

PTT Exploration and Production Public Company Limited

Q3 2017 Analyst Meeting

Bangkok

6 November 2017



PTTEP

MEMBER OF

**Dow Jones
Sustainability Indices**

In Collaboration with RobecoSAM





Safety Performance

Industry Highlights

Financial Performance

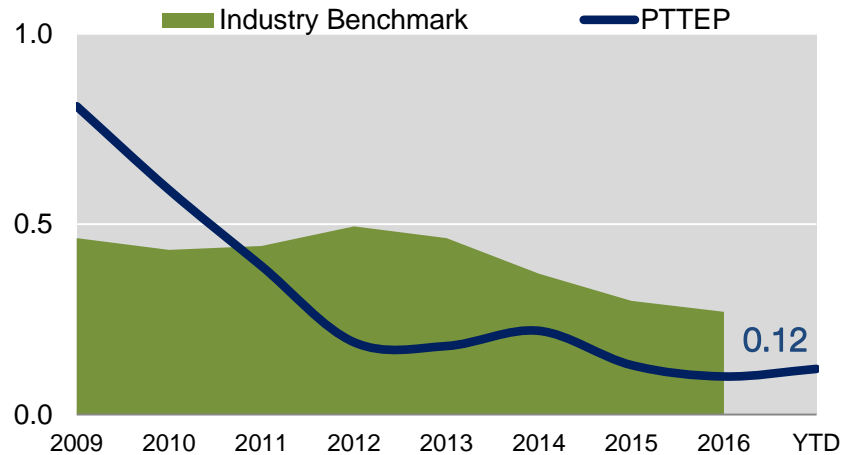
Operational Updates & Outlook

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"

Sustainability

Affirm our path to sustainable development



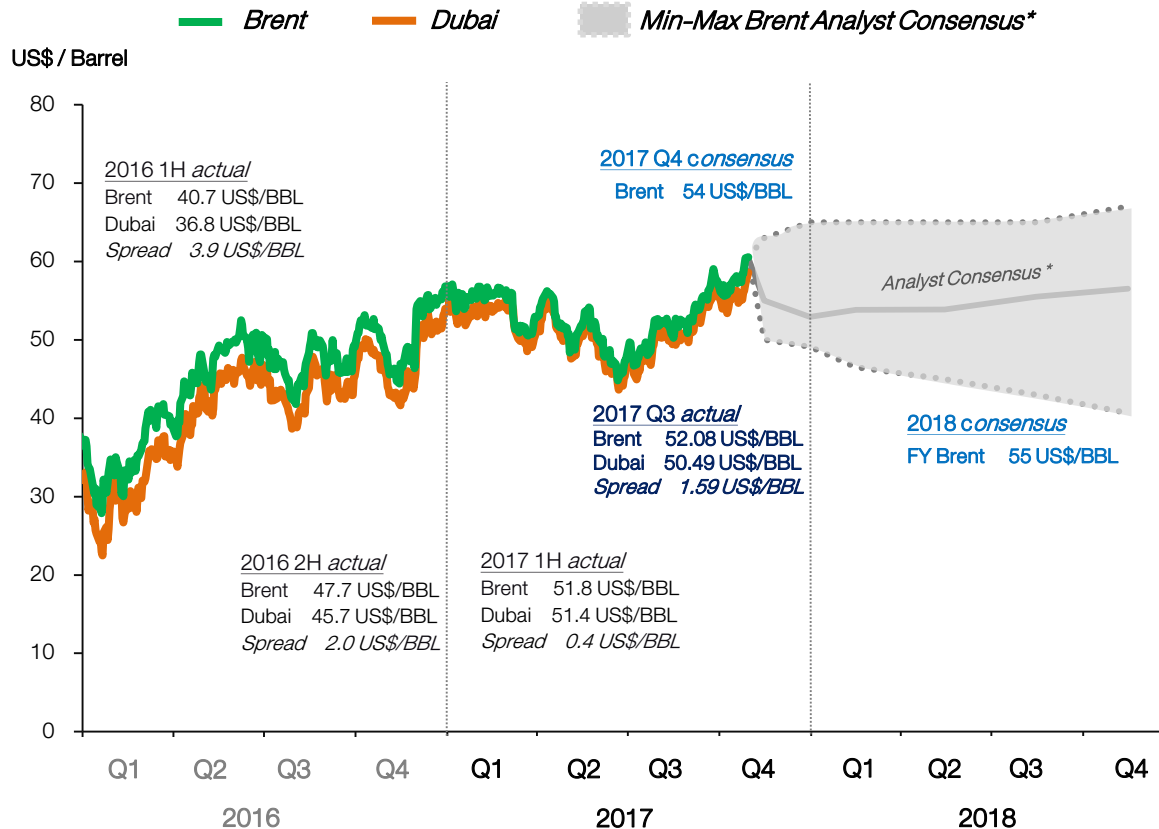


Safety Performance

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Q3 Highlights

- ↑ Decrease in US crude oil inventory due to higher demand from driving season
- ↑ Supply continued commitment led by Russia
- ↓ Incremental supply from Libya and Nigeria and high production level from the US shale
- ↕ Other pressures; tensions in North Korea, political tension between Iraq and Kurds, impacts from Hurricane in the US

Outlook from the Remainder of 2017

- ↑ Production cut by OPEC and Non-OPEC and potential extension of supply cut agreement
- ↓ Additional supply from the US caused by improved crude oil price
- ↑ Continued growth in globally crude demand driven by India and OECD countries
- ↕ Other impacts including economic growth of China and economic policies of EU
- ↕ Possibility of intensified political tension between Iraq and Kurds

Compliance Rate (Sep 17)

OPEC: 88% achieved

OPEC supply decreased in September led by Saudi Arabia

Non-OPEC: 125% achieved

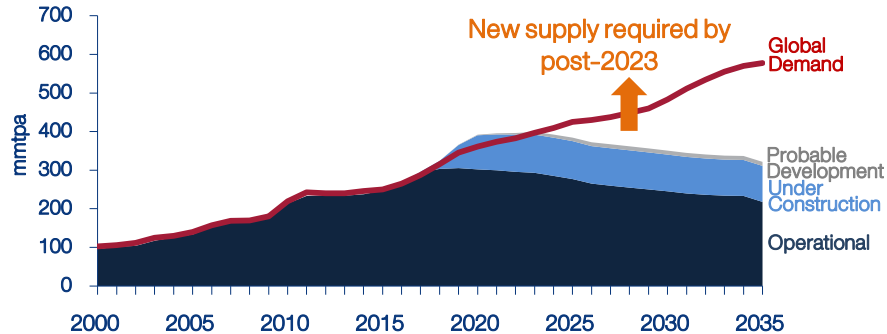
Compliance exceeded mainly due to the planned maintenance season in Russia and production disruption in Mexico from hurricane and earthquake

Remark: * Bloomberg Analyst Consensus (CPFC) as of 25 October 2017 and IEA (as of Oct 2017)



Global LNG Situation

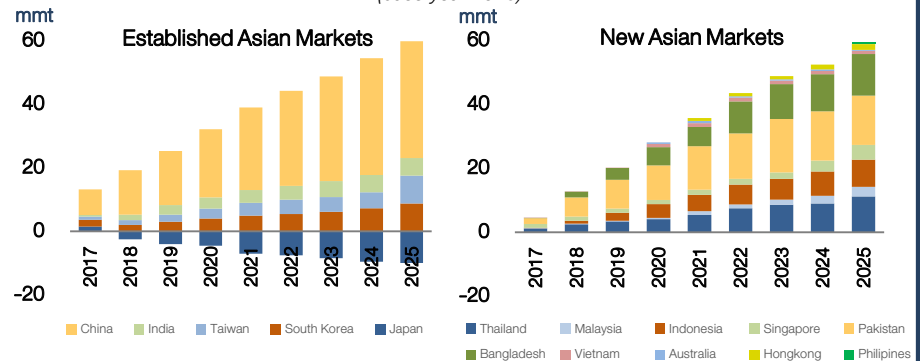
Global LNG demand VS supply (2000-2035)



Supply

- Market expects supply grow rapidly by over 40% from 2016 base to 2020 mainly from start-up of under construction projects in US, Russia and Australia
- Oversupply condition should pressure LNG spot price until early 2020s and cause the delay of new project sanction

LNG demand growth
(base year 2016)



Demand

- The Asian Markets forecasts to be a key driver for future LNG demand
- While LNG demand from Japan will decline due to renewable growth, China, Taiwan and South Korea accounts for the bulk of incremental demand, mainly driven by the Government policy to switch from coal and nuclear power

Source: Woodmac (September 2017) and LNG demand growth from FGE (August 2017)

Key Determinants for Proposed LNG Projects to Reach FID

Proximity to Asian markets

- Competitive **shipping cost and duration**

Competitive Facility Development Costs

- Priority on **expansion of brownfield** projects but opportunities are limited.
- **Advantaged greenfield** needs **competitive cost** and **scalability**

Feed Gas Sourcing

- **Adequacy and low feed gas cost** throughout the project life

Secure Markets with termed contracts

- **Quick** to secure markets
- **Flexibility** to cater for buyer's need in price and non-price factors

