



Q3 2016 Analyst Meeting
Bangkok

8 November 2016



PTTEP



Safety Performance

Industry Highlights

Financial Results

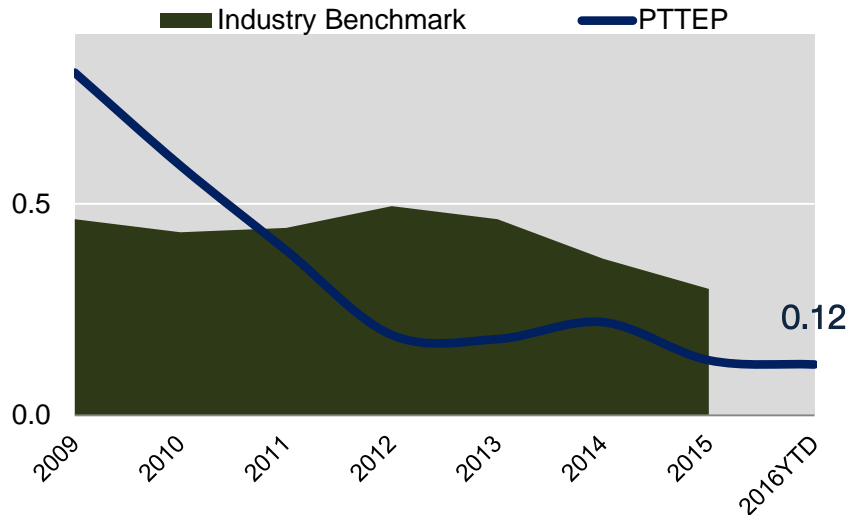
Outlook



Safety

Maintain high safety standard

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

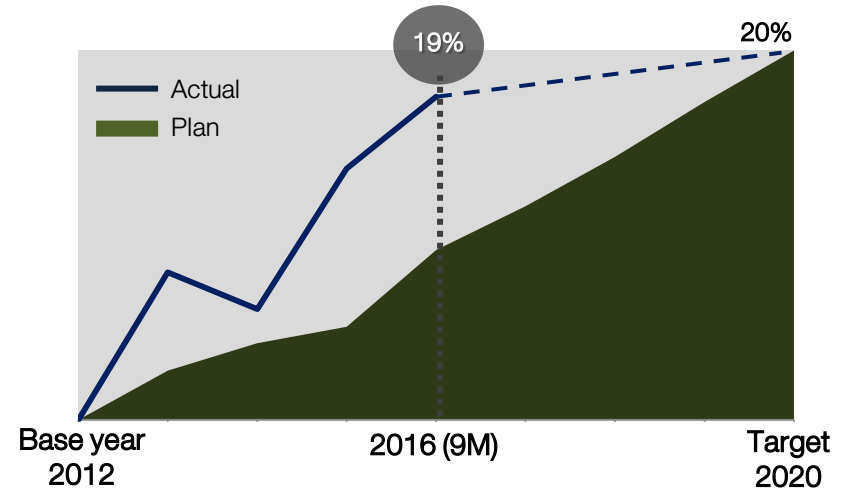


Safety of PTTEP employees and contractors in every aspect of our operations is key to achieve the goal of "Target Zero"

Environment

Target 20% GHG reduction by 2020

% of reduction in GHG emission per BOE produced, comparing to 2012 base year figure



PTTEP aims to become a Low Carbon Footprint organization, and has set a goal to reduce its greenhouse gas (GHG) emissions by not less than 20% in the year 2020 versus its 2012 base year figure.

** Increase in GHG emission per barrel produced in 2014 was due to slight decrease in production from domestic assets.*

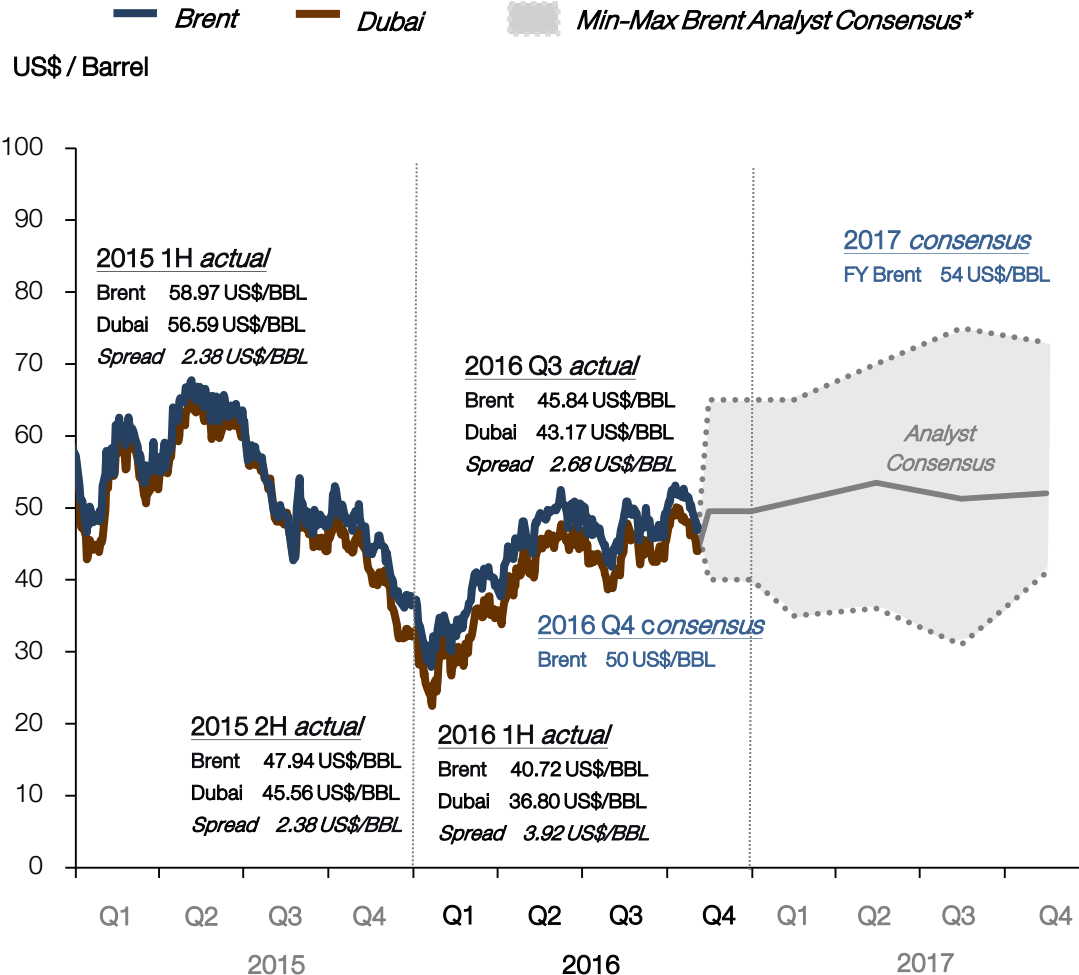


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Remark: * Bloomberg Analyst Consensus (CPFC) as of 31 October 2016 (52 estimates)

9M 2016 Highlights

- ↓ High level of production from OPEC
- ↓ Continuing supply ramp-up from Iran and potential production recovery in US from increasing rig counts
- ↓ Concern over the impact of Brexit to global economic and oil demand outlook

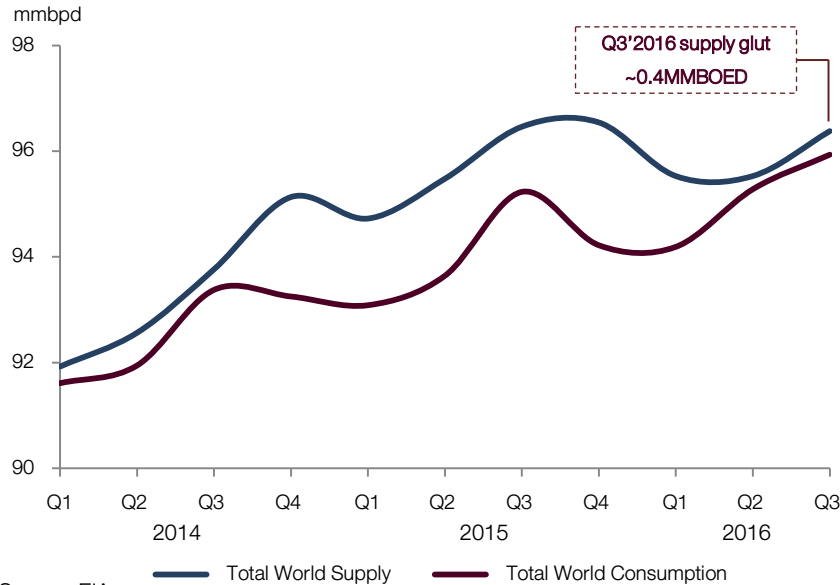
Outlook for the remaining of the year

- ↓ Pressure from oversupply conditions
- ↕ Potential of production cut from OPEC and non-OPEC
- ↑ Gradual expansion in global economy reflecting increase in global oil demand
- ↑ Distress from the unrest situation in Syria if escalates



