

PTT Exploration and Production Public Company Limited

Non-Deal Roadshow

Hong Kong

17-18 August 2017



PTTEP

MEMBER OF

**Dow Jones
Sustainability Indices**

In Collaboration with RobecoSAM





Company Overview

Financial Performance

Operational Updates

Investment Plan & Outlook



As PTT's Upstream Flagship



Government of
Thailand

64.8%²



Thailand's national energy company

65.3%¹



Credit ratings equivalent to parent and country

S&P Moody's TRIS JCR

BBB+

Baa1

AAA

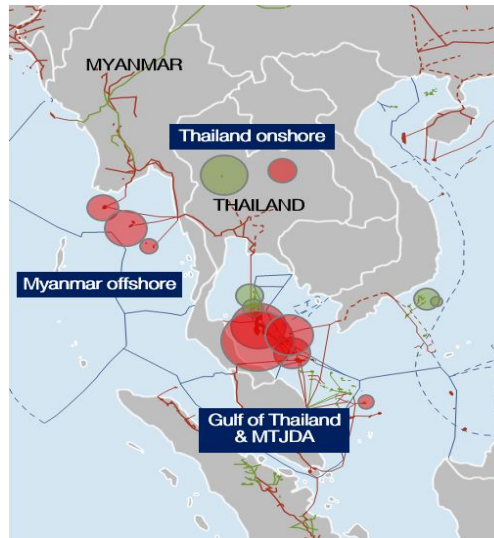
A-

Largest oil and gas producers in
Thailand and Myanmar

Synergy with PTT's gas value chain through its dominant
position in the regional gas market

Opportunities to expand into regional investments

PTTEP's operations in SEA



○ Approx. 20 KBOED of net sales volume
● Gas-weighted ● Oil-weighted

96%

of PTTEP's total
sales volume

+99%

Reliability of plants
and field facilities*

84%

of PTTEP's sales volume
sold to PTT

12 USD/
BOE

Average regional
cash cost

* of PTTEP-operated projects in Gulf of Thailand, excl. planned shutdown
All figures are as of 1H 2017

Notes:

1. Ownership as of 10 February 2017

2. 51.1% is directly held by the Government of Thailand (Ministry of Finance), with the remaining 13.72% held by the state-controlled Vayupak Fund I as of 3 April 2017

Overview

Financials

Operations

Outlook



Company Overview

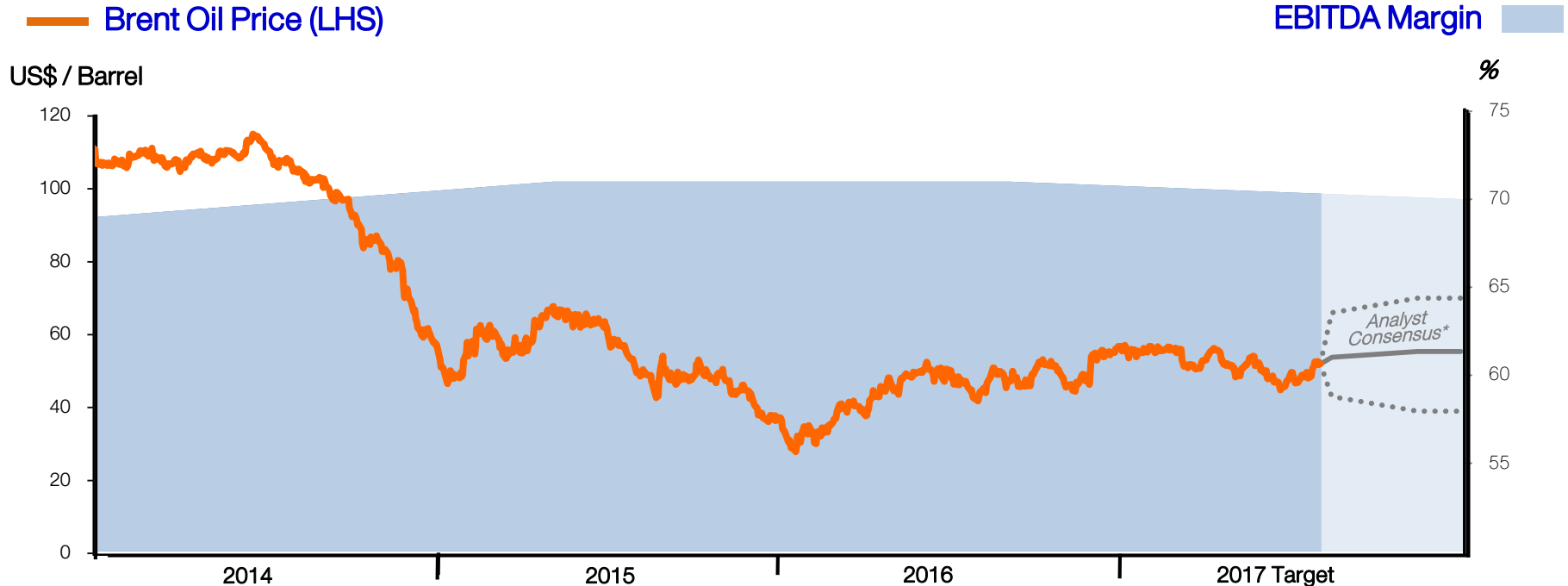
Financial Performance

Operational Updates

Investment Plan & Outlook

Survived through the Downturn and Ready to Strike

Strong operational and financial performance amid the oil price crisis

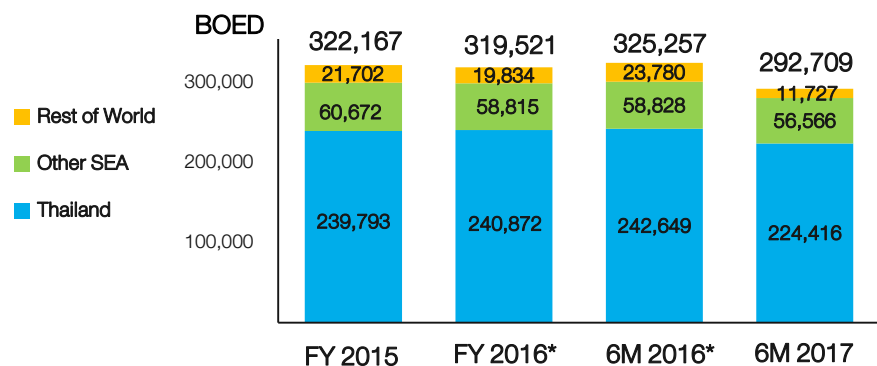


EBITDA Margin	Annual Operating Cash Flow	Cash on Hand	Outlook
69 – 71 %	2.3 – 2.9 \$ Billion	3.5 – 4.0 \$ Billion	Expect to maintain strong EBITDA margin throughout 2017 and beyond

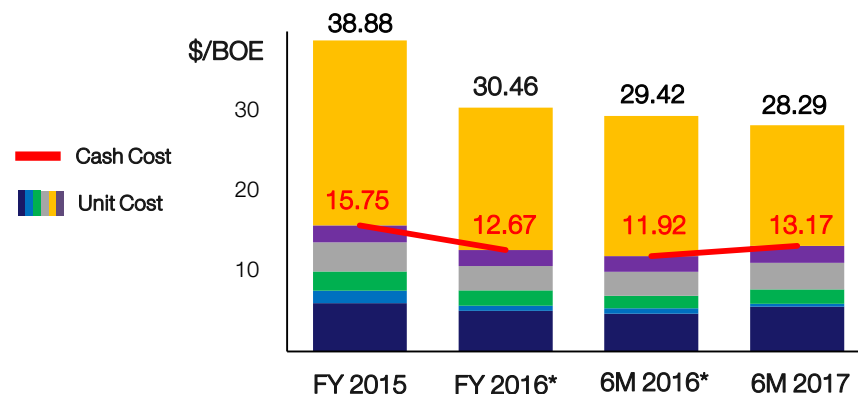
Remark * Brent oil prices consensus range: Bloomberg Analyst Consensus (CPFC) as of 3 August 2017



Sales Volume and Price



Unit Cost



Gas (\$/MMBTU)	7.20	5.60	5.84	5.45
Liquid (\$/BBL)	50.05	41.17	37.61	50.63
Weighted Avg. (\$/BOE)	45.29	35.91	35.84	38.04
Avg. Dubai (\$/BBL)	50.91	41.27	36.80	51.38
Avg. HSFO (\$/BBL) (High Sulphur Fuel Oil)	44.89	35.48	29.16	47.85
Volume Mix (Gas : Liquid)	70 : 30	69 : 31	69 : 31	70 : 30
Revenue Mix (Gas : Liquid)	66 : 34	65 : 35	67 : 33	60 : 40

DD&A	23.13	17.79	17.50	15.12
Finance Cost	2.14	2.01	1.98	2.12
Royalties	3.62	3.02	2.98	3.32
G&A	2.39	1.93	1.56	1.77
Exploration Expenses	1.56	0.63	0.70	0.39
Operating Expenses	6.04	5.08	4.70	5.57
Lifting Cost	4.62	4.18	3.97	4.10
Drilling Success Ratio**	31 : 47	6 : 8	3 : 5	0 : 4

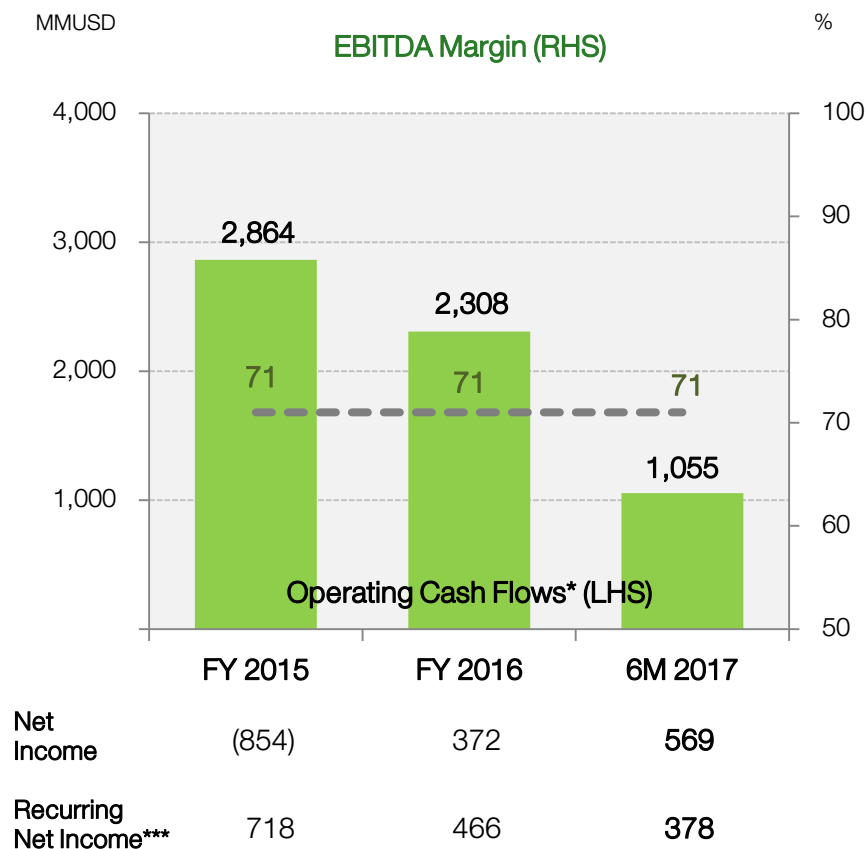
Note: * Represented and includes discontinued operations until end of August 2016

