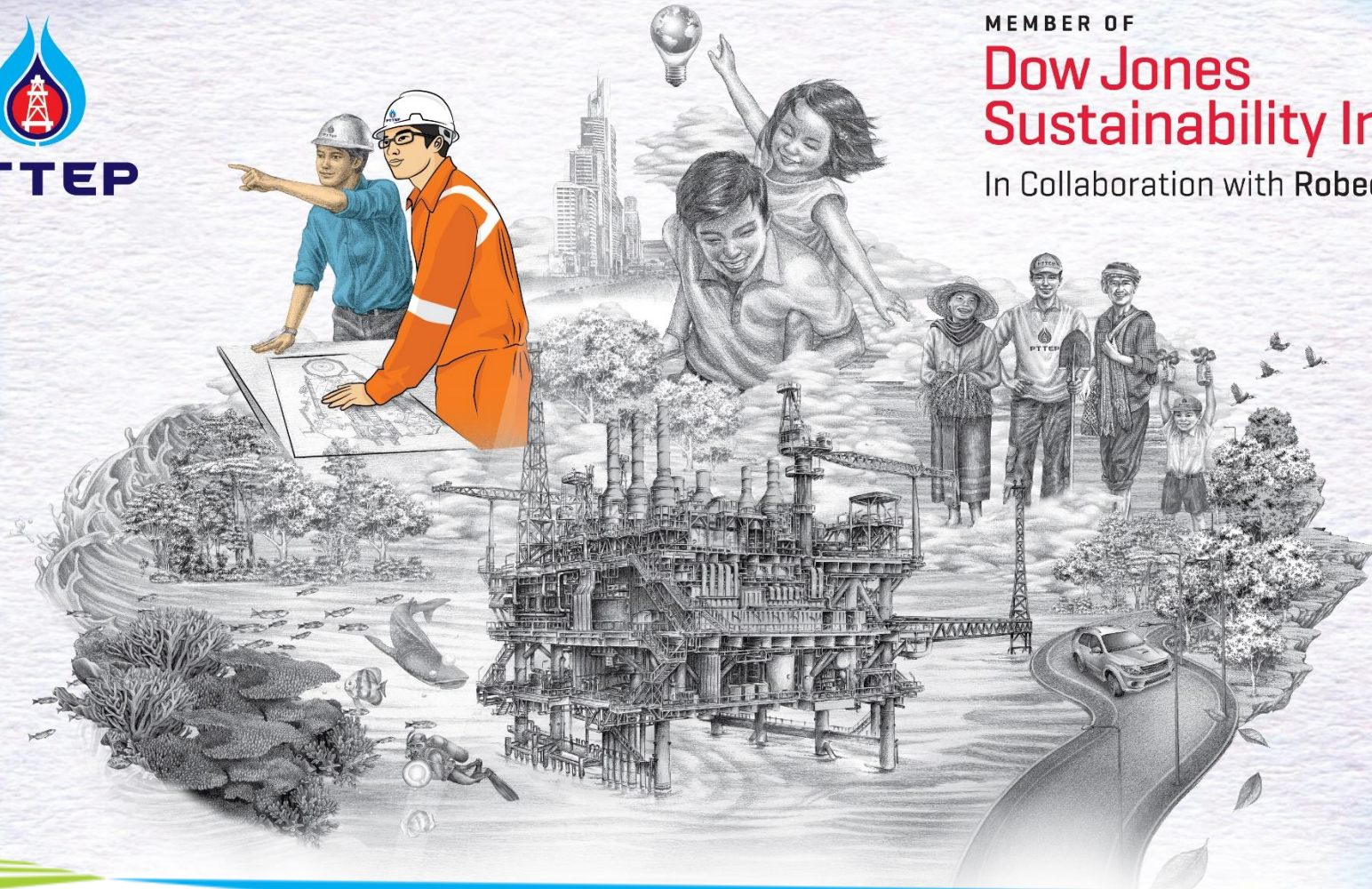




MEMBER OF

**Dow Jones
Sustainability Indices**

In Collaboration with RobecoSAM 



Q3 2018 Strategy and Performance update

Analyst Meeting

16 November 2018



Strategy Outlook



Industry Update



Financial Performance

2018 Key Achievements and Outlook

Unlocking value through concrete plan with solid financial position to capture business growth



Strategic Business Plan

Continue to operate under 3Rs “RESET REFOCUS and RENEW”

RESET

Aspiration Production
Growth and Sustain Cost
Competitiveness



Potential to supply
more gas from current
level



Implement digitalization
to improve productivity
and sustain cost
competitiveness



Divest non-core assets,
Accelerate and/or De-risk
exploration projects

REFOCUS

E&P Growth to
Increase R/P



Coming-home strategy:

- Focus on gas security for Thailand
- Accelerate exploration in Myanmar and Malaysia



Realize E&P growth and build up
healthy portfolio:

- Consolidate TH opportunities
- Expand M&A and EXP in SEA
- Attempt to enter ME resilience project



Capture LNG value
chain opportunity

RENEW

New Opportunities



Transform PTTEP to an agile,
lean and innovative
organization



Add new line of business
(G2P, Robotic, AI and others)

PTTEP as a “Good” Thai Corporate Citizen

With focus on 3 pillars

High Performance Organization

HPO



Transform PTTEP to an agile, lean and innovative organization



Maintain highest SSHE standard

Stakeholder Value Creation to enhance long-term value to society

SVC



Crab hatchery, Waste to energy, School BIRDs, SE Products



Proactive Issue Management Communication (Concession Bid round)