Global Supply and Consumption

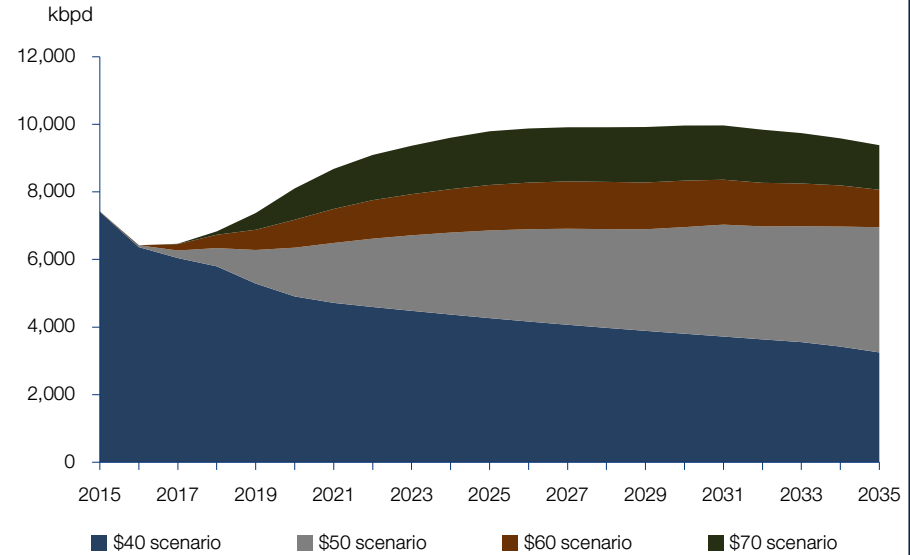
Potential OPEC's production cut will help rebalance the oil demand and supply



Source: EIA

US Production

US production is expected to increase if oil price stays above \$50/BBL



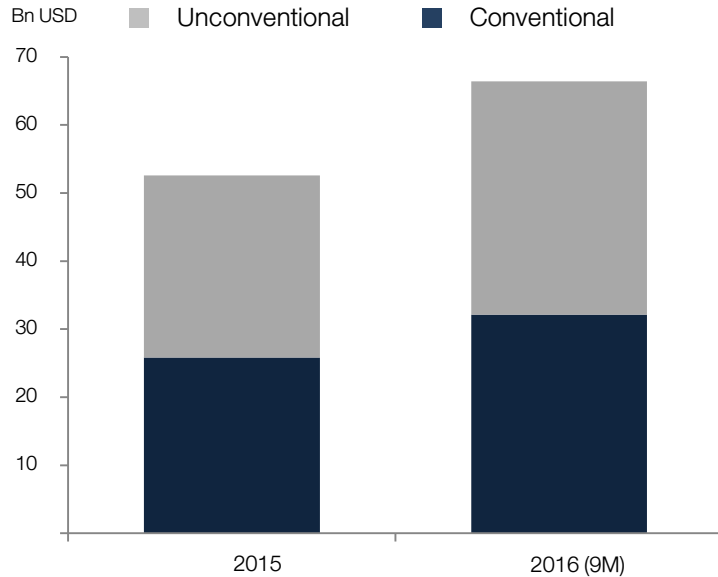
Source: Wood Mackenzie

Current supply glut as of end of Q3'16 is approx. 0.4 MMBOED

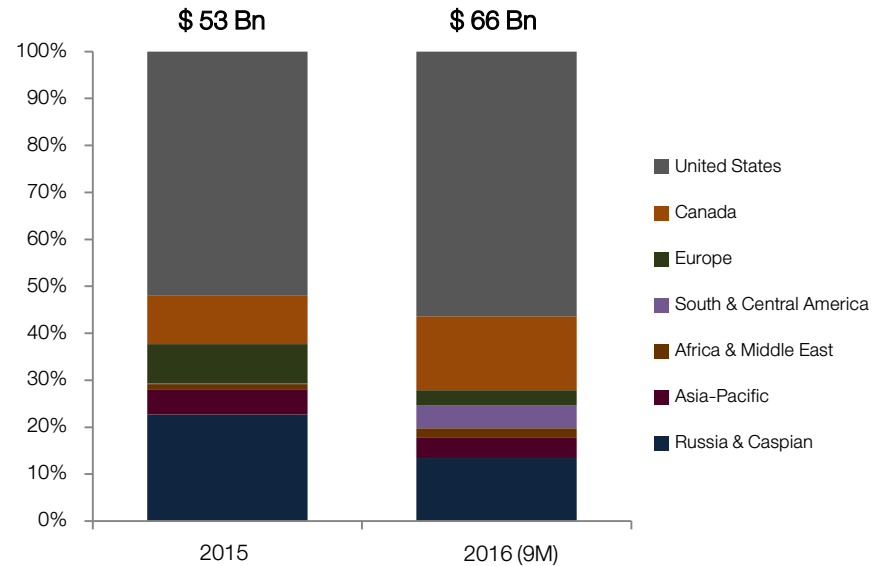
- Supply glut will be eased up, if OPEC and non-OPEC meeting in November 2016 reaches the conclusion to cut the production (positive impact to oil prices)
- Key catalyst: If oil price continues to rise, US production is likely to recover from 2017 onwards



Upstream Deal Value by Segment*



Upstream Deal Value Distribution by Region*

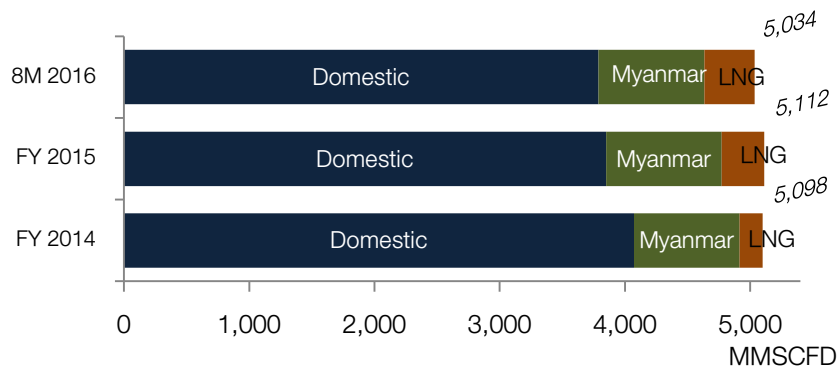


- Global M&A upstream market showed a sign of recovery mainly due to improved oil prices
- As of the third quarter of 2016, majority of deal value and activities remain in US unconventional and the consolidation of oil sands position in Canada

