PTT Exploration and Production Public Company Limited

Energy Day with KGI Securities

19 October 2017

PTTEP

MEMBER OF
Dow Jones
Sustainability Indices
In Collaboration with RobecoSAM

PTTEP

Company Overview

Financial Performance

Operational Updates

Investment Plan & Outlook

PTTEP: the E&P Flagship of PTT Group

Plays a pivotal role in Thailand's oil and gas production

As PTT's Upstream Flagship

Government of Thailand

64.2%[2]

ptt

Thailand's national energy company

65.3%[1]

PTTEP

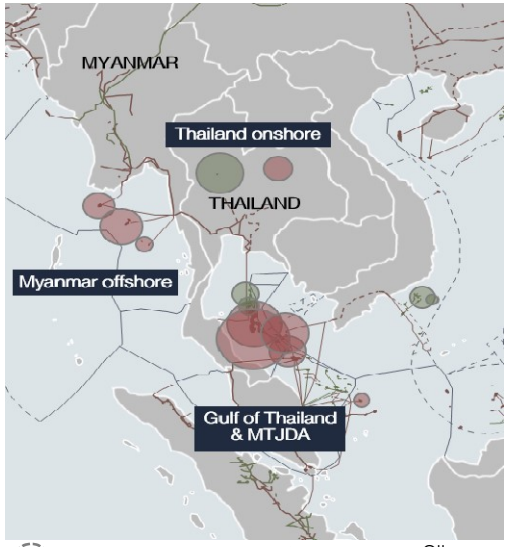
Credit ratings equivalent to parent and country			
S&P	Moody's	TRIS	JCR
BBB+	Baa1	AAA	A-

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*

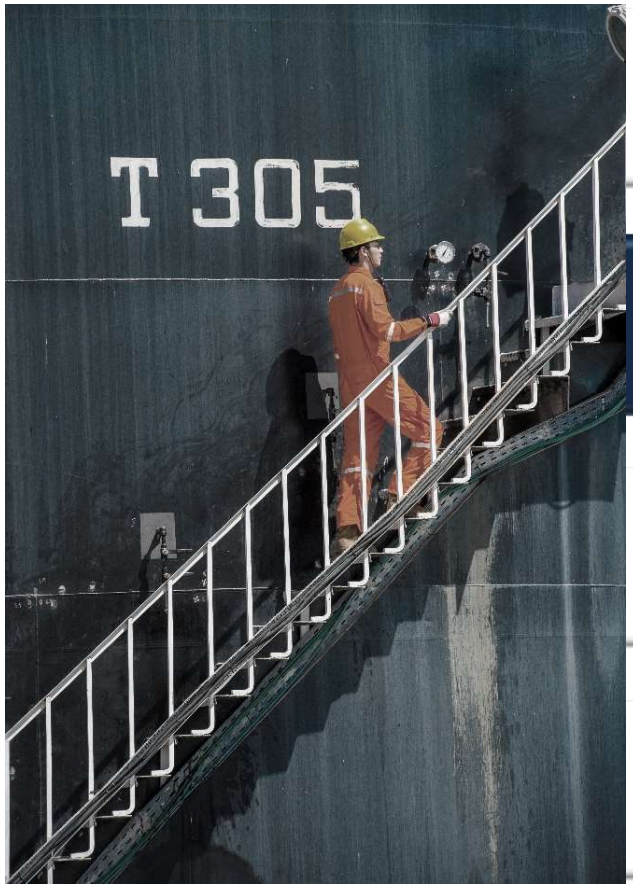
84% of PTTEP's sales volume sold to PTT

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 11 August 2017
2. 51.1% is directly held by the Government of Thailand (Ministry of Finance), with the remaining 13.1% held by the state-controlled Vayupak Fund I as of 5 September 2017

PTTEP



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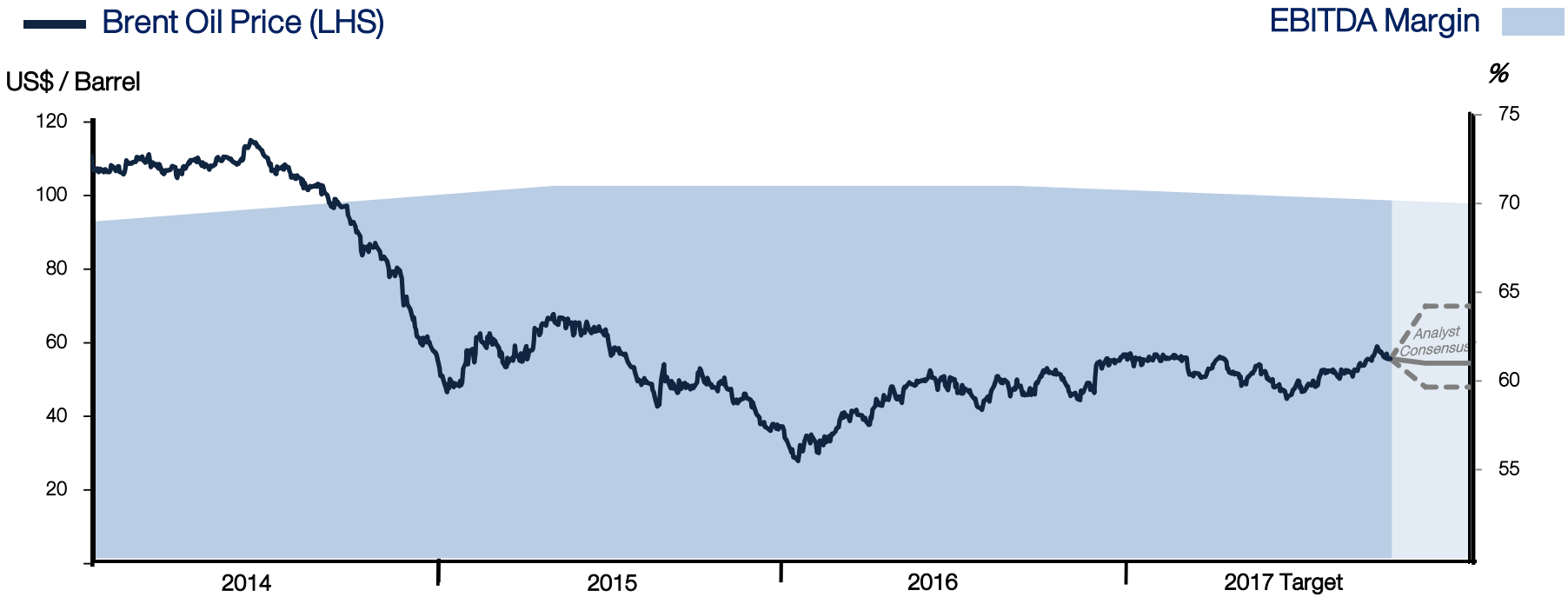
Survived through the Downturn and Ready to Strike

Strong operational and financial performance amid the oil price crisis



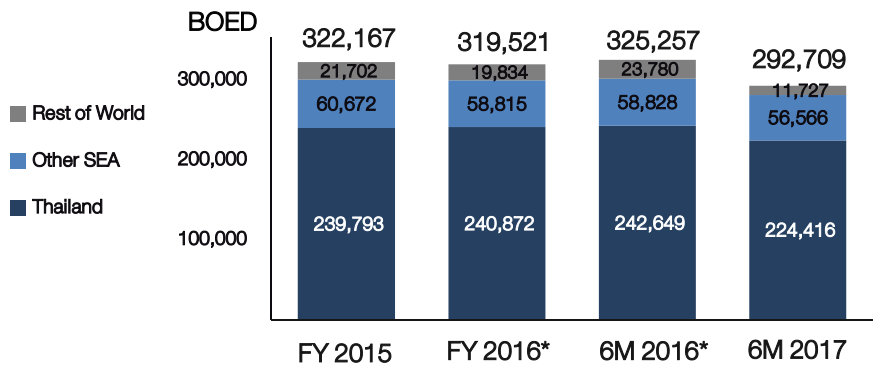
EBITDA Margin	Annual Operating Cash Flow	Cash on Hand	Outlook
69 - 71 %	2.3 - 2.9 $ Billion	3.5 - 4.0 $ Billion	Expect to maintain strong EBITDA margin throughout 2017 and beyond

Remark Brent oil prices consensus range: Bloomberg Analyst Consensus (CPFC) as of 9 October 2017

Sales Volume & Unit Cost

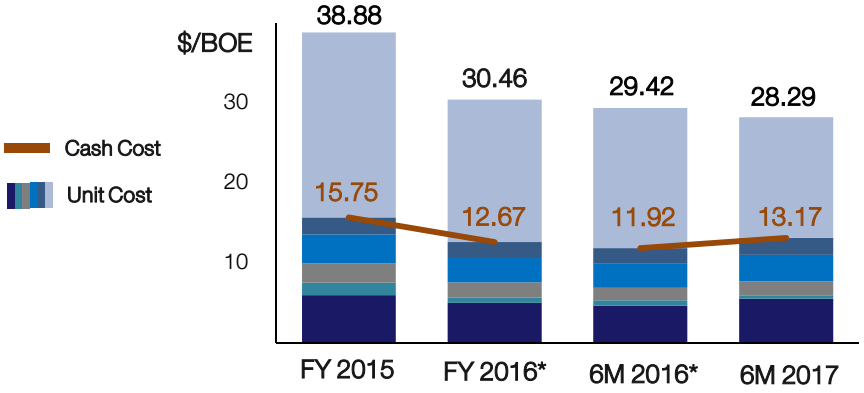
Better unit cost and selling price despite lower sales volumes

Sales Volume and Price



	FY 2015	FY 2016*	6M 2016*	6M 2017
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

Unit Cost



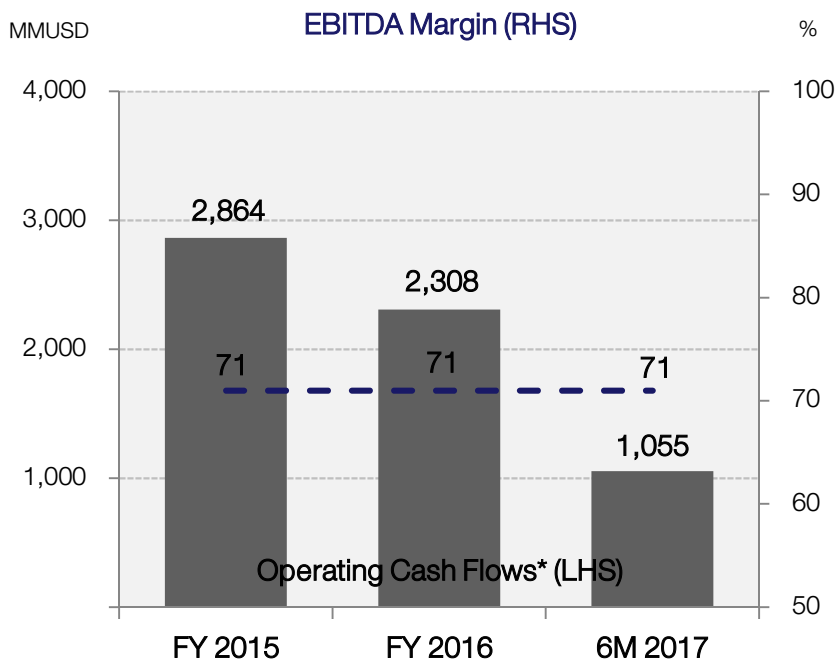
	FY 2015	FY 2016*	6M 2016*	6M 2017
DD&A	23.13	17.79	17.50	15.12
Finance Cost	2.14	2.01	1.98	2.12
Royalties	3.62	3.02	2.98	3.32
G&A	2.39	1.93	1.56	1.77
Exploration Expenses	1.56	0.63	0.70	0.39
Operating Expenses	6.04	5.08	4.70	5.57
Lifting Cost	4.62	4.18	3.97	4.10
Drilling Success Ratio**	31 : 47	6 : 8	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