CSR transformation plan for Myanmar and Indonesia

Governance Risk and Compliance: Commit to conduct business with transparency

GRC



CG&BE



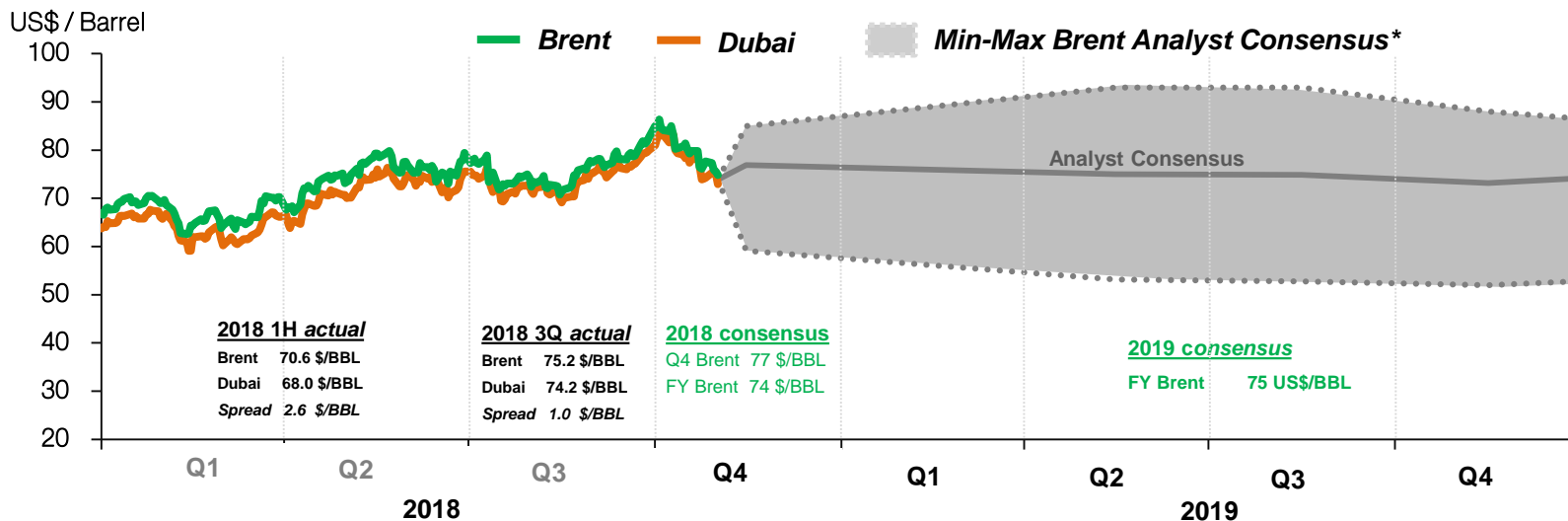
Strategy Outlook



Industry Update



Financial Performance

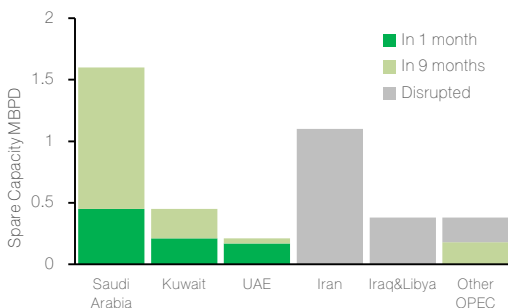


Short-term Key Drivers & Outlook

▲ Iran Supply Shortage & OPEC Spare Cap

- Sanction can halt Iran supply up to 1 MMBPD
- OPEC spare capacities mainly from Saudi Arabia, Kuwait and UAE are eroding

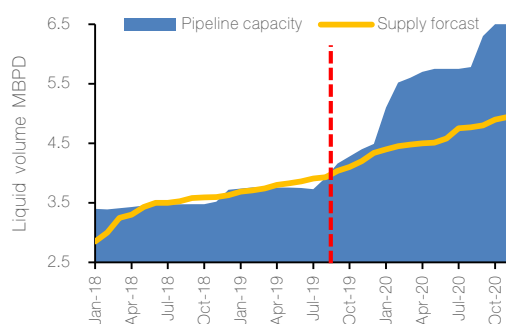
Q4 2018 OPEC spare capacity



▲ US Pipeline Bottleneck

- Permian capacity remains limited and temporary truck movement is expensive
- However pipeline construction is on track to complete in Q3 2019

US Pipeline capacity



▼ Softened Global Demand & other bearish

US-China trade war

- Tension provokes risks on confidence and pressures global economic growth

Global economy slowdown

- IMF cut 2018-2019 global growth forecast from 3.9% to 3.7%

Minimal Iran Sanction impact

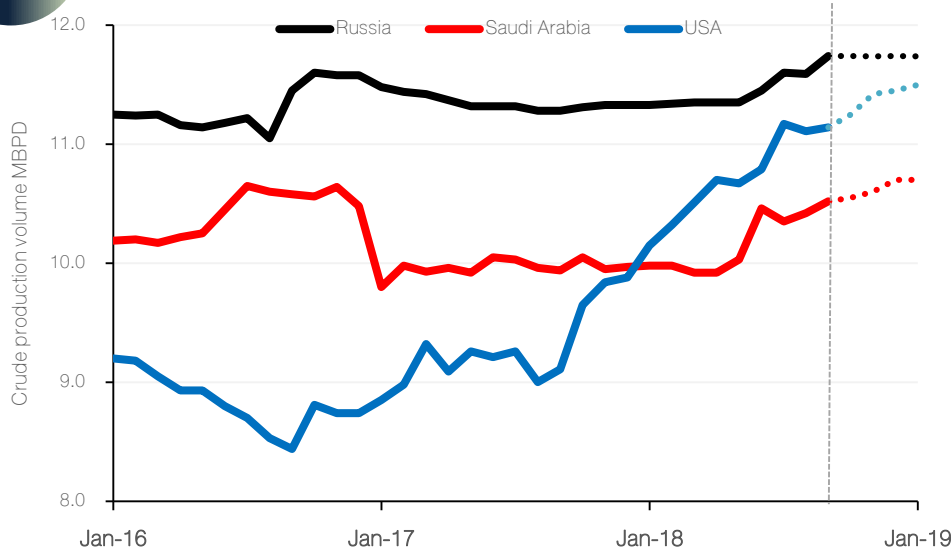
- US waived Iranian crude import for some countries
- EU set up Special Purpose Vehicle (SPV) to trade with Iran after US sanction

Key Highlights

US, shale super power still faces constraints. TH expiring concession's bidding steps forward



Global Update: Growing supply from Major Crude Producers



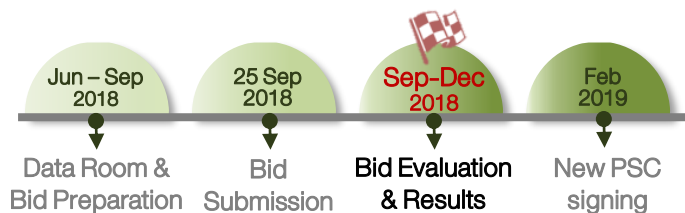
Source: IEA report and The Economist

- In September 2018, global crude supply approached 100 MBPD, growth led by Non-OPEC such as US
- Key engine boosted US output is shale expansions
- Although extracting oil from shale became more efficient, but the industry is facing;
 - cost rising
 - long term labor shortage
 - productivity gain slowing (as drilled closer)
 - intensive water consumption and environmental concerns e.g. small earthquake
- Higher likelihood that shale supply is unable to keep up with rising demand