Remark: * includes deal valued over \$100 million and excludes Shell-BG deal

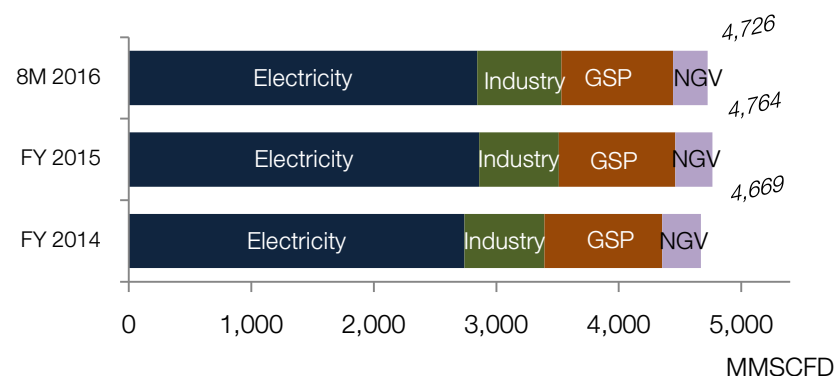
Source: IHS

Thailand's Natural Gas Supply by Source



Source: EPPO

Thailand's Natural Gas Consumption by Sector



Source: EPPO

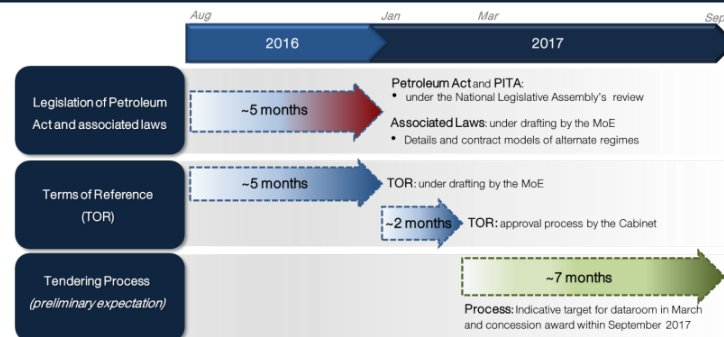
Exchange Rate Movement (THB/USD)



Source: Bank of Thailand, Bloomberg

Forecast based on Bloomberg Consensus as of 19 October 2016

Re-tendering of Expiring Concession in GOT



- Delayed process on Petroleum Act and PITA under the National Legislative Assembly's review from October 2016 target
- Closely monitor the potential impact on the timely process of dataroom opening in March 2017 and concession award in late 2017

Source: Interviewed by Director General of DMF, 26 August 2016



Safety Performance

Industry Highlights

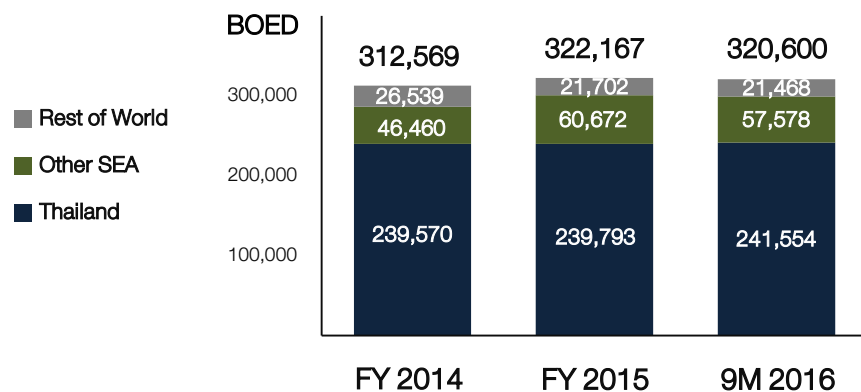
Financial Results

Outlook

Sales Volume & Unit Cost

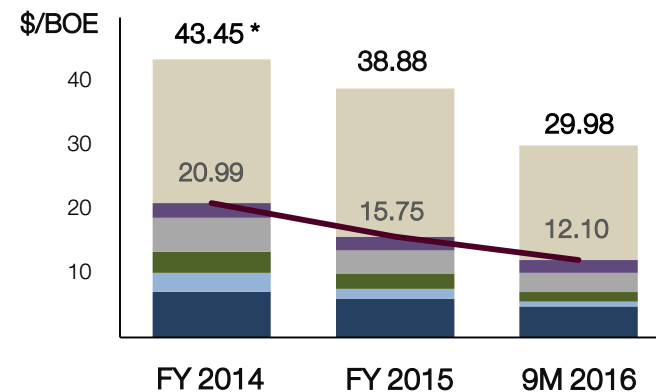
On track for 2016 sales volume target; while cost improvement exceeds target

Sales Volume and Price



Gas (\$/MMBTU)	8.06	7.20	5.75
Liquid (\$/BBL)	94.82	50.05	39.37
Weighted Avg. (\$/BOE)	63.71	45.29	36.00
Avg. Dubai (\$/BBL)	96.60	50.91	38.92
Avg. HSFO (\$/BBL) (High Sulphur Fuel Oil)	86.74	44.86	32.11
Volume Mix (Gas : Liquid)	67 : 33	70 : 30	70 : 30
Revenue Mix (Gas : Liquid)	51 : 49	66 : 34	66 : 34

Unit Cost



DD&A	22.46	23.13	17.88
Finance Cost	2.27	2.14	2.01
Royalties	5.34	3.62	3.02
G&A	3.30	2.39	1.50
Exploration Expenses	2.92	1.56	0.71
Operating Expenses **	7.16	6.04	4.86
Lifting Cost	5.26	4.62	4.05
Drilling Success Ratio ***	25 : 43	31 : 47	5 : 7

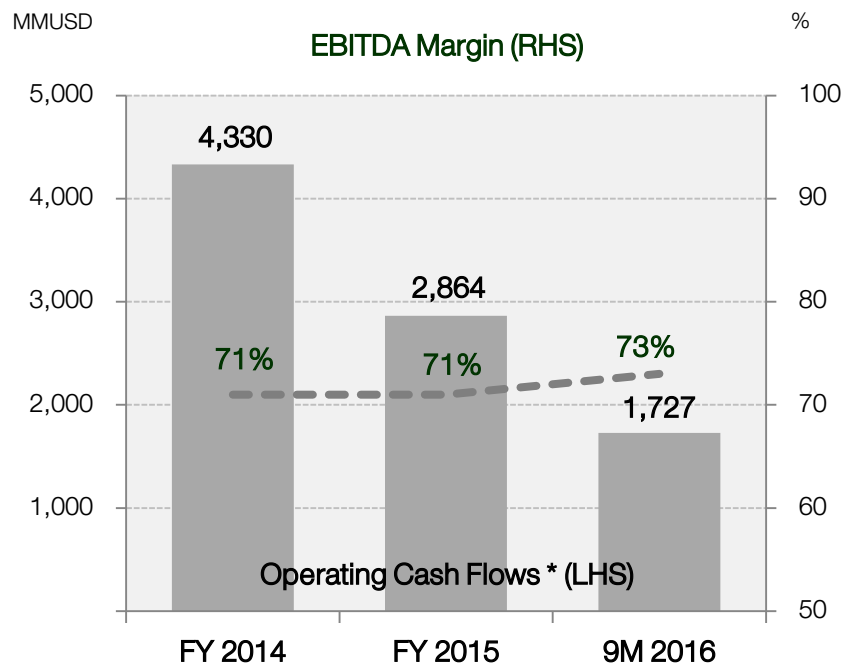
Remark: Sales Volume & Royalties after reclassification of PSC royalty. All numbers include discontinued operations until August 2016.

* 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

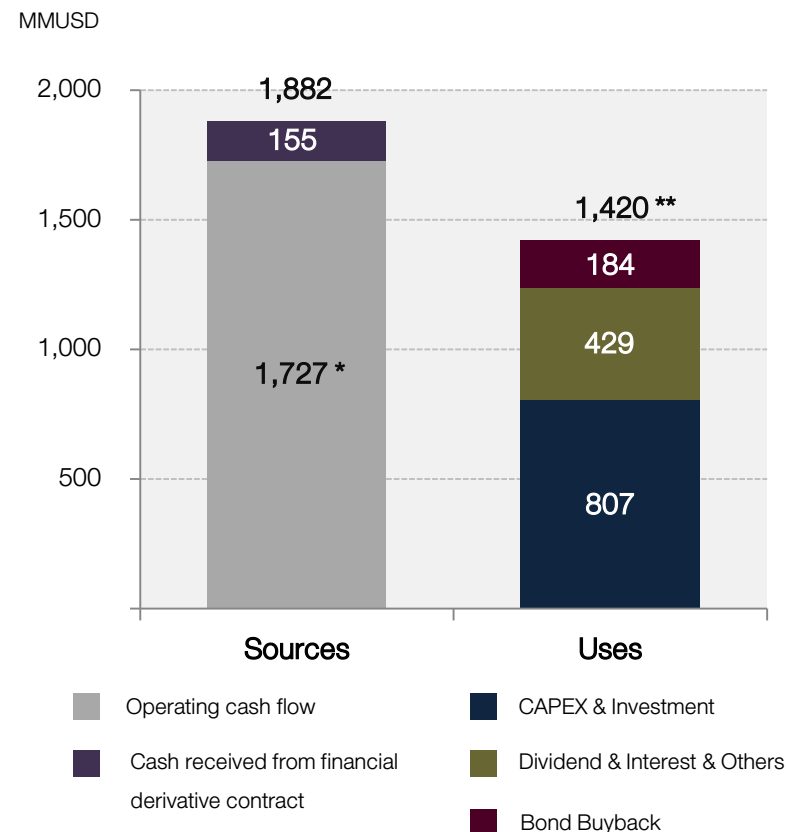
*** Successful wells : Total wells (includes Exploration and Appraisal wells)