Safety

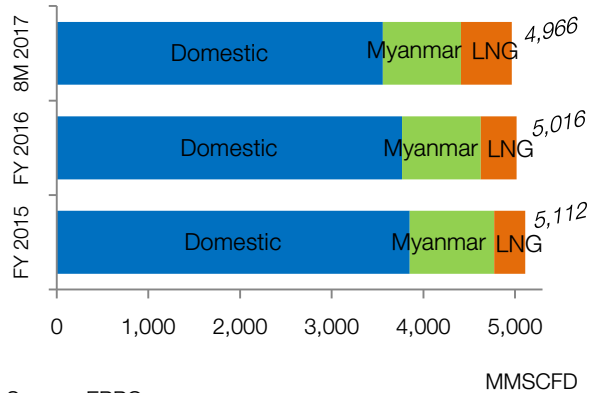
Industry

Financial

Outlook

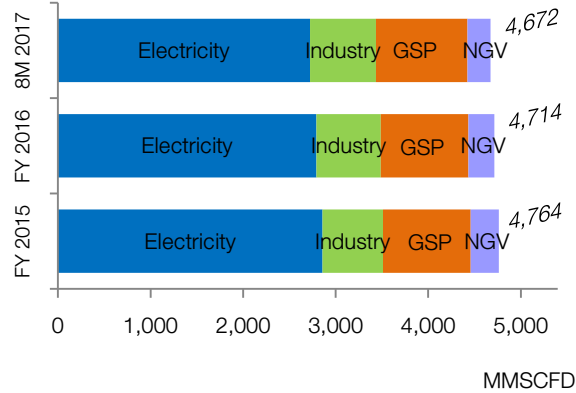
Thailand Energy Overview

Natural Gas Supply

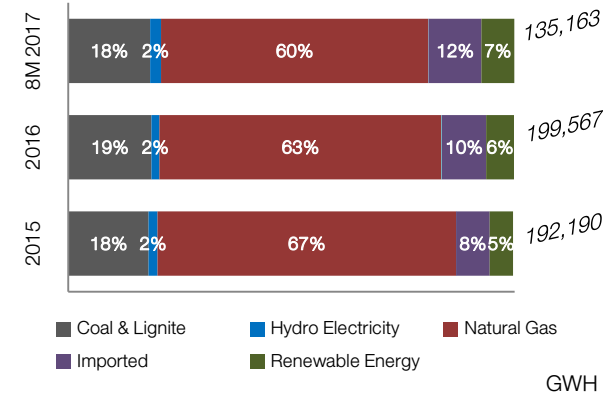


Source: EPPO

Natural Gas Consumption



Electricity Generation



GWH

Exchange Rate Movement (THB/USD)



Source: Bank of Thailand, Bloomberg

Forecast based on Bloomberg Consensus as of 30 October 2017

Thailand's Gas Market

- Slight decline in domestic production and Myanmar piped gas imports while domestic demand remains stable
- 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
- Concerns on Trump's Fiscal and Monetary policies



Safety Performance

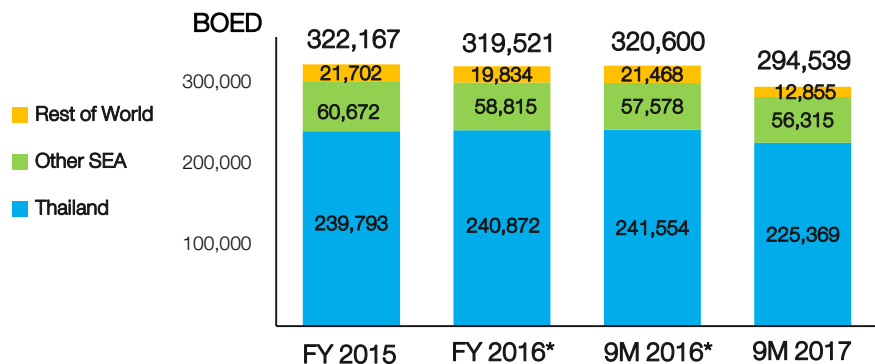
Industry Highlights

Financial Performance

Operational Updates & Outlook

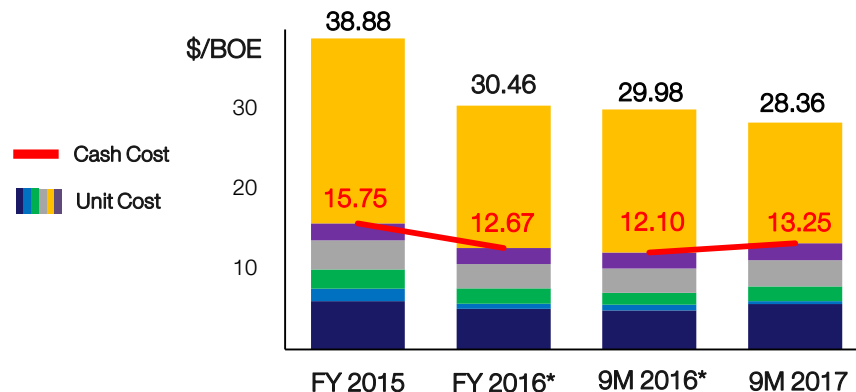


Sales Volume and Price



Gas (\$/MMBTU)	7.20	5.60	5.75	5.54
Liquid (\$/BBL)	50.05	41.17	39.37	49.87
Weighted Avg. (\$/BOE)	45.29	35.91	36.00	38.29
Avg. Dubai (\$/BBL)	50.91	41.27	38.92	51.06
Avg. HSFO (\$/BBL) (High Sulphur Fuel Oil)	44.89	35.48	32.11	47.79
Volume Mix (Gas : Liquid)	70 : 30	69 : 31	70 : 30	70 : 30
Revenue Mix (Gas : Liquid)	66 : 34	65 : 35	66 : 34	60 : 40

Unit Cost



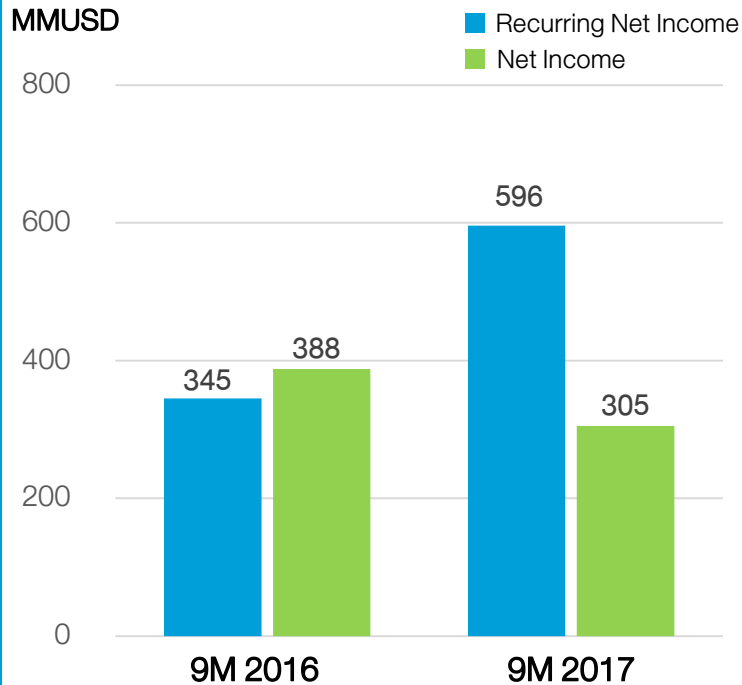
DD&A	23.13	17.79	17.88	15.11
Finance Cost	2.14	2.01	2.01	2.10
Royalties	3.62	3.02	3.02	3.30
G&A	2.39	1.93	1.50	1.81
Exploration Expenses	1.56	0.63	0.71	0.36
Operating Expenses	6.04	5.08	4.86	5.68
Lifting Cost	4.62	4.18	4.05	4.12
Drilling Success Ratio**	31 : 47	6 : 8	5 : 7	0 : 4

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

Net Income 9M Comparison



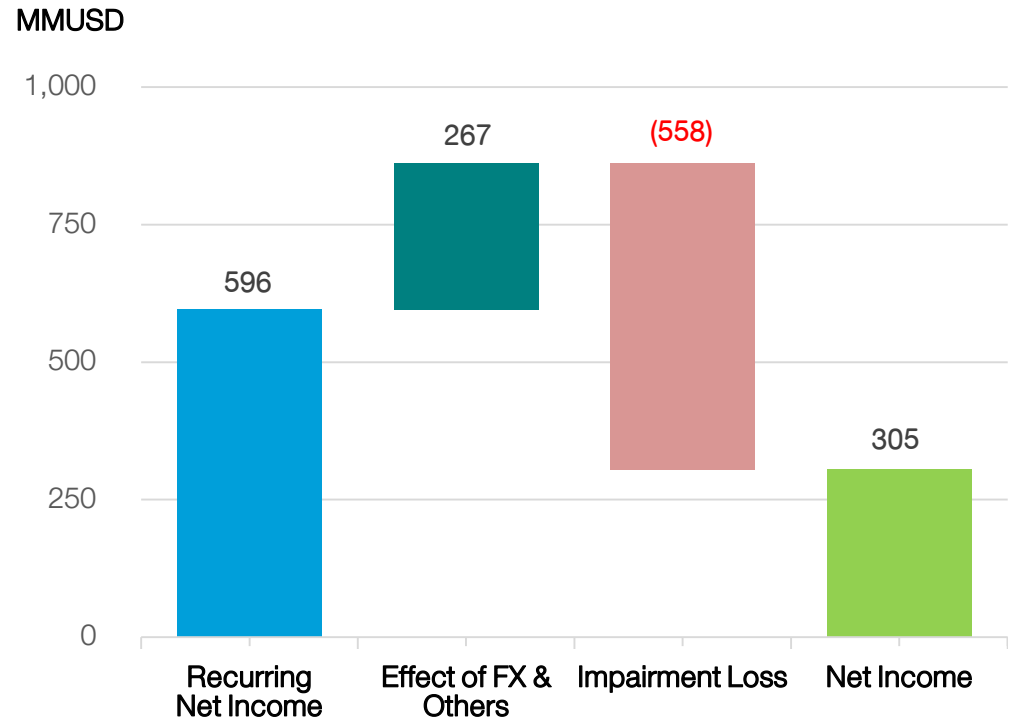
Recurring Net Income

Improved due to lower unit cost and better ASP

Net Income

Pressured by impairment loss net with higher gains from effect of FX and oil price hedging