Thailand Update: Bidding is in evaluation process with target result announcement by end of 2018

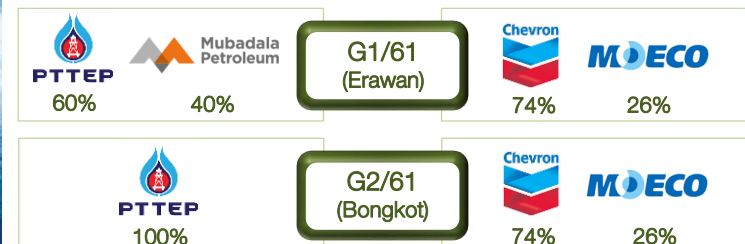
Timeline for the bidding of Expiring Concessions in GoT



Source: DMF



Consortium from the bid submission

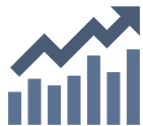




Strategy Outlook



Industry Update

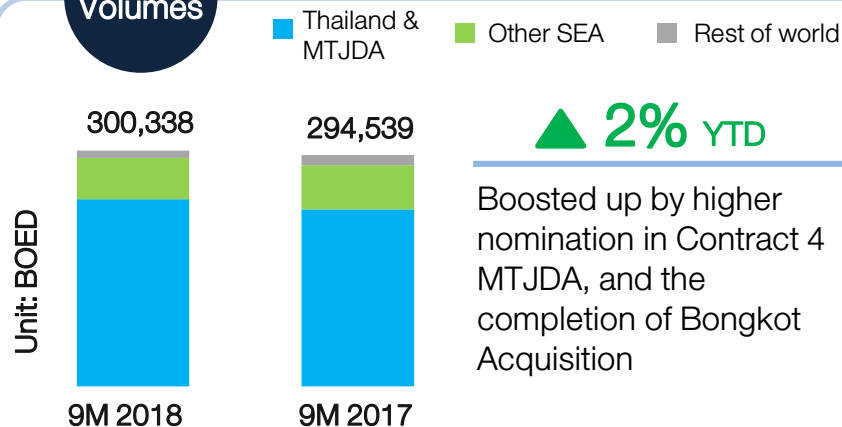


Financial Performance

Key Performance Drivers

Generated solid operating cash flow 9M2018 driven by strong core performance

Sale Volumes



Average Selling Price

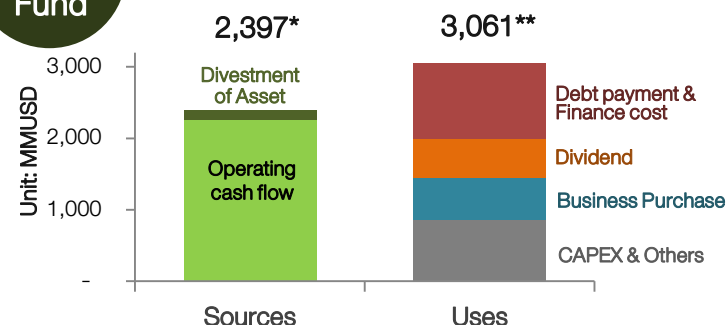
	9M 2018	9M 2017	
Gas (\$/MMBTU)	6.24	5.54	▲ 21% YTD
Liquid (\$/BBL)	67.85	49.87	
Weighted Avg. (\$/BOE)	46.25	38.29	
Avg. Dubai (\$/BBL)	70.10	51.06	
Avg. HSFO (\$/BBL) (High Sulphur Fuel Oil)	65.15	47.79	
Volume Mix (Gas : Liquid)	71:29	70:30	Better global oil price led to improved ASP

Unit Cost

Unit : \$/BOE	9M 2018	9M 2017	
Cash cost	14.64	13.25	▲ 10% YTD
Non-Cash cost	16.64	15.11	
Unit cost	31.28*	28.36	

Driven by higher royalties and DD&A from Bongkot acquisition and more completed asset in S1

Source & Uses of Fund



73% EBITDA Margin

Maintain strong OCF and sustain EBITDA Margin level

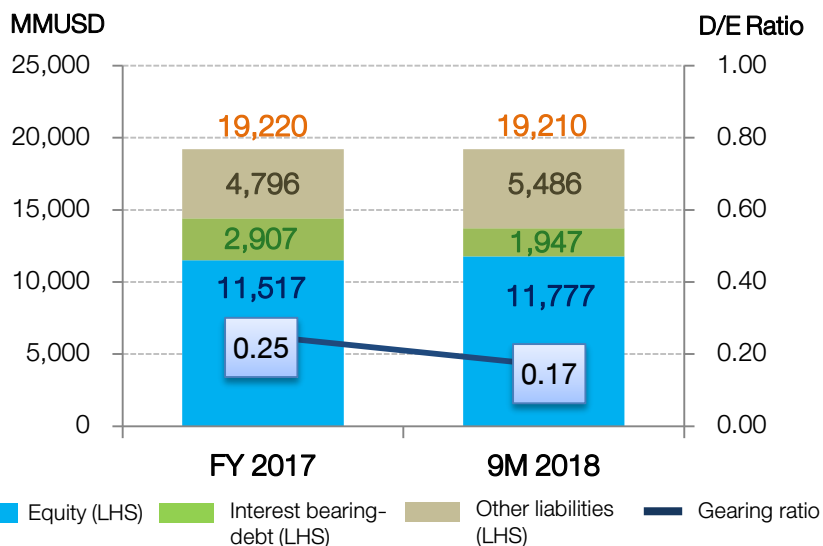
Note: * Exclude costs related to new business, if include, unit cost for 9M 2018 will be 31.35\$/BOE

Remark: * Net of adjustment for the effect of exchange rate changes on cash and cash equivalents
** Excludes cash flows for short-term investments fixed deposit > 3 months)