Cash Flow Performance



Net Income	677	(854)	388
Recurring Net Income ***	1,538	718	345

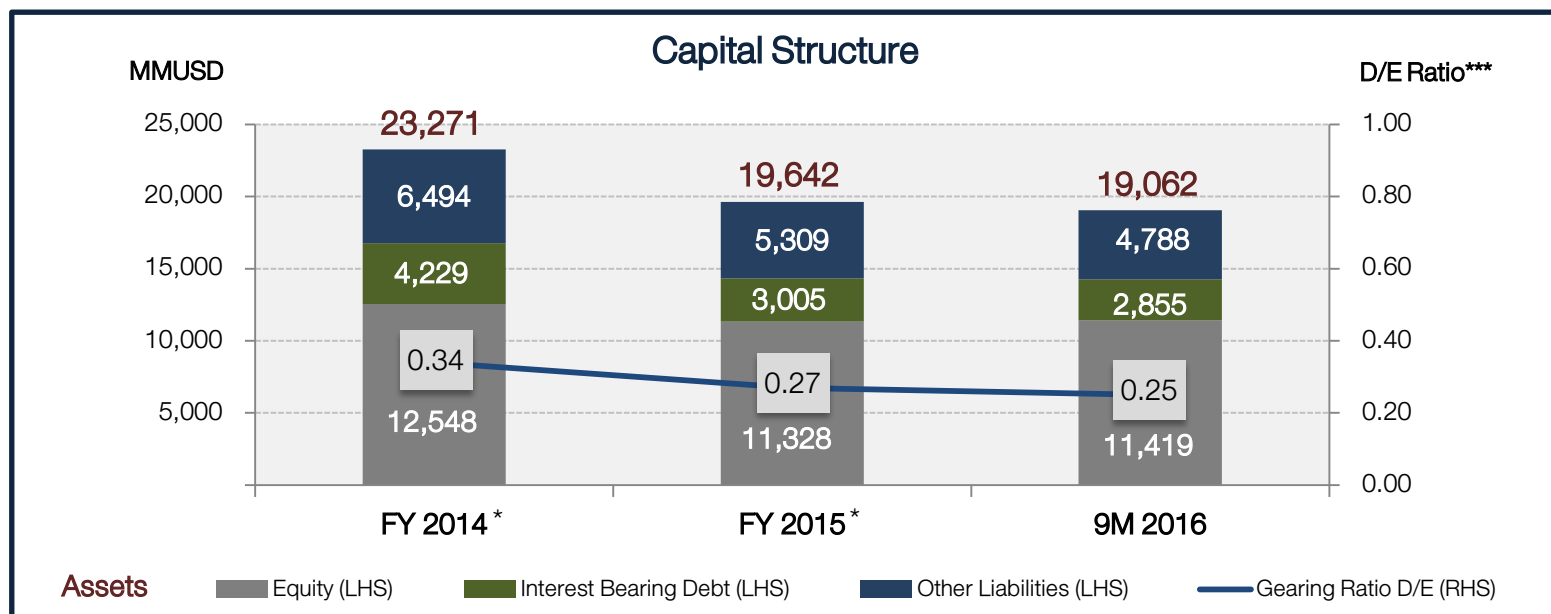
Source & Use of Funds in 9M 2016



Remark: * 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.



Debt Profile **



Weighted Average
Cost of Debt** (%)

4.14

4.32

4.37

[Fixed : Floating]

[77 : 23]

[82 : 18]

[80 : 20]

Average Loan Life** (Years)

7.05

8.17

8.40

Remark: * Restated

** Excludes Hybrid bonds

*** Include discontinued operations until end of August 2016



Safety Performance

Industry Highlights

Financial Results

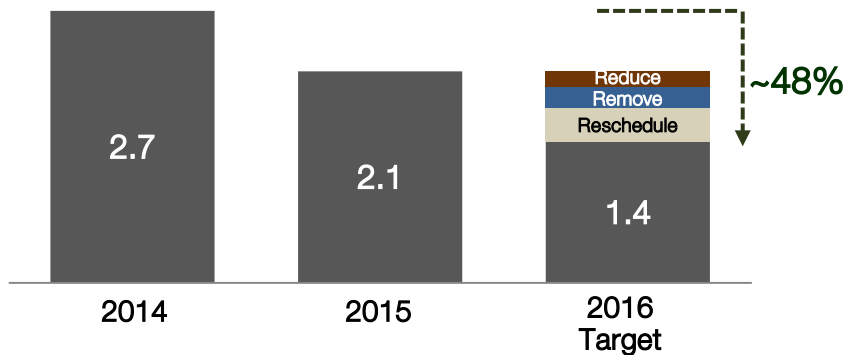
Outlook



SAVE to be SAFE....

Reduce CAPEX Spending

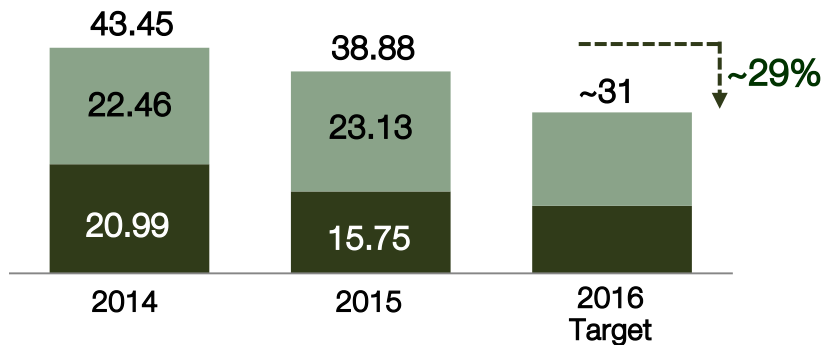
Unit : Bn USD



Bring down unit cost

Unit : USD/BOE

Cash Non-cash



Financial outlook

FY 2016



Average Gas Price *

~5.5
USD/MMBTU



Average Sales Volume

~320
KBOED



EBITDA Margin

~70
% of sales revenue



Operating Cash Flow

~2.3
Bn USD

* Based on the average Dubai crude oil price in Q4 2016 of 45 USD/BBL

SPEND SMART to business sustainability



Short to Medium term

FID Candidates: select to proceed with competitive projects



Mozambique Area 1

- 8.5% interest (operated by APC)
- Initial development for 12 MMTPA LNG (2 trains)



Contract 4 (Ubon)

- 60% interest (operated by Chevron)
- Oil resources in the Gulf of Thailand
- Proposed production capacity in 25–30 kbpd range



Algeria HBR

- 24.5% interest, operator
- Successful appraisal wells result
- Fasten development plan

Continue to pursue new investments



M&A

- Producing / near-term producing assets in SEA



Exploration Portfolio

- Low risk, known areas and quick commercialization located in SEA



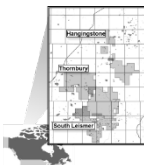
LNG Value Chain

- Evaluate feasibility to form LNG value chain partnership with PTT

Long term

Resources for further cost efficiency improvement

Mariana Oil Sands



- 100% interest, operator
- Re-assessing development plan for cost optimization

Cash Maple



- 100% interest, operator
- 5 years Retention lease period (2017–2021)
- In discussion with nearby operators for joint-development

Business enhancement and sustainability



Strengthen E&P capability

- Through R&D on exploration and production technologies



Diversification for Future value

- Search for new business in both E&P-related and non-E&P related sectors



Existing Portfolio

Seismic

- 20% reduction of 2016YTD Seismic costs
- Currently focus on Seismic works optimization and data quality for prospect evaluation (M11, MD-7, MOGE3 and Barreirinhas AP1)

E&A Drilling

- 2017-2018: Conduct E&A drilling of high potential blocks with promising seismic results