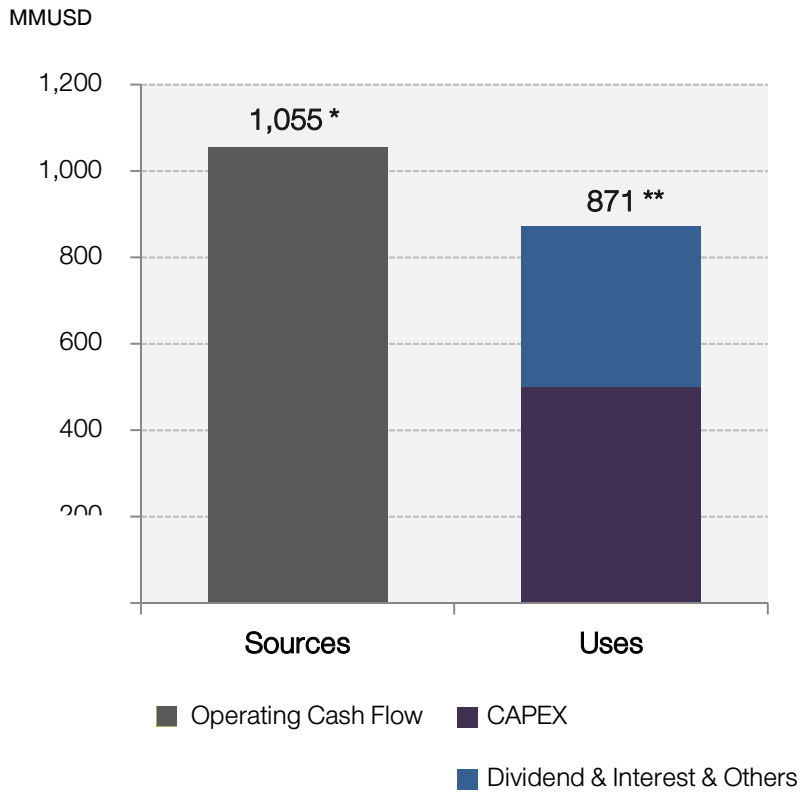
Robust cash flow generation to support CAPEX and debt service

Cash Flow Performance



	FY 2015	FY 2016	6M 2017
Net Income	(854)	372	569
Recurring Net Income***	718	466	378

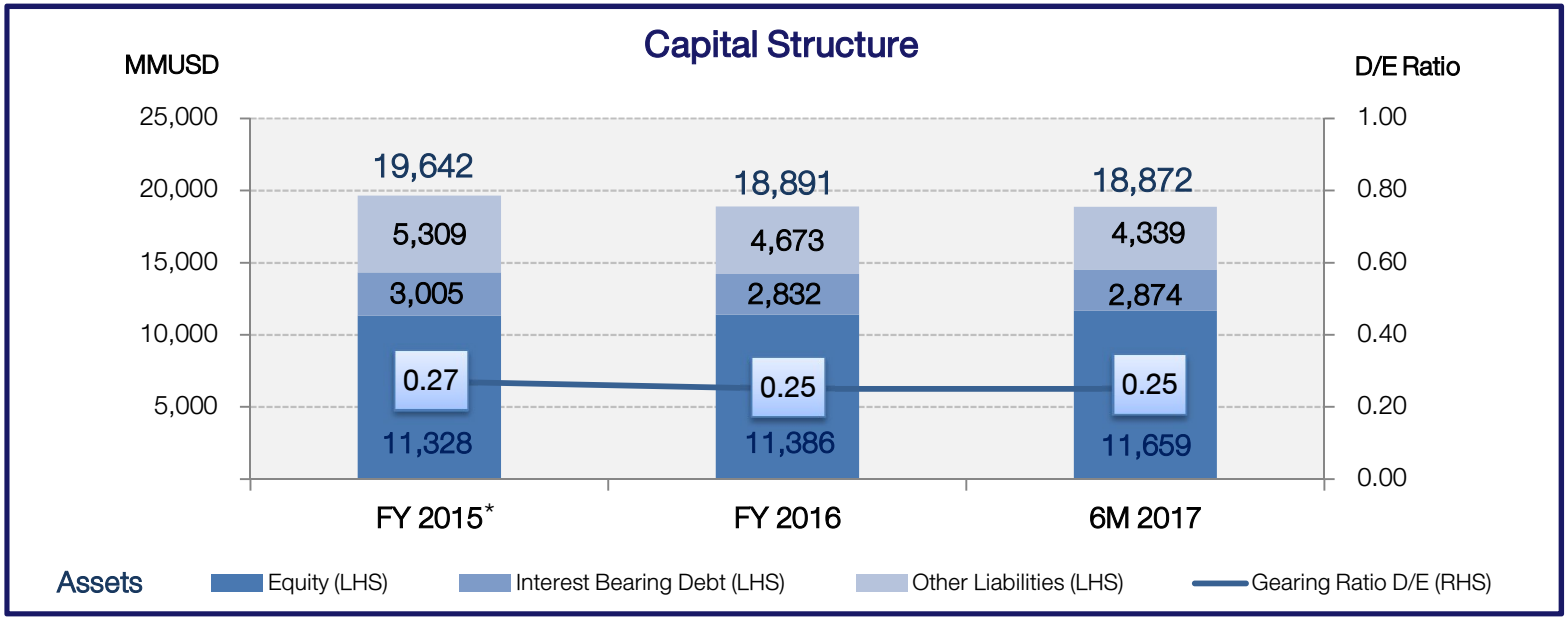
Source & Use of Funds in 6M 2017



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.

Financial Position

Healthy balance sheet with low gearing



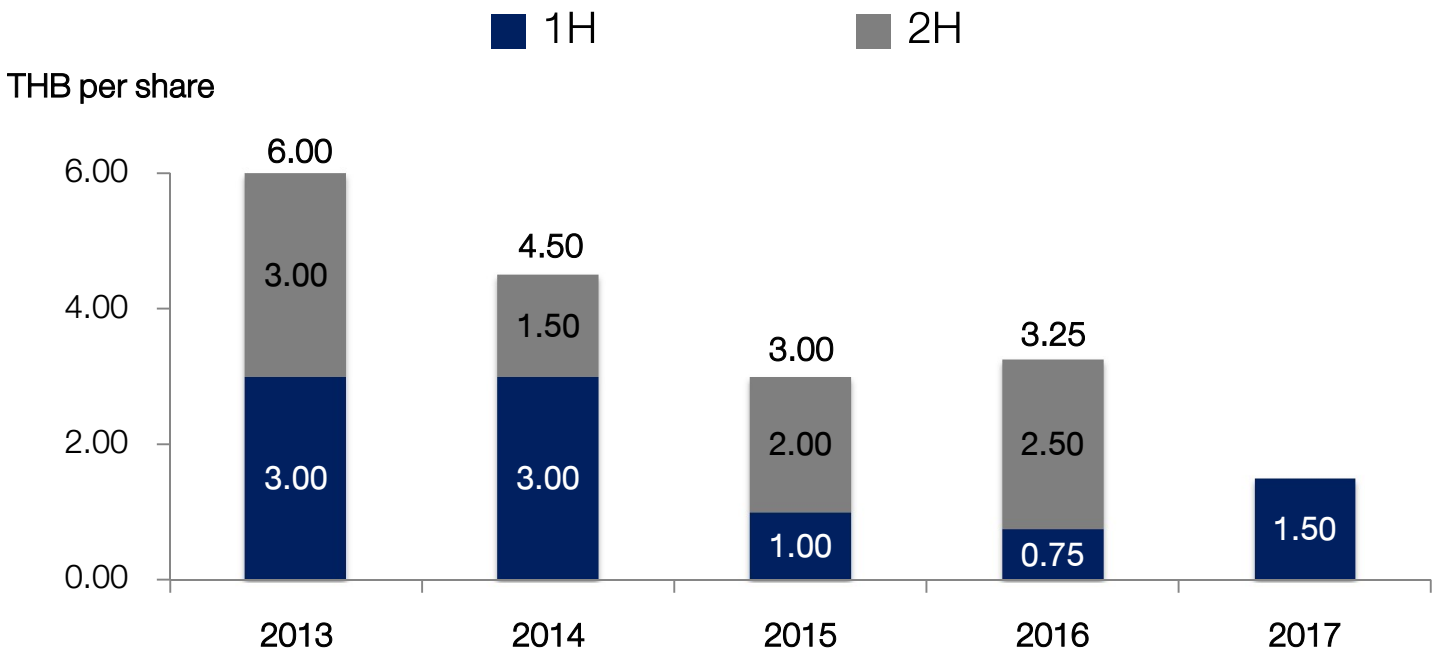
Debt Profile**	US$ 100%	US$ 100%	US$ 100%
Weighted Average Cost of Debt** (%)	4.32	4.41	**4.46**
[Fixed : Floating]	[82 : 18]	[80 : 20]	**[80 : 20]**
Average Loan Life** (Years)	8.17	8.15	**7.71**

Remark: * Restated
** Excludes Hybrid bonds

Dividends

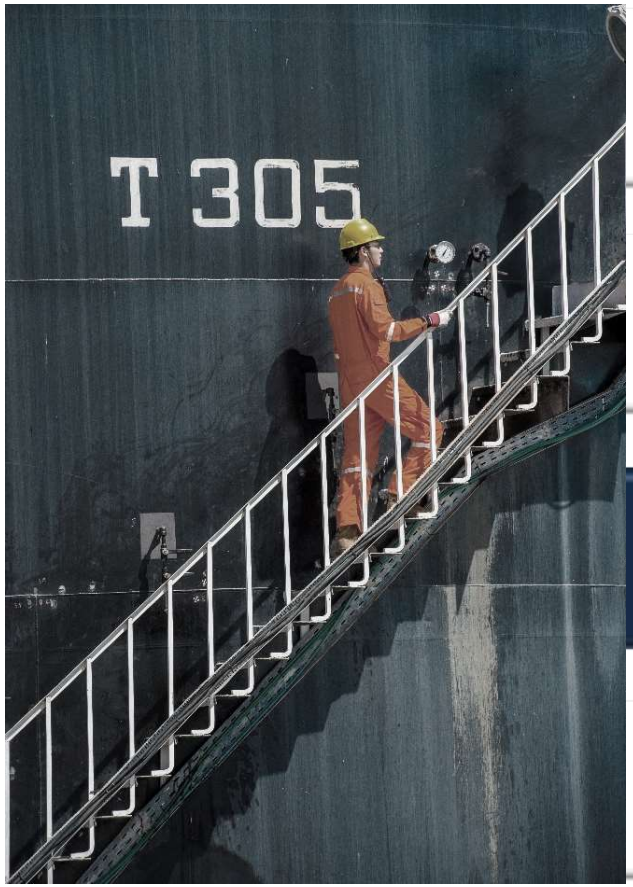
Demonstrating our dividend commitment to shareholders

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



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

PTTEP



Company Overview

Financial Performance

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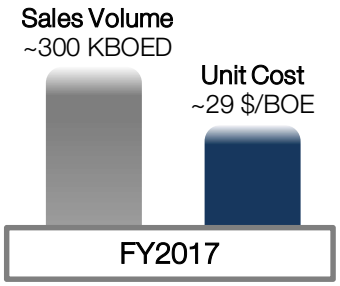
Investment Plan & Outlook

Updates on 2017 Priorities (1/2)

Expedite the execution with focus on adding reserves and production

Sustain Production and Low Cost in Existing Projects

Maximizing value and mitigating near-term downsides



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

Mitigation Plan

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

- 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

Expiring Concessions Bidding

Ready to bid for both Bongkot and Erawan

Competitively positioned and ready to continue as operator of Bongkot

- Experienced and reliable
- Operational efficiency
- Deep subsurface understanding