** Exploration and Appraisal Wells

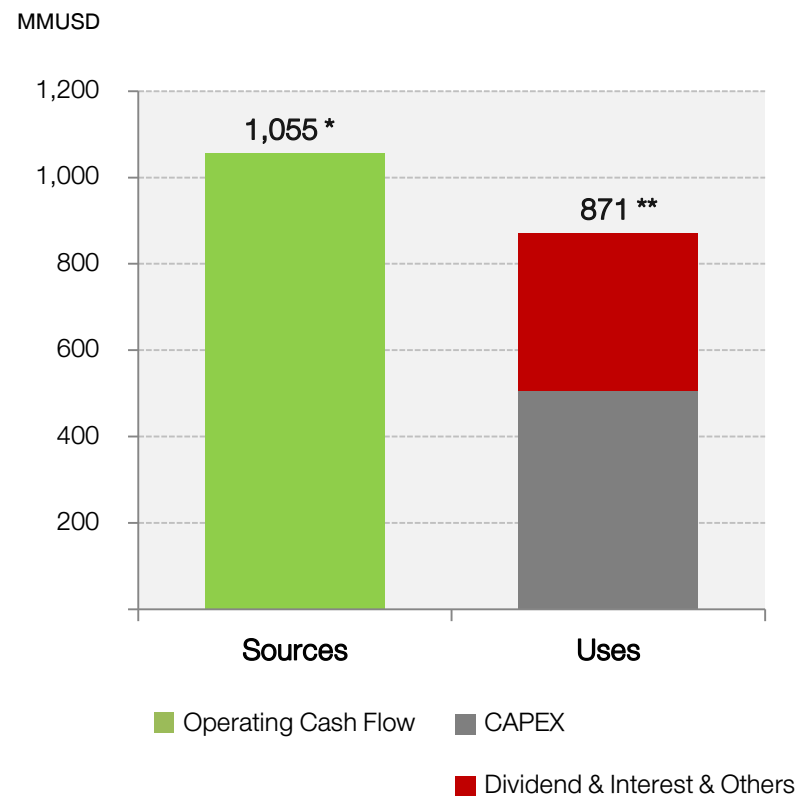
The formulas for calculating ratios are provided in the supplementary section for your reference



Cash Flow Performance



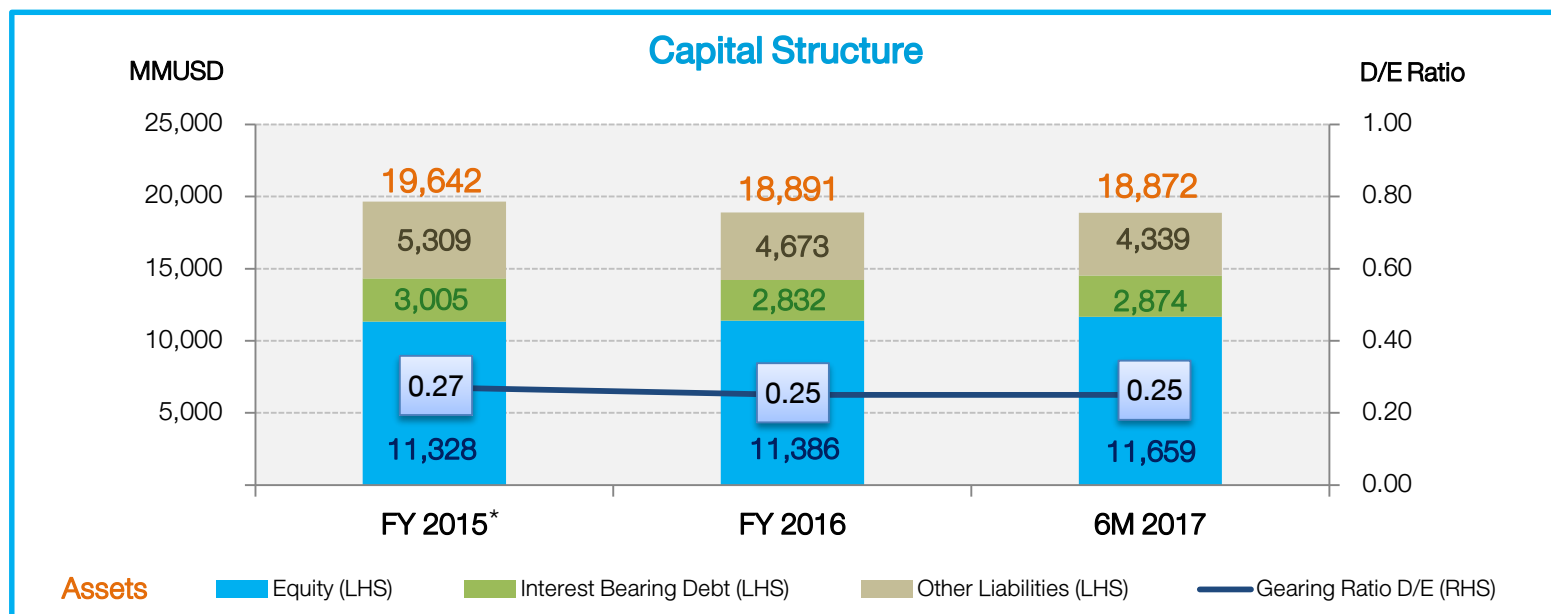
Source & Use of Funds in 6M 2017



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** (%)

4.32

4.41

4.46

[Fixed : Floating]

[82 : 18]

[80 : 20]

[80 : 20]

Average Loan Life** (Years)

8.17

8.15

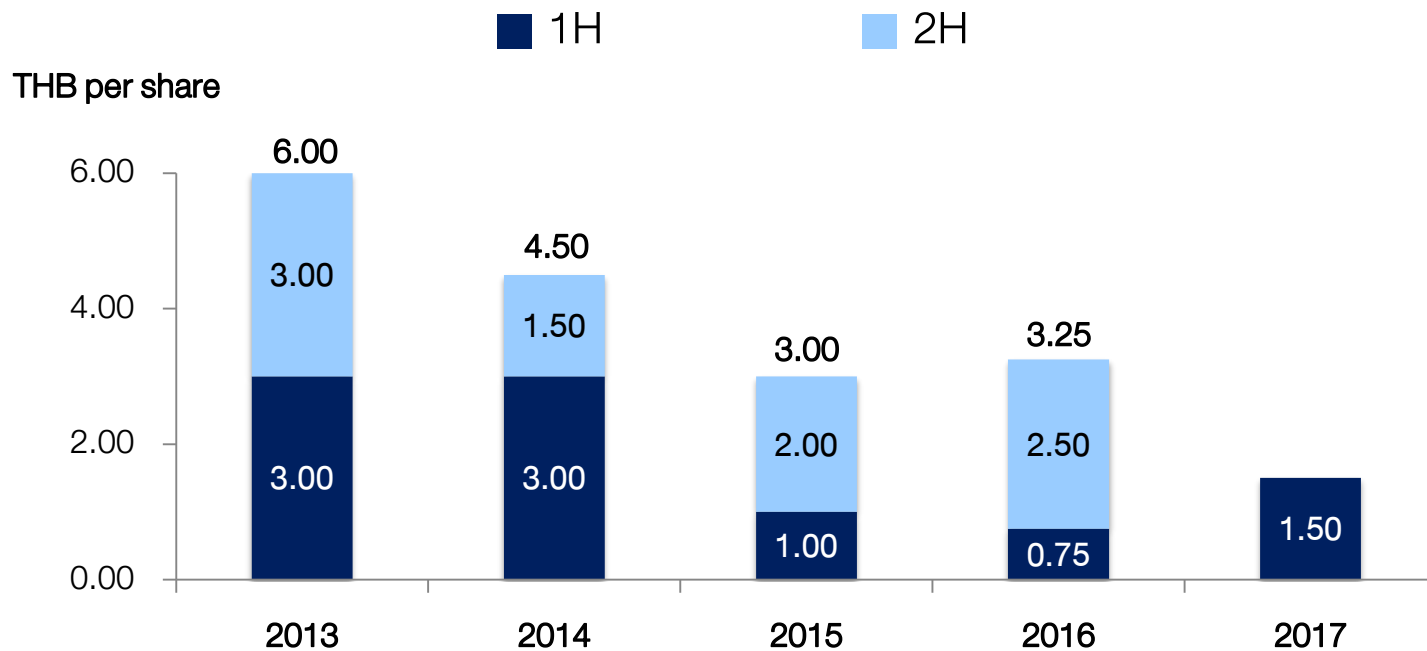
7.71

Remark: * Restated

** Excludes Hybrid bonds



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



Payout Ratio (%)	40	82	N/A	98	31
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Company Overview

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Operational Updates

Investment Plan & Outlook



Sustain Production and Low Cost in Existing Projects

Maximizing value and mitigating near-term downsides

Sales Volume
~300 KBOED

Unit Cost
~29 \$/BOE

FY2017

Low nomination of natural gas for projects in the GoT impacted by PTT's LNG import

Mitigation Plan

- ✓ Recovering volume from MTJDA project after resolving technical problem of Malaysian buyer's receiving plant
- ✓ Resumption of full S1 operation after temporary partial suspension
- ✓ Maintain low cost base as planned

S1 project

- Maximize crude production in current development areas and new discovery areas

Myanmar projects

- Best endeavor to increase export and domestic gas
- Shutdown plan optimization

Montara field

- Maximize crude production by facility reliability improvement and reservoir management

Bongkot and Arthit projects

- Maximize condensate production by high yield well management

Expiring Concessions Bidding

Ready to bid for both Bongkot and Erawan

Q1 2017 Q2 2017 Q3 2017 Q4 2017 Q1 2018

Legislation of Petroleum Act and associated laws

Petroleum Act: approved

Associated Laws: under preparation

Term of Reference and Tendering Process

Terms of Reference: under preparation

Dataroom in Sep 2017
Bid result in Q1 2018

Competitively positioned and ready to continue as operator of Bongkot

- Experienced and reliable
- Operational efficiency
- Deep subsurface understanding



Progress on Pre-development Projects

Accelerating the FID for near-term reserves addition

Mozambique Offshore LNG



8.5%
(operated by APC)

Production
12MMTPA

Expected Start-up
2022/23

- Initial development for 12 MMTPA (2 trains)
- Received approval on marine concessions
- Resettlement action plan to begin in 2H2017
- Converting HOA into SPA and project finance are ongoing

Algeria HBR



24.5%
(operator)

Production
50KBPD

Expected Start-up
2023

- Planned full production of 50 KBPD with development phase 1 of 10-13 KBPD
- Preparing development plan and target to submit in Q3 2017 and FID once government approval is received

Ubon (Contract 4)



60%
(operated by CVX)

Production
25-30KBPD

Expected Start-up
2021

- Oil field in the Gulf of Thailand
- Pursuing further cost rationalization

M&A and Exploration

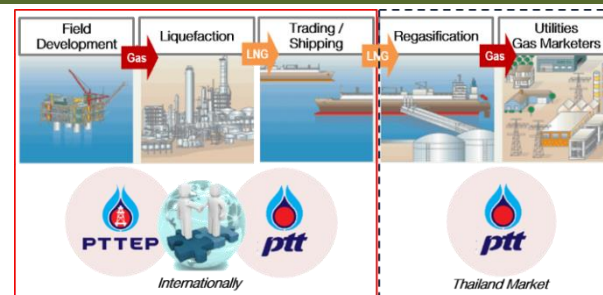
Actively seeking opportunities for better valued investments and reserves accretion

M&A and Exploration



- Geographical** • SEA and other potential areas
- M&A** • Focus on producing or near-producing
- Exploration** • Focus on prolific areas and quick commercialization
- 2017 mainly focus on seismic evaluation

LNG Value Chain



- Cooperation with PTT to capture value in the LNG chain
- Recent 10% Investment in MLNG Train 9 (midstream LNG) in Malaysia



10% Investment in MLNG Train 9 by PTT Global LNG....

