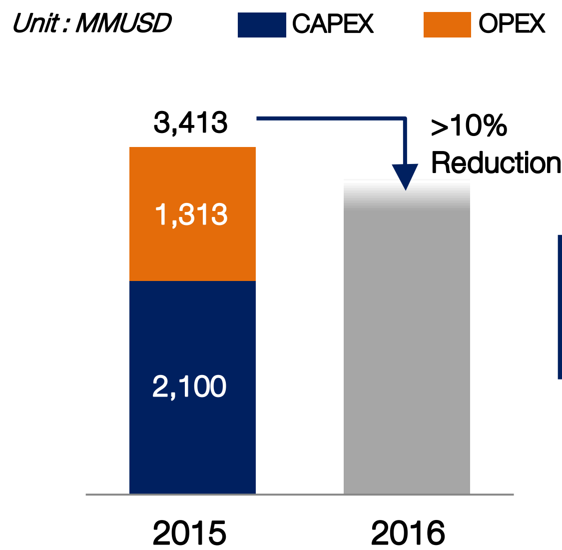
2016 | **2016 and beyond**

Maintain Sales Volume



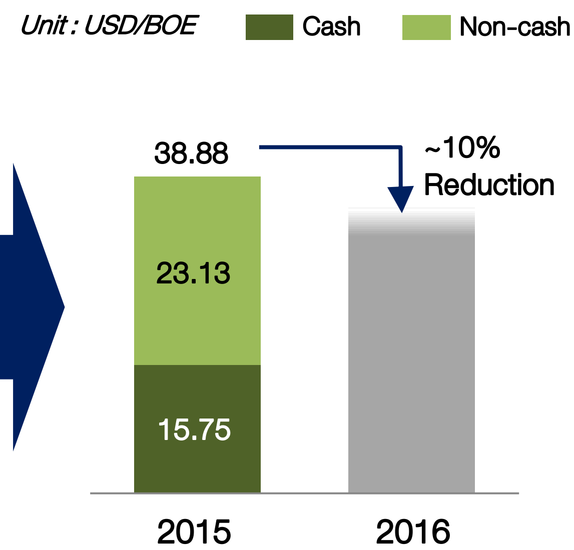
- Utmost compliance to safety
- Deliver domestic gas at DCQ
- Sustain field performance

Lower Expenditures



- Efficiency improvement and contract renegotiation
- Capital allocation prioritized for high quality assets

Bring Down Unit Cost



- Further process streamline
- Disciplined G&A policies

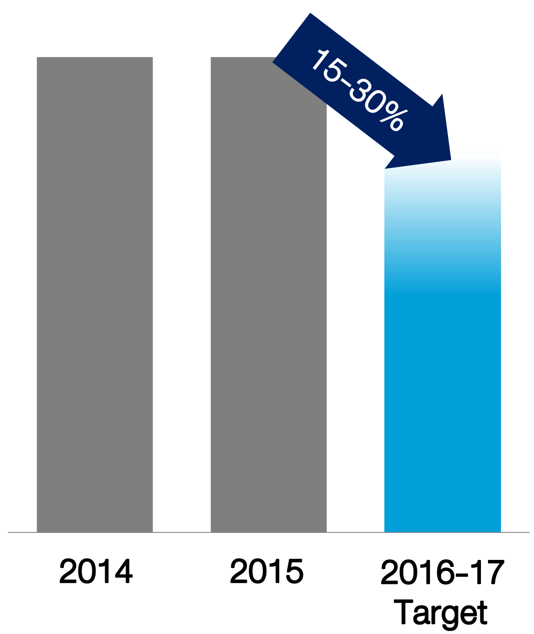
Preserve liquidity and financial flexibility in near-term

Cost Reduction Through Core Operations

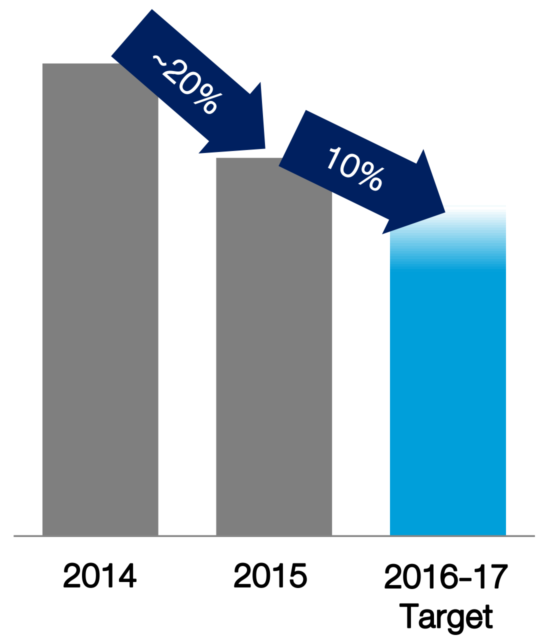
Focus on improving process efficiencies and capitalizing on cost deflation