Financial Position and Outlook

Healthy balance sheet, well positioned for future growth

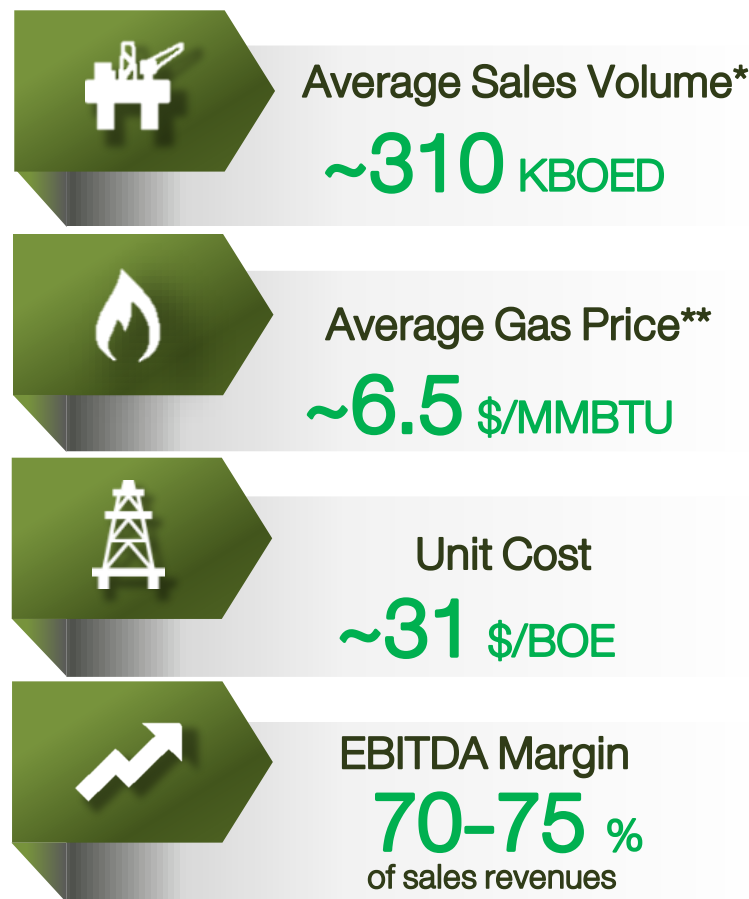
Capital Structure



Debt Profile*	US\$ 100%	US\$ 100%
Weighted Average Cost of Debt* (%)	4.50	5.32
[Fixed : Floating]	[80 : 20]	[100 : 0]
Average Loan Life* (Years)	7.15	8.91

Remark: * Excludes Hybrid bonds

...Expect strong 2018 core performance



Note: * Included sales volume from 1) the additional stakes in Bongkot and 2) Montara until the divestment completion

** Based on FY2018 Dubai oil price at 72 \$/BBL

Key Takeaways

Maximizing value through solid growth platforms

Strengthen fundamental

- Sustain competitive cost structure
- Uplift sales volume through efficiency improvement
- Maintain healthy margin

Focus on production and reserves accretion

- Implement series of portfolio rationalization
- Continue gas-weighted portfolio in line with global trend
- Push forward FID of key pre-development projects
- Expansion exploration portfolio and M&A execution in focus areas

Ready for future challenges

- Organizational Transformation
- Collaboration with PTT for LNG value chain investments
- Diversification through new business opportunities

Solid balance sheet to support growth

- \$3.8 Bn cash on hand with concrete capital structure
- Consistent dividend payments to shareholders



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



<http://www.pttep.com>



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+66 2 537 4000



Passion to Explore
For a Sustainable Future



Q3 2018 Financial Results

15-18

PTTEP Growth Outlook

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Sustainable Development

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Thailand Updates

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Reserve and Resources

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Key Project Highlights by Region

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Project Details

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Organization Structure

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Ratio and Formula

33

Summary of Q3 2018 Financial Results

Better net income QoQ driven by THB appreciation and strong core performance

Unit : MMUSD

Statement of Income	Q2 18	Q3 18	% QoQ	Q3 17	% YoY	9M 18	9M 17	% YTD
Total Revenues	1,347	1,398	4%	1,134	23%	3,960	3,252	22%
Sales	1,293	1,338	3%	1,064	26%	3,792	3,079	23%
Others	54	60	11%	70	(14%)	168	173	(3%)
Sales Volume (BOED)	302,846	304,940	1%	298,139	2%	300,338	294,539	2%
Sales Price (USD/BOE)	46.94	47.67	2%	38.78	23%	46.25	38.29	21%
Total Expenses	1,234	1,083	(12%)	1,398	(23%)	3,109	2,947	5%
Major Expenses:								
Operating Expenses	169	166	(2%)	162	2%	476	457	4%
Exploration Expenses	15	19	27%	9	>100%	37	29	28%
DD&A	460	496	8%	413	20%	1,364	1,214	12%
Impairment Loss on Assets	-	-	-	558	(>100%)	-	558	(>100%)
Loss on Divestment	-	37	>100%	-	>100%	37	-	>100%
Income Tax Expense	329	105	(68%)	57	84%	439	116	>100%
(Gain)/Loss on FX	30	6	(80%)	(23)	>100%	11	(37)	>100%
Net Income	113	315	>100%	(264)	>100%	851	305	>100%
Recurring Net Income	336	292	(13%)	218	34%	932	596	56%
Non-Recurring *	(223)	23	>100%	(482)	>100%	(81)	(291)	72%

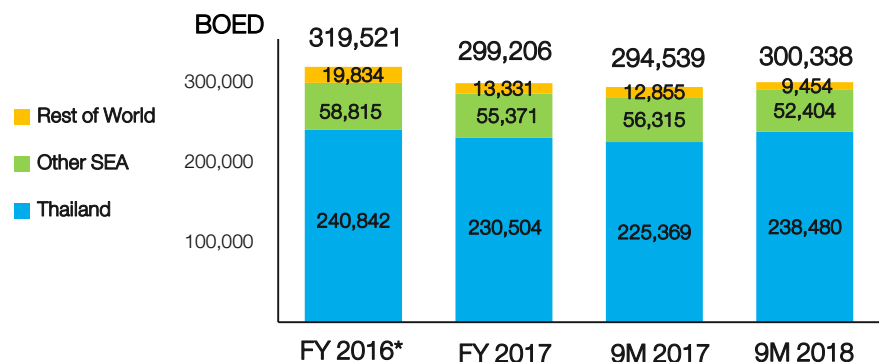
Note:

* 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.