Updates on 2017 Priorities (2/2)

Expedite the execution with focus on adding reserves and production

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 Q4 2017
- 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 Q4 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

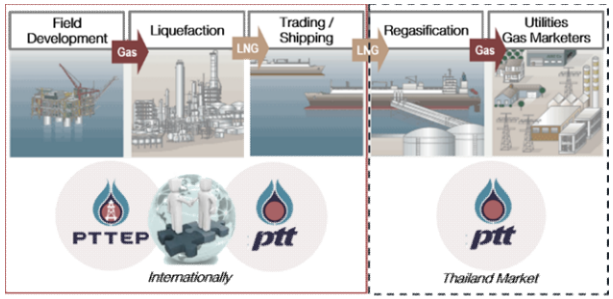
M&A and Exploration

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

LNG Value Chain Investment : MLNG Train 9 (1/2)

First step into midstream LNG business in strategic area of focus

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

….continue to look for more LNG opportunities globally

MLNG Satu (Train 1-3)
Capacity 8.4MTPA
COD Jan 1983

MLNG Tiga (Train 7-8)
Capacity 7.7MTPA
COD Mar 2003

MLNG Train 9
Capacity 3.6MTPA
COD Jan 2017

MLNG Dua (Train 4-6)
Capacity 9.6MTPA
COD May 1995

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%

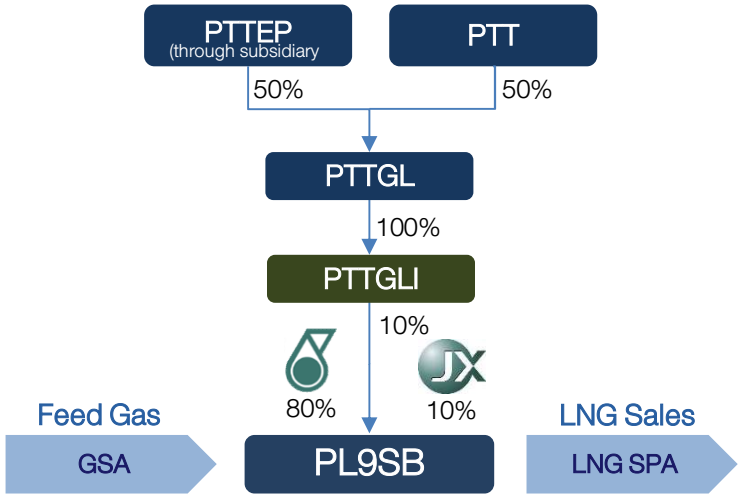
Investment Rationales

- 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

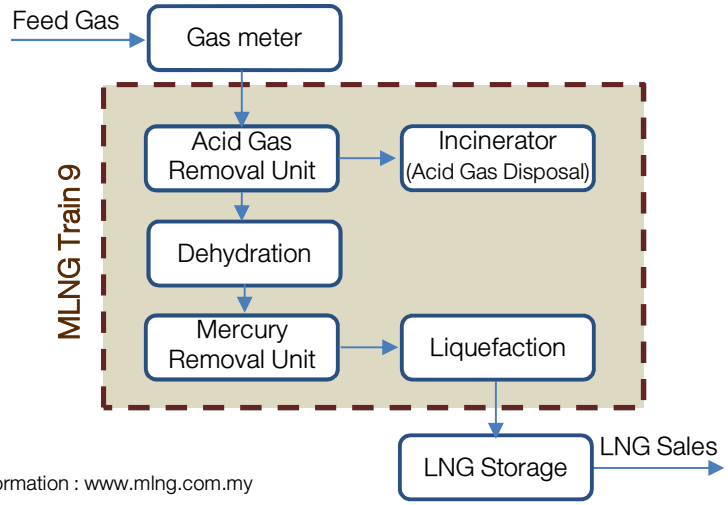
LNG Value Chain Investment : MLNG Train 9 (2/2)

Investment structure and LNG process

Investment Structure



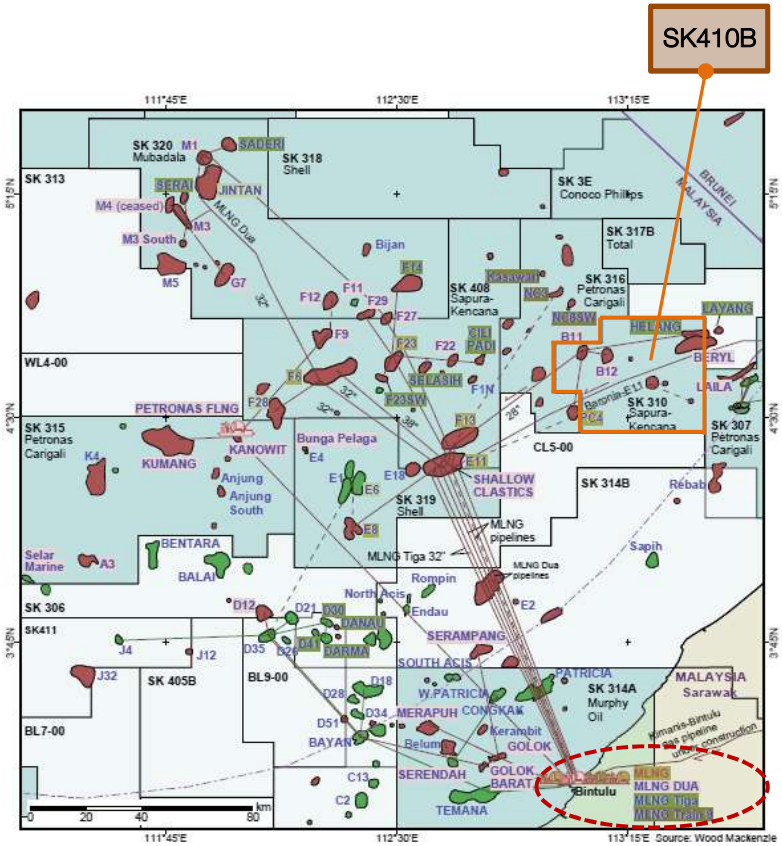
LNG Process



Information : www.mlng.com.my

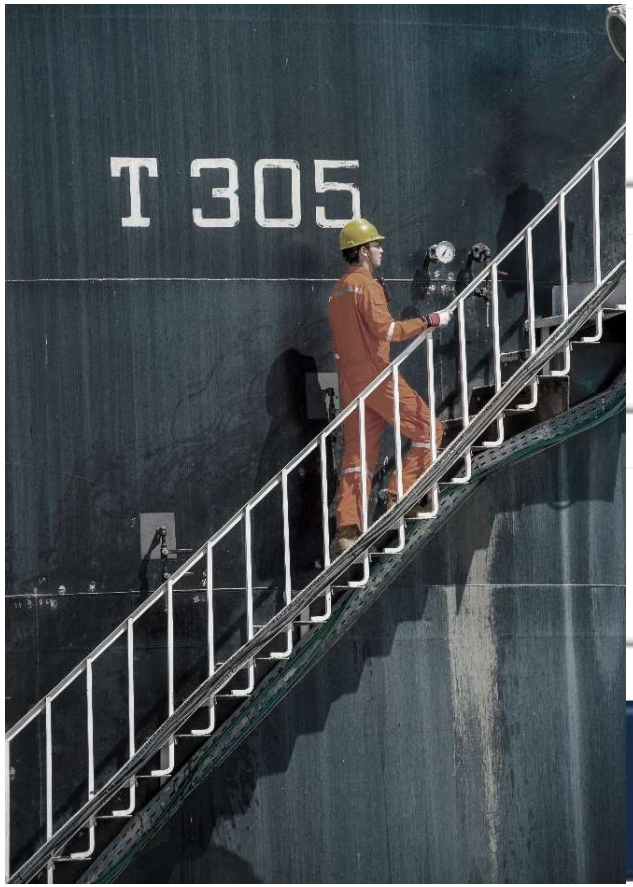
In vicinity of future upstream opportunities

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



Source: Woodmac

PTTEP



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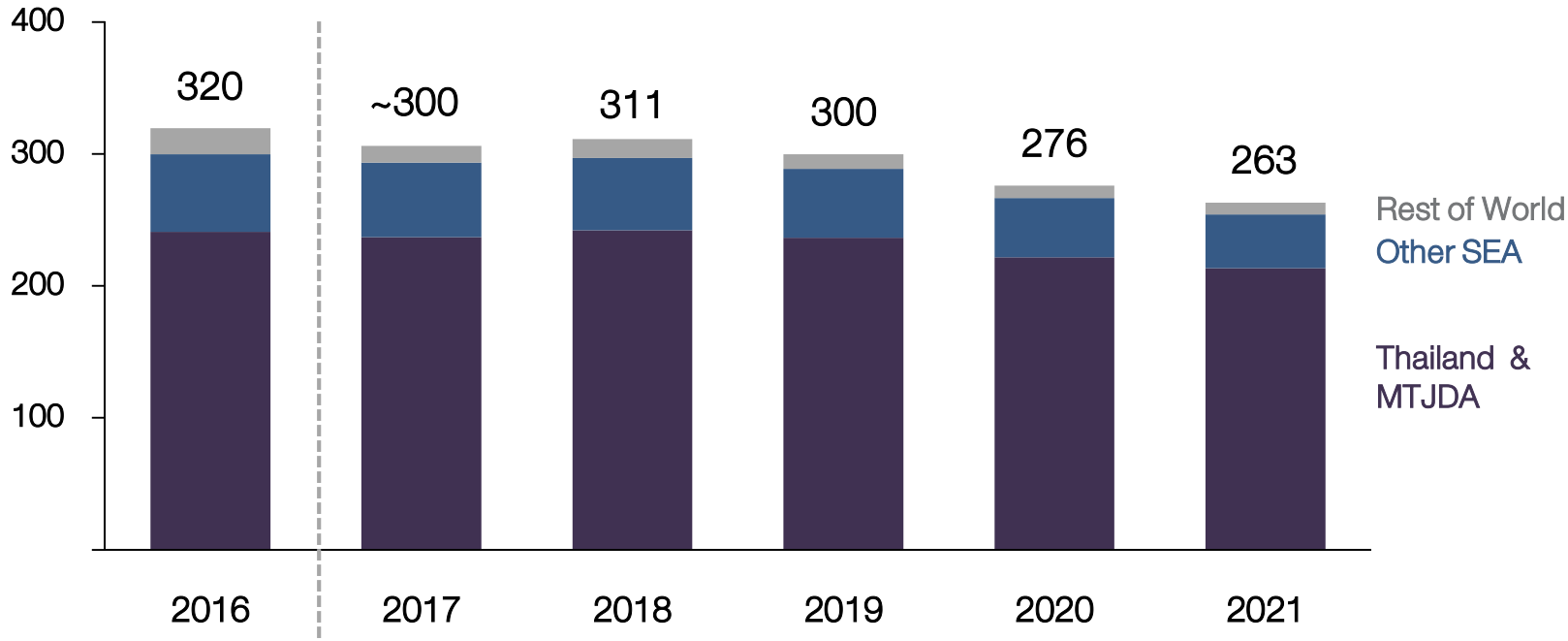
Sales Volume Guidance

Focus area in Thailand and South East Asia

Unit : KBOED



Key Project Start-up*

Contract 4 (Ubon)
Capacity 25-30 KBPD

Mozambique LNG
Capacity 12 MMTPA (~300KBOED)