Cost Improvements Across Operations

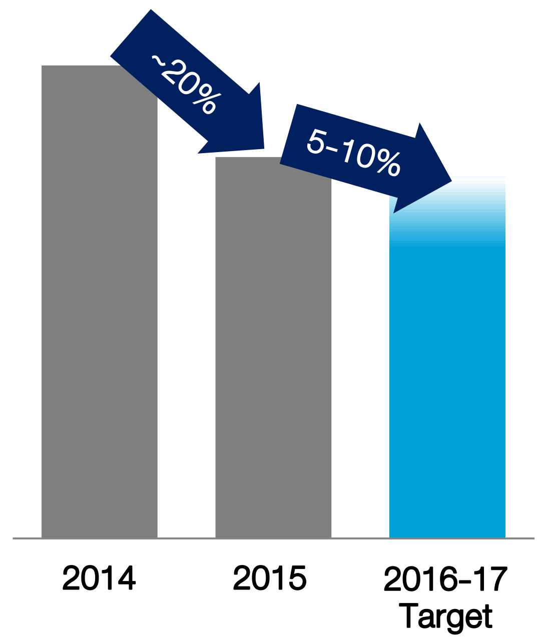
Wellhead Platform Cost*



Average Cost Per Well**



OPEX and G&A Cost Per BOE



* Primarily applicable to PTTEP-operated projects in the Gulf of Thailand

** Primarily applicable to development wells in PTTEP-operated offshore projects in Southeast Asia

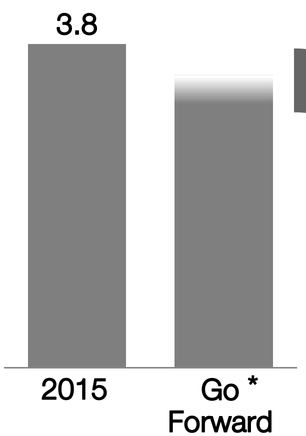
REFOCUS to Capitalize on the Upturn

Through pre-development candidates and portfolio rationalization

2016 | 2016 and beyond

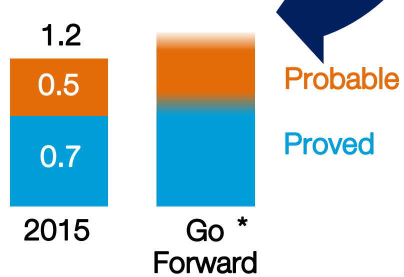
Convert 2C resources…

Unit : bn BOE



…to P1+P2 reserves

Unit : bn BOE



Advancing with medium-term value contributors in portfolio…

Development Focus

- Plan in place or revisited for further cost optimization
  - Commercial: Mozambique Rov. Offshore Area 1
  - Cost: Contract 4 (Ubon), Algeria HBR, Myanmar M3
- Deferred for study / review
  - Cash/Maple
  - Mariana Oil Sands

…as well as through portfolio management opportunities

- Producing / near-producing assets primarily in SE Asia
- Synergic opportunities with PTT on LNG value chain
- Consideration of portfolio rationalization

* Go forward reserves and resources are illustrative and does not reflect the anticipated magnitude of conversion for any particular project

Thank you and Q&A

You can reach the Investor Relations team for more information and inquiry through the following channels:

http://www.pttep.com

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+66 2 537 4000

Supplementary Information

1 Detailed financial information

2 Five-year investment plan

3 Reserves and resources

4 Project details

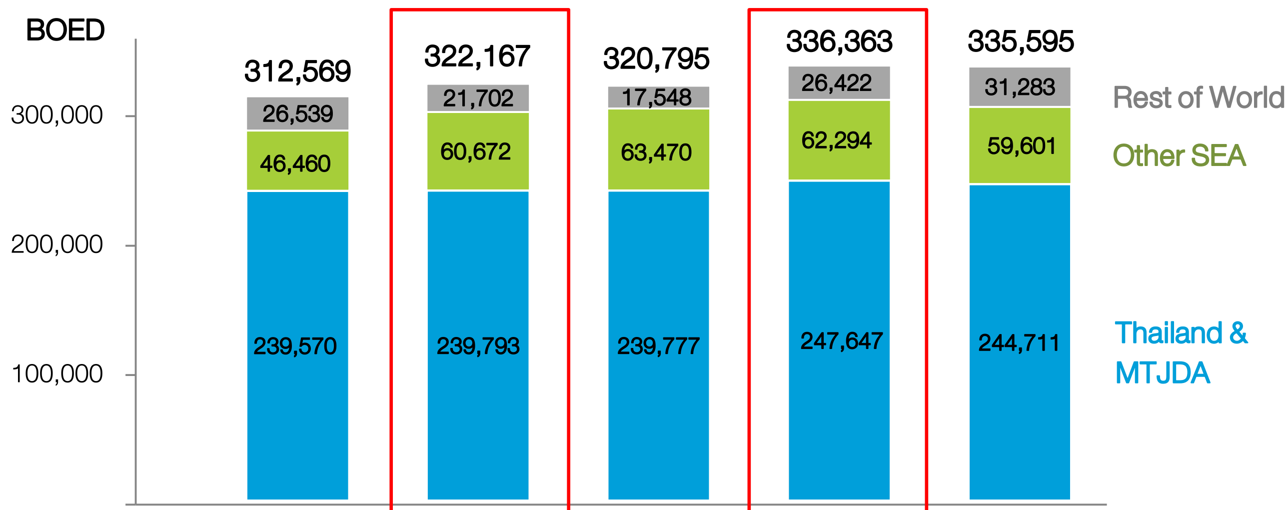
5 Organization structure

6 Ratios and formula

PTTEP Sales Volume & Average Selling Price

Sales volume increased per 3% target; ASP decreased from lowered oil prices

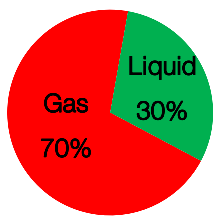
Sales Volume



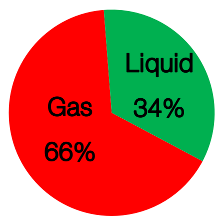
Sales Price	2014	2015	Q3 15	Q4 15	Q4 14
Gas ($/MMBTU)	8.06	**7.20**	7.16	**6.29**	8.12
Liquid ($/BBL)	94.82	**50.05**	49.33	**42.22**	74.84
Weighted Avg. ($/BOE)	63.71	**45.29**	44.83	**39.18**	56.95
Avg. Dubai ($/BBL)	96.60	**50.91**	49.74	**40.71**	74.40
Avg. HSFO ($/BBL) (High Sulphur Fuel Oil)	86.74	**44.86**	40.69	**33.39**	67.23