Portfolio Rationalization

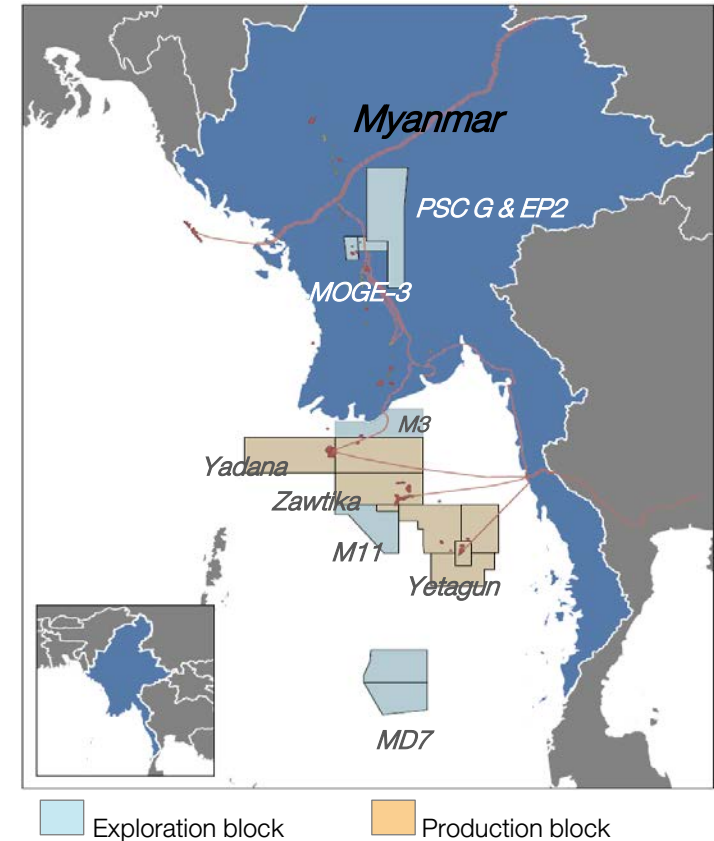
- Farm out of exploration blocks with high stakes (i.e. MD-7)

Near field unlock potential (i.e. Zawtika West)

Growth Portfolio

Strategy

- Focus on low risk, known areas and quick commercialization located in SEA (i.e. SK 410B in Malaysia)
- Cluster exploration (multi blocks)





On target to achieve
stable sales

Leaner cost structure
driving Competitive
operating performance

Robust liquidity with
solid cash flow and
significant cash on hand

Opportunities for
long-term growth
through organic and
inorganic investments



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



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Detailed financial information

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Project details

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Organization structure

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Ratios and formula

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Summary of Q3 2016 Financial Results

Healthy bottom line supported by core earnings and non-recurring gains

Unit : MMUSD

Statement of Income	Q2 16 *	Q3 16	% QoQ	Q3 15 *	% YoY	9M 16	9M 15 *	% YTD
Total Revenues	1,102	1,109	1	1,457	(24)	3,281	4,291	(24)
Sales	1,061	1,047	(1)	1,307	(20)	3,152	4,084	(23)
Others	41	62	51	150	(59)	129	207	(38)
Sales Volume (BOED)	320,657	311,386	(3)	320,795	(3)	320,600	317,383	1
Sales Price (USD/BOE)	36.62	36.32	(1)	44.83	(19)	36.00	47.47	(24)
Total Expenses	1,028	953	(7)	2,710	(65)	2,896	5,245	(45)
Major Expenses:								
Operating Expenses	139	146	5	177	(18)	415	515	(19)
Exploration Expenses	15	20	33	78	(74)	61	129	(53)
DD&A	518	534	3	644	(17)	1,570	2,095	(25)
Impairment loss on assets	-	-	-	1,350	(100)	-	1,350	(100)
Income Tax Expense	55	67	22	220	(70)	152	377	(60)
(Gain)/Loss on FX	(7)	(14)	(100)	20	<(100)	(27)	73	<(100)
Net Income from Continuing Operations	74	156	>100	(1,253)	>100	385	(954)	>100
Profit (Loss) from Discontinued Operations	1	0.3	(70)	(31)	>100	3	(32)	>100
Net Income	75	156	>100	(1,284)	>100	388	(986)	>100
Recurring Net Income	154	75	(51)	264	(72)	345	705	(51)
Non-Recurring **	(79)	81	>100	(1,548)	>100	43	(1,691)	>100

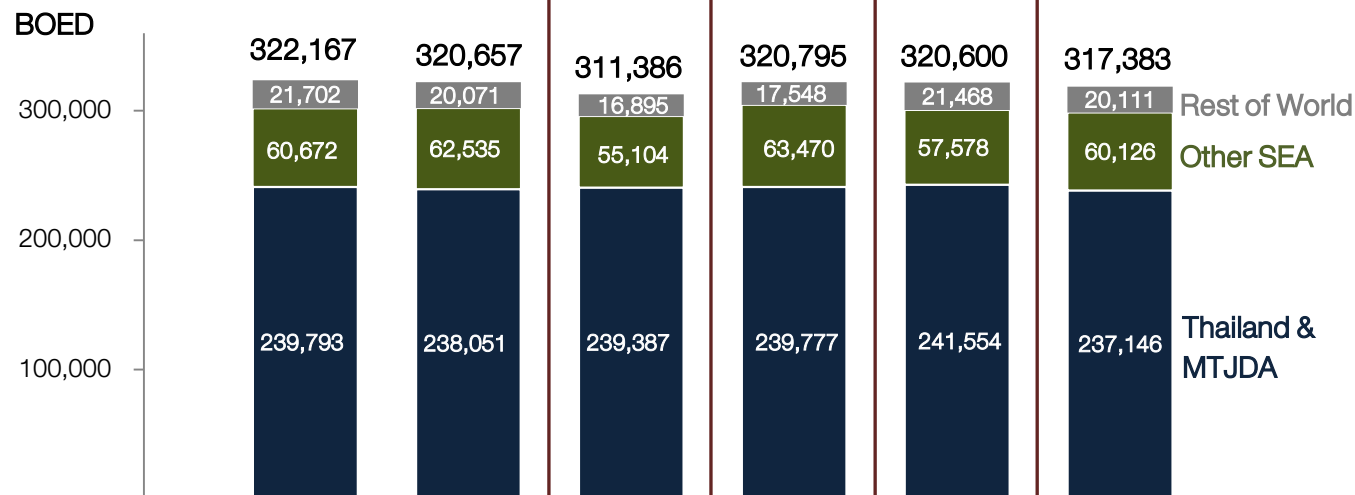
Note: * Restated / Represented

** Includes Gain/(Loss) on FX, Deferred tax from Functional currency, Current Tax from FX Revaluation, Gain/(Loss) from Financial Instruments, and etc.

PTTEP Sales Volume & Average Selling Price

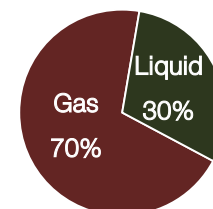
Lower sales volume QoQ from higher planned maintenance shutdown activities

Sales Volume

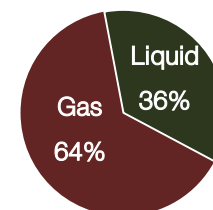


Q3 2016 Sales Volume & Revenue By Product

Volume Mix



Revenue Mix



Sales Price	2015	Q2 16	Q3 16 **	Q3 15 *	9M 16	9M 15 *
Gas (\$/MMBTU)	7.20	5.59	5.56	7.16	5.75	7.51
Liquid (\$/BBL)	50.05	43.68	43.15	49.33	39.37	52.96
Weighted Avg. (\$/BOE)	45.29	36.62	36.32	44.83	36.00	47.47
Avg. Dubai (\$/BBL)	50.91	43.18	43.17	49.74	38.92	54.31
Avg. HSFO (\$/BBL) (High Sulphur Fuel Oil)	44.86	33.65	38.02	40.69	32.11	48.68