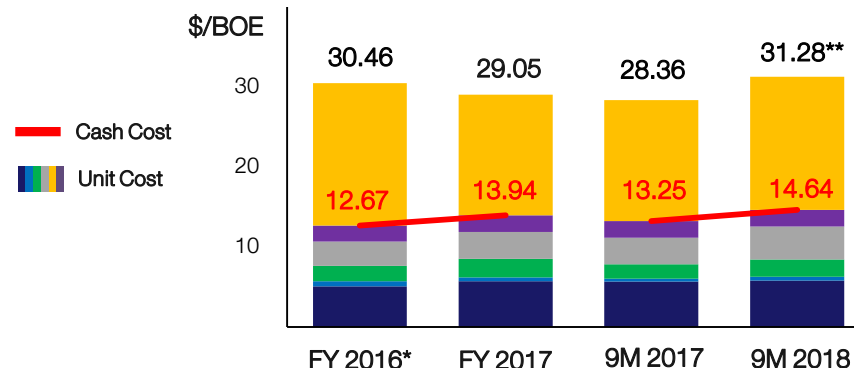
Sales Volume & Unit Cost

Improved sales volume and selling price with cost management effort

Sales Volume and Price



Unit Cost



Gas (\$/MMBTU)	5.60	5.59	5.54	6.24
Liquid (\$/BBL)	41.17	52.26	49.87	67.85
Weighted Avg. (\$/BOE)	35.91	39.20	38.29	46.25
Avg. Dubai (\$/BBL)	41.27	53.14	51.06	70.10
Avg. HSFO (\$/BBL)	35.48	49.64	47.79	65.15
(High Sulphur Fuel Oil)				
Volume Mix (Gas : Liquid)	69 : 31	70 : 30	70 : 30	71 : 29
Revenue Mix (Gas : Liquid)	65 : 35	60 : 40	60 : 40	58 : 42

DD&A	17.79	15.11	15.11	16.64
Finance Cost	2.01	2.07	2.10	2.09
Royalties	3.02	3.37	3.30	4.10
G&A	1.93	2.30	1.81	2.19
Exploration Expenses	0.63	0.48	0.36	0.45
Operating Expenses	5.08	5.72	5.68	5.81
Lifting Cost	4.18	4.19	4.12	4.38

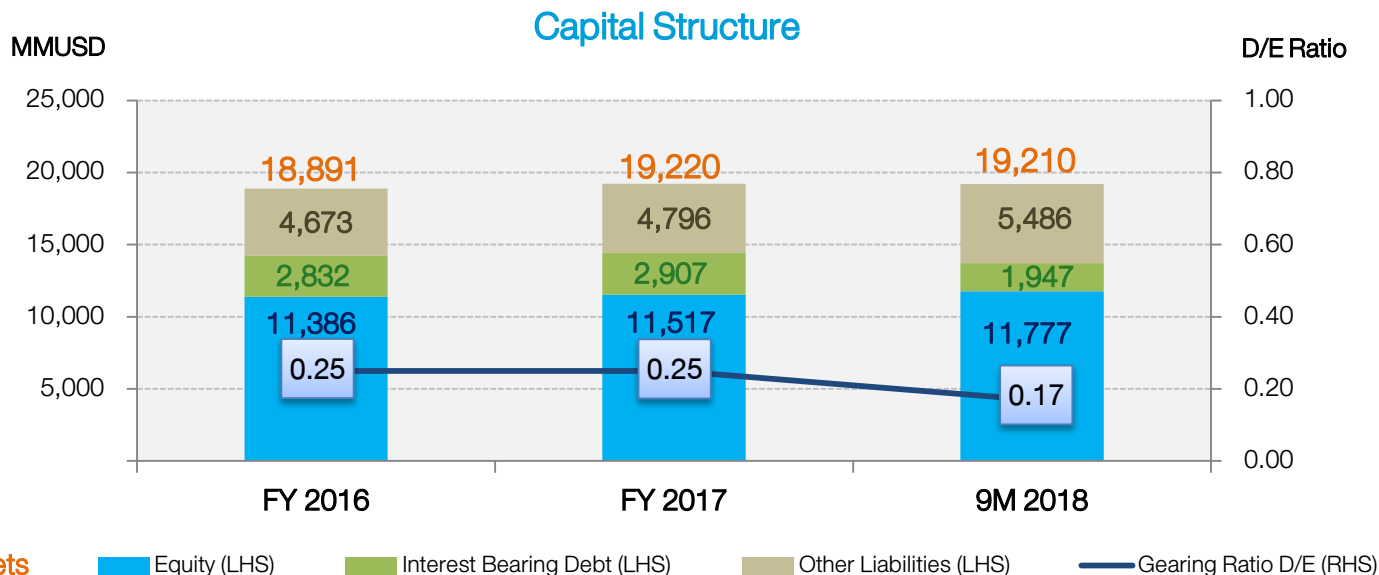
Note: * Represented and includes discontinued operations until end of August 2016

** Exclude costs related to new business, If include, unit cost for 9M18 will be 31.35 \$/BOE.

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

Financial Position

Healthy balance sheet with low gearing ratio

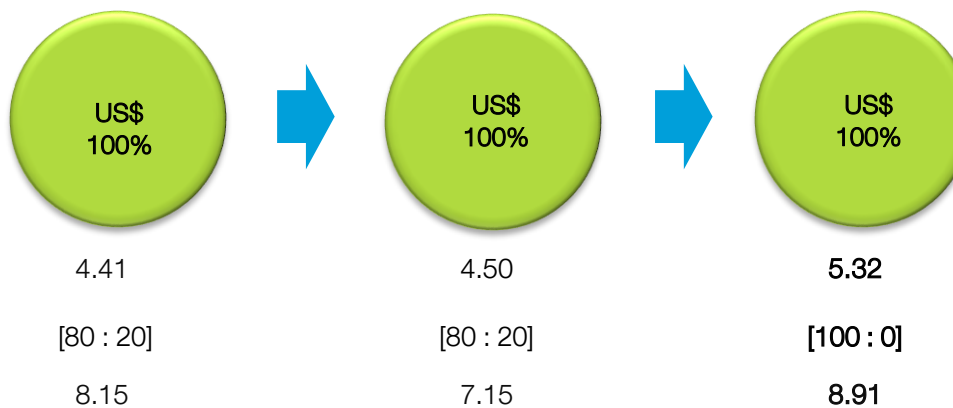


Debt Profile*

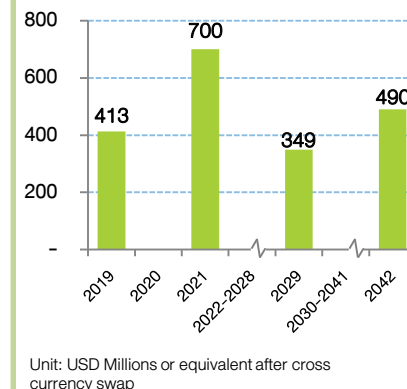
Weighted Average
Cost of Debt* (%)