2015 Sales Volume By Product

Volume Mix

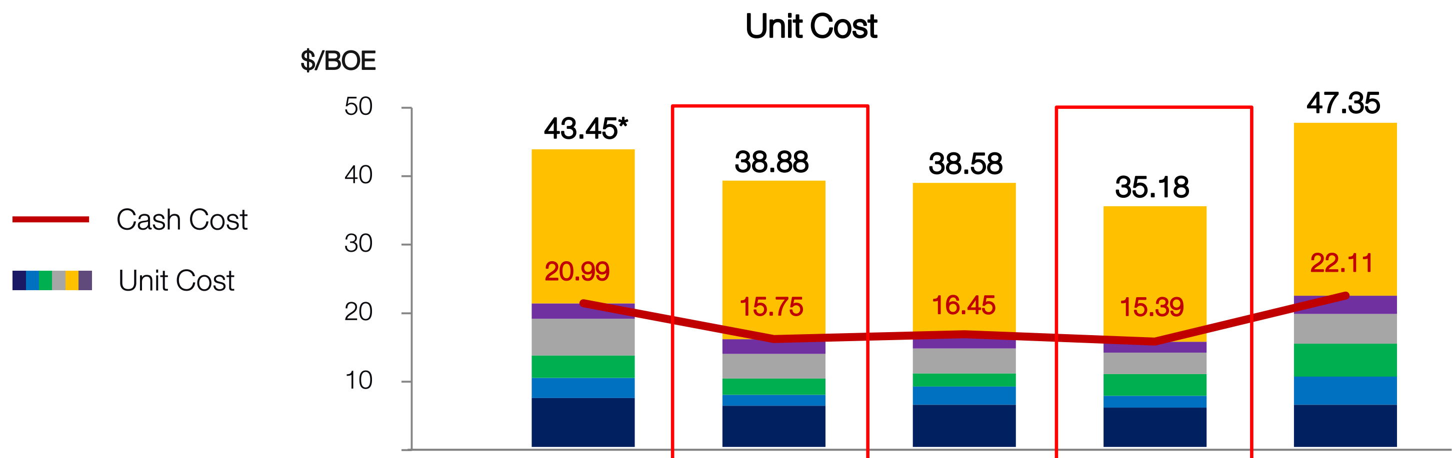


Revenue Mix



Operating Performance

Continuous improvement in unit cost performance



	2014	2015	Q3 15	Q4 15	Q4 14
DD&A	22.46	**23.13**	22.13	**19.79**	25.24
Finance Cost	2.27	**2.14**	2.08	**1.60**	2.66
Royalties	5.34	**3.62**	3.63	**3.14**	4.38
G&A	3.30	**2.39**	1.89	**3.16**	4.81
Exploration Expenses	2.92	**1.56**	2.66	**1.73**	4.07
Operating Expenses**	7.16	**6.04**	6.19	**5.76**	6.19
Lifting Cost	5.26	**4.62**	4.62	**4.32**	4.76
Drilling Success Ratio*** (successful wells : total wells)	25 : 43	**31 : 47**	8 : 15	**1 : 5**	8 : 18

* If excluded extra expense from Montara's Development well (H5) : For 2014 : Operating Exp. : 6.73 $/BOE / Unit cost : 43.02 $/BOE

** Excludes diluent cost for blending bitumen in Oil Sands project

*** Exploration and Appraisal Wells

Note : The formulas for calculating ratios are provided in the supplementary section for your reference

Financial Performance : Income Statement

Healthy EBITDA margin

	2014*	2015	Q3 15*	Q4 15	Q4 14*
Sales Revenue** (MMUSD)	7,457	**5,444**	1,353	**1,236**	1,797
EBITDA (MMUSD)	5,282	**3,844**	929	**809**	1,196
Net Income (MMUSD)	677	**(854)**	(1,284)	**132**	(739)
Recurring Net Income (MMUSD)	1,538	**718**	264	**13**	183
Earning Per Share (USD)	0.16	**(0.22)**	(0.32)	**0.02**	(0.20)
Key Financial Ratios					
EBITDA Margin (%)	71	**71**	69	**65**	67
Return on Equity (%) (LTM)	6	**(7)**	(14)	**(7)**	6
Return on Capital Employed (%) (LTM)	5	**(5)**	(10)	**(5)**	5
Return on Equity (%) (LTM, Recurring Net Income)	13	**6**	7	**6**	13
Return on Capital Employed (%) (LTM, Recurring Net Income)	10	**5**	6	**5**	10

* Restated

** Sales and revenue from pipeline transportation

Note : The formulas for calculating ratios are provided in the supplementary section for your reference