Net Income 9M 2017

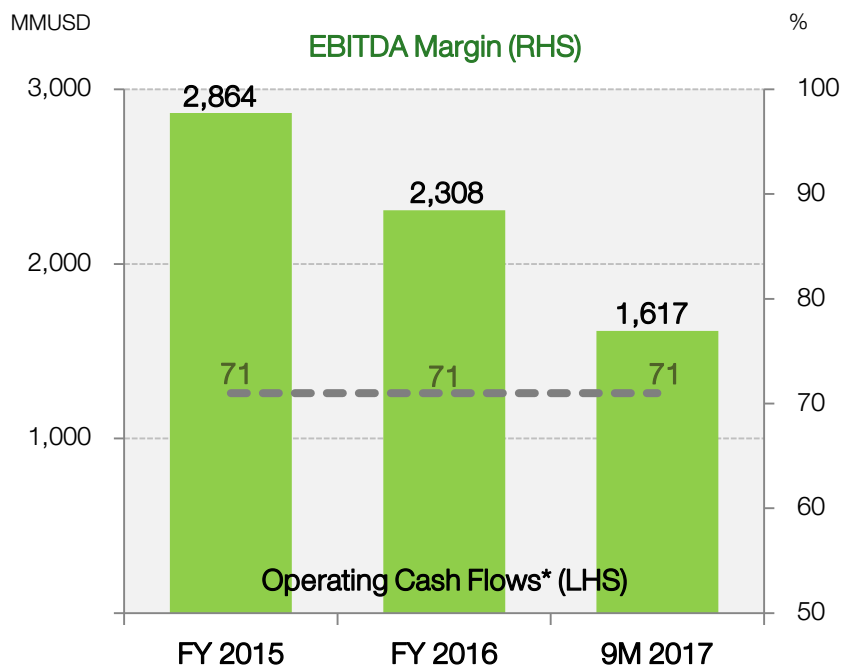


Impairment Loss

- Triggered by the revision of Mariana Oil Sands Project's development plan
- Impairment loss has no impact to cash flow

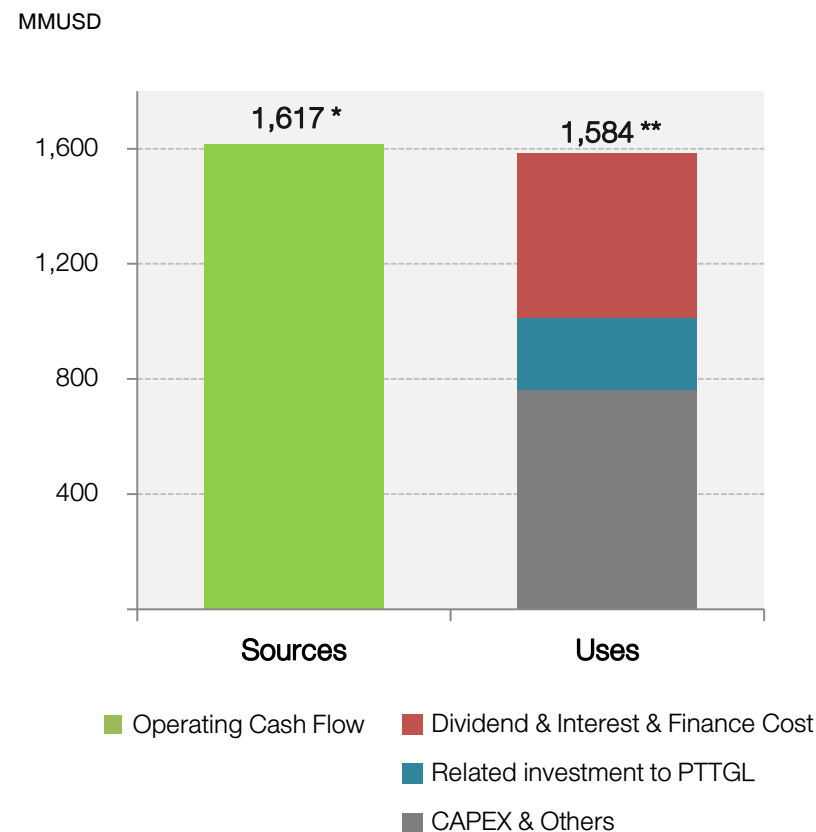


Cash Flow Performance



Net Income	(854)	372	305
Recurring Net Income***	718	466	596

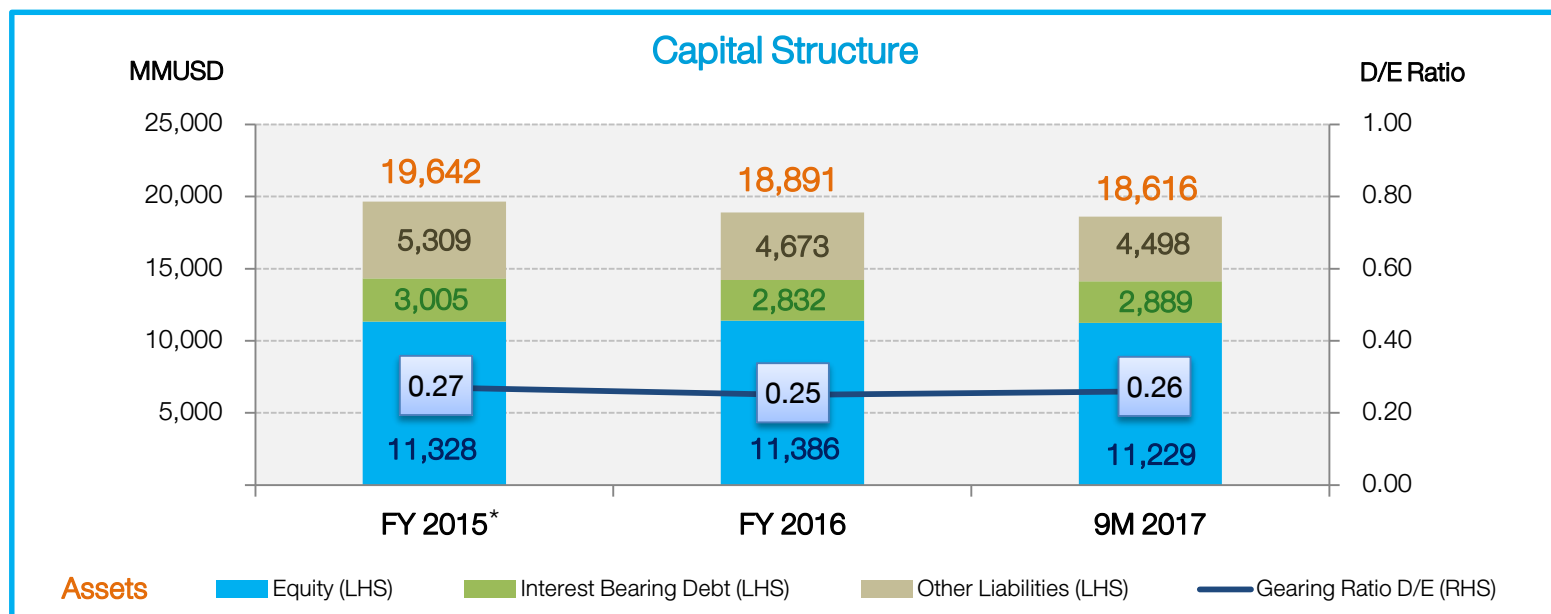
Source & Use of Funds in 9M 2017



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

4.49

[Fixed : Floating]

[82 : 18]

[80 : 20]

[80 : 20]

Average Loan Life** (Years)

8.17

8.15

7.40

Remark: * Restated

** Excludes Hybrid bonds

Safety

Industry

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Outlook



Financial Outlook

FY 2017



Average
Sales Volume

~300
KBOED



Average
Gas Price *

~5.6
USD/MMBTU



Unit Cost

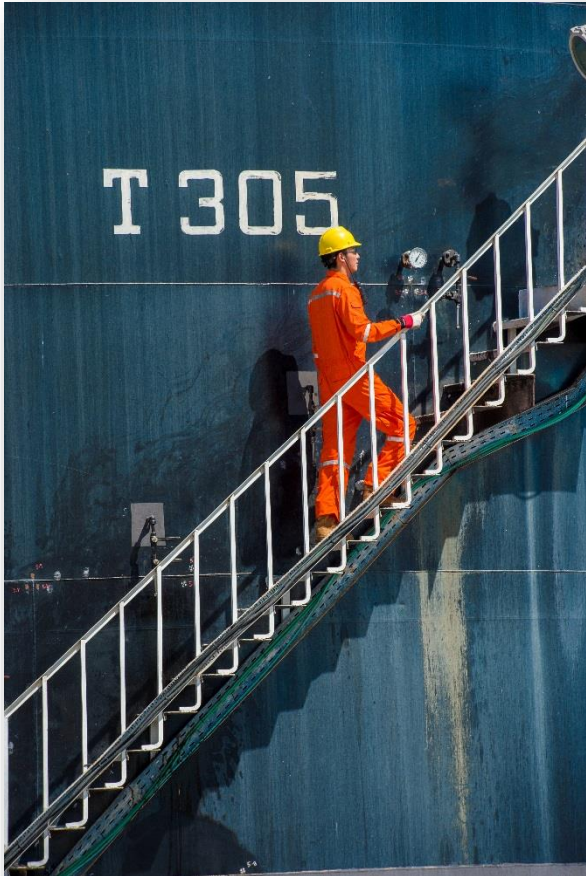
~29
USD/BOE



EBITDA
Margin

~70
% of sales revenue

* Based on FY2017 Dubai oil price at 52 \$/BBL



Safety Performance

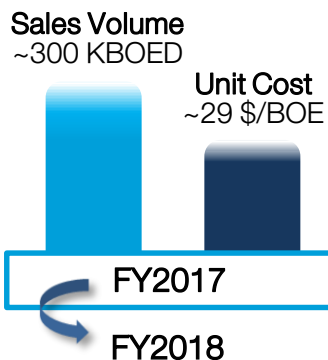
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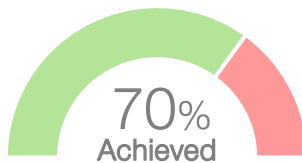
On track for FY2017 sales volume and unit cost targets



aims to maintain sales volume and unit cost at similar level as FY2017

Initiatives to uplift production volume

Progress (as of Oct 2017)