....continue to look for more LNG opportunities globally



MLNG Train 9 – Overview

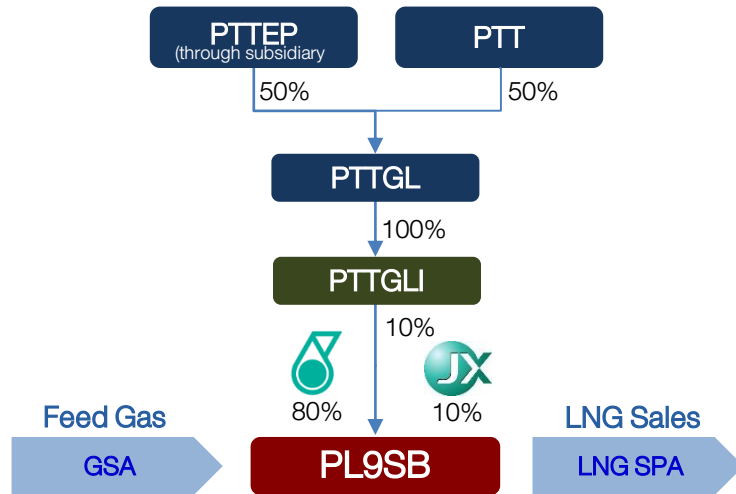
Location	Bintulu, Sarawak, Malaysia	
Asset	Liquefaction Train 9 Tank 7	
Phase	Commercial: Jan 2017	
Capacity	3.6MTPA	
Contract Life	20 years	
Partners (subject to closing)	Petronas	80%
	JX Nippon	10%
	PTT Global LNG	10%



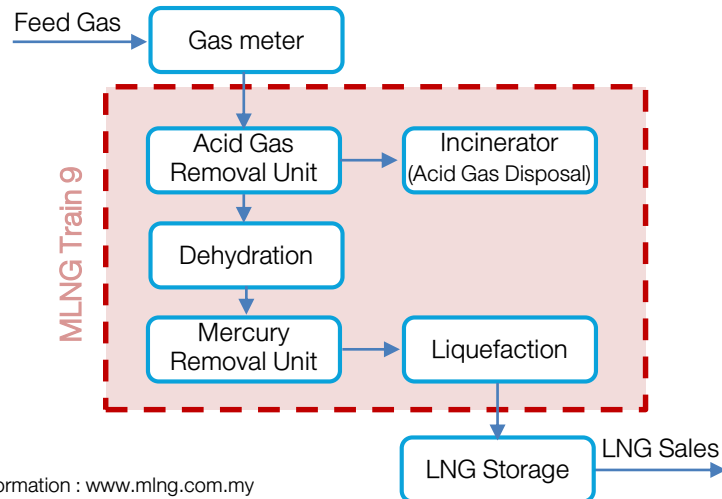
Investment Rationales

- Capture opportunity from increasing LNG demand as a supplement to Thailand gas production
- Venture into midstream LNG as a mean to secure LNG supply and growth of PTT and PTTEP, as well as capture value added along with LNG value chain
- Low risk and highly market secured opportunity
 - Highly experienced operator
 - Already commenced commercial production with immediate revenue stream
- In vicinity of future upstream opportunities in focus area – offshore Sarawak

Investment Structure



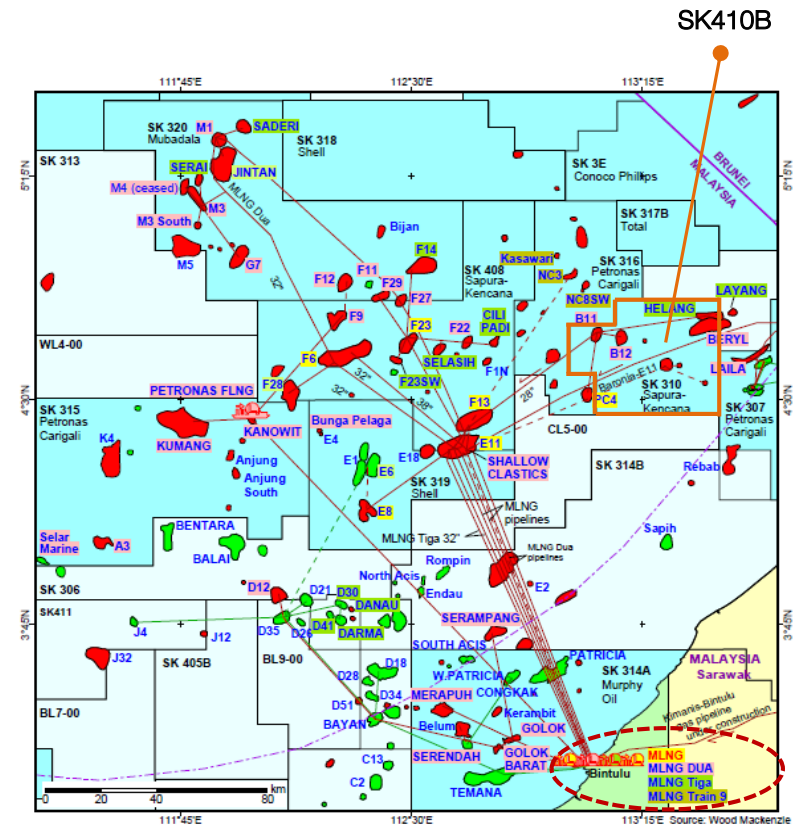
LNG Process



Information : www.mlng.com.my

In vicinity of future upstream opportunities

Investment in MLNG Train 9 strengthened PTTEP's current and future investment opportunities in strategic focus area.



Source: Woodmac



Company Overview

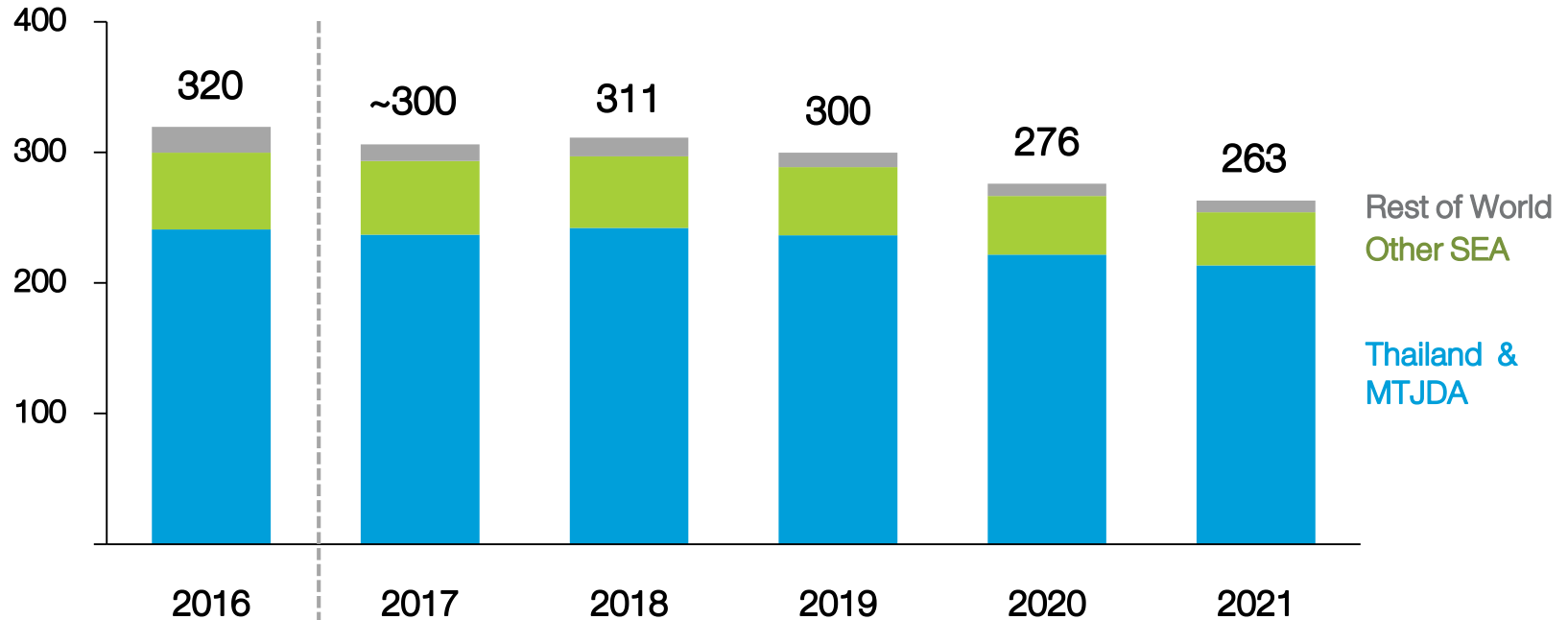
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Unit : KBOED



Key Project Start-up*

Contract 4 (Ubon)
Capacity 25-30 KBPD

Algeria HBR
Capacity 50KBPD

Mozambique LNG
Capacity 12 MMTPA (~300KBOED)

Product Mix (%)
Gas : Liquid

69 : 31

72 : 28

71 : 29

74 : 26

75 : 25

74 : 26

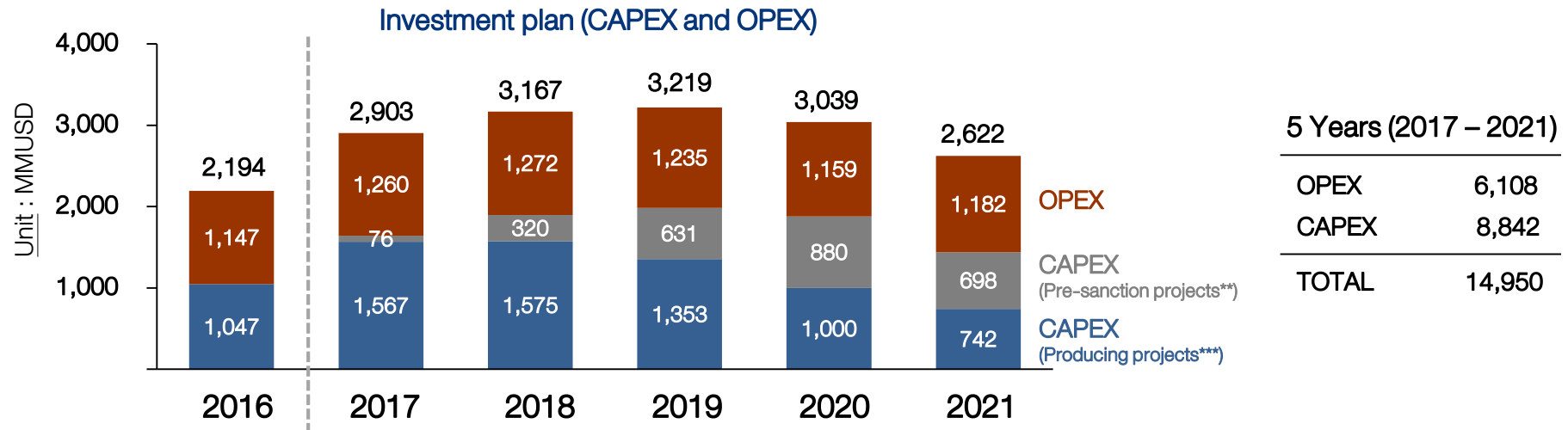
Note: * Subject to FID timing

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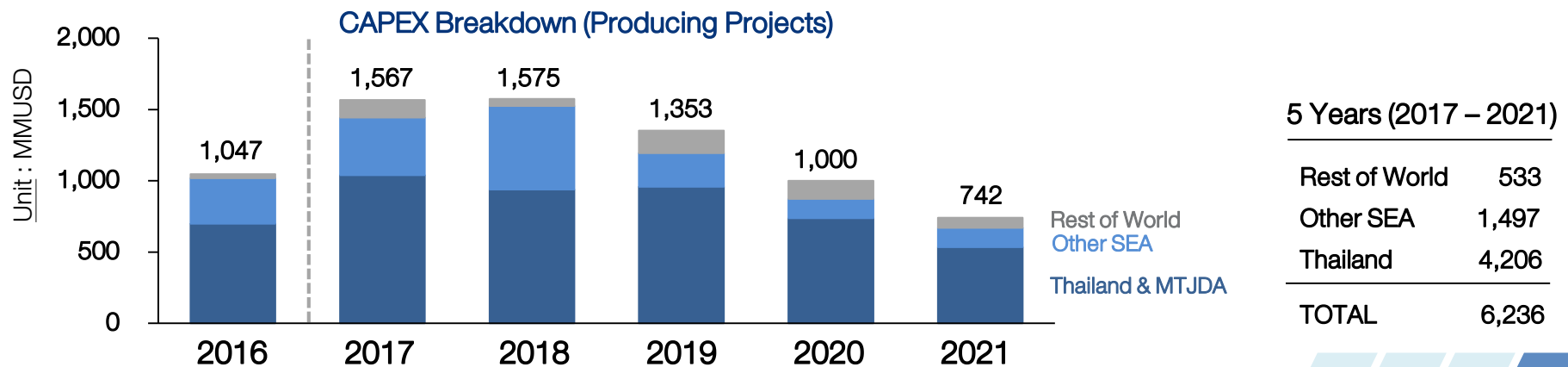