Financial Performance : Balance Sheet

Healthy balance sheet with low gearing ratio and over $3Bn cash on hand

	2014*	2015
Total Assets (MMUSD)	23,271	19,642
- Cash & cash equivalents** (MMUSD)	3,930	3,260
Total Liabilities (MMUSD)	10,723	8,314
- Interest bearing debt (MMUSD)	4,229	3,005
Equity (MMUSD)	12,548	11,328
Key Financial Ratios		
Total Debt to Equity (X)	0.34	0.27
Net Debt** to Equity (X)	0.02	(0.02)
Total Debt to Capital (X)	0.25	0.21
Total Debt to EBITDA (X)	0.80	0.78
Net Debt** to EBITDA (X)	0.06	(0.07)
EBITDA Interest Coverage (X)	28	24

Credit Ratings : BBB+ (S&P), Baa1 (Moody's), AAA (TRIS)

Weighted Average Cost of Debt* :** 4.32%

Average Loan Life* :** 8.17 years

* Restated

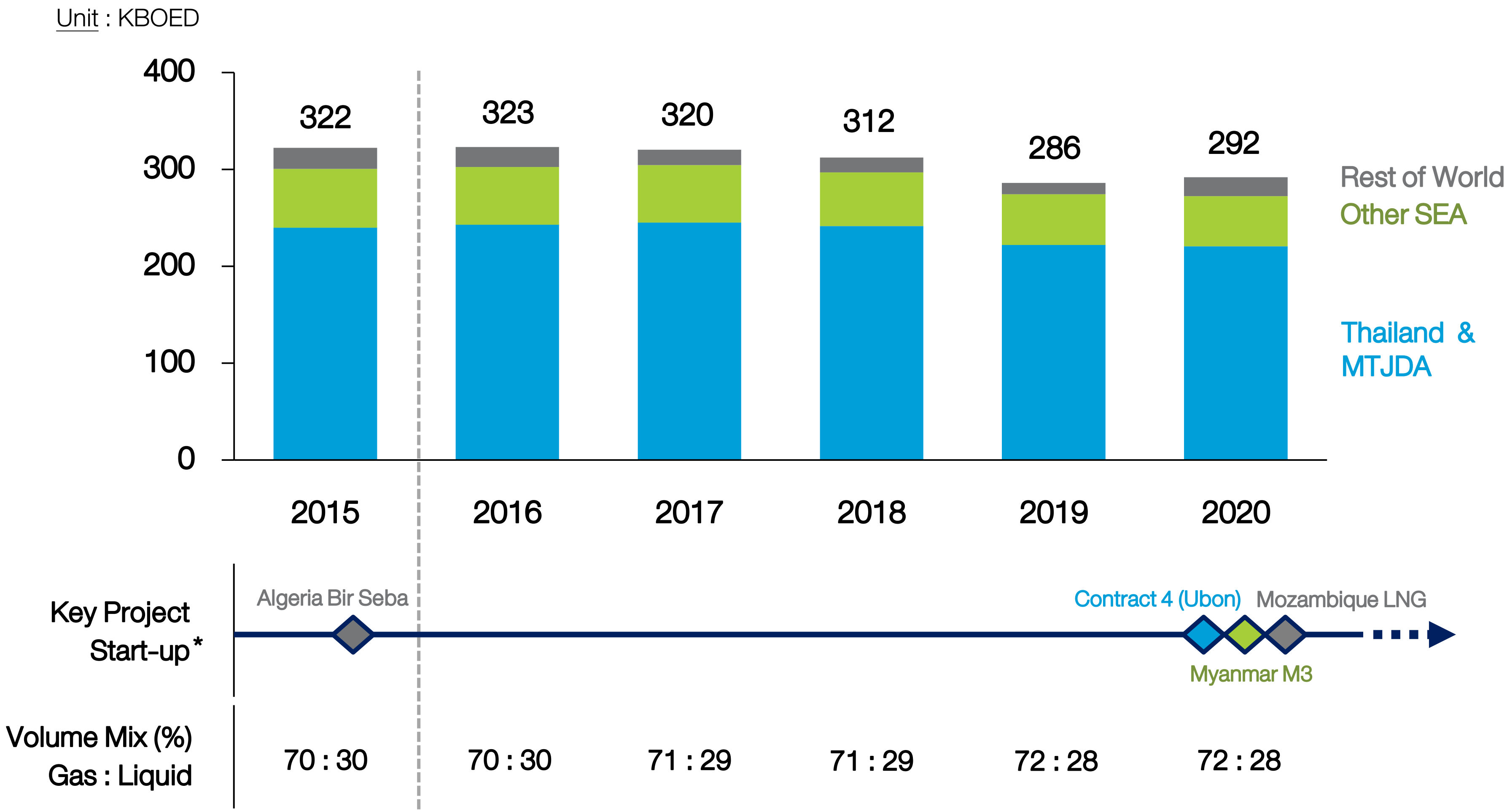
** Cash & Cash Equivalents (Cash on hand) include Short-term Investments (Fixed deposit > 3 months)
Net Debt = Total Debt less Cash & Cash Equivalents and Short-term Investments

*** Excludes hybrid bonds

Note : The formulas for calculating ratios are provided in the supplementary section for your reference