Total initiatives ~7 KBOED

Total initiatives are already included in Sales volume guidance of ~300 KBOED

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

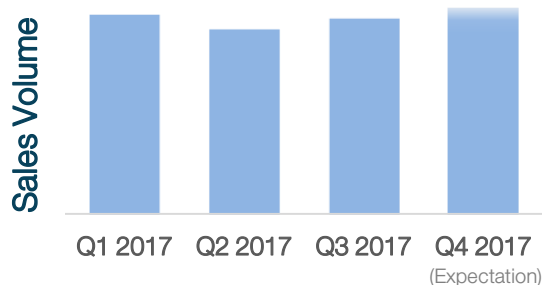
Montara field

- Maximize crude production by facility reliability improvement and reservoir management

Bongkot and Arthit projects

- Maximize condensate production by high yield well management

Strong 2H 2017 sales volume outlook



2H 2017

- Improved situation on nomination of natural gas projects in Thailand
- Recovering volume from MTJDA project after resolving technical problem of Malaysian buyer's receiving plant
- Low maintenance shutdown activities
- Additional contribution from the company's initiatives

Mozambique Rovuma Offshore LNG



8.5%
(operated by Anadarko)

Production

12MMTPA

Expected Start-up

2022/23

- Received approval on marine concessions
- Under preparation for resettlement action plan which is to begin in Q4 2017
- Significant progress on SPA negotiation, especially with PTT – foundation buyer, and project finance is ongoing as planned

Algeria HBR



24.5%
(operator)

Production

50KBPB

Expected Start-up

2023

Submitting development plan in Q4 2017 and FID once government approval is received

Ubon (Contract 4)



60%
(operated by CVX)

Production

25-30KBPB

Expected Start-up

2021

Pursuing further cost rationalization

Southwest Vietnam



Block B&48/95 **Block 52/97**
8.5% **7.0%**
(operated by PetroVietnam)

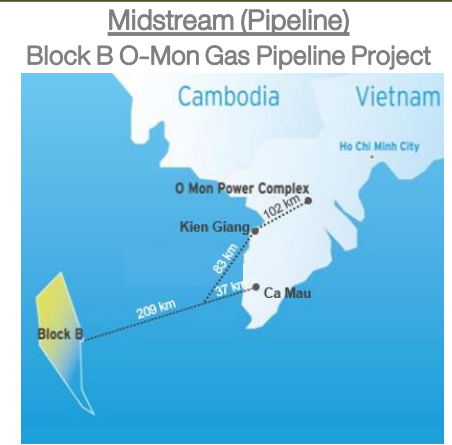
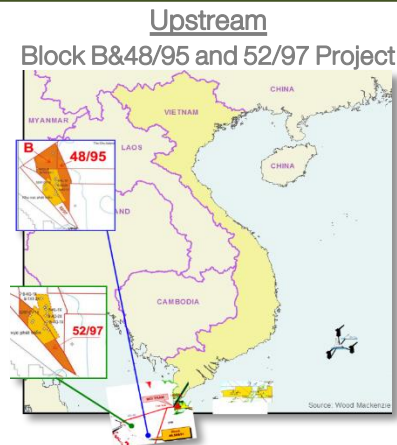
Production

490MMSCFD

Expected Start-up

2021

- Gas production will support domestic power plants through Block B O-Mon Gas Pipeline Project (PTTEP's WI 5.183%)
- Signed Letter of Agreement on gas price and pipeline tariff in Q3 2017
- Finalizing commercial agreements and FID once government approval on FDP is received





Path to Retendering Process



Related Rules/Laws to the Bidding

Petroleum Act & Petroleum Income Tax Act



Announcement of Petroleum Committee about rules in determining E&P areas



3 Ministerial Regulations relating to Production Sharing Contract

Terms of Reference for this bidding

2 Ministerial Regulations relating to Service Contract (Not required prior to this bidding)

Under State Council's consideration

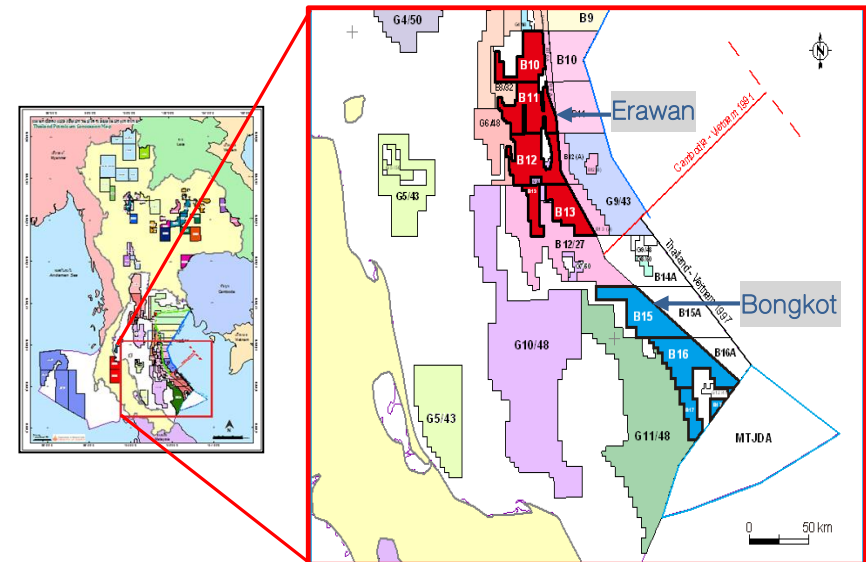
Under MoE's consideration

With key objective to ensure energy security...



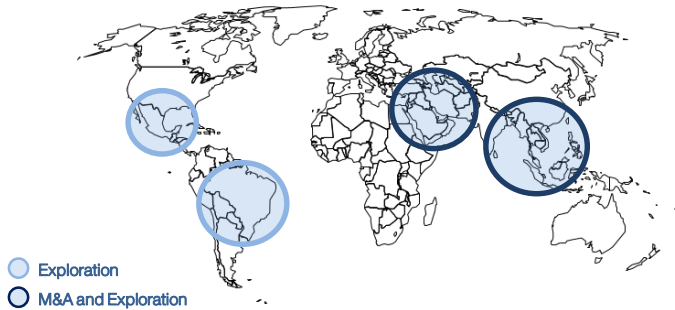
PTTEP is competitively positioned to continue as operator for Bongkot

- Experienced and reliable
- Operational efficiency
- Deep subsurface understanding
- Synergies in the Gulf of Thailand



Note: indicative timeline and Progress as of 1 November 2017

M&A and Exploration



Geographical

- SEA and other potential areas

M&A

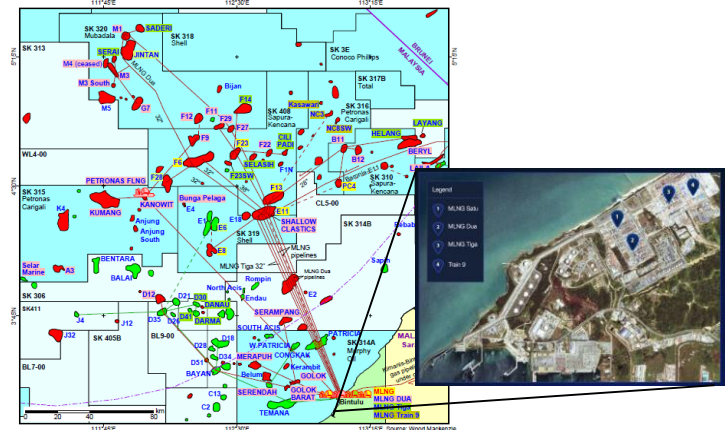
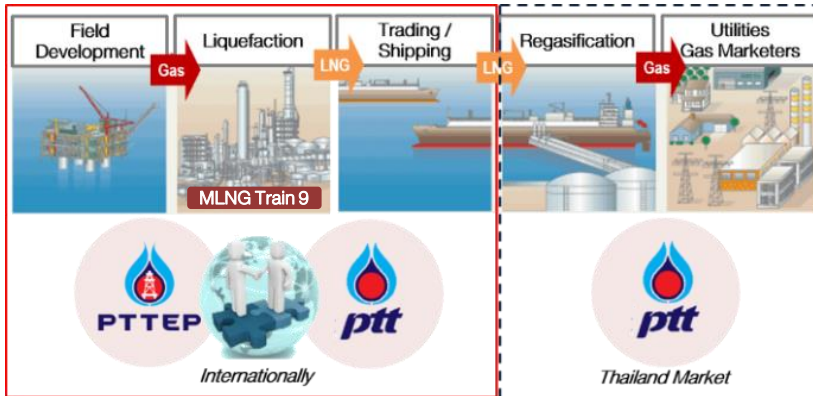
- Focus on producing or near-producing