Key Project
Start-up*

Contract 4 (Ubon)
Capacity 25-30 KBPD

Algeria HBR
Capacity 50KBPD

Mozambique LNG
Capacity 12 MMTPA (~300KBOED)



Note: * Subject to FID timing
 ** Pre-sanction projects include Mozambique LNG, Contract 4 (Ubon), Algeria HBR
 *** Includes exploration and appraisal in all projects and head office CAPEX



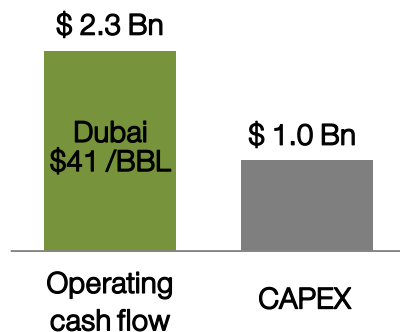
Strong Financial Capability in 2016

2.3 billion USD Operating cash flow

4.0 billion USD Cash on hand

2.0 billion USD Debt headroom

0.25 x Total debt/equity ratio



"Solid cash flow from operations in 2016 despite low oil price environment"

Financial Outlook

Average Sales Volume (KBOED)

Q3 2017	FY 2017
~ 290	~ 300

Average Gas Price (USD/MMBTU)

Q3 2017	FY 2017*
~ 5.6	~ 5.5

Unit Cost (USD/BOE)

Q3 2017	FY 2017
~ 30	~ 29

EBITDA margin

FY 2017
~ 70 %

* Based on FY2017 Dubai oil price at 49 \$/BBL



Focused Portfolio with
revenue stability

Competitive Cost base
and strong margin

Best Balance sheet
and Capital
Management

Well positioned for
future growth

- +90% of sales volume concentrated in SEA
- Stable revenues from PTT +80% of sales volume via long term off-take contracts
- Gas-weighted portfolio to cushion oil price volatility

- Low cost operations in SEA with ~70% EBITDA margin amid the low oil prices
- Cost discipline and operation efficiency with over 30% Unit cost reduction

- \$4.2 Bn cash on hand and solid capital structure with low D/E ratio at 0.25x
- A consistent dividend-paying company for over 15 years

- Series of project developments in the pipeline and M&A
- Current gas-weighted portfolio in line with global trend towards gas
- Continue strategy to seek LNG Value Chain investments with First Step into LNG midstream



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



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Unit : MMUSD

Statement of Income	Q1 17	Q2 17	% QoQ	Q2 16 *	% YoY	6M 17	6M 16 *	% YTD
Total Revenues	1,092	1,032	(5)	1,102	(6)	2,121	2,187	(3)
Sales	1,040	975	(6)	1,061	(8)	2,015	2,106	(4)
Others	52	57	10	41	39	106	81	31
Sales Volume (BOED)	304,108	281,435	(7)	320,657***	(12)	292,709	325,257***	(10)
Sales Price (USD/BOE)	38.00	38.08	0	36.62	4	38.04	35.84	6
Total Expenses	743	812	9	1,028	(21)	1,552	1,957	(21)
Major Expenses:								
Operating Expenses	142	153	8	139	10	295	269	10
Exploration Expenses	1	19	>100	15	27	20	41	(51)
DD&A	420	381	(9)	517	(26)	801	1,035	(23)
Income Tax Expense	(8)	67	>100	55	22	59	85	(31)
(Gain)/Loss on FX	(3)	(11)	(>100)	(7)	(57)	(14)	(13)	(8)
Net Income from Continuing Operations	349	220	(37)	74	>100	569	230	>100
Profit (loss) from Discontinued Operations	-	-	-	1	(100)	-	2	(100)
Net Profit	349	220	(37)	75	>100	569	232	>100
Recurring Net Income	211	167	(21)	154	8	378	270	40
Non-Recurring **	138	53	(62)	(79)	>100	191	(38)	>100

Note: * Represented

** Includes 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.

*** Sales volume includes discontinued operations



	Q1 17	Q2 17	Q2 16*	6M 17	6M 16*
Sales Revenue ** (MMUSD)	1,053	993	1,078	2,046	2,139
EBITDA (MMUSD)	776	685	778	1,461	1,567
Net Income (MMUSD)	349	220	75	569	232
Recurring Net Income (MMUSD)	211	167	154	378	270
Earning Per Share (USD)	0.09	0.04	0.01	0.13	0.05
Key Financial Ratios					
EBITDA Margin (%)	74	69	72	71	73
Return on Equity (%) (LTM)	5	6	(8)	6	(8)
Return on Capital Employed (%) (LTM)	5	6	(5)	6	(5)
Return on Equity (%) (LTM, Recurring Net Income)	5	5	5	5	5
Return on Capital Employed (%) (LTM, Recurring Net Income)	5	5	4	5	4
	Q4 16	Q1 17	Q2 17		
Total Assets (MMUSD)	18,891	19,251	18,872		
- Cash & cash equivalents *** (MMUSD)	4,022	4,446	4,206		
Total Liabilities (MMUSD)	7,505	7,800	7,213		
- Interest bearing debt (MMUSD)	2,832	2,863	2,874		
Equity (MMUSD)	11,386	11,451	11,659		
Key Financial Ratios					
Total Debt to Equity (X)	0.25	0.25	0.25		
Net Debt*** to Equity (X)	(0.11)	(0.14)	(0.11)		
Total Debt to Capital (X)	0.20	0.20	0.20		
Total Debt to EBITDA (X)	0.94	0.95	0.98		
Net Debt*** to EBITDA (X)	(0.40)	(0.53)	(0.46)		
EBITDA Interest Coverage (X)	22	22	22		

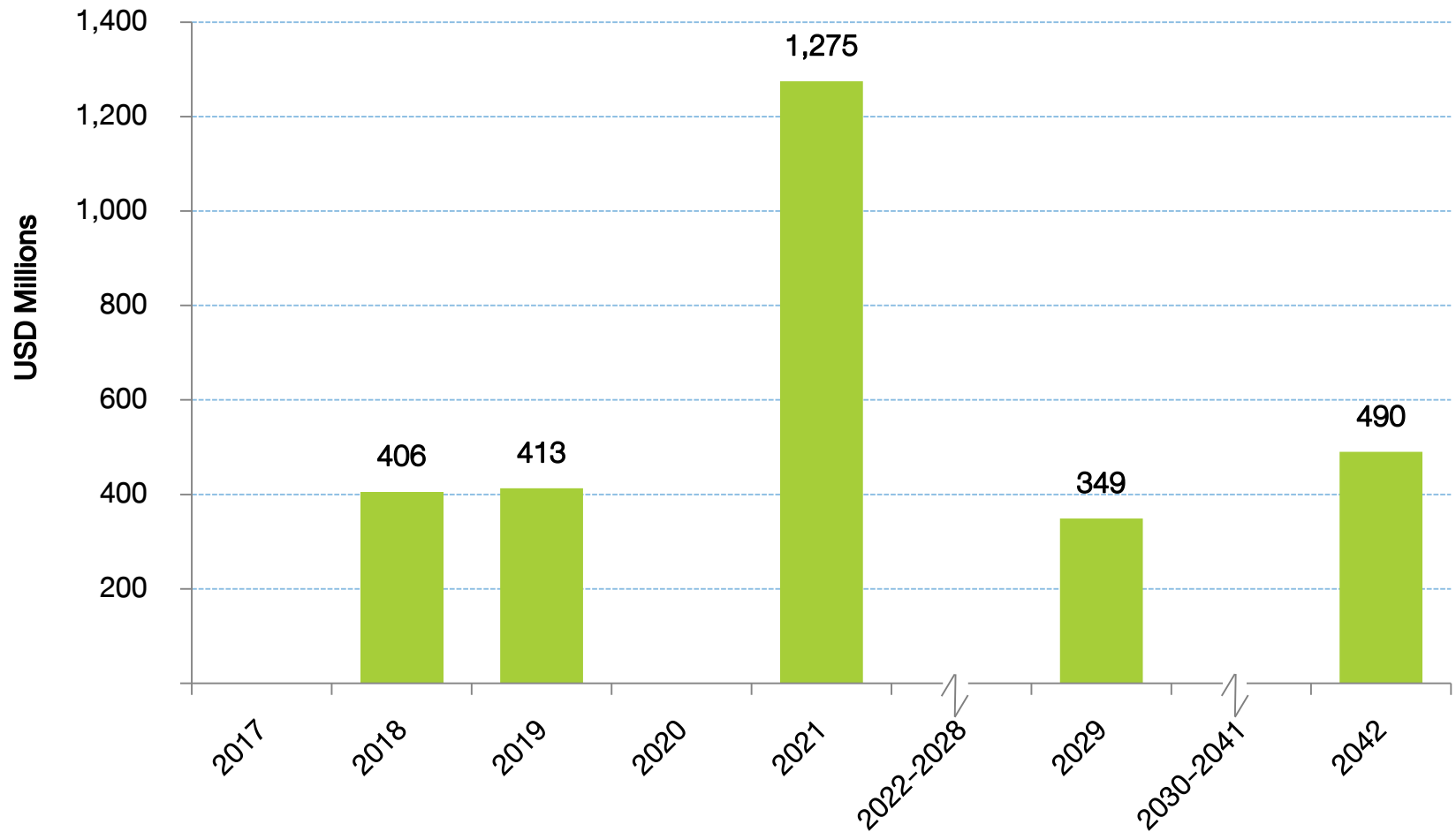
Note: Includes discontinued operations until end of August 2016

* Restated/Represented

** Sales and revenue from pipeline transportation

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

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

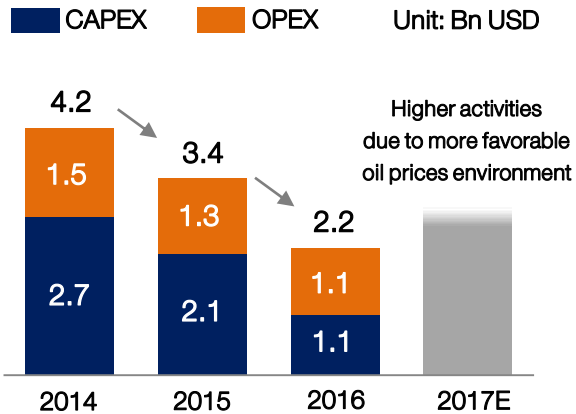


Note: Excludes Hybrid bonds

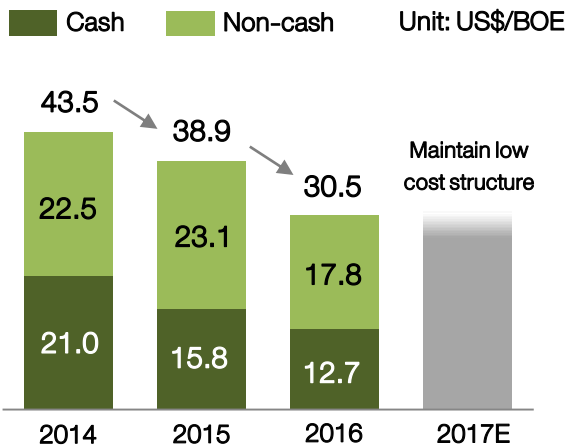
Unit: USD Millions or equivalent after cross currency swap



Expenditure (CAPEX + OPEX)

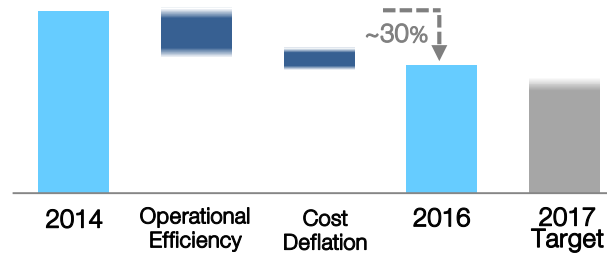


Maintain Low Unit Cost



Continuing Cost Improvement Momentum

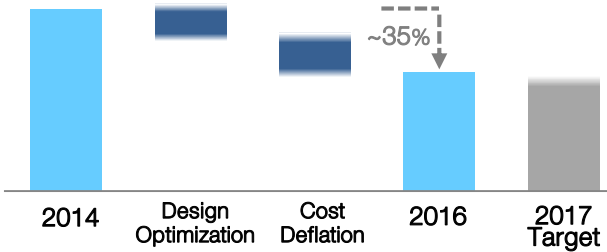
Development Drilling Cost per Well*



Reductions achieved through ...