Sales Volume Guidance

Stable volume outlook with new project start-up expected in 2020

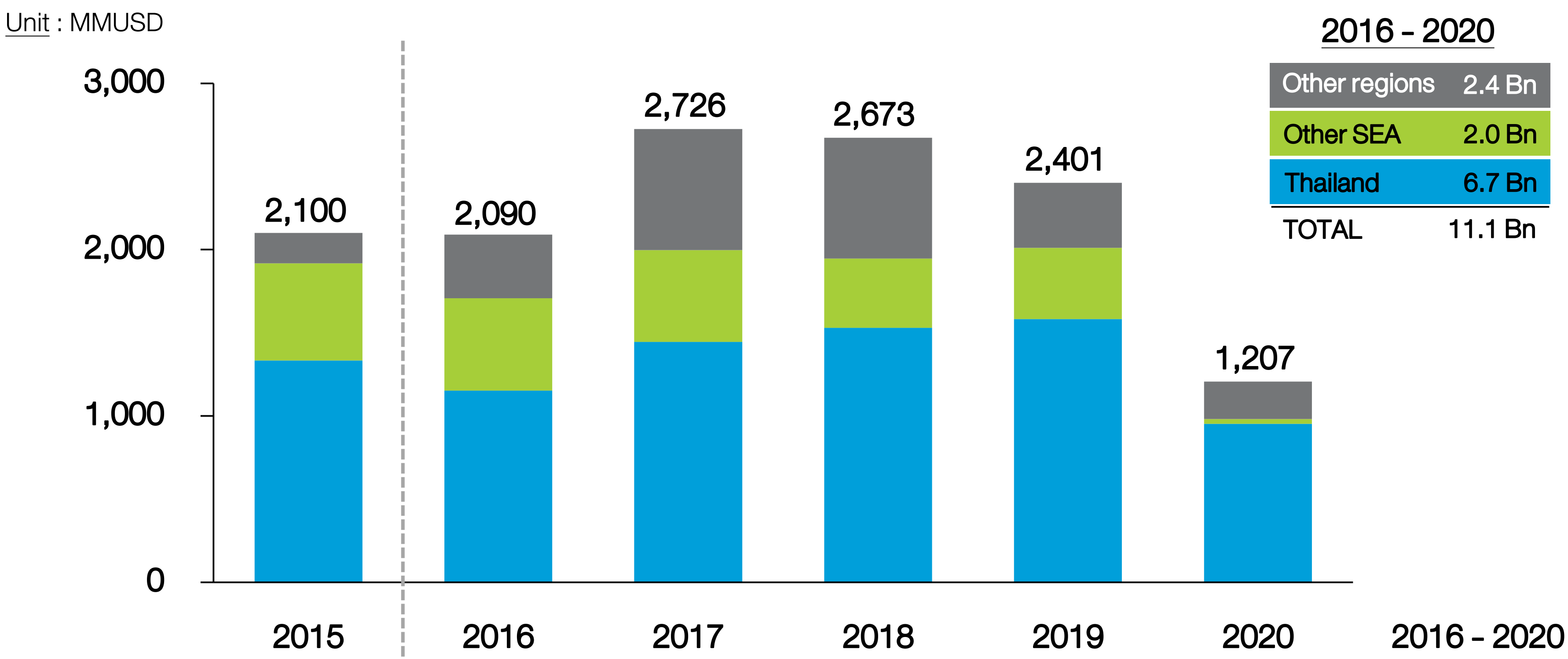


Note: Sales volume after reclassification of PSC royalty

* Subject to FID timing

CAPEX Breakdown

Approx. two-thirds of CAPEX to maintain output from producing projects

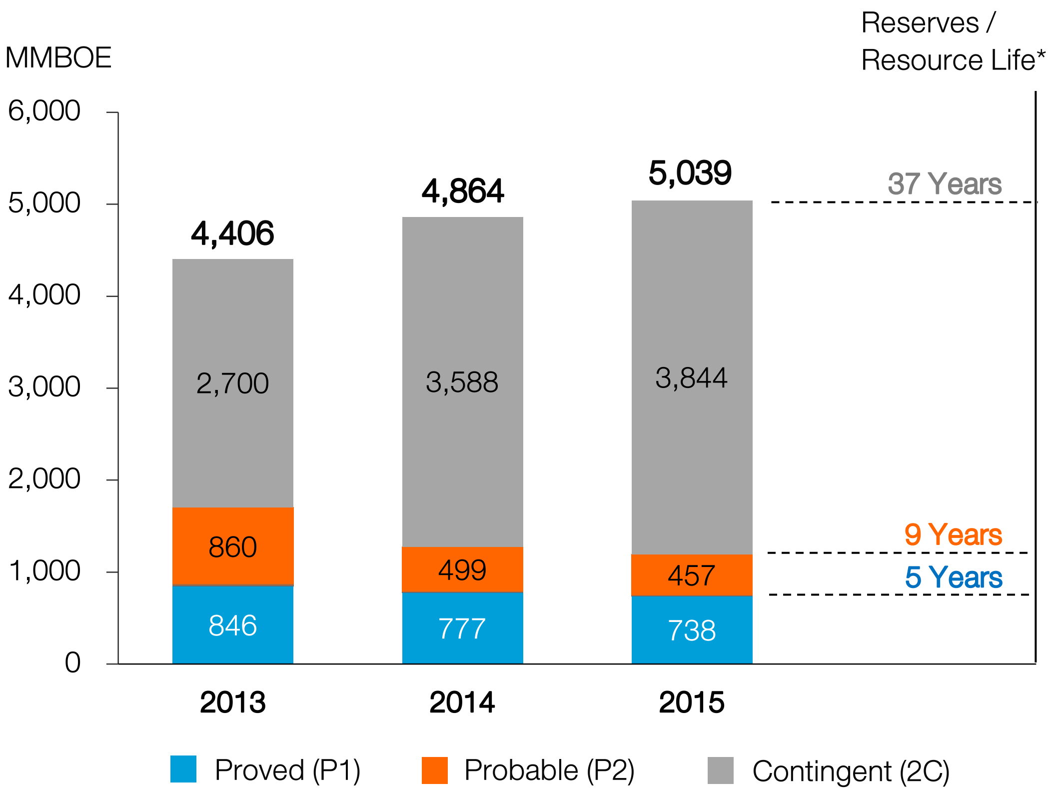


By Activities :	2015	2016	2017	2018	2019	2020	2016 – 2020
Production	81%	82%	64%	53%	52%	65%	62%
New Project Development *	3%	15%	31%	45%	39%	35%	33%
Exploration and Others **	16%	3%	5%	2%	8%	1%	5%