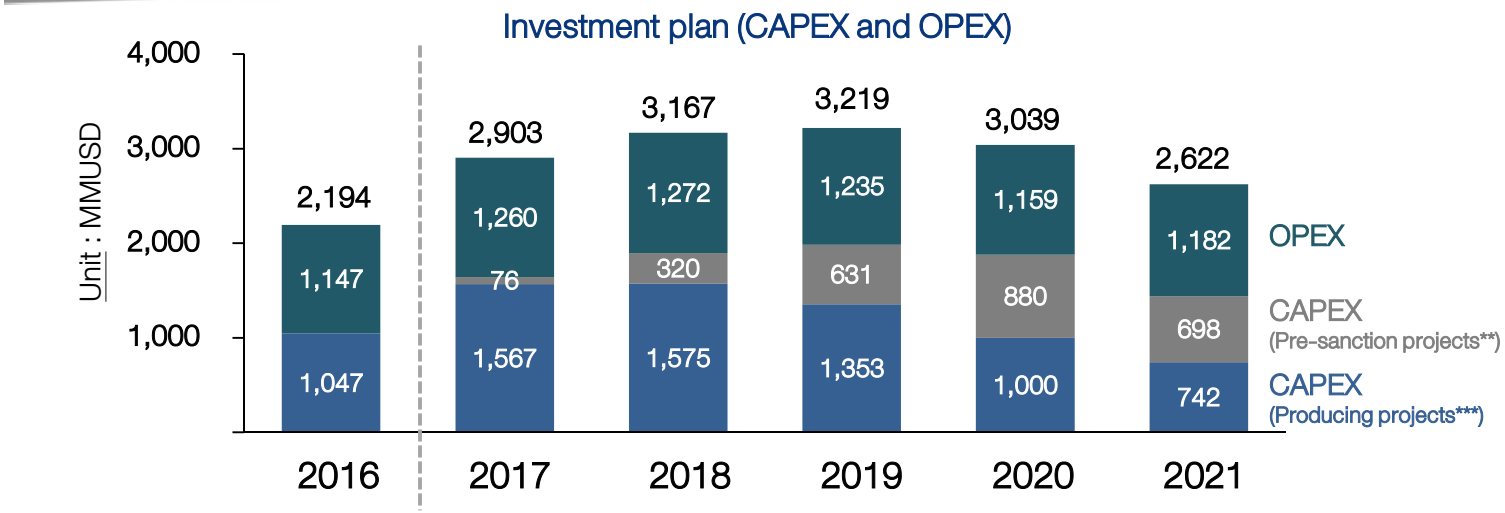
Algeria HBR
Capacity 50KBPD

Product Mix (%) Gas : Liquid	69 : 31	72 : 28	71 : 29	74 : 26	75 : 25	74 : 26

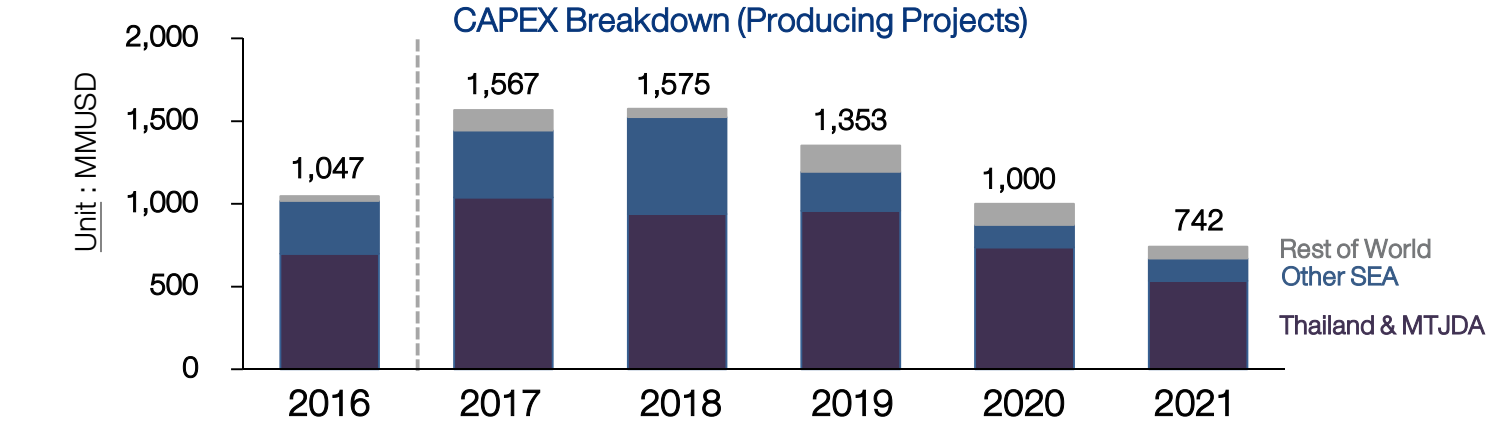
Note: * Subject to FID timing

Investment Plan (CAPEX and OPEX)

SPEND SMART through leaner CAPEX and OPEX program



5 Years (2017 – 2021)	
OPEX	6,108
CAPEX	8,842
TOTAL	14,950



5 Years (2017 – 2021)	
Rest of World	533
Other SEA	1,497
Thailand	4,206
TOTAL	6,236

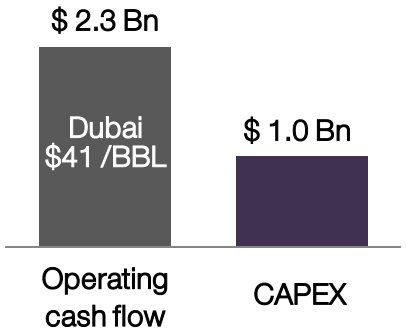
Note:
- * Subject to FID timing
- ** Pre-sanction projects include Mozambique LNG, Contract 4 (Ubon), Algeria HBR
- *** Includes exploration and appraisal in all projects and head office CAPEX

Financial Capability and Outlook

Expect to maintain strong financial performance

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

Key Takeaways

Strived through the downturn and ready to compete

Focused Portfolio with revenue stability

- +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

Competitive Cost base and strong margin

- 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

Best Balance sheet and Capital Management

- $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

Well positioned for future growth

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

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

IR@pttep.com

+66 2 537 4000

Supplementary information

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Summary of Q2 2017 Financial Results

Positive core earning supported by stable sales price

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

Financial Performance

Survived through the downturn and ready for future growth

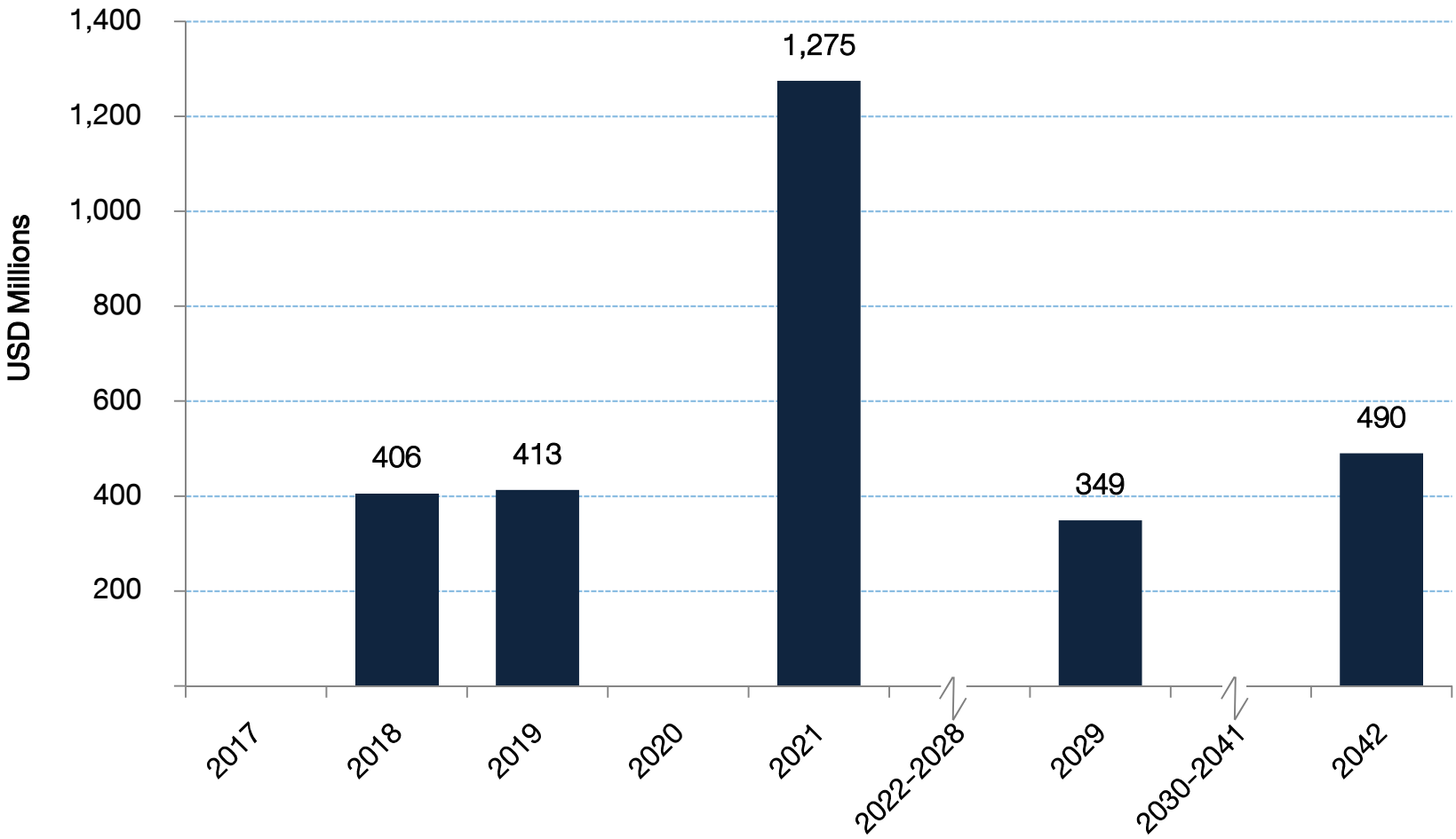
	Q1 17	Q2 17	Q2 16*	6M 17	6M 16*
Sales Revenue ** (MMUSD)	1,053	993	1,078	2,046	2,139
EBITDA (MMUSD)	776	685	778	1,461	1,567
Net Income (MMUSD)	349	220	75	569	232
Recurring Net Income (MMUSD)	211	167	154	378	270
Earning Per Share (USD)	0.09	0.04	0.01	0.13	0.05
Key Financial Ratios					
EBITDA Margin (%)	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

Debt Maturity Profile

Expect no debt maturity until 2018



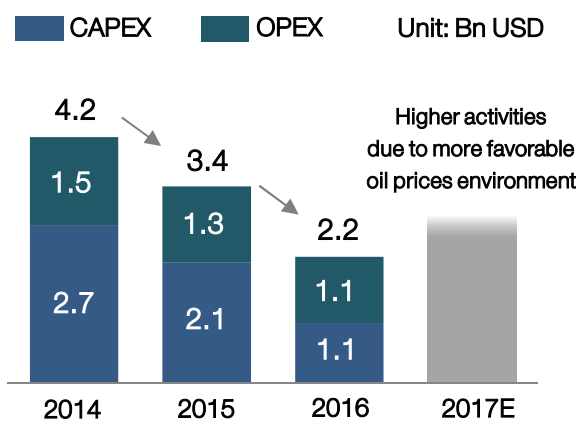
Note: Excludes Hybrid bonds

Unit: USD Millions or equivalent after cross currency swap

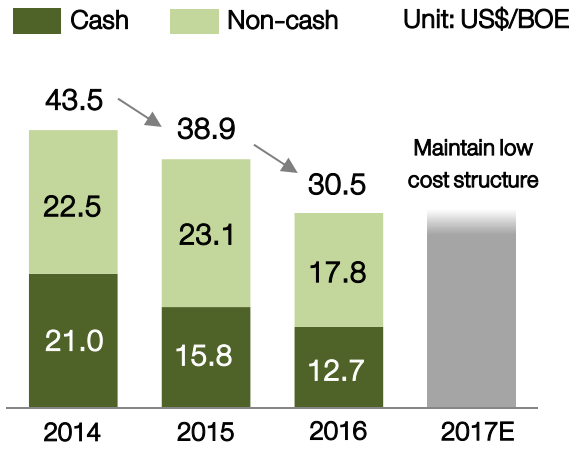
Disciplined Cost Management

Approx. 30% reduction to date on both CAPEX and OPEX

Expenditure (CAPEX + OPEX)