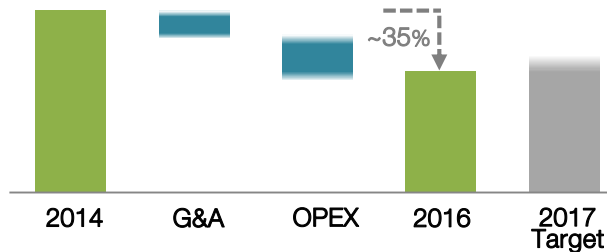
- Drilling performance improvement
- Drilling days reduction
- Standardizing well design

Wellhead Platform Cost per Unit*



- Platform design standardization
- Enhance more savings on marine costs related
- Contract renegotiation

OPEX and G&A per BOE



- Process streamline e.g. logistics, maintenance optimization
- Disciplined G&A policies
- Enhance procurement savings

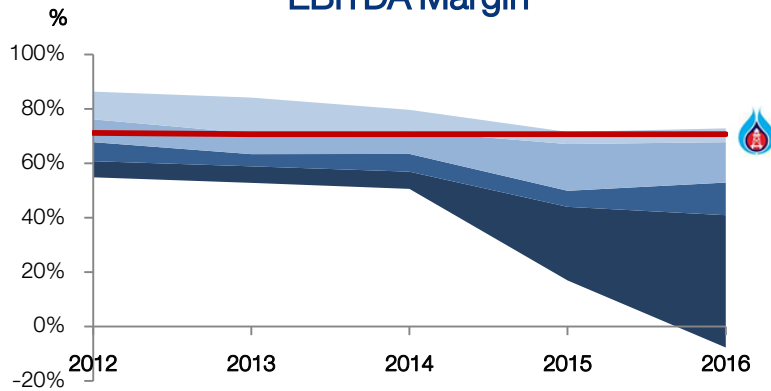
Remark * Primarily applicable in PTTEP-operated projects in the Gulf of Thailand

Note : For Wellhead Platform Cost: Graph represents cost reduction captured but not yet fully realized

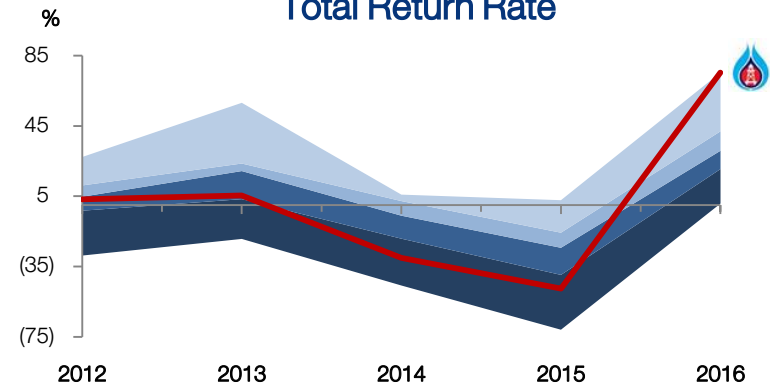


Deliver better performance...

EBITDA Margin

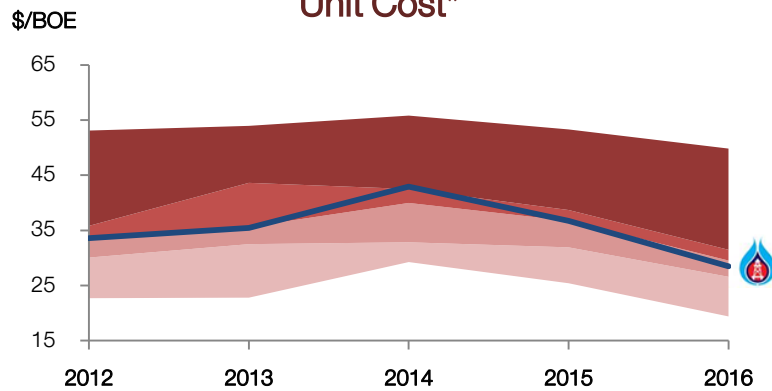


Total Return Rate



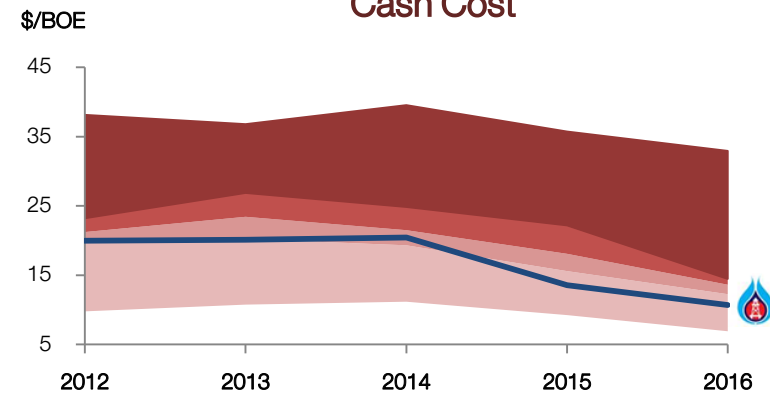
...with competitive cost structure

Unit Cost*



Remark: * Exclude Finance cost

Cash Cost

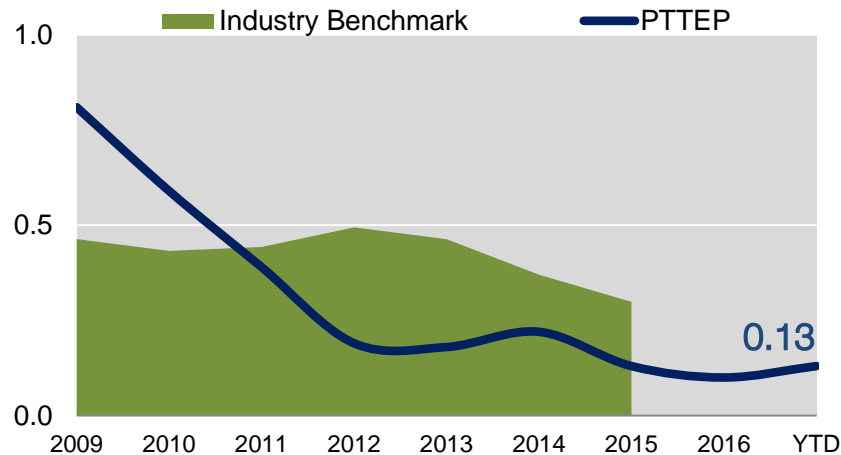




Safety

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"

DJSI

Listed for three consecutive years

MEMBER OF

Dow Jones Sustainability Indices

In Collaboration with RobecoSAM



ROBECOSAM
Sustainability Award
Industry Leader 2016



ROBECOSAM
Sustainability Award
Gold Class 2017

PTTEP is selected for the DJSI World Oil and Gas Upstream & Integrated Industry with the highest score in 2016 and also awarded the RobecoSAM Gold Class Sustainability Award 2017.





MEMBER OF
**Dow Jones
Sustainability Indices**
In Collaboration with RobecoSAM



2016 DJSI Listed Company

PTTEP is selected for the DJSI World Oil and Gas Upstream & Integrated Industry with the highest score and also awarded the RobecoSAM Gold Class Sustainability Award 2017.



Proven business integrity

Outstanding Sustainability Report Award 2016
Thai Listed Companies Association

Certified Member
Thailand's Private Sector Collective Action Coalition Against Corruption (CAC)

CG Asia Recognition Awards
Corporate Governance Asia Magazine



FTSE4Good

FTSE4Good Emerging Index

PTTEP is a constituent of the FTSE4Good Emerging Index following its launch in December 2016



Exemplary social contributor

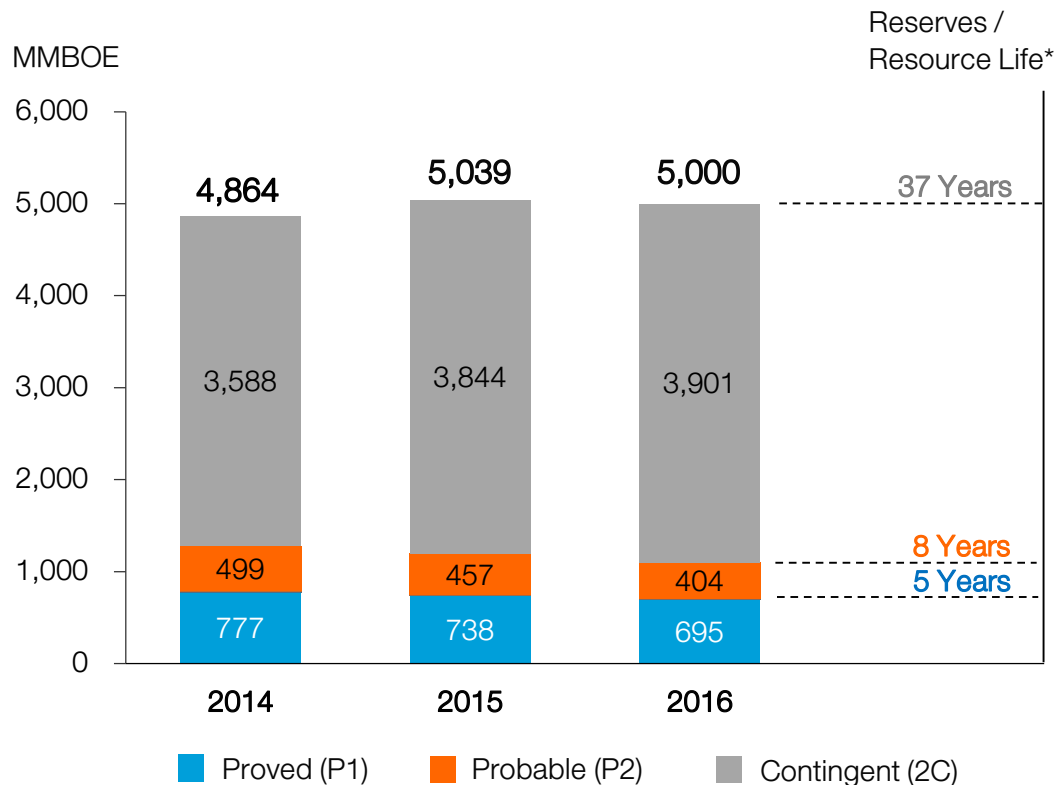
Platinum Award for SIOLA Project:
Best Community Program
the 9th Annual Global CSR Summit 2017

Bronze Stevie Award for SIOLA and Crab Hatchery Learning Center Project:
The Asia-Pacific Stevie Awards Program