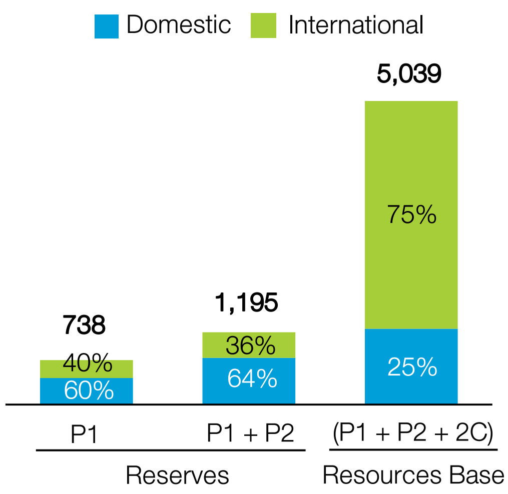
Note: * Subject to FID ** Includes exploration and appraisal in all projects and HO CAPEX

Reserves and Resources

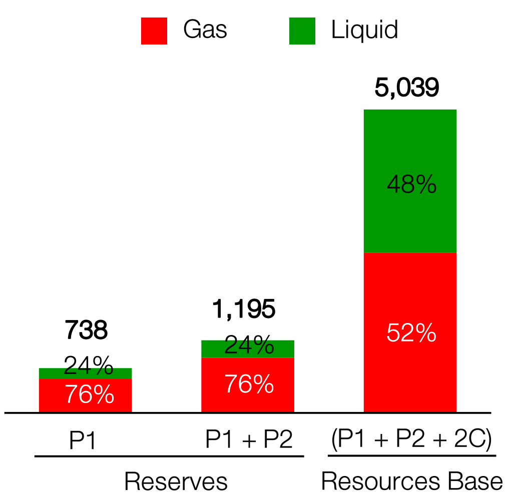
Growing resources base to support future reserves addition



2015 by Geography



2015 by Product Type



5-Year Average Proved Reserves Replacement Ratio (RRR)

2013	2014	2015
0.82x	0.45x	0.50x

* Based on total production of natural gas, condensate, and crude oil (including LPG) of 374 KBOED for the year ended December 31, 2015

Project Information 1/4

Production phase: Thailand and JDA

	Project	Status*	PTTEP's Share	Partners (as of 2015)		2015 Average Sales Volume ** Gas	Oil and Other	2016 Key Activities
Production Phase								
Thailand and JDA								
1	**Arthit**	OP	80%	Chevron MOECO	16% 4%	213 MMSCFD	Condensate: 9.4 k BPD	• Ensure gas deliverability level at DCQ**** • Drill development wells • Install wellhead platforms
2	**B6/27**	OP	60%***			N/A	N/A	• Subsurface study
3	**B8/32 & 9A**		25%	Chevron MOECO KrisEnergy PSTL	51.66% 16.71% 4.63% 2%	98 MMSCFD	Crude: 26 k BPD	• Drill development wells • Perform waterflood activities
4	**Bongkot**	OP	44.4445%	TOTAL British Gas	33.3333% 22.2222%	905 MMSCFD	Condensate: 28 k BPD	• Ensure gas deliverability level at DCQ**** • Drill Exploration / Appraisal / Development wells • Install wellhead platforms
5	**Contract 3** *(Formerly Unocal III)*		5%	Chevron MOECO	71.25% 23.75%	561 MMSCFD	Crude: 20 k BPD Condensate: 19 k BPD	• Drill exploration / appraisal / development wells • Install wellhead platforms • Perform waterflood activities
6	**Contract 4** *(Formerly Pailin)*		60%	Chevron MOECO	35% 5%	305 MMSCFD	Condensate: 14 k BPD	• Ensure gas deliverability level at DCQ**** • Drill exploration / appraisal / development wells • Install wellhead platforms • Review development plan of Ubon field
7	**E5**		20%	ExxonMobil	80%	12 MMSCFD	-	
8	**G4/43**		21.375%	Chevron MOECO PSTL	51% 21.25% 6.375%	2 MMSCFD	Crude: 6.7 k BPD	• Drill development wells • Perform waterflood activities
9	**G4/48**		5%	Chevron MOECO	71.25% 23.75%	5 MMSCFD	Crude: 981 BPD	
10	**L53/43 & L54/43**	OP	100%			-	Crude: 297 BPD	• Drill exploration and development wells
11	**PTTEP1**	OP	100%			-	Crude: 386 BPD	• Drill development wells • Perform waterflood activities
12	**S1**	OP	100%			26 MMSCFD	Crude: 29 k BPD	• Drill exploration / appraisal / development wells • Enhance oil recovery program includes waterflooding and artificial lift
13	**Sinphuhorm**	OP	55%	Apico ExxonMobil	35% 10%	121 MMSCFD	Condensate: 460 BPD	• Drill development wells
14	**MTJDA**	JOC	50%	Petronas-Carigali	50%	326 MMSCFD	Condensate: 7.3 k BPD	• Drill development wells • Install wellhead platforms
15	**L22/43**	OP	100%			-	Crude: 50 BPD	• Drill exploration / development wells