Exploration

- Focus on prolific areas and quick commercialization
- Participating in bid rounds in potential areas

Cooperation with PTT on LNG Value Chain

To capture opportunity from increasing LNG demand, while creating value from synergy with PTT in the LNG value chain



Recent 10% Investment in MLNG Train 9 in Malaysia marked as first step into midstream LNG business in strategic area and in vicinity of current and future upstream opportunities

Source – map of Offshore Sarawak: Woodmac



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 and in line with global trend towards gas

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

Well positioned for future growth

- Organizational Restructuring to enhance operational efficiency
- Series of project developments in the pipeline and M&A
- Cooperation with PTT in 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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Key Project Highlights by Region	27-33
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Ratios and Formula	38

Summary of Q3 2017 Financial Results

Improved core earnings while net income hurt by impairment charge

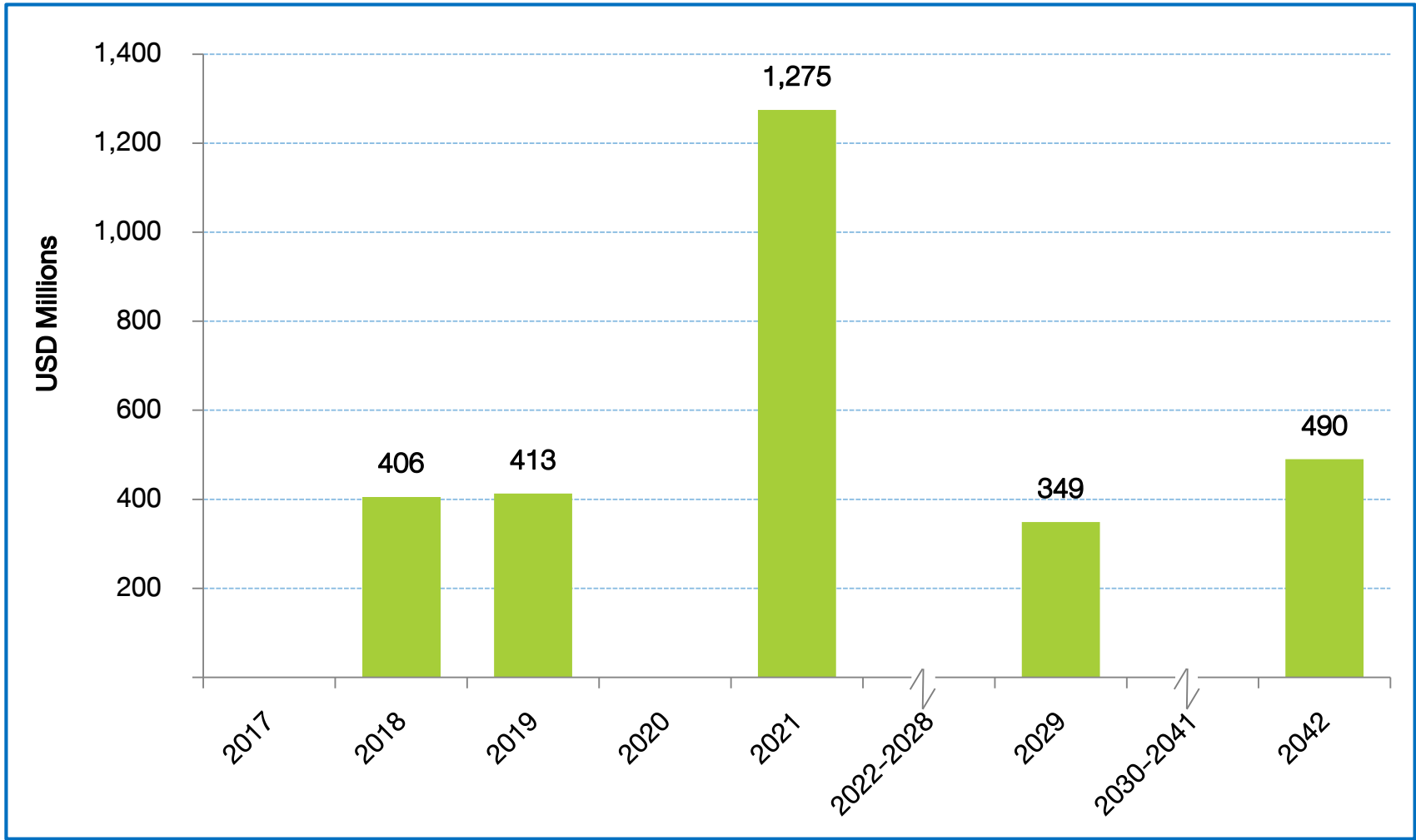
Unit : MMUSD

Statement of Income	Q2 17	Q3 17	% QoQ	Q3 16 *	% YoY	9M 17	9M 16 *	% YTD
Total Revenues	1,032	1,134	10%	1,109	2%	3,252	3,281	(1%)
Sales	975	1,064	9%	1,047	2%	3,079	3,152	(2%)
Others	57	70	23%	62	13%	173	129	34%
Sales Volume (BOED)	281,435	298,139	6%	311,386***	(4%)	294,539	320,600***	(8%)
Sales Price (USD/BOE)	38.08	38.78	2%	36.32	7%	38.29	36.00	6%
Total Expenses	812	1,398	72%	953	47%	2,947	2,896	2%
Major Expenses:								
Operating Expenses	153	162	6%	146	11%	457	415	10%
Exploration Expenses	19	9	(53%)	20	(55%)	29	61	(52%)
DD&A	381	413	8%	534	(23%)	1,214	1,570	(23%)
Impairment Loss on Assets	-	558	>100%	-	>100%	558	-	>100%
Income Tax Expense	67	57	(15%)	67	(15%)	116	152	(24%)
(Gain)/Loss on FX	(11)	(23)	(>100%)	(14)	(64%)	(37)	(27)	(37%)
Net Income from Continuing Operations	220	(264)	(>100%)	156	(>100%)	305	385	(21%)
Profit (loss) from Discontinued Operations	-	-	-	0.27	(100%)	-	3	(100%)
Net Profit	220	(264)	(>100%)	156	(>100%)	305	388	(21%)
Recurring Net Income	167	218	31%	75	>100%	596	345	73%
Non-Recurring **	53	(482)	(>100%)	81	(>100%)	(291)	43	(>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