Green driver to environment

Best Initiative Environmental Responsibility Award
The Asset Magazine

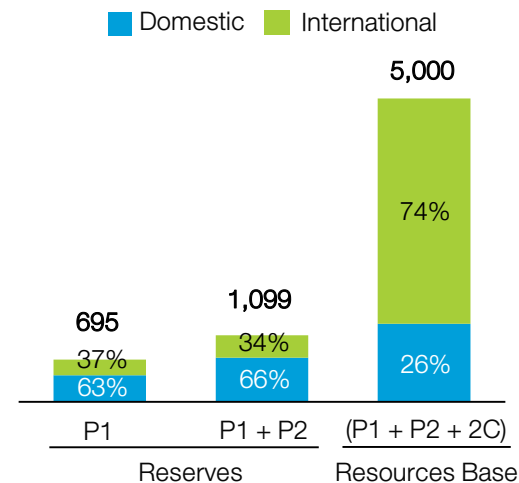
CDP's Climate Leadership Level
CDP
Excellence in the safety, health and environmental management awards
2016 SHE Award



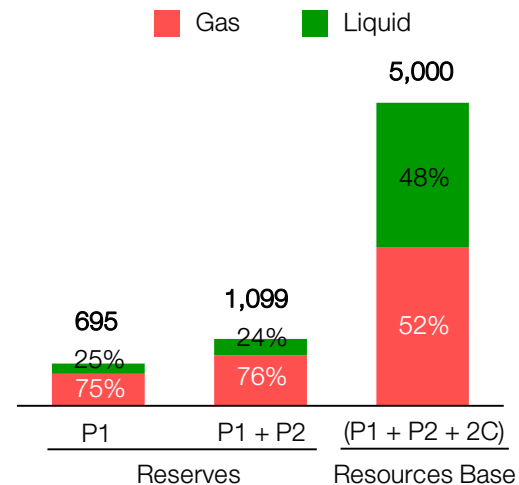
5-Year Average Proved Reserves Replacement Ratio (RRR)

2014	2015	2016
0.45x	0.50x	0.57x

2016 by Geography



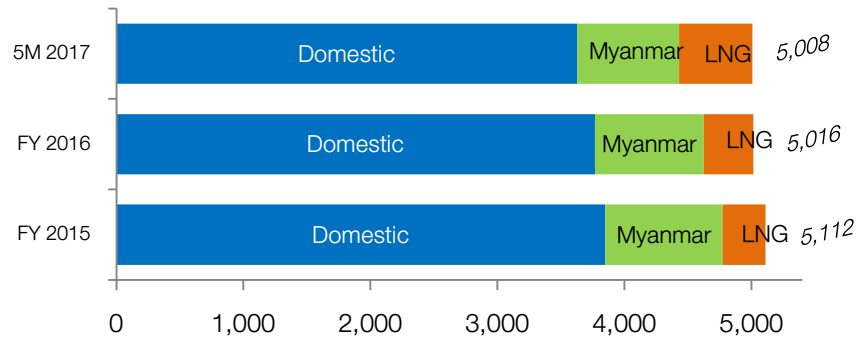
2016 by Product Type



* Based on total production of natural gas, condensate, and crude oil (including LPG) of 368 KBOED for the year ended December 31, 2016



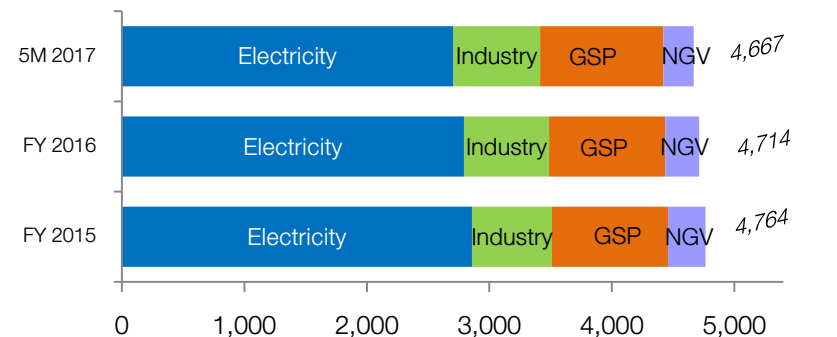
Thailand's Natural Gas Supply by Source



Source: EPPO

MMSCFD

Thailand's Natural Gas Consumption by Sector



Source: EPPO

MMSCFD

Exchange Rate Movement (THB/USD)



Source: Bank of Thailand, Bloomberg

Forecast based on Bloomberg Consensus as of 18 July 2017

Thailand's Gas Market

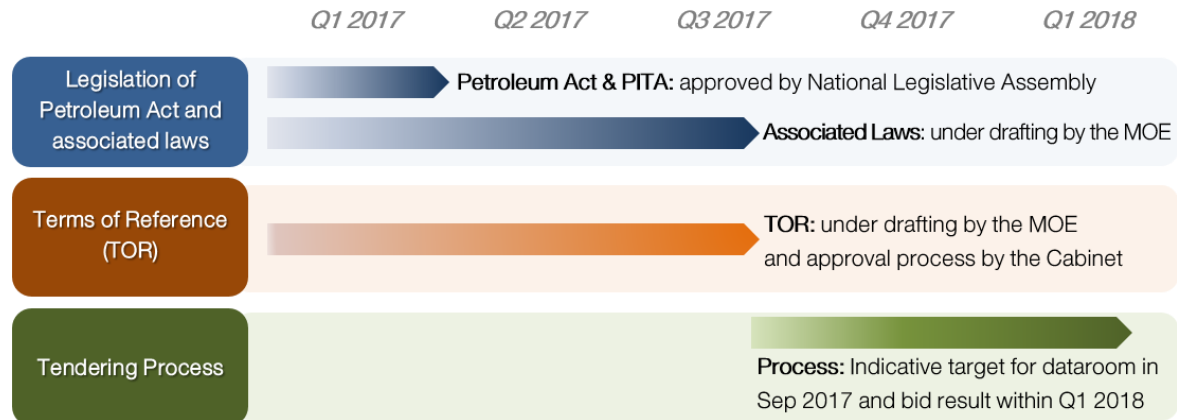
- Quite stable in domestic demand while domestic production slightly decreased. Rising in LNG import and planned shutdown in Q1 reduced Myanmar production volumes.

Consensus on the exchange rate mostly depends on

- Decision on rising interest rate made by FOMC's may cause the USD to appreciate against the THB
- Increasing uncertainties surrounding Trump's Fiscal and Monetary policies



Path to re-tendering of expiring concessions



Source: Indicative timeline interpreted from the interview by Minister of Energy

Associated Laws

5 Ministerial Regulations

- Prescribing the *Production Sharing Contract* Form
- Prescribing Rules, Procedures and Conditions in *PSC* Application
- Prescribing Rules, Procedures and period for payment of royalty for *PSC* contractors
- Prescribing the *Service Contract* Form
- Prescribing Rules, Procedures and Conditions in *SC* Application

1 Announcement of Petroleum Committee

- Rules and procedures in determining E&P areas

PTTEP: Competitively positioned to continue as operator



● *Experienced and reliable*

operated at average over 95%* field reliability

● *Operational efficiency*

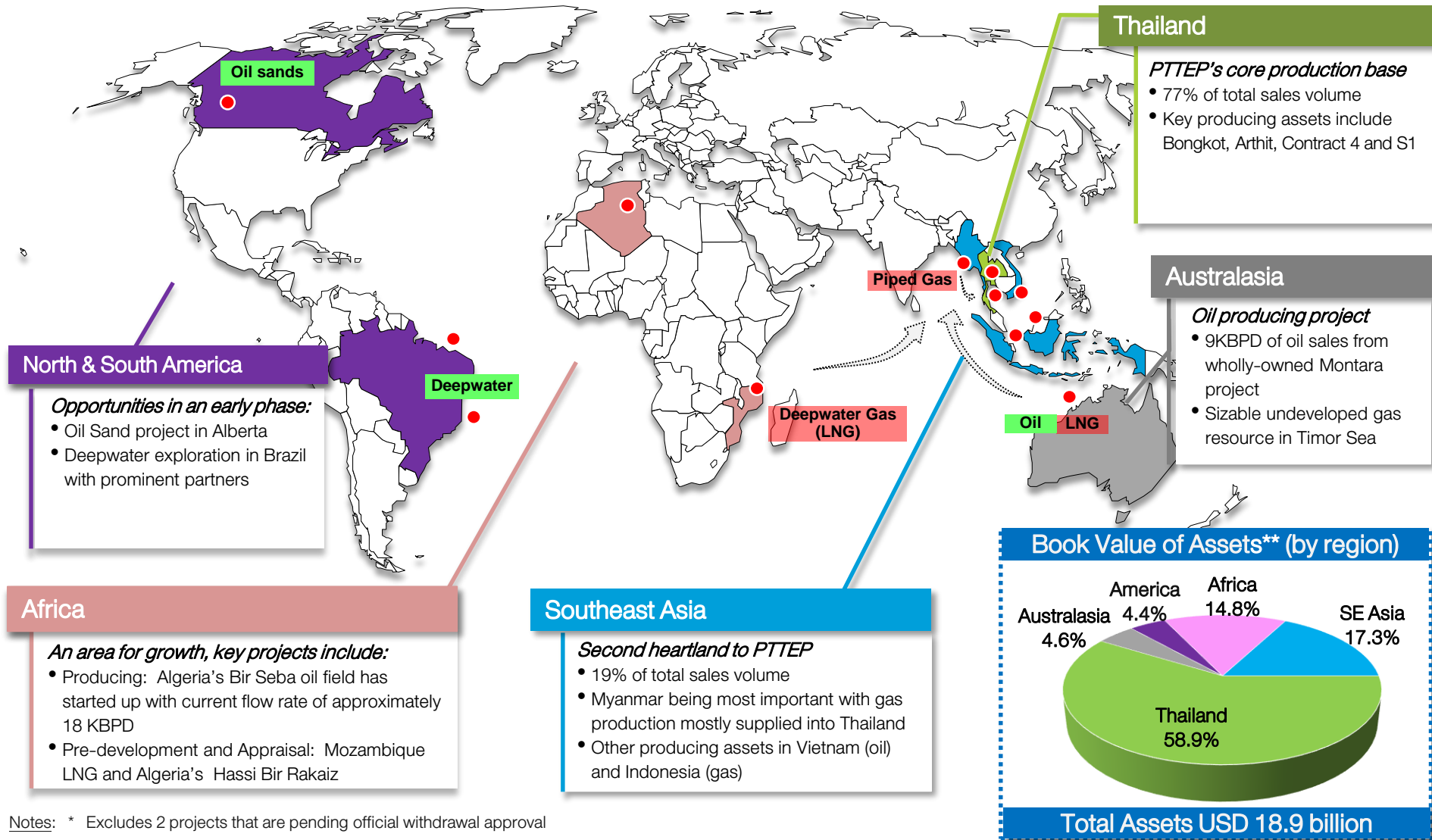
through 20 years of factory drilling and GoT synergies

● *Deep subsurface understanding*

Key enabler to deliver optimum resource recovery

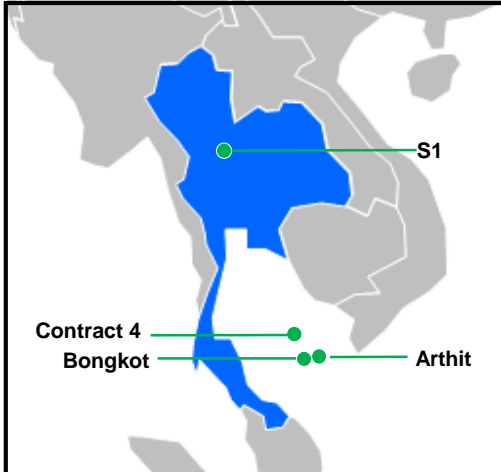


Remark: * Bongkot field's performance as of 2016



Notes: * Excludes 2 projects that are pending official withdrawal approval

** Information dated as of 30 June 2017 (1H 2017)



● Production / Ramp-up Projects

Bongkot (44.4445% interest)