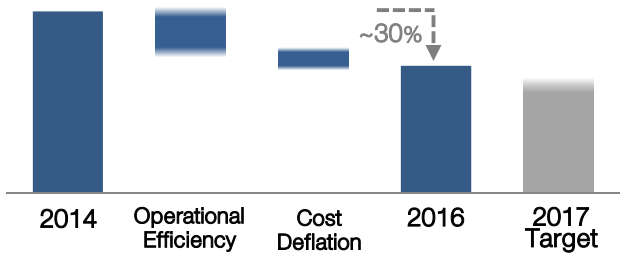


Maintain Low Unit Cost



Continuing Cost Improvement Momentum

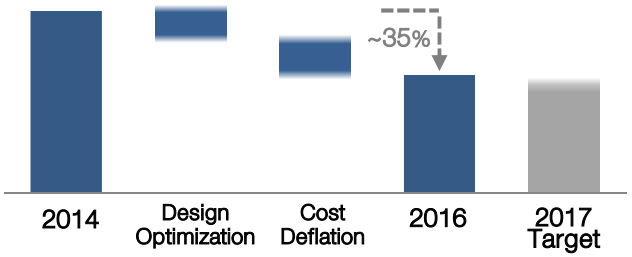
Development Drilling Cost per Well*



Reductions achieved through …

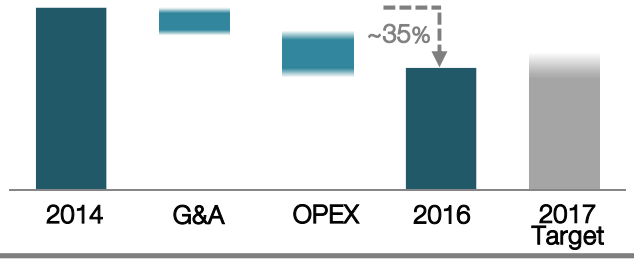
- Drilling performance improvement
- Drilling days reduction
- Standardizing well design

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

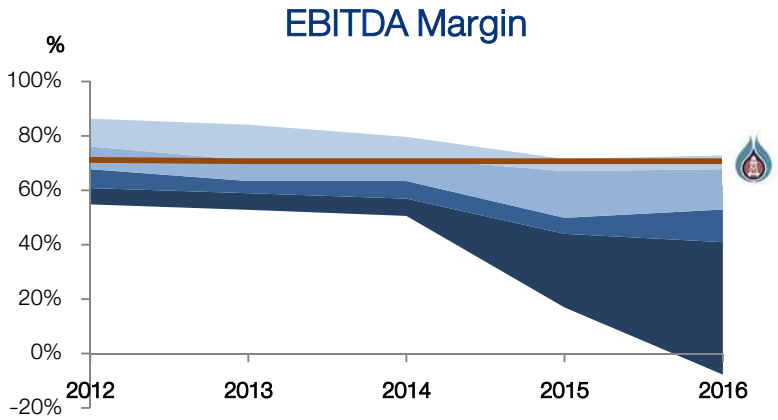
Remark * Primarily applicable in PTTEP-operated projects in the Gulf of Thailand

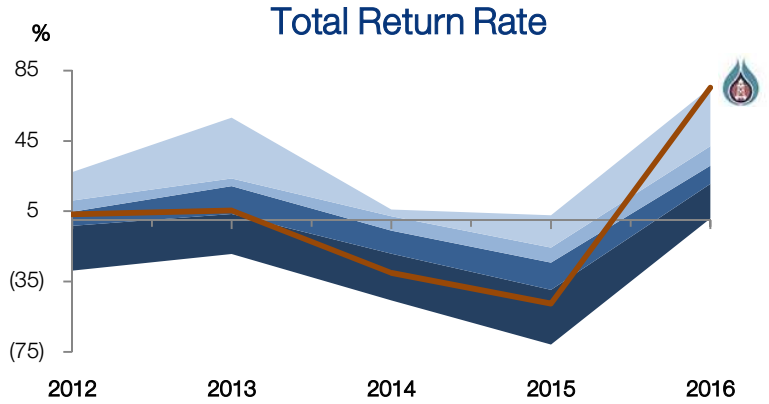
Note : For Wellhead Platform Cost: Graph represents cost reduction captured but not yet fully realized

Peers Performance Comparison

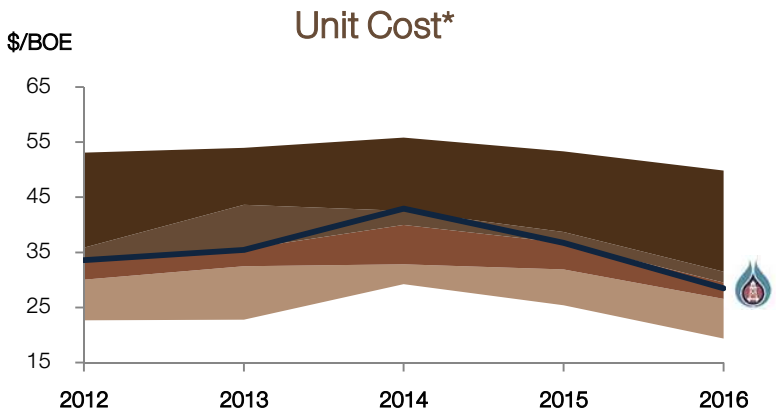
Beat the industry average

Deliver better performance…

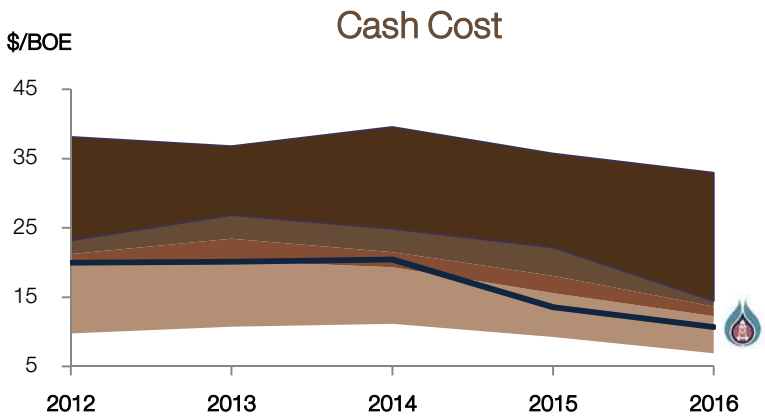




…with competitive cost structure



Remark: * Exclude Finance cost



Peers includes Anadarko, BG, BP, Chevron, CNOOC, ConocoPhilips, ExxonMobil, Hess, Inpex, Marathon, Murphy Oil, PetroChina, Petronas, Premier Oil, Repsol, Shell, Sinopec, Total, and Woodside (Upstream division for Integrated firms) (only Total Return Rate: excludes BG, Petronas)

Source: Companies' annual report (except Total Return Rate from Bloomberg)

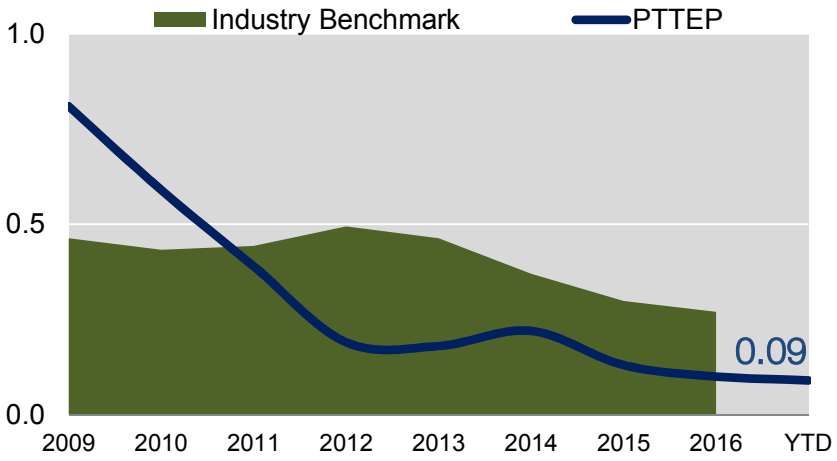
Priority on Safety and Sustainability

Significant cost reduction without compromising on SSHE

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 fourth consecutive years

MEMBER OF
Dow Jones Sustainability Indices
In Collaboration with RobecoSAM

PTTEP has been selected as a member of the 2017 Dow Jones Sustainability Indices (DJSI) in the DJSI World Oil and Gas Upstream & Integrated Industry for its fourth consecutive year.

Sustainable development

Pursue long-term growth with social and environmental wellness

MEMBER OF
Dow Jones Sustainability Indices
In Collaboration with RobecoSAM

2017 DJSI Listed Company

PTTEP has been selected as a member of the 2017 Dow Jones Sustainability Indices (DJSI) in the DJSI World Oil and Gas Upstream & Integrated Industry for its fourth consecutive year.

FTSE4Good

FTSE4Good Emerging Index 2017

PTTEP becomes a constituent of the FTSE4Good Emerging Index 2017 for a second consecutive year

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

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

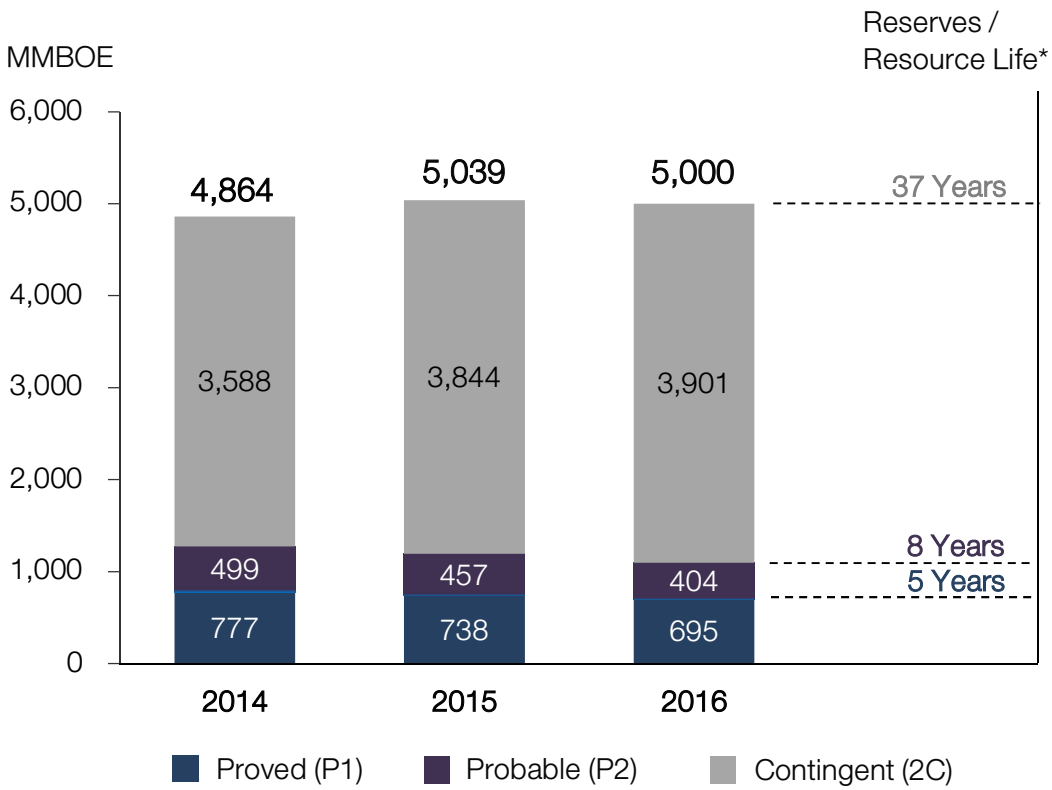
Best Initiative Environmental Responsibility Award
The Asset Magazine