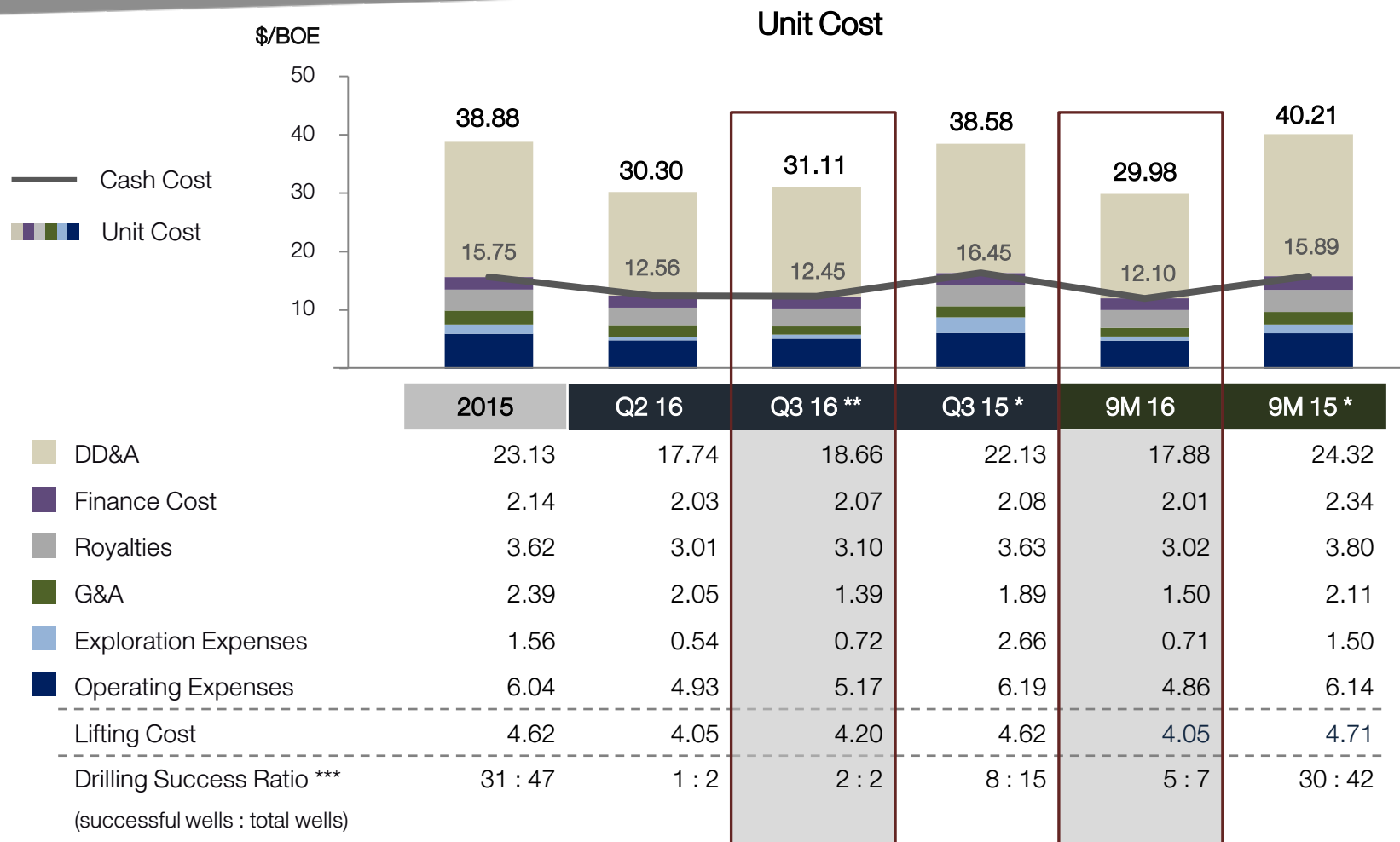
Note: * Restated

** Includes discontinued operations until end of August 2016



Operating Performance

Slight increase in unit cost QoQ due to more completed assets and higher maintenance activities



Note: * Restated

** Includes discontinued operations until end of August 2016

*** Exploration and Appraisal Wells

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

	Q2 16 *	Q3 16	Q3 15 *	9M 16	9M 15 *
Sales Revenue ** (MMUSD)	1,085	1,065	1,337	3,204	4,179
EBITDA *** (MMUSD)	778	770	919	2,337	3,025
Net Income (MMUSD)	75	156	(1,284)	388	(986)
Recurring Net Income (MMUSD)	154	75	264	345	705
Earning Per Share (USD)	0.01	0.04	(0.32)	0.09	(0.25)
Key Financial Ratios ***					
EBITDA Margin (%)	72	72	69	73	72
Return on Equity (%) (LTM)	(7)	5	(14)	5	(14)
Return on Capital Employed (%) (LTM)	(5)	4	(10)	4	(10)
Return on Equity (%) (LTM, Recurring Net Income)	5	3	7	3	7
Return on Capital Employed (%) (LTM, Recurring Net Income)	4	3	6	3	6

Note: * Restated / Represented

** Sales and revenue from pipeline transportation

*** Includes discontinued operations until end of August 2016

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



	Q4 15	Q1 16	Q2 16	Q3 16
Total Assets (MMUSD)	19,642	19,795	19,025	19,062
- Cash & cash equivalents * (MMUSD)	3,260	3,702	3,205	3,722
Total Liabilities (MMUSD)	8,314	8,509	7,704	7,643
- Interest bearing debt (MMUSD)	3,005	3,018	2,844	2,855
Equity (MMUSD)	11,328	11,286	11,321	11,419
Key Financial Ratios ***				
Total Debt to Equity (X)	0.27	0.27	0.25	0.25
Net Debt * to Equity (X)	(0.02)	(0.06)	(0.03)	(0.08)
Total Debt to Capital (X)	0.21	0.21	0.20	0.20
Total Debt to EBITDA (X)	0.78	0.85	0.86	0.91
Net Debt * to EBITDA (X)	(0.07)	(0.19)	(0.11)	(0.28)
EBITDA Interest Coverage (X)	24	24	24	23

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

Weighted Average Cost of Debt ** : 4.37%

Average Loan Life ** : 8.40 years

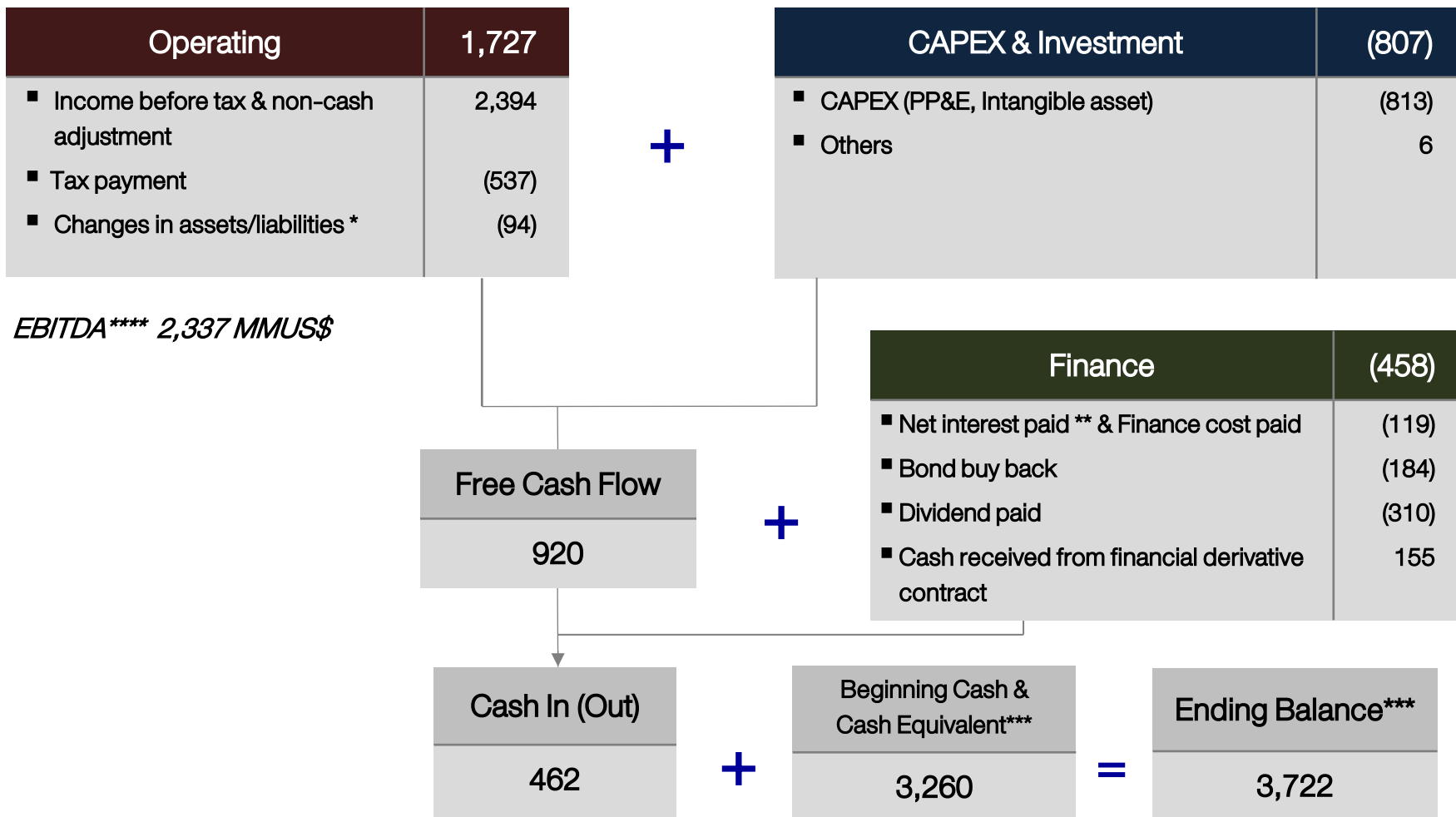
Note: * Cash & Cash Equivalents (Cash on hand) include Short-term Investments (Fixed deposit > 3 months)