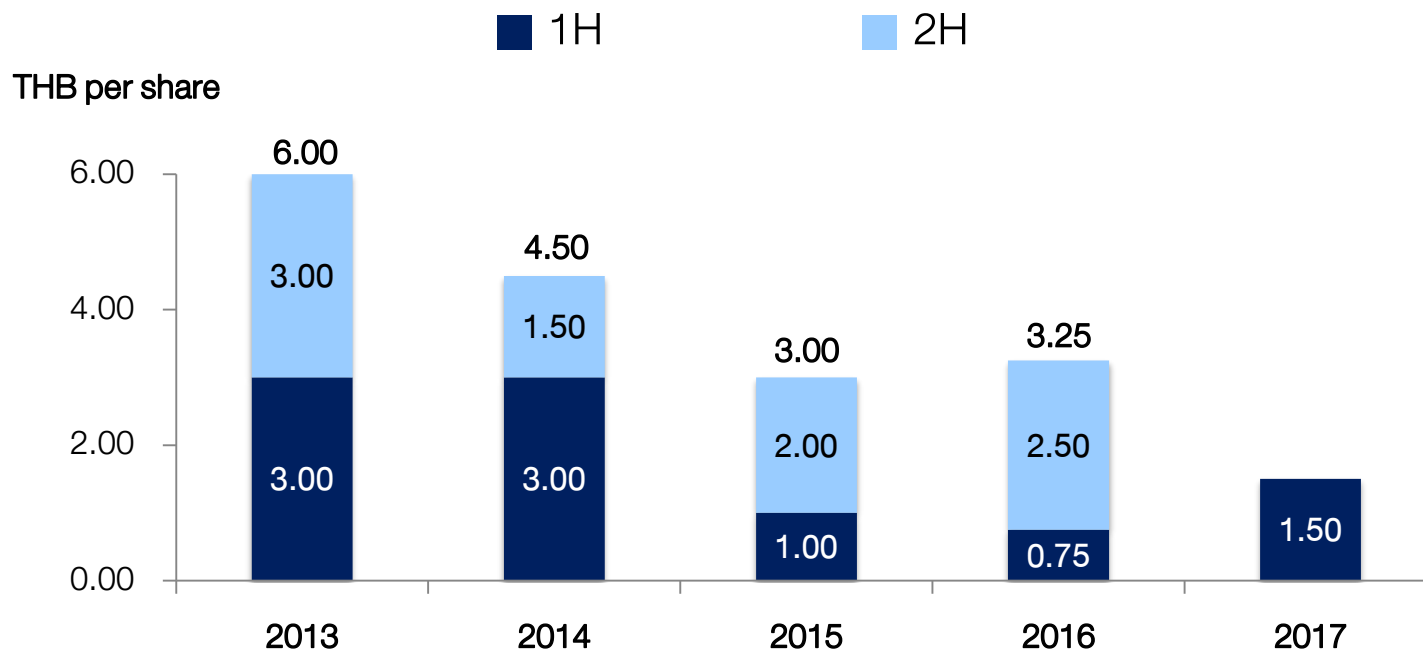


Note: Excludes Hybrid bonds

Unit: USD Millions or equivalent after cross currency swap



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



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



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 2017

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



Exemplary social contributor

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

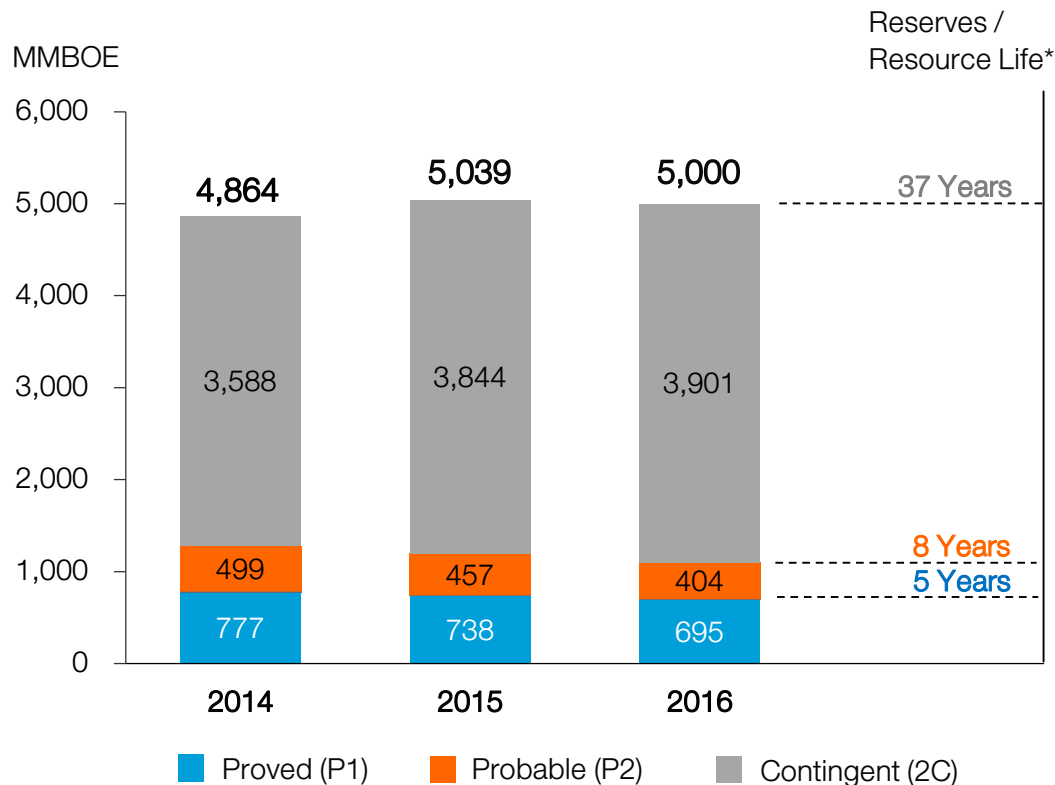
Bronze Stevie Award for SIOLA and Crab
Hatchery Learning Center Project:
The Asia-Pacific Stevie Awards Program

Green driver to environment

Asia's Best Environmental Responsibility Award
Corporate Governance Asia Magazine

2017 LESS Award Letter of Recognition
Thailand Greenhouse Gas Management Organization

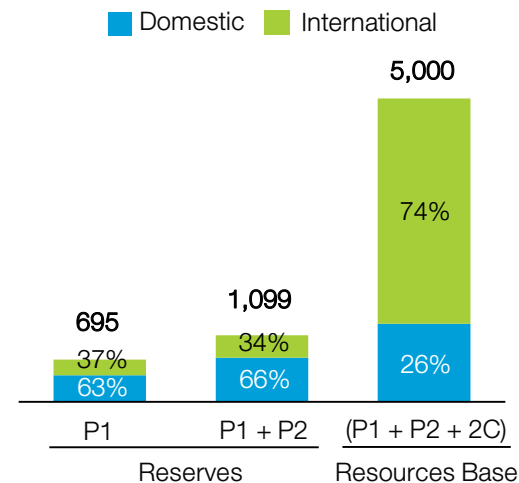
Thailand Occupational Safety and Health Awards
the Ministry of Labour



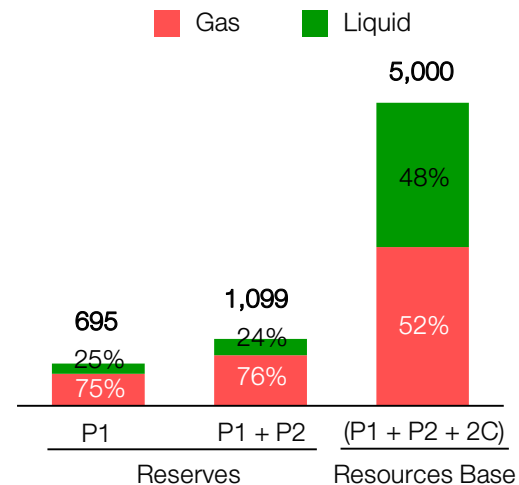
5-Year Average Proved Reserves Replacement Ratio (RRR)

2014	2015	2016
0.45x	0.50x	0.57x

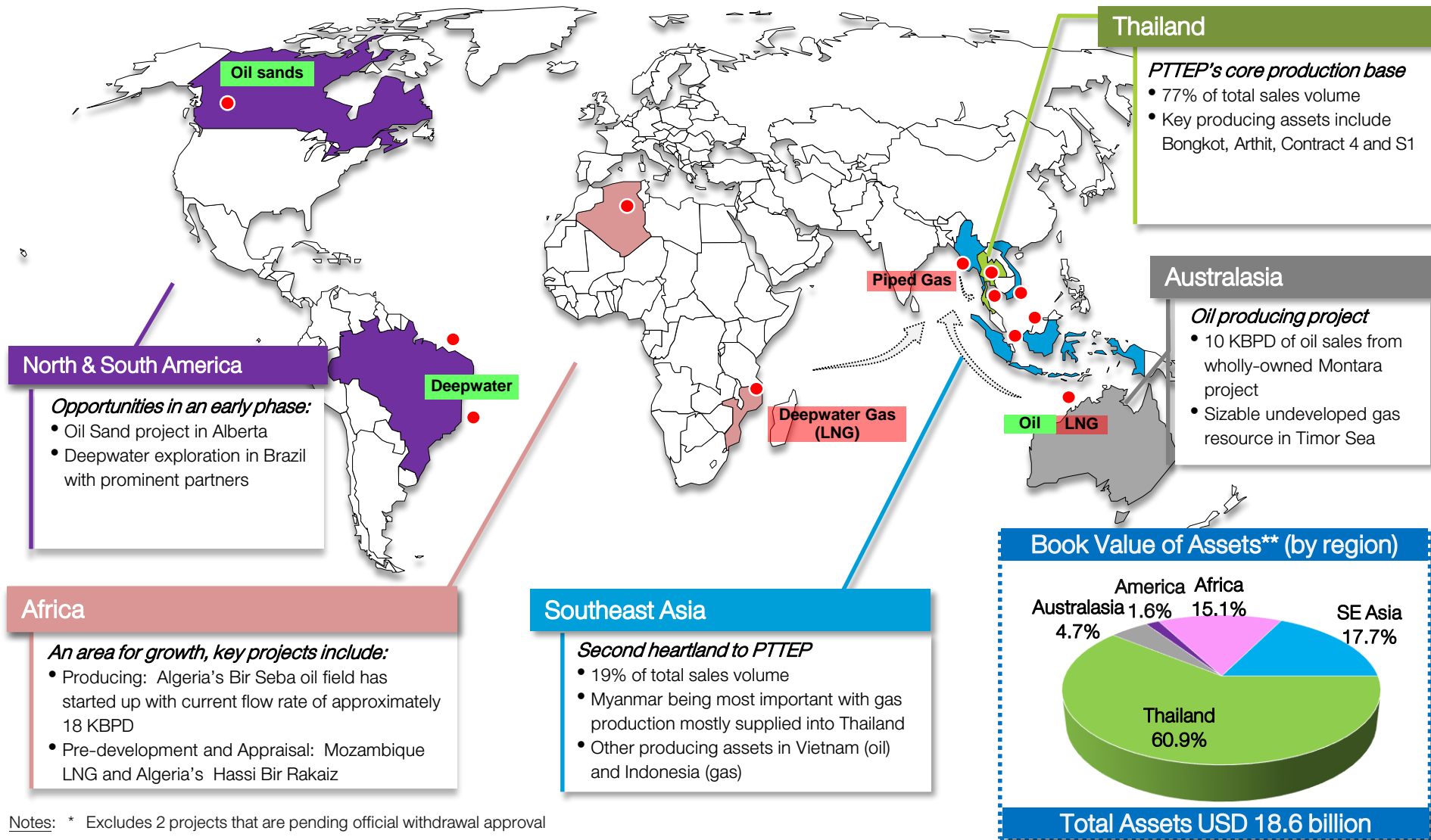
2016 by Geography



2016 by Product Type

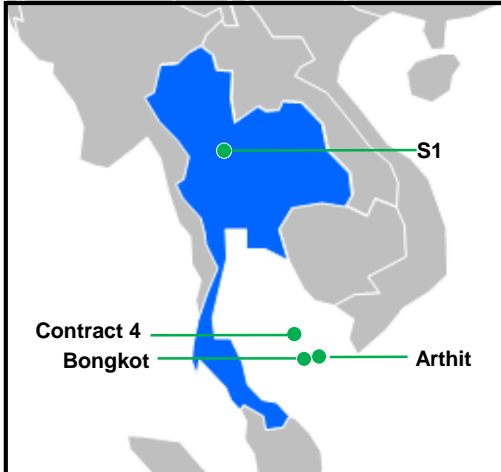


* Based on total production of natural gas, condensate, and crude oil (including LPG) of 368 KBOED for the year ended December 31, 2016