* Status: OP = PTTEP operatorship / JOC = PTTEP joint operatorship
** Sales volume stated at 100% basis.
*** Pending the approval of the partner divestment from DMF
**** DCQ = Daily Contractual Quantity

Project Information 2/4

Production phase: overseas

	Project	Status*	PTTEP's Share	Partners *(as of 2015)*	2015 Average Sales Volume **		2016 Key Activities
					Gas	Oil and Other	
Production Phase							
Overseas							
16	**Oman 44**	OP	100%		22 MMSCFD	Condensate: 1.1 k BPD	• Maintain production operation
17	**Vietnam 9-2**	JOC	25%	PetroVietnam 50% SOCO 25%	13 MMSCFD	Crude: 4.8 k BPD	• Maintain production operation • Perform reservoir management
18	**Yadana**		25.5%	TOTAL 31.24% Chevron 28.26% MOGE 15%	751 MMSCFD	-	• Drill exploration / development wells • Acquire 2D seismic reprocessing • Perform reservoir management
19	**Yetagun**		19.3178%	Petronas-Carigali 30.00140% MOGE 20.4541% Nippon Oil 19.3178% PC Myanmar (Hong Kong) 10.90878%	286 MMSCFD	Condensate: 5.8 k BPD	• Drill development wells • Perform reservoir Management
20	**Vietnam 16-1**	JOC	28.5%	PetroVietnam 41% SOCO 28.5% OPECO 2%	16 MMSCFD	Crude: 31 k BPD	• Drill development wells • Perform reservoir management • Review feasibility for water handling facility upgrade
21	**PTTEP Australasia (PTTEP AA)**	OP	20%-100% (varied by permits)		-	Crude: 16 k BPD	• Maintain production operation • Assess resource potential of exploration permits
22	**Natuna Sea A**		11.5%	Premier Oil 28.67% KUFPEC 33.33% Petronas 15% Pertamina 11.5%	213 MMSCFD	Crude: 1.4 k BPD	• Maintain production operation
23	**Zawtika (M9 & a part of M11)**	OP	80%	Myanma Oil and Gas Enterprise (MOGE) 20%	314 MMSCFD	-	• Maintain production rate • Drill development wells • Install wellhead platforms
24	**Algeria 433a & 416b (Bir Seba)**	JOC	35%	PetroVietnam 40% Sonatrach 25%	-	215 BPD	• Maintain production operation • Review field development plan for possible capacity expansion

* Status: OP = PTTEP operatorship / JOC = PTTEP joint operatorship
** Sales volume stated at 100% basis

Project Information 3/4

Exploration phase

	Project	Status*	PTTEP's Share	Partners *(as of 2015)*		2016 Key Activities
Exploration Phase						
Thailand and JDA						
25	**G9/43**	OP	100%			
Overseas						
26	**Myanmar M3**	OP	80%	MOECO	20%	• Access development options and commercial potential
27	**Mozambique Rovuma Offshore Area 1**		8.5%	Anadarko, Mitsui, ENH, Bharat Petroleum, BREML, OVL	26.5%,20% 15%,10%, 10%,10%	• Preparatory work for Final Investment Decision (FID) including LNG marketing and finalization of remaining commercial contracts
28	**Algeria Hassi Bir Rekaiz**	OP	24.5%	CNOOC Sonatrach	24.5% 51%	• Drill Appraisal wells
29	**Myanmar M11**	OP	100%**			
30	**Vietnam B & 48/95**		8.5%	PVN MOECO	65.88% 25.62%	• Negotiate a GSA with the Vietnamese government
31	**Vietnam 52/97**		7%	PVN MOECO	73.4% 19.6%	• Negotiate a GSA with the Vietnamese government
32	**Myanmar PSC G and EP 2**	OP	70%	WinPreciousResources MOECO Palang Sophon Offshore	10% 10% 10%	• Conduct G&G studies
33	**Kenya L11A, L11B, L12**		10%	Anadarko Total ENI	50% 30% 10%	• Conduct G&G studies

* Status: OP = PTTEP operatorship / JOC = PTTEP joint operatorship
** New participating interest subject to government approval