CDP's Climate Leadership Level
CDP

Excellence in the safety, health and environmental management awards
2016 SHE Award

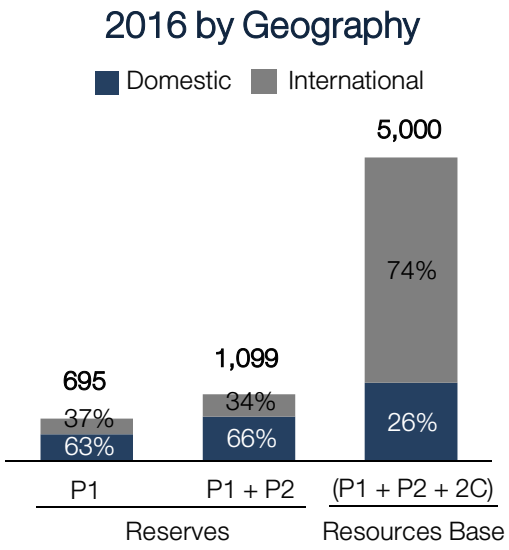
Reserves and Resources

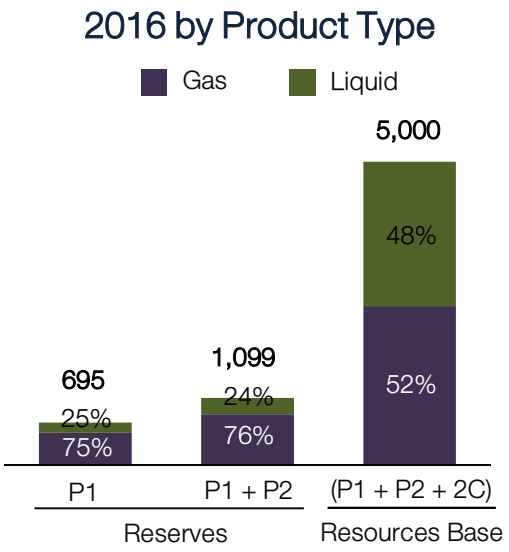
Maintaining reserve life with majority of reserves base in SEA



5-Year Average Proved Reserves Replacement Ratio (RRR)

2014	2015	2016
0.45x	0.50x	0.57x



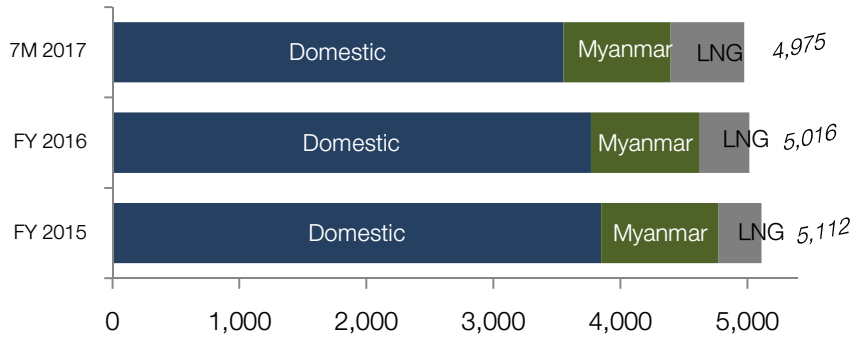


* Based on total production of natural gas, condensate, and crude oil (including LPG) of 368 KBOED for the year ended December 31, 2016

Thailand Economic Forecast

Economic expansion with uncertainty on Thai Baht

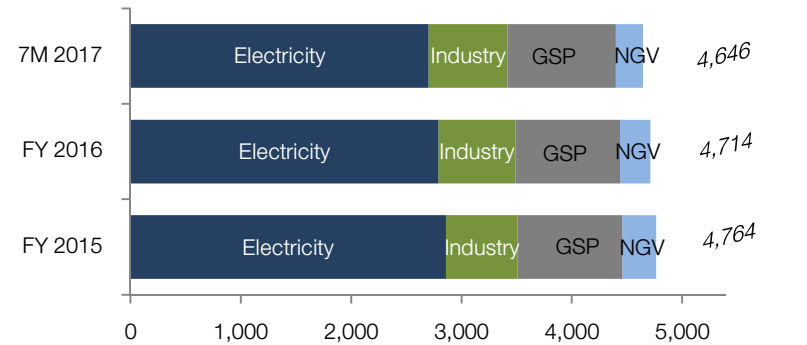
Thailand's Natural Gas Supply by Source



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 12 October 2017

- Thailand's Gas Market
  - Slight decline in domestic production and Myanmar piped gas imports while domestic demand remains constant.
  - Domestic volumes had been pressured by low nomination due to growth in LNG import.
- Consensus on the exchange rate mostly depends on:
  - Determination on ascending interest rate made by FOMC's may lead USD to appreciate against the THB
  - Uncertainties on the US Fiscal and Monetary policies

Thailand Updates : Bongkot Concession Expiry

PTTEP is well-positioned to continue as operator

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

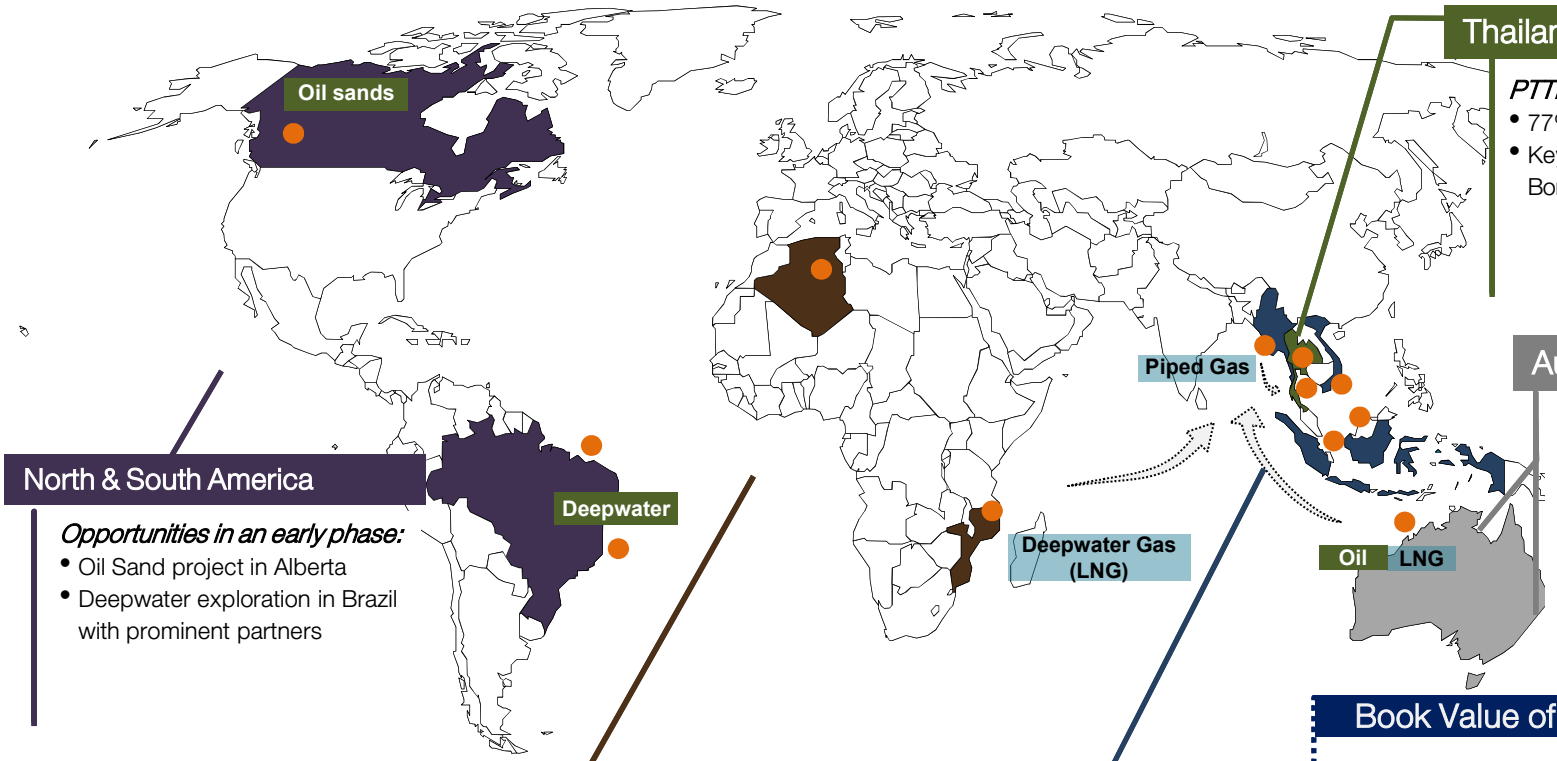
PTTEP: Competitively positioned to continue as operator

- ***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

Diversified international portfolio

Worldwide operations: 37 projects* in 10 countries



Thailand

PTTEP's core production base

- 77% of total sales volume
- Key producing assets include Bongkot, Arthit, Contract 4 and S1

Australasia

Oil producing project

- 9KBPD of oil sales from wholly-owned Montara project
- Sizable undeveloped gas resource in Timor Sea

North & South America

Opportunities in an early phase:

- Oil Sand project in Alberta
- Deepwater exploration in Brazil with prominent partners

Africa

An area for growth, key projects include:

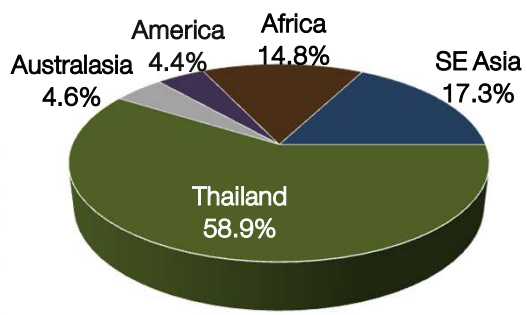
- Producing: Algeria's Bir Seba oil field has started up with current flow rate of approximately 18 KBPD
- Pre-development and Appraisal: Mozambique LNG and Algeria's Hassi Bir Rakaiz

Southeast Asia

Second heartland to PTTEP

- 19% of total sales volume
- Myanmar being most important with gas production mostly supplied into Thailand
- Other producing assets in Vietnam (oil) and Indonesia (gas)

Book Value of Assets** (by region)

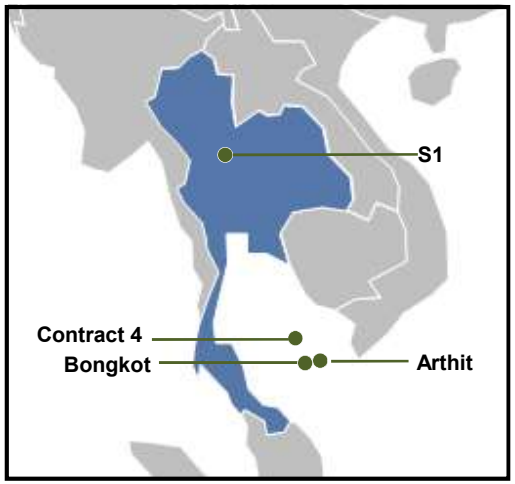


Total Assets USD 18.9 billion

Notes: * Excludes 2 projects that are pending official withdrawal approval
** Information dated as of 30 June 2017 (1H 2017)