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

** Information dated as of 30 September 2017 (9M 2017)



● Production / Ramp-up Projects

Bongkot (44.4445% interest)

- Bongkot's natural gas sales volume of 833 MMSCFD in 9M 2017
- Average condensate sales volume was 25 KBPD in 9M 2017

S1 (100% interest)

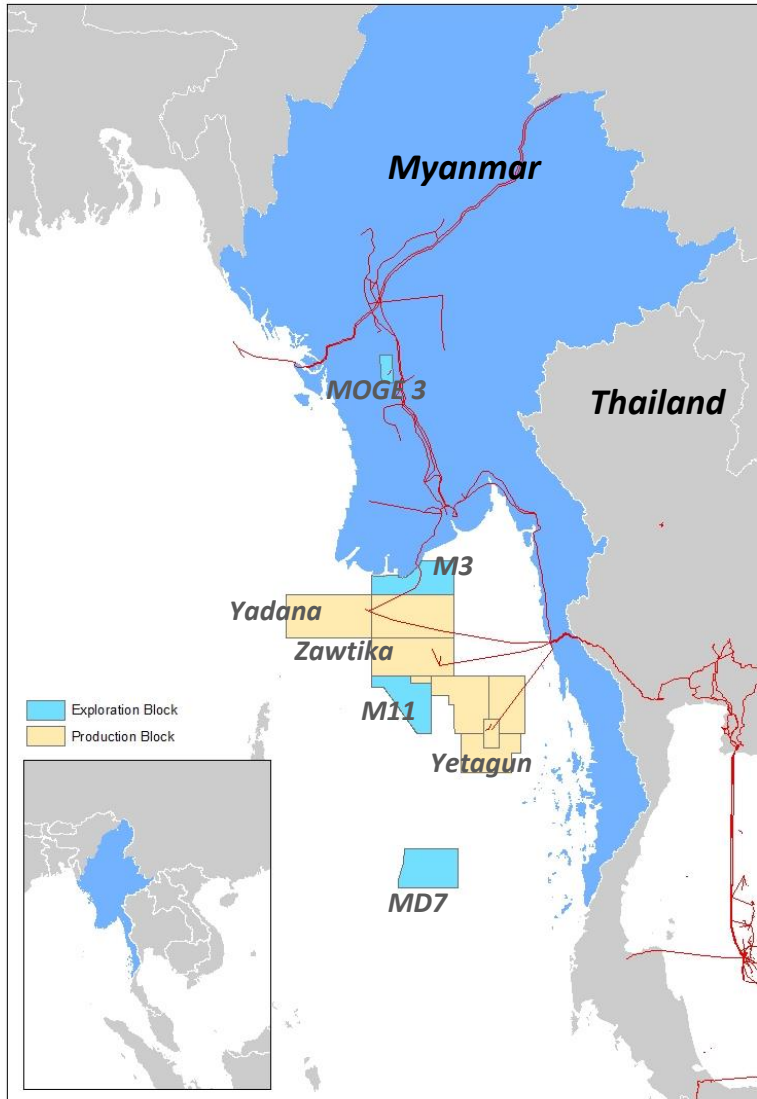
- S1 is the largest onshore crude oil production field in Thailand
- Average crude oil sales volume was 26 KBPD in 9M 2017

Arthit (80% interest)

- Average sales volume in 9M 2017 was 215 MMSCFD of natural gas and 9.8 KBPD of condensates

Contract 4 (60% interest)

- Acquired from Hess Corporation in 2014.
- The Contract 4 project had an average sales rate of 330 MMSCFD for natural gas and 15 KBPD for condensate in 9M 2017



- 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 with current gas supply of 305 MMSCFD in 9M 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"> • 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

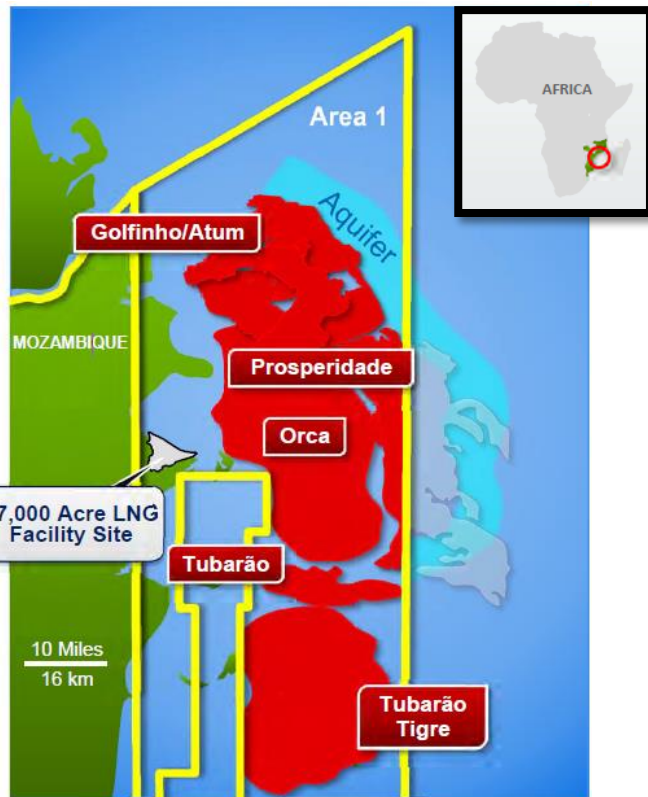


Vietnam 16-1 (28.5% interest)

- Average crude oil sales volume of 21 KBPD in 9M 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 221 MMSCFD in 9M 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

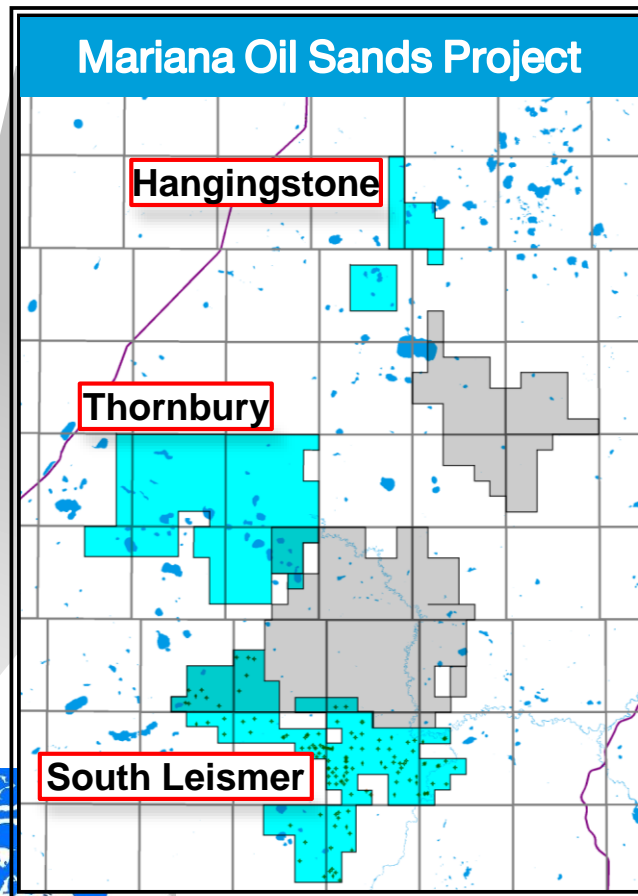
Regulatory

- ✓ Received approval on marine concession
- ✓ Resettlement plan to begin in Q4 2017

Financing

- ✓ On-going negotiation for project financing

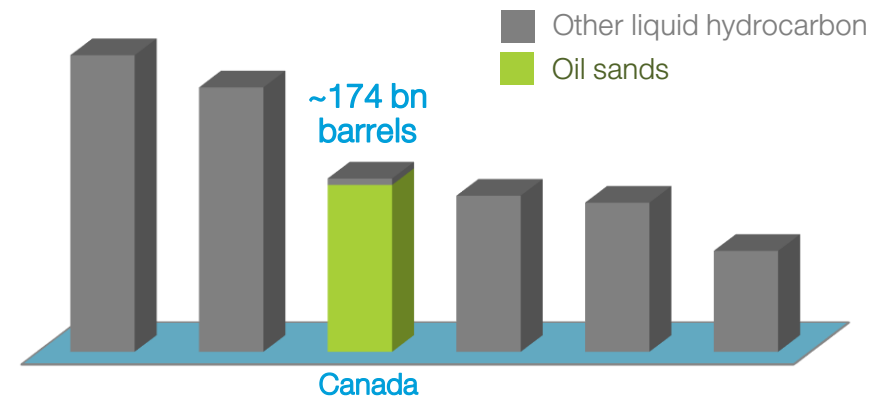
Onwards to initial phase of 12 MMTPA



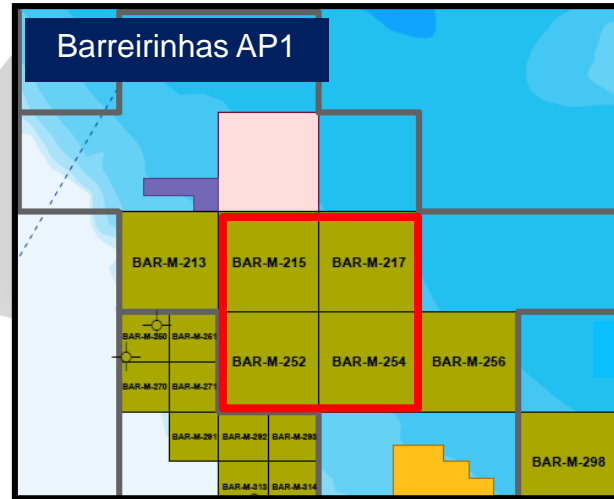
Project Overview

- 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
- In Q3 2017, the Company revised the project's development plan which involves delaying the project's Final Investment Decision, to reflect results from the assessment of the industry and commercial feasibility studies