Net Debt = Total Debt less Cash & Cash Equivalents and Short-term Investments

** Excludes hybrid bonds

*** Includes discontinued operations until end of August 2016

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



Note: * Net of foreign exchange rate effect

** Net of interest received

*** Include Short-term investment (Fixed deposit > 3 months)

**** Includes discontinued operations until end of August 2016



Project Information 1/4

Production phase: Thailand and JDA



	Project	Status*	PTTEP's Share	Partners <i>(as of Q3 2016)</i>	9M 2016 Average Sales Volume **		2016 Key Activities	
					Gas	Oil and Other		
Production Phase								
Thailand and JDA								
1	Arthit	OP	80%	Chevron MOECO	16% 4%	220 MMSCFD	Condensate: 10 k BPD	<ul style="list-style-type: none">• Ensure gas deliverability level at DCQ****• Drill development wells• Install wellhead platforms
2	B6/27	OP	60%***			N/A	N/A	<ul style="list-style-type: none">• Subsurface study
3	B8/32 & 9A		25%	Chevron MOECO KrisEnergy PSTL	51.66% 16.71% 4.63% 2%	127 MMSCFD	Crude: 29 k BPD	<ul style="list-style-type: none">• Drill development wells• Perform waterflood activities
4	Bongkot	OP	44.4445%	TOTAL British Gas	33.3333% 22.2222%	888 MMSCFD	Condensate: 27 k BPD	<ul style="list-style-type: none">• Ensure gas deliverability level at DCQ****• Drill Exploration / Appraisal / Development wells• Install wellhead platforms
5	Contract 3 <i>(Formerly Unocal III)</i>		5%	Chevron MOECO	71.25% 23.75%	586 MMSCFD	Crude: 24 k BPD Condensate: 22 k BPD	<ul style="list-style-type: none">• Drill exploration / appraisal / development wells• Install wellhead platforms• Perform waterflood activities
6	Contract 4 <i>(Formerly Pailin)</i>		60%	Chevron MOECO	35% 5%	323 MMSCFD	Condensate: 15 k BPD	<ul style="list-style-type: none">• 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%	11 MMSCFD	-	
8	G4/43		21.375%	Chevron MOECO PSTL	51% 21.25% 6.375%	1.6 MMSCFD	Crude: 6.3 k BPD	<ul style="list-style-type: none">• Drill development wells• Perform waterflood activities
9	G4/48		5%	Chevron MOECO	71.25% 23.75%	7.3 MMSCFD	Crude: 1.3 k BPD	
10	L53/43 & L54/43	OP	100%			-	Crude: 544 BPD	<ul style="list-style-type: none">• Drill exploration and development wells
11	PTTEP1	OP	100%			-	Crude: 378 BPD	<ul style="list-style-type: none">• Drill development wells• Perform waterflood activities
12	S1	OP	100%			23 MMSCFD	Crude: 27 k BPD	<ul style="list-style-type: none">• Drill exploration / appraisal / development wells• Enhance oil recovery program includes waterflooding and artificial lift
13	Sinphuhorm	OP	55%	Apico ExxonMobil	35% 10%	120 MMSCFD	Condensate: 444 BPD	<ul style="list-style-type: none">• Drill development wells
14	MTJDA	JOC	50%	Petronas-Carigali	50%	309 MMSCFD	Condensate: 8.3 k BPD	<ul style="list-style-type: none">• Drill development wells• Install wellhead platforms
15	L22/43	OP	100%			-	Crude: 165 BPD	<ul style="list-style-type: none">• 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

Safety

Industry

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Financial

Outlook



	Project	Status*	PTTEP's Share	Partners (as of Q3 2016)	9M 2016 Average Sales Volume **		2016 Key Activities
					Gas	Oil and Other	
Production Phase							
Overseas							
16	Oman 44 ***	OP	100%		17 MMSCFD	Condensate: 854 BPD	<ul style="list-style-type: none">Maintain production operation
17	Vietnam 9-2	JOC	25%	PetroVietnam 50% SOCO 25%	12 MMSCFD	Crude: 3.9 k BPD	<ul style="list-style-type: none">Maintain production operationPerform reservoir management
18	Yadana		25.5%	TOTAL 31.24% Chevron 28.26% MOGE 15%	745 MMSCFD	-	<ul style="list-style-type: none">Drill exploration / development wellsAcquire 2D seismic reprocessingPerform reservoir management
19	Yetagun		19.3178%	Petronas-Carigali 30.00140% MOGE 20.4541% Nippon Oil 19.3178% PC Myanmar (Hong Kong) 10.90878%	233 MMSCFD	Condensate: 5.4 k BPD	<ul style="list-style-type: none">Drill development wellsPerform reservoir Management
20	Vietnam 16-1	JOC	28.5%	PetroVietnam 41% SOCO 28.5% OPECO 2%	12 MMSCFD	Crude: 26 k BPD	<ul style="list-style-type: none">Drill development wellsPerform reservoir managementReview feasibility for water handling facility upgrade
21	PTTEP Australasia (PTTEP AA)	OP	50%-100% (varied by permits)		-	Crude: 15 k BPD	<ul style="list-style-type: none">Maintain production operationAssess resource potential of exploration permits
22	Natuna Sea A		11.5%	Premier Oil 28.67% KUFPEC 33.33% Petronas 15% Pertamina 11.5%	217 MMSCFD	Crude: 1.5 k BPD	<ul style="list-style-type: none">Maintain production operation
23	Zawtika (M9 & a part of M11)	OP	80%	Myanma Oil and Gas Enterprise (MOGE) 20%	301 MMSCFD	-	<ul style="list-style-type: none">Maintain production rateDrill development wellsInstall wellhead platforms
24	Algeria 433a & 416b (Bir Seba)	JOC	35%	PetroVietnam 40% Sonatrach 25%	-	Crude: 2.2 k BPD (net entitlement)	<ul style="list-style-type: none">Maintain production operationReview field development plan for possible capacity expansion