[Fixed : Floating]

Average Loan Life* (Years)



Debt Maturity Profile* (as of end of September 2018)



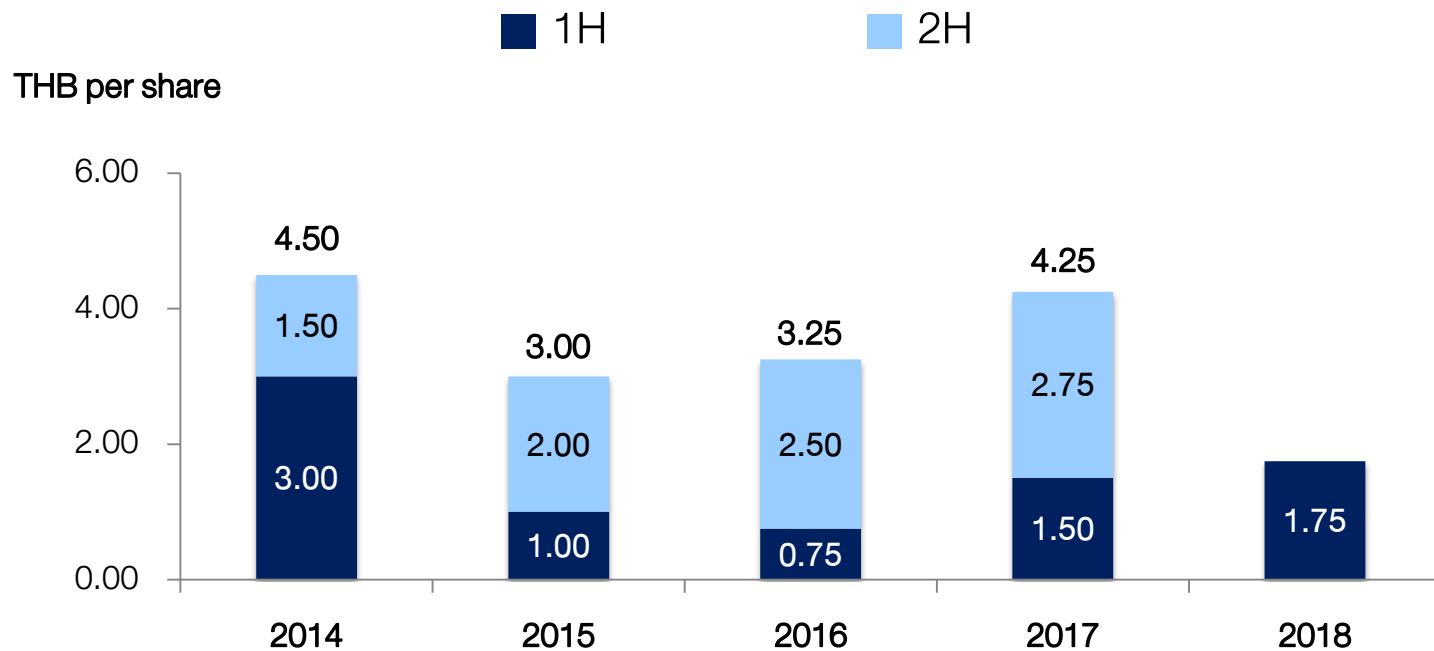
Remark: * Excludes Hybrid bonds

Dividends

Demonstrating our dividend commitment to shareholders



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



Payout Ratio (%)	82	N/A	98	90	39
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Continue to Pursue Growth Strategies

Production and Reserve accretion remains the top priority

Strive to win the Bidding

Summary of TOR

Bidding Obligations

Minimum DCQ

- G1/61: 800MMSCFD
- G2/61: 700MMSCFD

Gas price formula

Commit under fixed formula in TOR

Facility bonus

- G1/61: 350 MMTHB
- G2/61: 175 MMTHB

Decommissioning

Must be obligated all infrastructure / facilities both new and transferred per PSC agreement

Source: DMF

Bidding Proposal

1 Technical

1. Preparation period work plan
2. Exploration work plan
3. Field development plan

2 State Participation: 25% stake

3 Commercial

score

65% **Price Constant:** ≤ 214.23 THB per MMBTU

25% **Profit split:** ≤ 50%

5% **Bonuses:** Signature Bonus ≥ 350 MMTHB, Production Bonus ≥ 175 MMTHB and Training/CSR ≥ 3.5 MMTHB/Year

5% **Thai Employee Ratio:** ≥ 80% in 1st year and ≥ 90% in 5th year

Fasten pre-FID projects

Mozambique LNG: Stronger path towards FID by 1H2019

Mozambique Rovuma Offshore Area 1

Production

12 MTPA

Start-up

2023

Completed

- Legal & Contractual Framework, Marine Concessions as well as the development plan approved
- Resettlement Commenced and site preparation underway
- 1.2 MTPA SPA signed with EDF and 0.28 MTPA signed with Tohoku Electric

In-Progress

- Offshore contractor selections
- Project finance: To secure 2/3 leverage
- Secured sufficient non-binding HOAs to meet target off-take volume

Along with finalizing key terms of other pre-FID candidates

Southwest Vietnam

Production

490 MMSCFD

Start-up

2022

Ubon (Contract 4)

25-30 KBOED

2022

Algeria HBR

50-60 KBPD

2024

Execution of M&A Deal

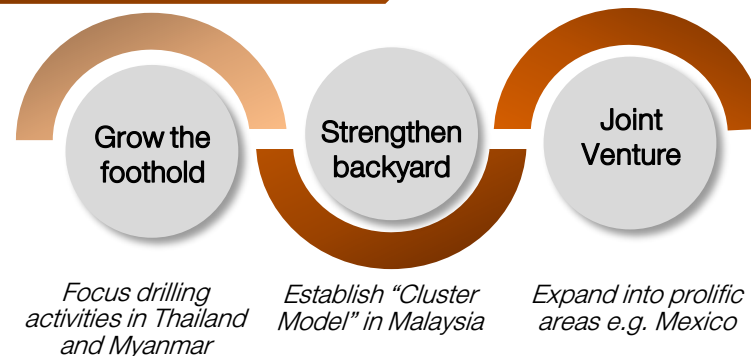


Geographical: SEA, Middle East and other potential areas

Target: Focus on producing or near-producing

Size: 500 – 1,000 MMUSD

Exploration Portfolio



Sustainable development

Pursue long-term growth with social and environmental wellness



MEMBER OF

**Dow Jones
Sustainability Indices**

In Collaboration with RobecoSAM

2018 DJSI Listed Company

PTTEP has been selected as a member of the 2018 Dow Jones Sustainability Indices (DJSI) in the DJSI World Oil and Gas Upstream & Integrated Industry for its fifth consecutive year.