Thailand

Strong home base with legacy assets maintaining production plateau



● 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)

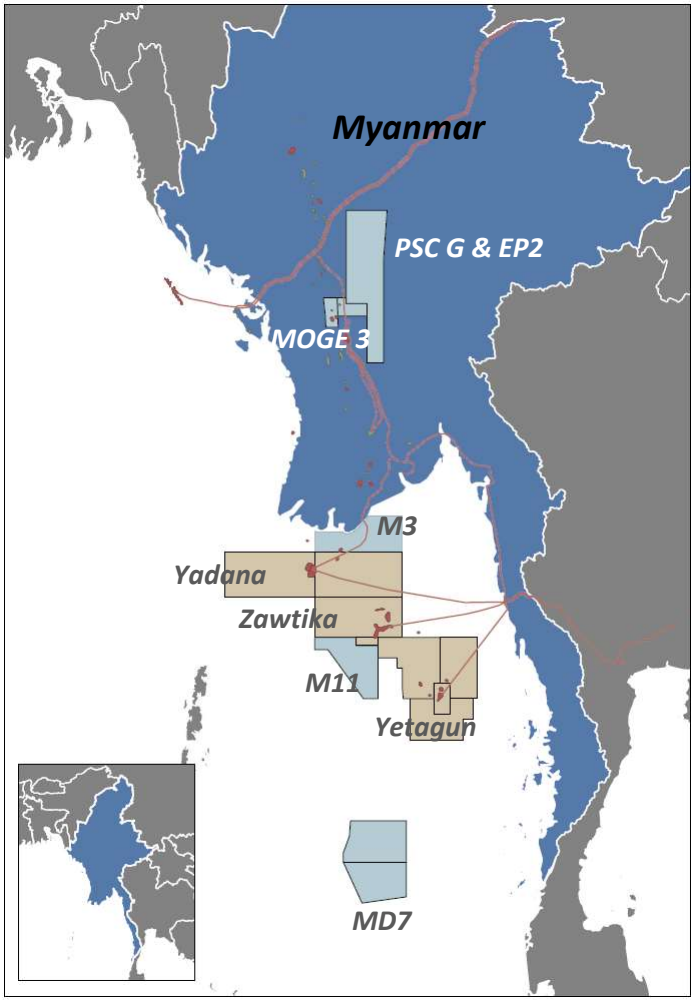
- Average sales volume in 1H 2017 was 221 MMSCFD of natural gas and 9.5 KBPD of condensates

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

Southeast Asia : Myanmar

Significant contribution to growth



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 March 2014. Deliver gas supply of 300 MMSCFD in 1H 2017.
- Significant exploration acreage both onshore and offshore in the Moattama Basin

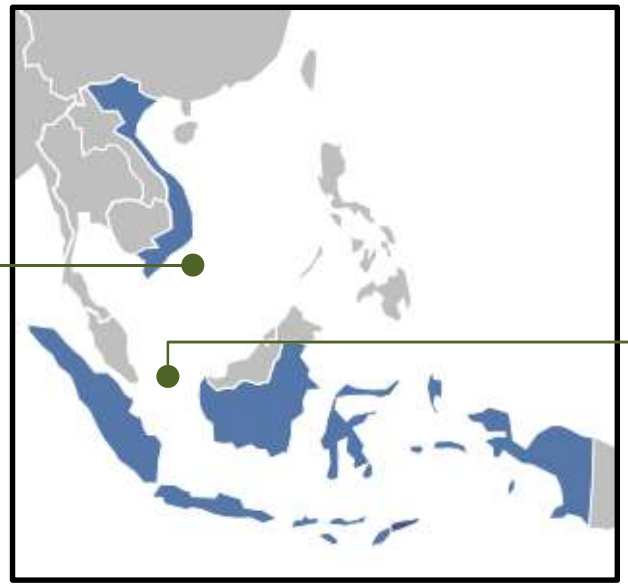
Project Status		
Producing	**Appraisal**	**Exploration**
• Yadana *(25.5% WI)*	• M3 *(80% WI)*	• PSC G & EP 2 *(70% WI)*
• Yetagun *(19.3% WI)*		• MOGE 3 *(75% WI)*
• Zawtika *(80% WI)*		• M11 *(100% WI)*
		• MD-7 *(50% WI)*

Note: WI – working interest

Southeast Asia : Vietnam and Indonesia

Reinforcing regional exposure through strategic partnerships

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

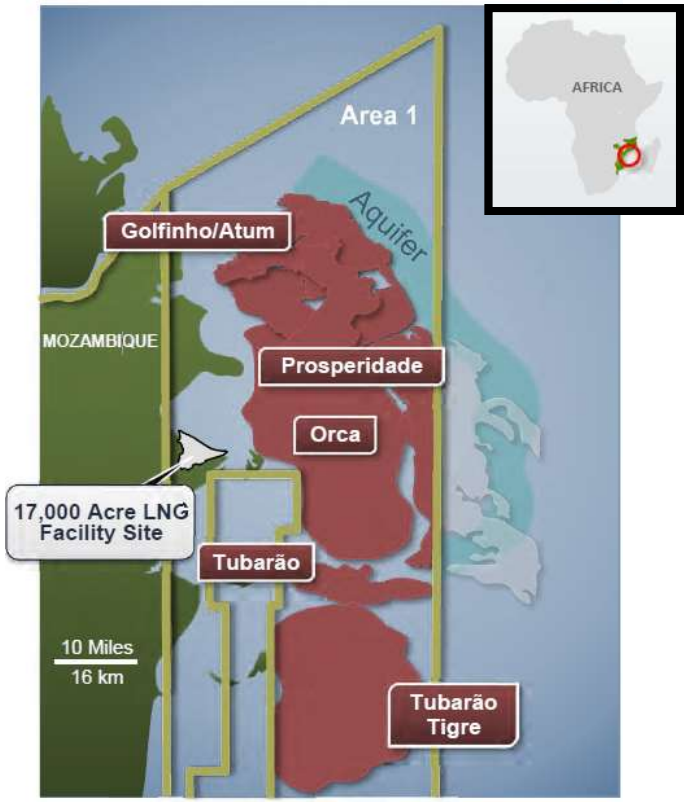
Natuna Sea A (11.5% interest)

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

Source : Premier Oil

East Africa : Mozambique

Potential to become one of the world's largest emerging LNG supply hubs



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

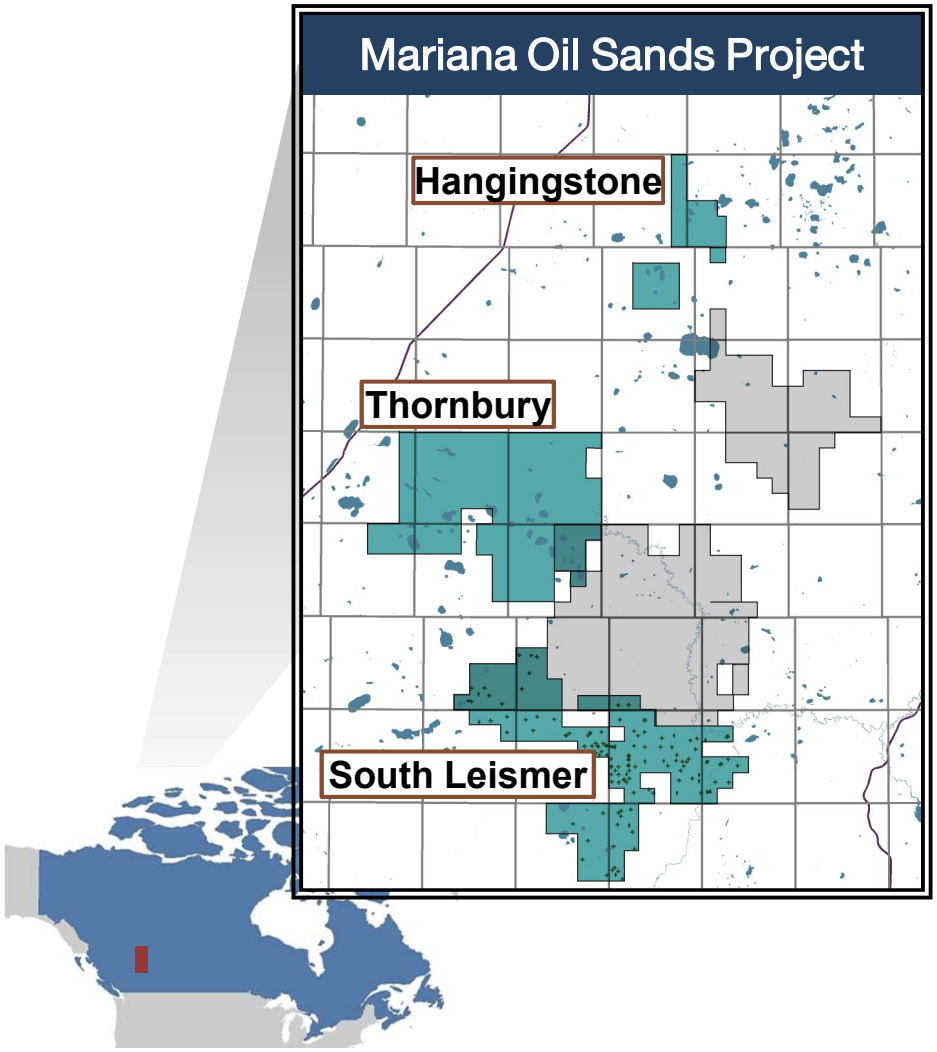
Technical	✓ Certified reserves to support initial trains ✓ Announced selection of contractor for onshore LNG facilities construction
Commercial	✓ Secured more than 8 MMTPA of non-binding HOAs
Regulatory	✓ Received approval on marine concession ✓ Resettlement plan to begin in 2H 2017
Financing	✓ On-going negotiation for project financing

Onwards to initial phase of 12 MMTPA

Source: Anadarko

America : Canada Oil Sands

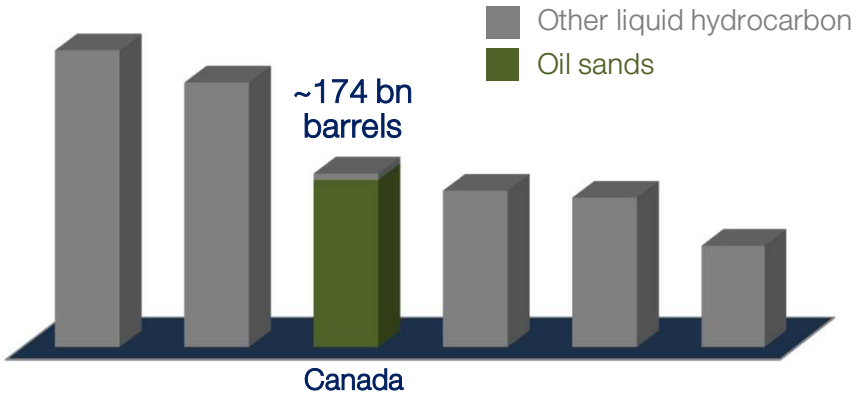
Flexibility to pursue long-term investment from the oil sands project



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.