- Bongkot's natural gas sales volume of 835 MMSCFD in 1H 2017
- Average condensate sales volume was 26 KBPD in 1H 2017

S1 (100% interest)

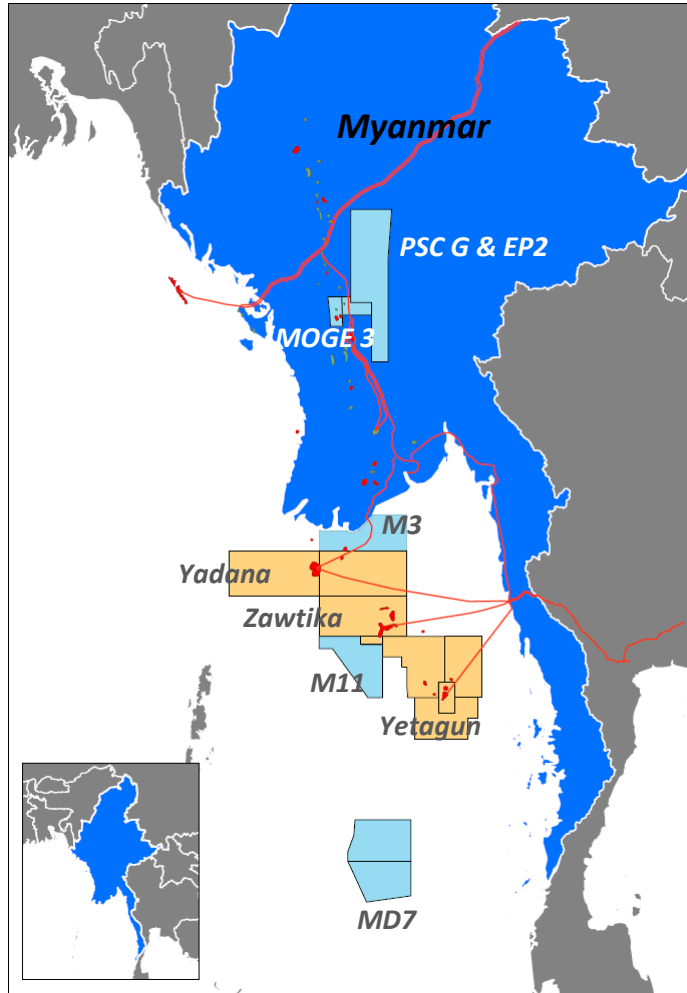
- S1 is the largest onshore crude oil production field in Thailand
- Average crude oil sales volume was 22 KBPD in 1H 2017

Arthit (80% interest)

- Average sales volume in 1H 2017 was 221 MMSCFD of natural gas and 9.5 KBPD of condensates

Contract 4 (60% interest)

- Acquired from Hess Corporation in 2014.
- The Contract 4 project had an average sales rate of 328 MMSCFD for natural gas and 14 KBPD for condensate in 1H 2017



Exploration block
 Production block

- Participating in three producing gas fields which supply gas to both Thailand and Myanmar: Yadana, Yetagun, Zawtika
- Operate Zawtika project, brought online in August 2014. Deliver gas supply of 300 MMSCFD in 1H 2017.
- Significant exploration acreage both onshore and offshore in the Moattama Basin

Project Status		
Producing	Appraisal	Exploration
<ul style="list-style-type: none"> • Yadana (25.5% WI) • Yetagun (19.3% WI) • Zawtika (80% WI) 	<ul style="list-style-type: none"> • M3 (80% WI) 	<ul style="list-style-type: none"> • PSC G & EP 2 (70% WI) • MOGE 3 (75% WI) • M11 (100% WI) • MD-7 (50% WI)

Note: WI – working interest



Vietnam 16-1



● Production / Ramp-up Projects

Natuna Sea A

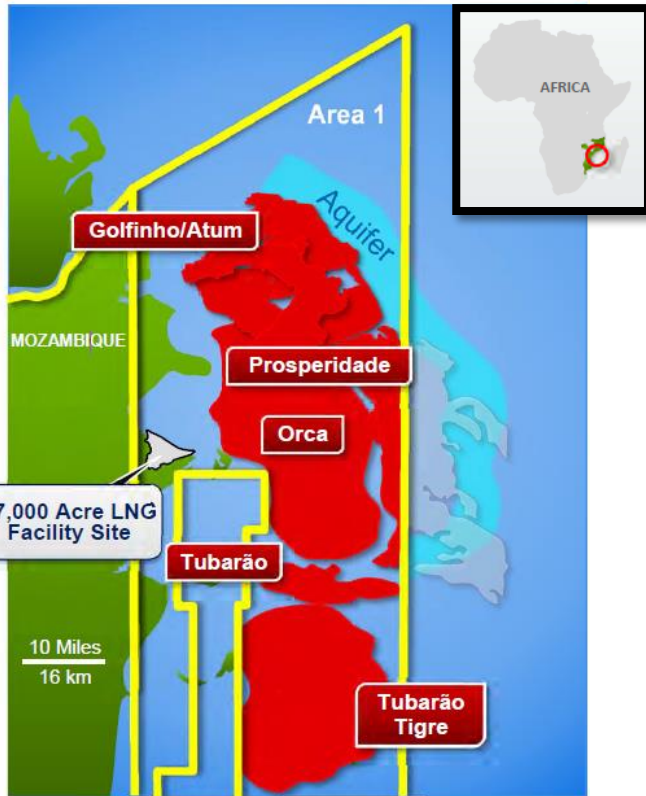


Vietnam 16-1 (28.5% interest)

- Average crude oil sales volume of 21 KBPD in 1H 2017
- Commissioned production platform in the H5 area to support current production level

Natuna Sea A (11.5% interest)

- Average sales volume of natural gas was 222 MMSCFD in 1H 2017



Location and Cost Advantage

- Close proximity to shore
- High quality reservoirs
- Access to Asian markets

*Substantial recoverable resources of **70+ tcf** with scalable offshore development of **more than 6 LNG trains***

Key Milestones to Final Investment Decision

Technical

- ✓ Certified reserves to support initial trains
- ✓ Announced selection of contractor for onshore LNG facilities construction

Commercial

- ✓ Secured more than 8 MMTPA of non-binding HOAs

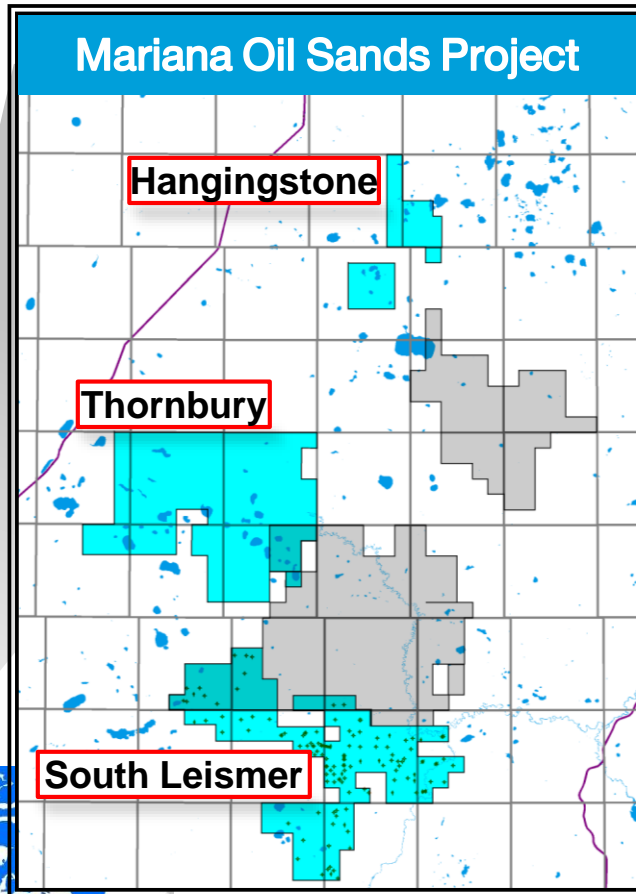
Regulatory

- ✓ Received approval on marine concession
- ✓ Resettlement plan to begin in 2H 2017

Financing

- ✓ On-going negotiation for project financing

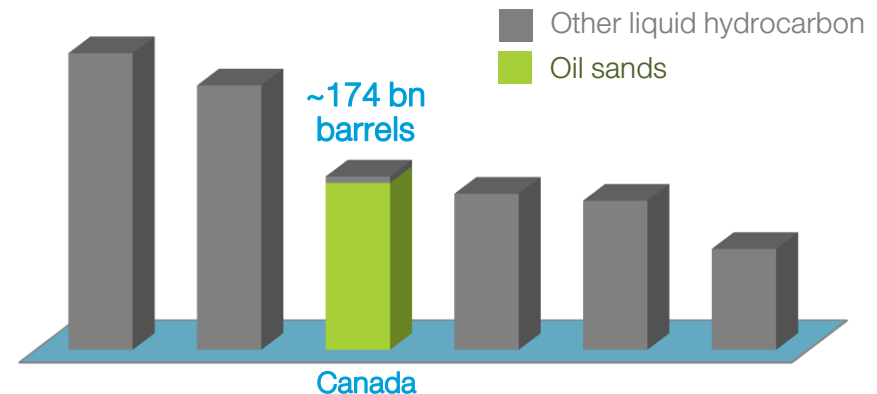
Onwards to initial phase of 12 MMTPA



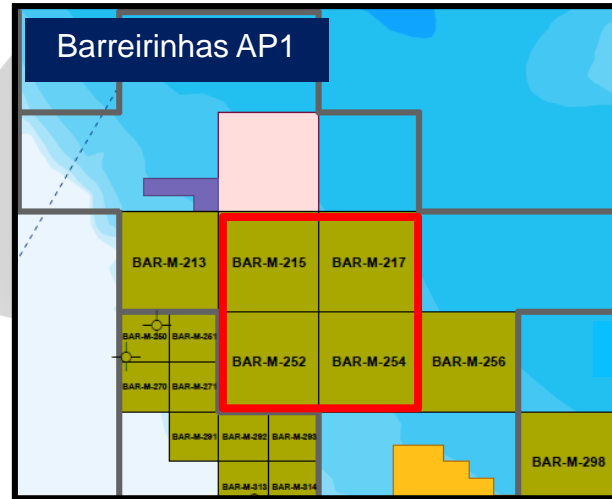
Project Overview

- Operates 100% interest of the Thornbury, Hangingstone and South Leismer (THSL) areas (exploration and appraisal phase)
- Potential large resource base with over a billion barrel
- Current focus on assessing cost reduction opportunity in light of low oil price environment.