Proven business integrity

Thailand's Strongest Adherence to Corporate Governance (ranked second)
Alpha Southeast Asia Magazine 2018

Asia's Icon on Corporate Governance Award
Corporate Governance Asia Magazine

Platinum Corporate Award
The Asset Corporate Awards 2017



FTSE4Good

FTSE4Good Emerging Index 2018

PTTEP becomes a constituent of the FTSE4Good Emerging Index 2018 for the third consecutive year



Exemplary social contributor

Thailand's Best Strategic Corporate Social Responsibility (ranked first)
Alpha Southeast Asia Magazine 2018

Platinum and Gold Awards for 3 CSR Projects:
Best Environmental Excellence and Community Program
The 10th Annual Global CSR Summit 2018

Silver Award for Free Clinic and Waste to Energy Project
The 2018 Asia-Pacific Stevie Awards Program

Green driver to environment

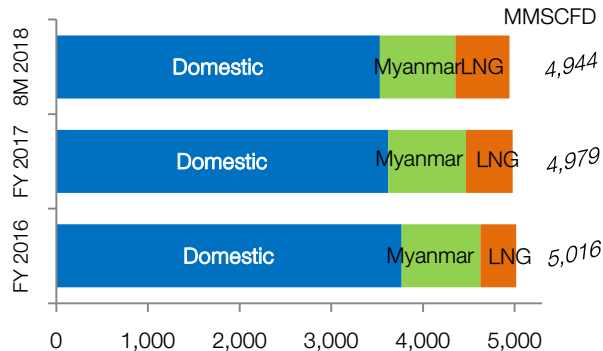
The Excellent Level (G-Gold) of the Green Office Award 2017
The Ministry of Natural Resources and Environment

Water A List Award
Carbon Disclosure Project (CDP)

Thailand Occupational Safety and Health Awards
The Ministry of Labour

Thailand Energy Overview

Natural Gas Supply



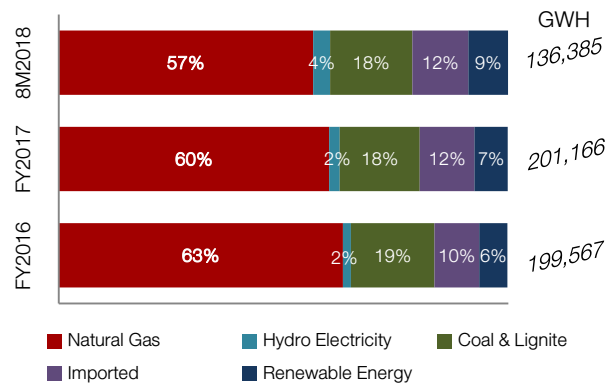
Slight decline in domestic production and Myanmar piped gas imports as a result of lower demands and growth in LNG import

Natural Gas Consumption



Source: EPPO

Electricity Generation



Exchange Rate Movement (THB/USD)



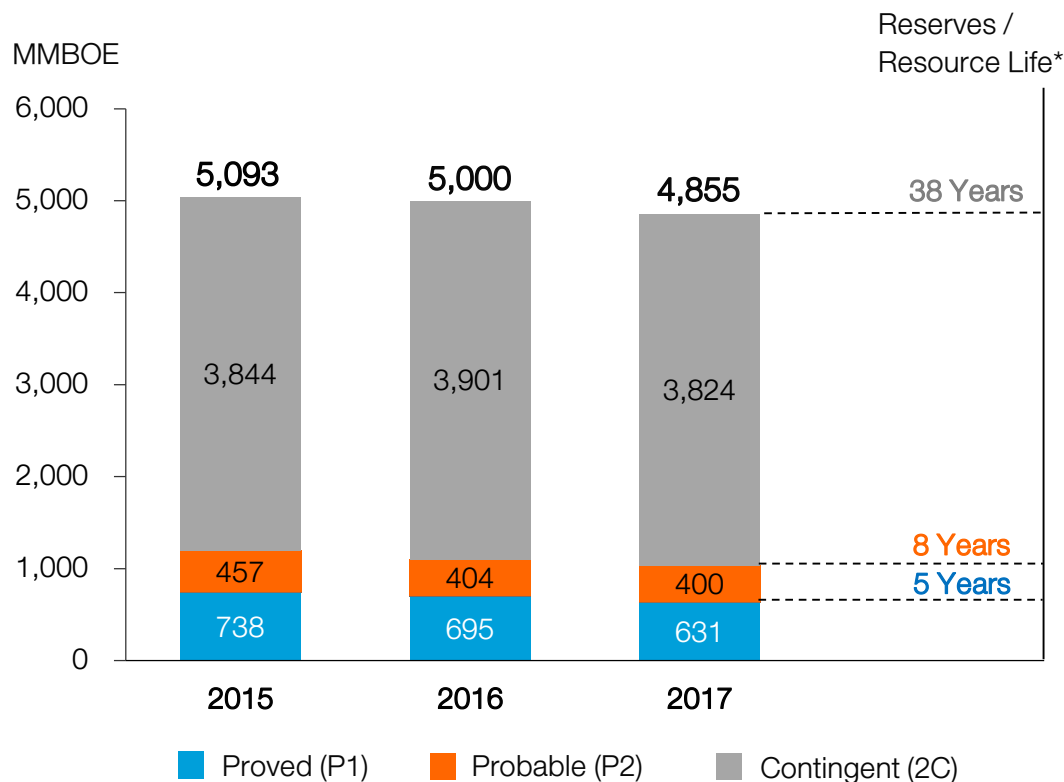
Consensus on the exchange rate mostly depends on