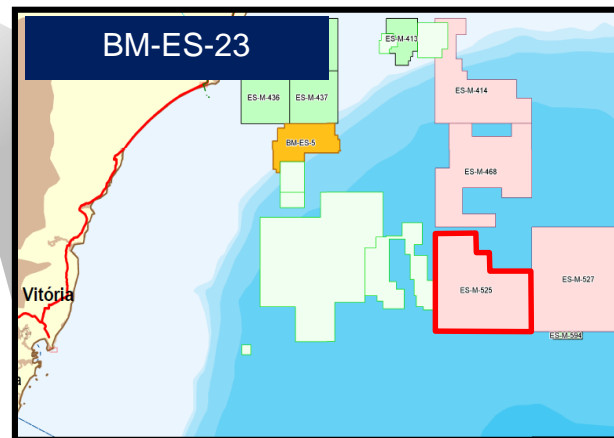
Approximately 96% of the reserves in Canada, the world's 3rd largest oil reserves, is oil sands



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 (as of Q3 2017)	9M 2017 Average Sales Volume **		2017 Key Activities
					Gas	Oil and Other	
Production Phase							
Thailand and JDA							
1	Arthit	OP	80%	Chevron MOECO16%4%	215 MMSCFD	Condensate: 9.8 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 MOECO16.71%4.63%KrisEnergy PSTL2%	97 MMSCFD	Crude: 27 k BPD	<ul style="list-style-type: none">Drill development wellsPerform waterflood activities
4	Bongkot	OP	44.4445%	TOTAL Shell33.3333%22.2222%	833 MMSCFD	Condensate: 25 k BPD	<ul style="list-style-type: none">Ensure gas deliverability level at DCQ***Drill development wellsInstall wellhead platforms
5	Contract 3 (Formerly Unocal III)		5%	Chevron MOECO71.25%23.75%	548 MMSCFD	Crude: 21 k BPD Condensate: 20 k BPD	<ul style="list-style-type: none">Drill exploration / appraisal / development wellsInstall wellhead platformsPerform waterflood activities
6	Contract 4 (Formerly Pailin)		60%	Chevron MOECO35%5%	330 MMSCFD	Condensate: 15 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%	ExxonMobil80%	9.1 MMSCFD	-	
8	G4/43		21.375%	Chevron MOECO51%21.25%6.375%PSTL	2.3 MMSCFD	Crude: 6.2 k BPD	<ul style="list-style-type: none">Drill development wellsPerform waterflood activities
9	G4/48		5%	Chevron MOECO71.25%23.75%	6.0 MMSCFD	Crude: 1.4 k BPD	
10	L53/43 & L54/43	OP	100%		-	Crude: 664 BPD	<ul style="list-style-type: none">Drill exploration / appraisal / development wells
11	PTTEP1	OP	100%		-	Crude: 278 BPD	<ul style="list-style-type: none">Drill development wellsPerform waterflood activities
12	S1	OP	100%		21 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 ExxonMobil35%10%	81 MMSCFD	Condensate: 264 BPD	<ul style="list-style-type: none">Drill development wells
14	MTJDA	JOC	50%	Petronas-Carigali50%	235 MMSCFD	Condensate: 6.0 k BPD	<ul style="list-style-type: none">Drill development wellsInstall wellhead platforms
15	L22/43	OP	100%		-	Crude: 164 BPD	<ul style="list-style-type: none">Drill development wells

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

** Sales volume stated at 100% basis.

*** DCQ = Daily Contractual Quantity



	Project	Status*	PTTEP's Share	Partners (as of Q3 2017)	9M 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: 4.1 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%	754 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%	219 MMSCFD	Condensate: 5.7 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: 10 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%	221 MMSCFD	Crude: 1.3 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%	305 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: 2.9 k BPD (net entitlement)	<ul style="list-style-type: none">Maintain production operationReview field development plan for possible capacity expansion

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

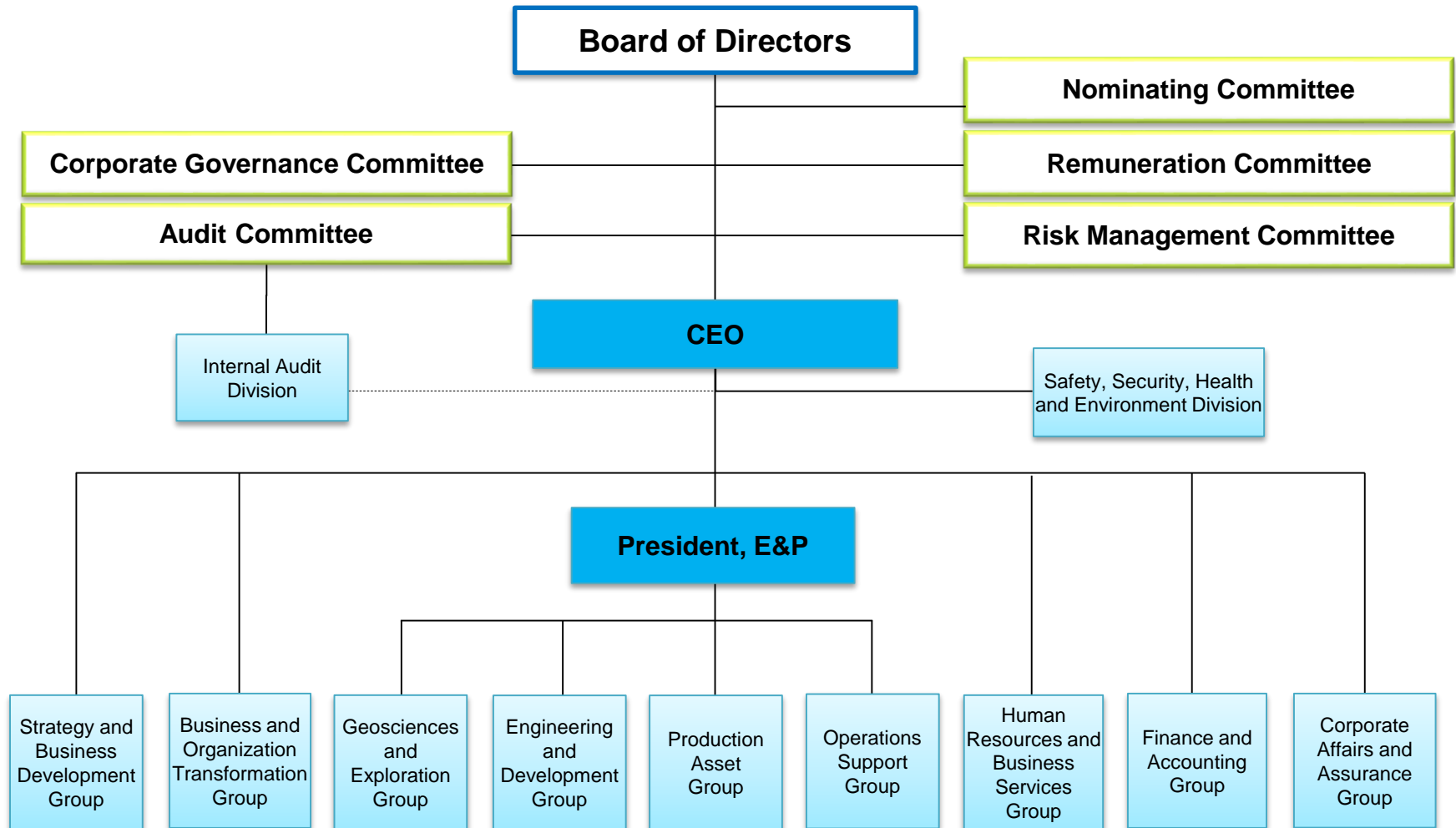
*** DCQ = Daily Contractual Quantity



	Project	Status*	PTTEP's Share	Partners (as of Q3 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% ENH, ONGC 15%, 10% Beas Rovuma, Bharat 10%, 10%	<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 MD-7	OP	50%	TOTAL 50%	<ul style="list-style-type: none"> Assess resource potential
32	Mariana Oil Sands	OP	100%		<ul style="list-style-type: none"> Assess development approach and cost reduction opportunity
33	Barreirinhas AP1		25%	Shell Brasil 65% Mitsui E&P Brasil 10%	<ul style="list-style-type: none"> Acquire 3D seismic
34	Myanmar MOGE 3	OP	75%	Palang Sophon 10% MOECO 10% WinPreciousResources 5%	<ul style="list-style-type: none"> Acquire 2D and 3D seismic
35	Brazil BM-ES-23		20%	Petrobras 65% INPEX 15%	<ul style="list-style-type: none"> Assess petroleum potential
36	Sarawak SK410B	OP	42.5%	KUFPEC 42.5% PSCB 15%	<ul style="list-style-type: none"> Acquire 3D seismic

Remarks: 36 projects exclude 2 projects that are pending official withdrawal approval

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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	$\text{Trailing-12-month EBITDA} / \text{Trailing-12-month Interest Expenses \& Amortization of Bond Issuing Cost}$