Project Information 4/4

Exploration phase

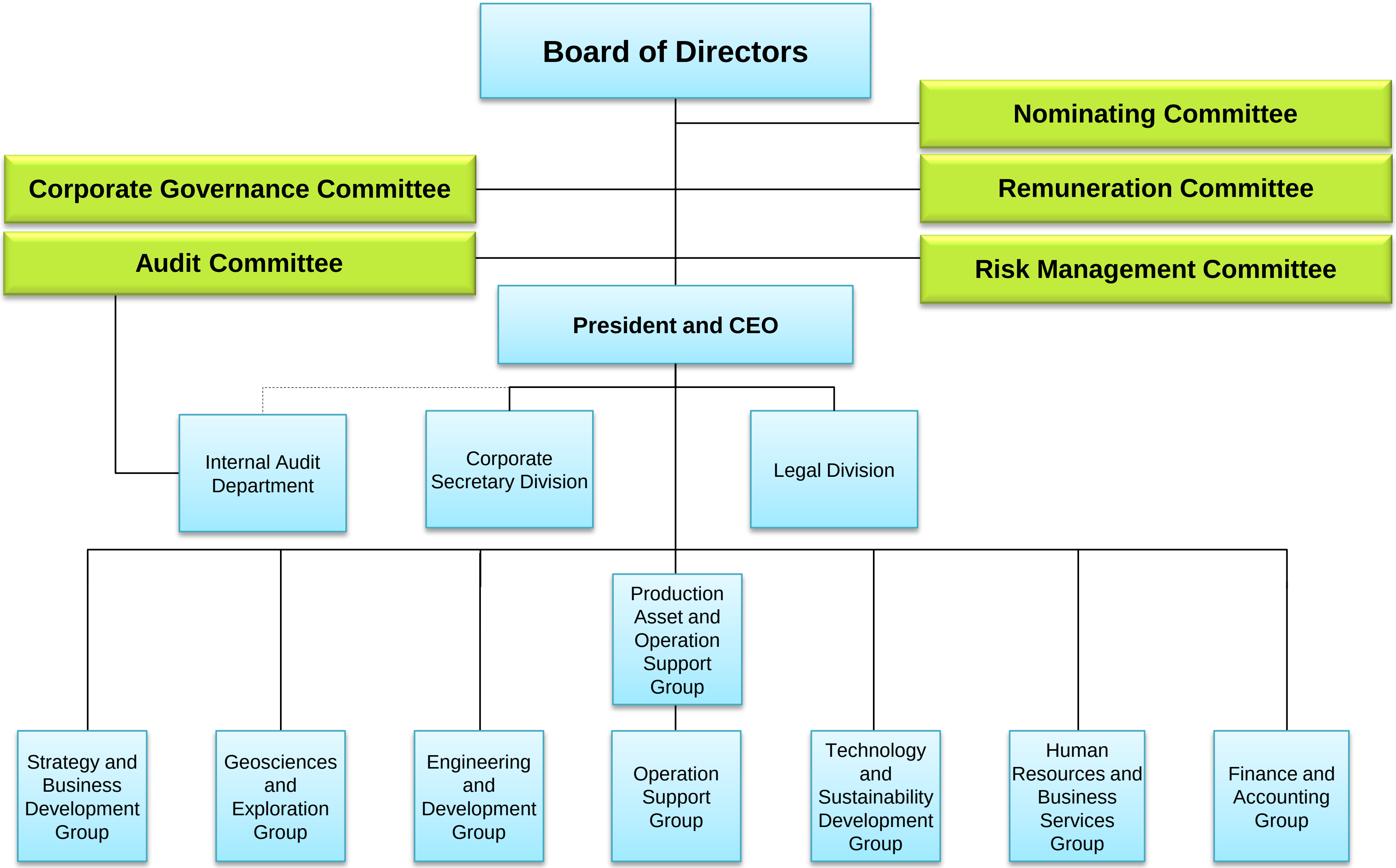
	Project	Status*	PTTEP's Share	Partners (as of 2015)		2016 Key Activities
Exploration Phase						
Overseas (Cont'd)						
34	**Myanmar MD 7 and MD 8**	OP	100%			
35	**Mariana Oil Sands**	OP	100%			• Assess development approach and cost reduction opportunity
36	**Barreirinhas AP1**		25%	BG Brasil	75%	• Acquire 3D seismic
37	**MOGE 3**	OP	75%	Palang Sophon Offshore MOECO WinPreciousResources	10% 10% 5%	• Acquire 3D seismic
38	**Brazil BM-ES-23**		20%	Petrobras INPEX	65% 15%	• Drilling result and resource evaluation

Remarks: 38 projects exclude 5 projects that are pending official withdrawal approval

* Status: OP = PTTEP operatorship / JOC = PTTEP joint operatorship

Organization Structure

Ensuring transparency, integrity and good corporate governance



Ratio & Formula

Ratio	Formula
Lifting Cost ($/BOE)	(Operating Exp.) / Production Volume
Cash Cost ($/BOE)	(Operating Exp. + Exploration Exp. + G&A + Royalties + Finance Cost) / Sales Volume
Unit Cost ($/BOE)	(Operating Exp. + Exploration Exp. + G&A + Royalties + Finance Cost + DD&A) / Sales Volume
Reserves Replacement Ratio	5-Yr Additional Proved Reserves / 5-Yr Production Volume
Reserves Life Index (Year)	Proved Reserves / Production Volume
Success Ratio	Number of wells with petroleum discovery / Total number of exploration and appraisal wells
Sales Revenue	Sales + Revenue from pipeline transportation
EBITDA	(Sales + Revenue from pipeline transportation) - (Operating expenses + Exploration expenses + Administrative expenses + Petroleum royalties and remuneration + Management's remuneration)
EBITDA Margin	EBITDA / Sales Revenue
Return on Equity	Trailing-12-month net income / Average shareholders' equity between the beginning and the end of the 12-month period
Return on Capital Employed	(Trailing-12-month net income + Trailing-12-month Interest Expenses & Amortise Bond Issuing Cost) / (Average shareholders' equity and average total debt between the beginning and the end of the 12-month period)
Simple Effective Tax Rate	Income tax expenses / Income before income taxes
Total debt	Short-term loans from financial institution + Current portion of long-term debts + Bonds + Long-term loans from financial institution
Net debt	Total debt – Liquidity
Debt to Equity	Total debt / Shareholders' equity
Net Debt to Equity	Net debt / Shareholders' equity
Total Debt to Capital	Total debt / (Total debt + Shareholders' equity)
Total Debt to EBITDA	Total debt / Trailing-12-month EBITDA
Net Debt to EBITDA	Net debt / Trailing-12-month EBITDA
EBITDA Interest Coverage Ratio	Trailing-12-month EBITDA / Trailing-12-month Interest Expenses & Amortize Bond Issuing Cost