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

** Sales volume stated at 100% basis except for Algeria 433a & 416b

*** In the process of divestment transaction closing



	Project	Status*	PTTEP's Share	Partners (as of Q3 2016)	2016 Key Activities
Exploration Phase					
Thailand and JDA					
25	G9/43	OP	100%		
Overseas					
26	Myanmar M3	OP	80%	MOECO 20%	<ul style="list-style-type: none"> Access development options and commercial potential
27	Mozambique Rovuma Offshore Area 1		8.5%	Anadarko, Mitsui, 26.5%, 20%, ENH, Bharat Petroleum, 15%, 10%, BREML, OVL 10%, 10%	<ul style="list-style-type: none"> 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 24.5%, Sonatrach 51%	<ul style="list-style-type: none"> Drill Appraisal wells
29	Myanmar M11	OP	100%**		<ul style="list-style-type: none"> Acquire 3D seismic
30	Vietnam B & 48/95		8.5%	PVN 65.88%, MOECO 25.62%	<ul style="list-style-type: none"> Negotiate a GSA with the Vietnamese government
31	Vietnam 52/97		7%	PVN 73.4%, MOECO 19.6%	<ul style="list-style-type: none"> Negotiate a GSA with the Vietnamese government
32	Myanmar PSC G and EP 2	OP	70%	WinPreciousResources 10%, MOECO 10%, Palang Sophon Offshore 10%	<ul style="list-style-type: none"> Conduct G&G studies
33	Myanmar MD 7	OP	100%		<ul style="list-style-type: none"> Acquire 3D seismic
34	Mariana Oil Sands	OP	100%		<ul style="list-style-type: none"> Assess development approach and cost reduction opportunity
35	Barreirinhas AP1		25%	BG Brasil 75%	<ul style="list-style-type: none"> Acquire 3D seismic

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

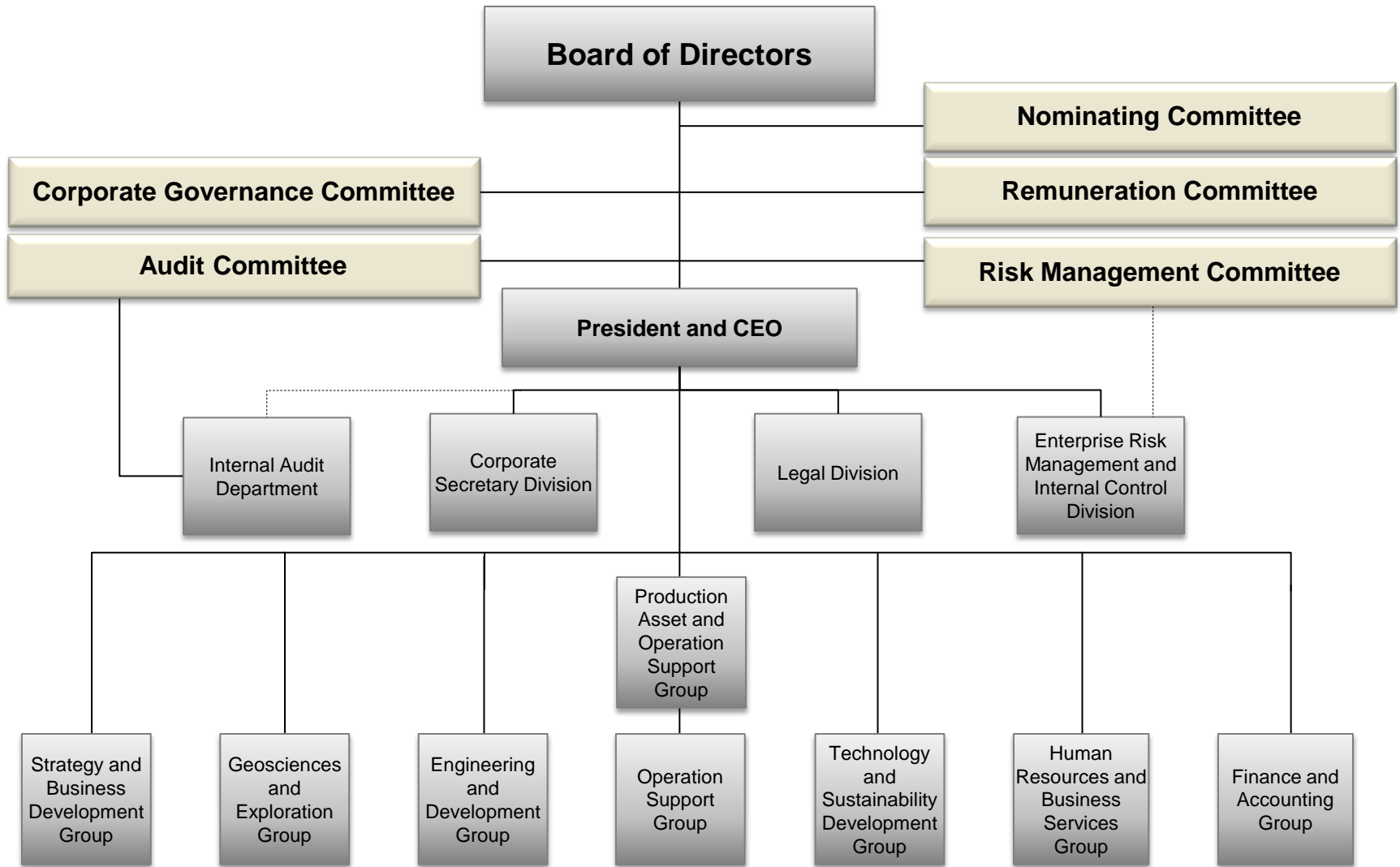
** New participating interest subject to government approval



	Project	Status*	PTTEP's Share	Partners (as of Q3 2016)	2016 Key Activities
Exploration Phase					
Overseas (Cont'd)					
36	Myanmar MOGE 3	OP	75%	Palang Sophon Offshore MOECO WinPreciousResources	10% 10% 5% • Acquire 3D seismic
37	Brazil BM-ES-23		20%	Petrobras INPEX	65% 15% • Drilling result and resource evaluation
38	Malaysia SK410B	OP	42.5%	KUFPEC PSCB	42.5% 15%
39	Kenya L11A, L11B, L12		10%	Anadarko Total ENI	50% 30% 10%

Remarks: 39 projects exclude 3 projects that are pending official withdrawal approval

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





Ratio	Formula
Lifting Cost (\$/BOE)	$(\text{Operating Exp.} - \text{Transportation Cost} - \text{Stock Variation} - \text{Other expense not related to lifting}) / \text{Production Volume}$
Cash Cost (\$/BOE)	$(\text{Operating Exp.} + \text{Exploration Exp.} + \text{G\&A} + \text{Royalties} + \text{Finance Cost}) / \text{Sales Volume}$
Unit Cost (\$/BOE)	$(\text{Operating Exp.} + \text{Exploration Exp.} + \text{G\&A} + \text{Royalties} + \text{Finance Cost} + \text{DD\&A}) / \text{Sales Volume}$
Reserves Replacement Ratio	$5\text{-Yr Additional Proved Reserves} / 5\text{-Yr Production Volume}$
Reserves Life Index (Year)	$\text{Proved Reserves} / \text{Production Volume}$
Success Ratio	$\text{Number of wells with petroleum discovery} / \text{Total number of exploration and appraisal wells}$
Sales Revenue	$\text{Sales} + \text{Revenue from pipeline transportation}$
EBITDA	$(\text{Sales} + \text{Revenue from pipeline transportation}) - (\text{Operating expenses} + \text{Exploration expenses} + \text{Administrative expenses} + \text{Petroleum royalties and remuneration} + \text{Management's remuneration})$
EBITDA Margin	$\text{EBITDA} / \text{Sales Revenue}$
Return on Equity	$\text{Trailing-12-month net income} / \text{Average shareholders' equity between the beginning and the end of the 12-month period}$
Return on Capital Employed	$(\text{Trailing-12-month net income} + \text{Trailing-12-month Interest Expenses \& Amortize Bond Issuing Cost}) / (\text{Average shareholders' equity and average total debt between the beginning and the end of the 12-month period})$
Simple Effective Tax Rate	$\text{Income tax expenses} / \text{Income before income taxes}$
Total debt	$\text{Short-term loans from financial institution} + \text{Current portion of long-term debts} + \text{Bonds} + \text{Long-term loans from financial institution}$
Net debt	$\text{Total debt} - \text{Liquidity}$
Debt to Equity	$\text{Total debt} / \text{Shareholders' equity}$
Net Debt to Equity	$\text{Net debt} / \text{Shareholders' equity}$
Total Debt to Capital	$\text{Total debt} / (\text{Total debt} + \text{Shareholders' equity})$
Total Debt to EBITDA	$\text{Total debt} / \text{Trailing-12-month EBITDA}$
Net Debt to EBITDA	$\text{Net debt} / \text{Trailing-12-month EBITDA}$
EBITDA Interest Coverage Ratio	$\text{Trailing-12-month EBITDA} / \text{Trailing-12-month Interest Expenses \& Amortize Bond Issuing Cost}$