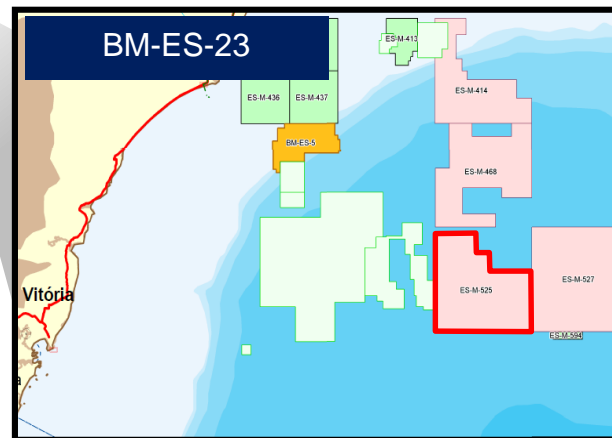
Approximately 96% of the reserves in Canada, the world's 3rd largest oil reserves, is oil sands



Source: Company data, BP Statistical Review of World Energy 2014



- Farm-in 25% from BG Group in 2014
- Operated by Shell Brasil (65% interest)
- Four offshore exploration blocks: BAR-M-215, BAR-M-217, BAR-M-252 and BAR-M-254
- Completed 3D seismic activities and is in the process of assessing the petroleum potential



- Acquired 20% interest from Shell in Q3 2014
- Partnered with Petrobras (65%, operator) and INPEX (15%)



	Project	Status*	PTTEP's Share	Partners <i>(as of Q2 2017)</i>		1H 2017 Average Sales Volume **		2017 Key Activities
						Gas	Oil and Other	
Production Phase								
Thailand and JDA								
1	Arthit	OP	80%	Chevron MOECO	16% 4%	221 MMSCFD	Condensate: 9.5 k BPD	<ul style="list-style-type: none">Ensure gas deliverability level at DCQ****Drill development wells
2	B6/27	OP	100%***			-	-	<ul style="list-style-type: none">Subsurface study
3	B8/32 & 9A		25%	Chevron MOECO KrisEnergy PSTL	51.66% 16.71% 4.63% 2%	102 MMSCFD	Crude: 26 k BPD	<ul style="list-style-type: none">Drill development wellsPerform waterflood activities
4	Bongkot	OP	44.4445%	TOTAL British Gas	33.3333% 22.2222%	835 MMSCFD	Condensate: 26 k BPD	<ul style="list-style-type: none">Ensure gas deliverability level at DCQ****Drill development wellsInstall wellhead platforms
5	Contract 3 <i>(Formerly Unocal III)</i>		5%	Chevron MOECO	71.25% 23.75%	542 MMSCFD	Crude: 20 k BPD Condensate: 19 k BPD	<ul style="list-style-type: none">Drill exploration / appraisal / development wellsInstall wellhead platformsPerform waterflood activities
6	Contract 4 <i>(Formerly Pailin)</i>		60%	Chevron MOECO	35% 5%	328 MMSCFD	Condensate: 14 k BPD	<ul style="list-style-type: none">Ensure gas deliverability level at DCQ****Drill development wellsInstall wellhead platformsReview development plan of Ubon field
7	E5		20%	ExxonMobil	80%	10 MMSCFD	-	
8	G4/43		21.375%	Chevron MOECO PSTL	51% 21.25% 6.375%	2.3 MMSCFD	Crude: 5.7 k BPD	<ul style="list-style-type: none">Drill development wellsPerform waterflood activities
9	G4/48		5%	Chevron MOECO	71.25% 23.75%	5.8 MMSCFD	Crude: 1.5 k BPD	
10	L53/43 & L54/43	OP	100%			-	Crude: 640 BPD	<ul style="list-style-type: none">Drill exploration / appraisal / development wells
11	PTTEP1	OP	100%			-	Crude: 288 BPD	<ul style="list-style-type: none">Drill development wellsPerform waterflood activities
12	S1	OP	100%			22 MMSCFD	Crude: 26 k BPD	<ul style="list-style-type: none">Drill exploration / development wellsEnhance oil recovery program includes waterflooding and artificial lift
13	Sinphuhorm	OP	55%	Apico ExxonMobil	35% 10%	95 MMSCFD	Condensate: 305 BPD	<ul style="list-style-type: none">Drill development wells
14	MTJDA	JOC	50%	Petronas-Carigali	50%	204 MMSCFD	Condensate: 6.0 k BPD	<ul style="list-style-type: none">Drill development wellsInstall wellhead platforms
15	L22/43	OP	100%			-	Crude: 211 BPD	<ul style="list-style-type: none">Drill 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	Status*	PTTEP's Share	Partners (as of Q2 2017)	1H 2017 Average Sales Volume **		2017 Key Activities
					Gas	Oil and Other	
Production Phase							
Overseas							
16	Vietnam 9-2	JOC	25%	PetroVietnam 50% SOCO 25%	12 MMSCFD	Crude: 3.4 k BPD	<ul style="list-style-type: none">Maintain production operationPerform reservoir management
17	Yadana		25.5%	TOTAL 31.24% Chevron 28.26% MOGE 15%	729 MMSCFD	-	<ul style="list-style-type: none">Ensure gas deliverability level at DCQ***
18	Yetagun		19.3178%	Petronas-Carigali 30.00140% MOGE 20.4541% Nippon Oil 19.3178% PC Myanmar (Hong Kong) 10.90878%	218 MMSCFD	Condensate: 6.3 k BPD	<ul style="list-style-type: none">Drill appraisal / development wellsPerform reservoir Management
19	Vietnam 16-1	JOC	28.5%	PetroVietnam 41% SOCO 28.5% OPECO 2%	-	Crude: 21 k BPD	<ul style="list-style-type: none">Drill development wellsMaintain production operation
20	PTTEP Australasia (PTTEP AA)	OP	90%-100% (varied by permits)		-	Crude: 9.1 k BPD	<ul style="list-style-type: none">Drill development well in MontaraMaintain production operationAcquire 3D seismic reprocessing
21	Natuna Sea A		11.5%	Premier Oil 28.67% KUFPEC 33.33% Petronas 15% Pertamina 11.5%	222 MMSCFD	Crude: 1.2 k BPD	<ul style="list-style-type: none">Maintain production operation
22	Zawtika (M9 & a part of M11)	OP	80%	Myanma Oil and Gas Enterprise (MOGE) 20%	300 MMSCFD	-	<ul style="list-style-type: none">Maintain production rateDrill development wellsInstall wellhead platforms
23	Algeria 433a & 416b (Bir Seba)	JOC	35%	PetroVietnam 40% Sonatrach 25%	-	Crude: 2.6 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

*** DCQ = Daily Contractual Quantity



	Project	Status*	PTTEP's Share	Partners (as of Q2 2017)	2017 Key Activities
Exploration Phase					
Thailand and JDA					
24	G9/43	OP	100%		
Overseas					
25	Myanmar M3	OP	80%	MOECO 20%	<ul style="list-style-type: none"> Assess resource potential and commercial feasibility
26	Mozambique Rovuma Offshore Area 1		8.5%	Anadarko, Mitsui, 26.5%, 20% OVL, ENH, 16%, 15%, Bharat Petroleum, Oil India 10%, 4%	<ul style="list-style-type: none"> Preparatory work for Final Investment Decision (FID) including LNG marketing and finalization of remaining commercial contracts
27	Algeria Hassi Bir Rekaiz	OP	24.5%	CNOOC 24.5% Sonatrach 51%	<ul style="list-style-type: none"> Conduct pre-development study and prepare project development plan
28	Myanmar M11	OP	100%		<ul style="list-style-type: none"> Acquire 3D seismic
29	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
30	Vietnam 52/97		7%	PVN 73.4% MOECO 19.6%	<ul style="list-style-type: none"> Negotiate a GSA with the Vietnamese government
31	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
32	Myanmar MD-7	OP	50%	TOTAL 50%	<ul style="list-style-type: none"> Assess resource potential
33	Mariana Oil Sands	OP	100%		<ul style="list-style-type: none"> Assess development approach and cost reduction opportunity
34	Barreirinhas AP1		25%	Shell Brasil 65% Mitsui E&P Brasil 10%	<ul style="list-style-type: none"> Acquire 3D seismic

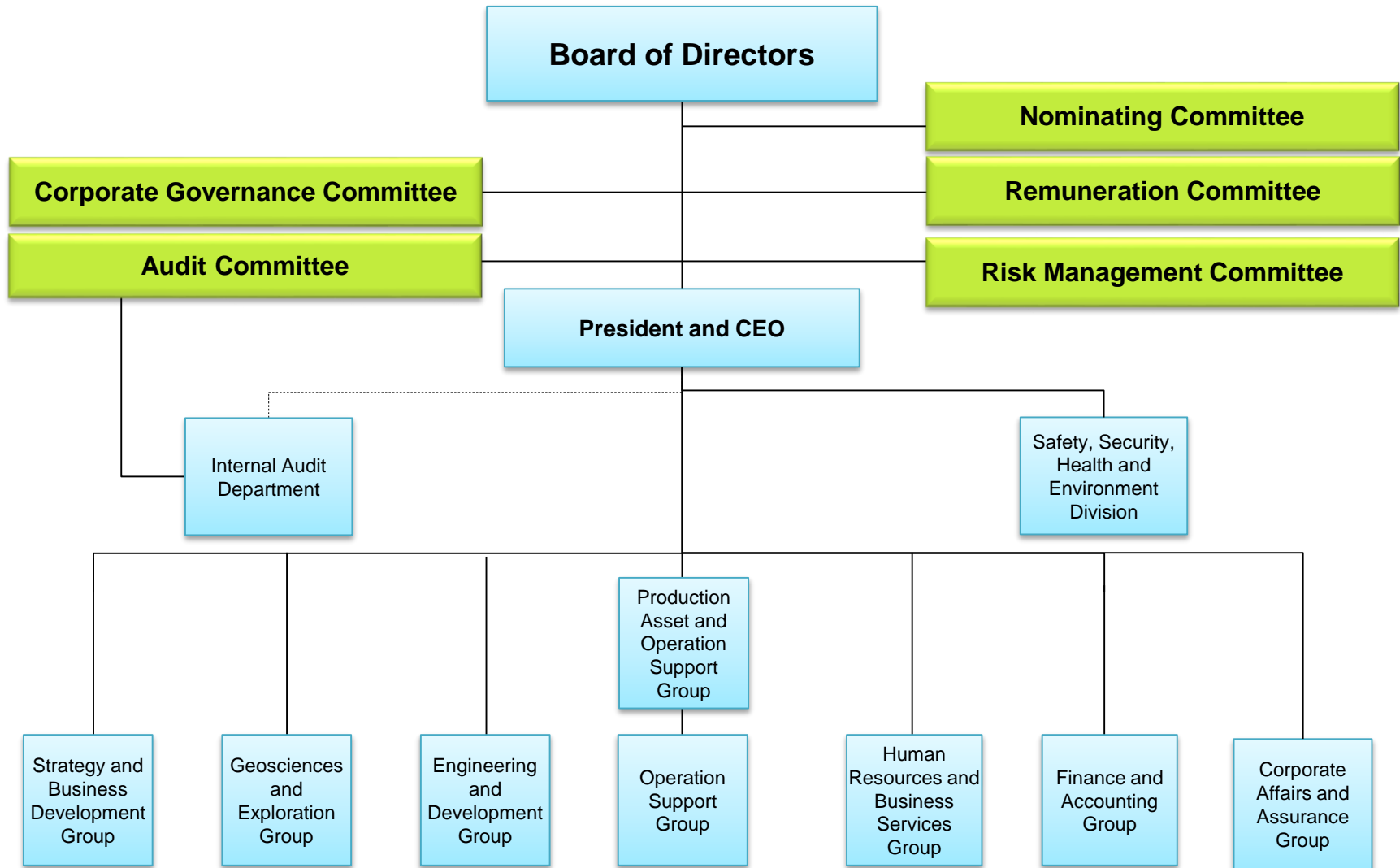
* Status: OP = PTTEP operatorship / JOC = PTTEP joint operatorship



	Project	Status*	PTTEP's Share	Partners (as of Q2 2017)	2017 Key Activities
Exploration Phase					
Overseas (Cont'd)					
35	Myanmar MOGE 3	OP	75%	Palang Sophon Offshore MOECO WinPreciousResources 10% 10% 5%	<ul style="list-style-type: none"> Acquire 2D and 3D seismic
36	Brazil BM-ES-23		20%	Petrobras INPEX 65% 15%	<ul style="list-style-type: none"> Assess petroleum potential
37	Sarawak SK410B	OP	42.5%	KUFPEC PSCB 42.5% 15%	<ul style="list-style-type: none"> Acquire 3D seismic

Remarks: 37 projects exclude 2 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	$(\text{Trailing-12-month net income} + \text{Trailing-12-month Interest Expenses \& Amortization Bond Issuing Cost}) / (\text{Average shareholders' equity and average total debt between the beginning and the end of the 12-month period})$
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	$\text{Trailing-12-month EBITDA} / \text{Trailing-12-month Interest Expenses \& Amortization of Bond Issuing Cost}$