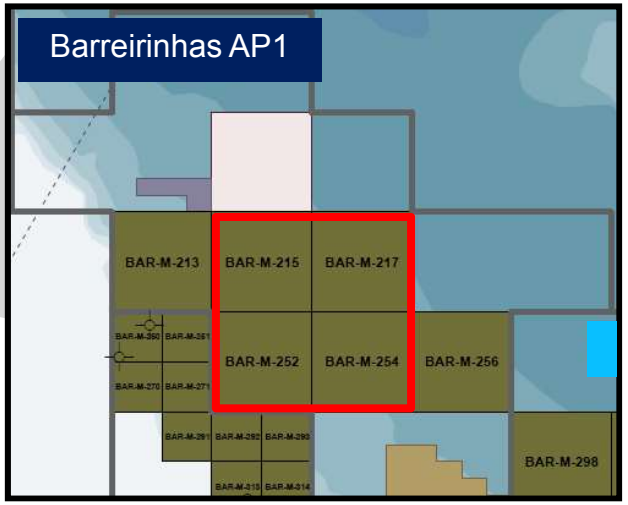
Approximately 96% of the reserves in Canada, the world's 3rd largest oil reserves, is oil sands



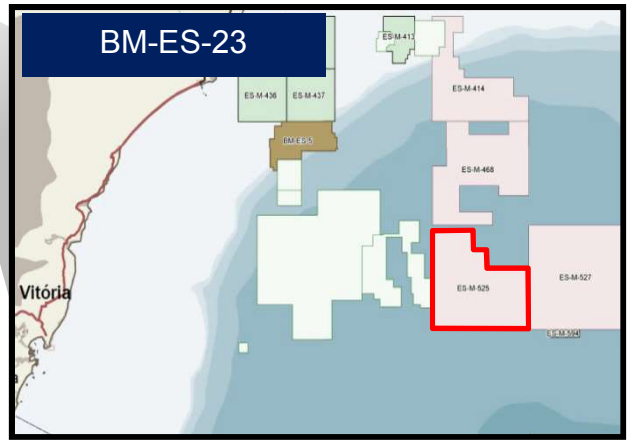
Source: Company data, BP Statistical Review of World Energy 2014

America : Brazil Deepwater

Entry into high potential petroleum province at exploration phase



- 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%)

Source : The National Agency of Petroleum, Natural Gas and Biofuels, Brazil (the ANP)

Project information 1/4

Production phase: Thailand and JDA

	Project	Status*	PTTEP's Share	Partners (as of Q2 2017)	1H 2017 Average Sales Volume **		2017 Key Activities
					Gas	Oil and Other	
Production Phase							
Thailand and JDA							
1	**Arthit**	OP	80%	Chevron 16% MOECO 4%	221 MMSCFD	Condensate: 9.5 k BPD	• Ensure gas deliverability level at DCQ*** • Drill development wells
2	**B6/27**	OP	100%		-	-	• Subsurface study
3	**B8/32 & 9A**		25%	Chevron 51.66% MOECO 16.71% KrisEnergy 4.63% PSTL 2%	102 MMSCFD	Crude: 26 k BPD	• Drill development wells • Perform waterflood activities
4	**Bongkot**	OP	44.4445%	TOTAL 33.3333% Shell 22.2222%	835 MMSCFD	Condensate: 26 k BPD	• Ensure gas deliverability level at DCQ*** • Drill development wells • Install wellhead platforms
5	**Contract 3** *(Formerly Unocal III)*		5%	Chevron 71.25% MOECO 23.75%	542 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 35% MOECO 5%	328 MMSCFD	Condensate: 14 k BPD	• Ensure gas deliverability level at DCQ**** • Drill development wells • Install wellhead platforms • Review development plan of Ubon field
7	**E5**		20%	ExxonMobil 80%	10 MMSCFD	-	
8	**G4/43**		21.375%	Chevron 51% MOECO 21.25% PSTL 6.375%	2.3 MMSCFD	Crude: 5.7 k BPD	• Drill development wells • Perform waterflood activities
9	**G4/48**		5%	Chevron 71.25% MOECO 23.75%	5.8 MMSCFD	Crude: 1.5 k BPD	
10	**L53/43 & L54/43**	OP	100%		-	Crude: 640 BPD	• Drill exploration / appraisal / development wells
11	**PTTEP1**	OP	100%		-	Crude: 288 BPD	• Drill development wells • Perform waterflood activities
12	**S1**	OP	100%		22 MMSCFD	Crude: 26 k BPD	• Drill exploration / development wells • Enhance oil recovery program includes waterflooding and artificial lift
13	**Sinphuhorm**	OP	55%	Apico 35% ExxonMobil 10%	95 MMSCFD	Condensate: 305 BPD	• Drill development wells
14	**MTJDA**	JOC	50%	Petronas-Carigali 50%	204 MMSCFD	Condensate: 6.0 k BPD	• Drill development wells • Install wellhead platforms
15	**L22/43**	OP	100%		-	Crude: 211 BPD	• Drill development wells

* Status: OP = PTTEP operatorship / JOC = PTTEP joint operatorship
** Sales volume stated at 100% basis.
*** DCQ = Daily Contractual Quantity

Project information 2/4

Production phase: Overseas

	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	• Maintain production operation • Perform reservoir management
17	**Yadana**		25.5%	TOTAL 31.24% Chevron 28.26% MOGE 15%	729 MMSCFD	-	• 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	• Drill appraisal / development wells • Perform reservoir Management
19	**Vietnam 16-1**	JOC	28.5%	PetroVietnam 41% SOCO 28.5% OPECO 2%	-	Crude: 21 k BPD	• Drill development wells • Maintain production operation
20	**PTTEP Australasia (PTTEP AA)**	OP	90%-100% (varied by permits)		-	Crude: 9.1 k BPD	• Drill development well in Montara • Maintain production operation • Acquire 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	• Maintain production operation
22	**Zawtika (M9 & a part of M11)**	OP	80%	Myanma Oil and Gas Enterprise (MOGE) 20%	300 MMSCFD	-	• Maintain production rate • Drill development wells • Install wellhead platforms
23	**Algeria 433a & 416b (Bir Seba)**	JOC	35%	PetroVietnam 40% Sonatrach 25%	-	Crude: 2.6 k BPD *(net entitlement)*	• 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 except for Algeria 433a & 416b
*** DCQ = Daily Contractual Quantity

Project information 3/4

Exploration phase

	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%	• Assess resource potential and commercial feasibility
26	**Mozambique Rovuma Offshore Area 1**		8.5%	Anadarko, Mitsui, OVL, ENH, Bharat Petroleum, Oil India 26.5%,20% 16%,15%, 10%, 4%	• 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%	• Conduct pre-development study and prepare project development plan
28	**Myanmar M11**	OP	100%		• Acquire 3D seismic
29	**Vietnam B & 48/95**		8.5%	PVN 65.88% MOECO 25.62%	• Negotiate a GSA with the Vietnamese government
30	**Vietnam 52/97**		7%	PVN 73.4% MOECO 19.6%	• Negotiate a GSA with the Vietnamese government
31	**Myanmar PSC G and EP 2**	OP	70%	WinPreciousResources 10% MOECO 10% Palang Sophon Offshore 10%	• Conduct G&G studies
32	**Myanmar MD-7**	OP	50%	TOTAL 50%	• Assess resource potential
33	**Mariana Oil Sands**	OP	100%		• Assess development approach and cost reduction opportunity
34	**Barreirinhas AP1**		25%	Shell Brasil 65% Mitsui E&P Brasil 10%	• Acquire 3D seismic

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

Project information 4/4

Exploration phase

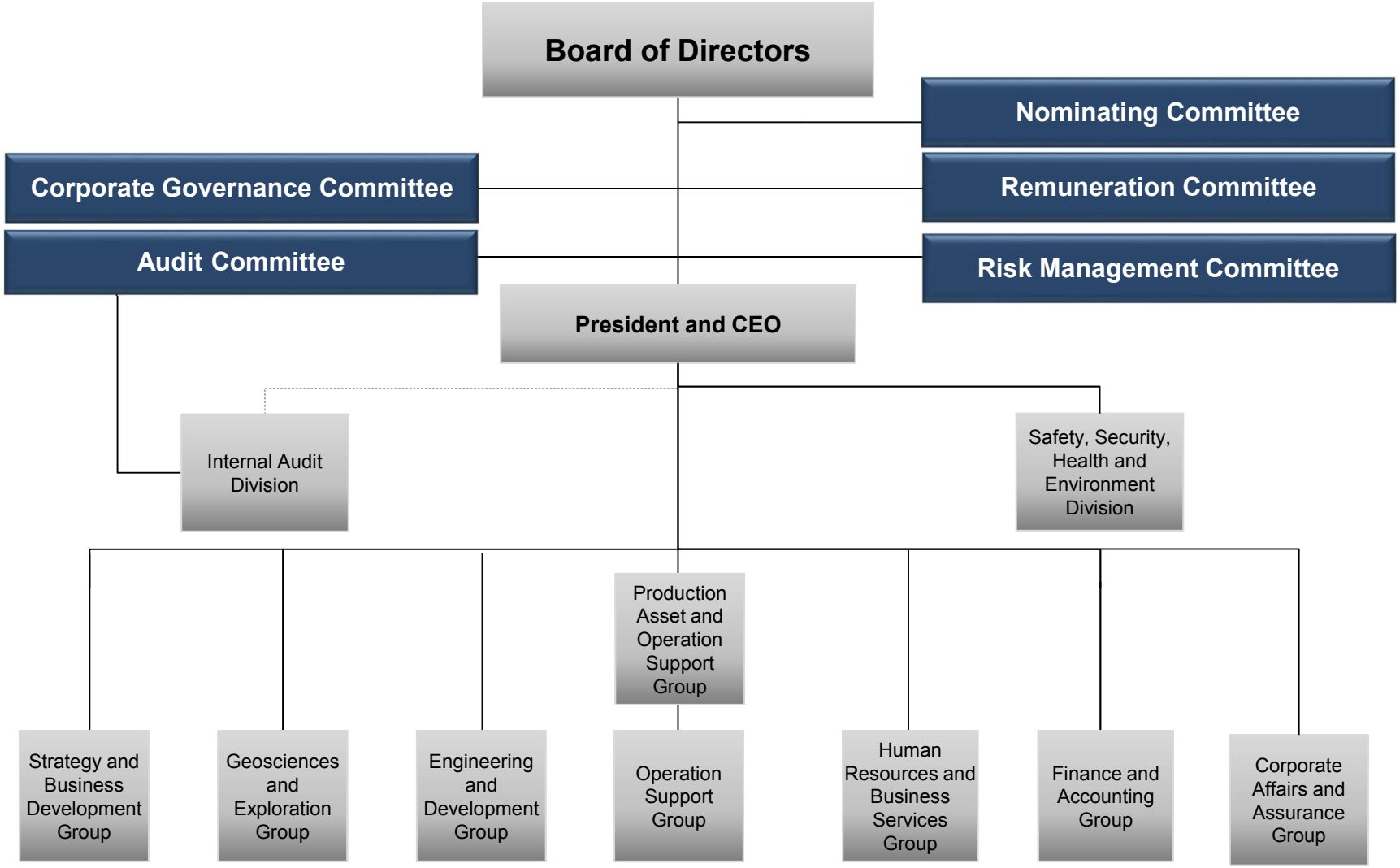
	Project	Status*	PTTEP's Share	Partners *(as of Q2 2017)*	2017 Key Activities
Exploration Phase					
Overseas (Cont'd)					
35	**Myanmar MOGE 3**	OP	75%	Palang Sophon Offshore 10% MOECO 10% WinPreciousResources 5%	• Acquire 2D and 3D seismic
36	**Brazil BM-ES-23**		20%	Petrobras 65% INPEX 15%	• Assess petroleum potential
37	**Sarawak SK410B**	OP	42.5%	KUFPEC 42.5% PSCB 15%	• Acquire 3D seismic

Remarks: 37 projects exclude 2 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 and Formula

Ratio	Formula
Lifting Cost ($/BOE)	(Operating Exp. – Transportation Cost – Stock Variation – Other expense not related to lifting) / Production Volume
Cash Cost ($/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 & Amortization 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 & Amortization of Bond Issuing Cost