- Continued uncertainty around monetary policies of major global economies such as Europe
- Trade war between the US and China
- The political instability in several regions

Source: Bank of Thailand, Bloomberg
Forecast based on Bloomberg Consensus as of 6 November 2018

Reserves and Resources

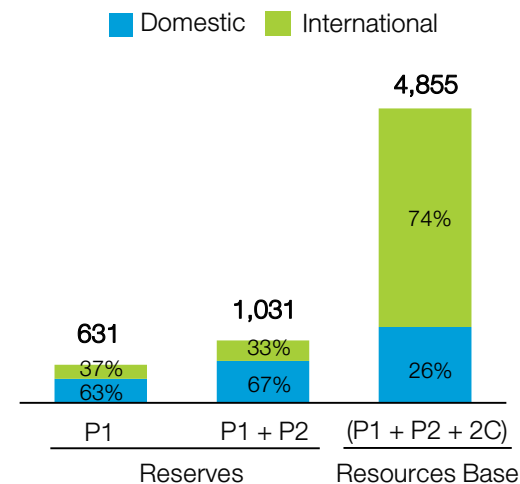
Maintained reserve life with majority of reserves base in SEA



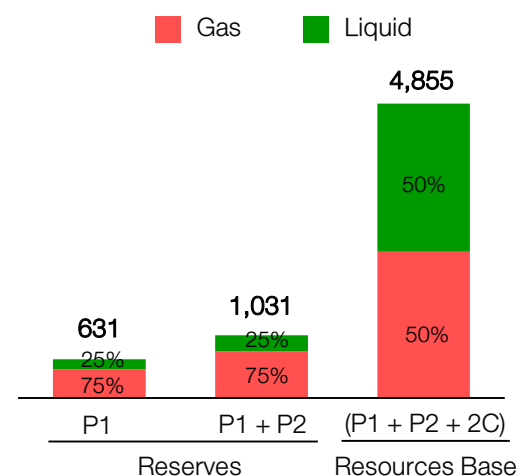
5-Year Average Proved Reserves Replacement Ratio (RRR)

2015	2016	2017
0.50x	0.57x	0.58x

2017 by Geography



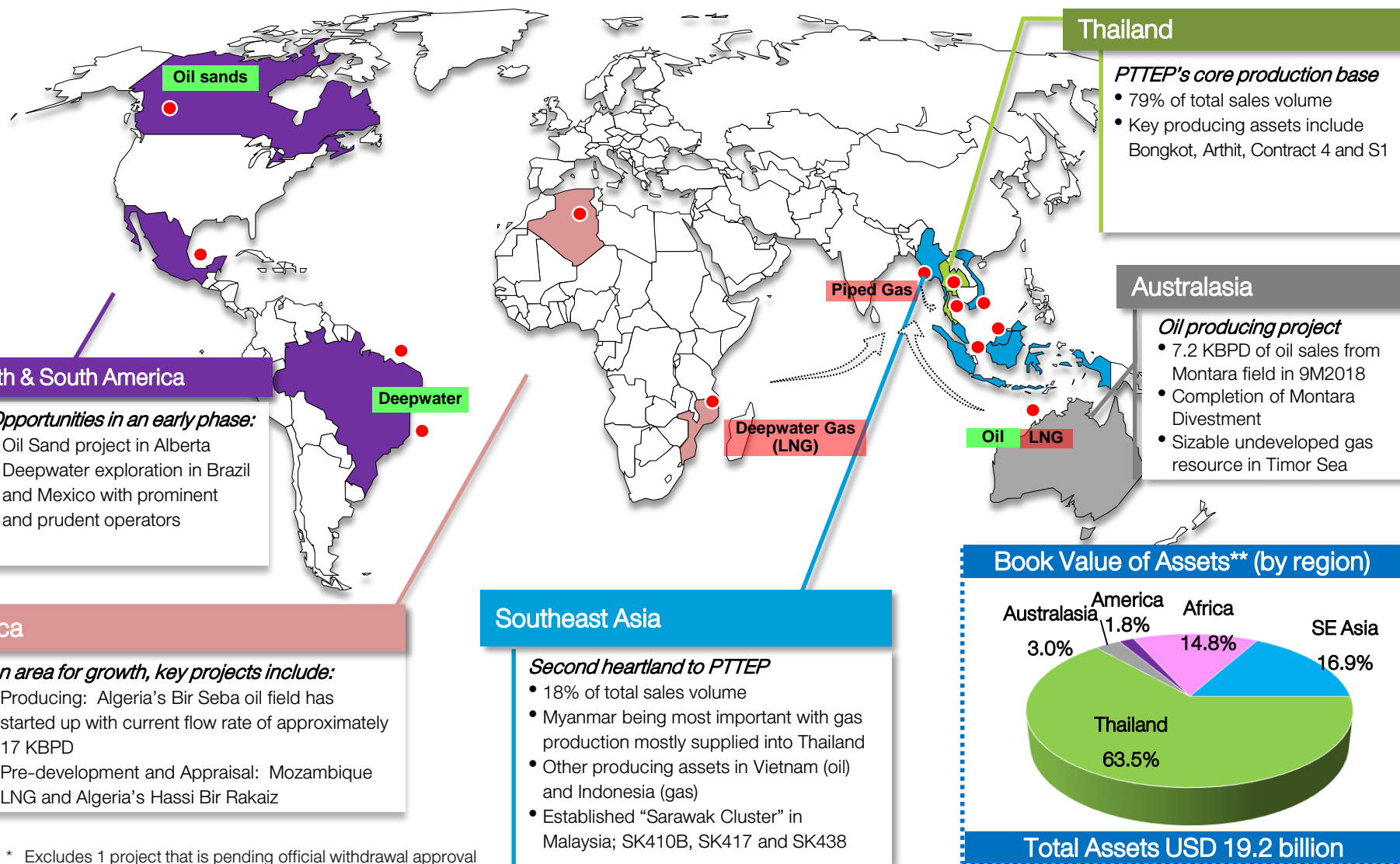
2017 by Product Type



* Based on total production of natural gas, condensate, and crude oil (including LPG) of 347 KBOED for the year ended December 31, 2017

Diversified international portfolio

Worldwide operations: 40 projects* in 11 countries



Notes: * Excludes 1 project that is pending official withdrawal approval

** Information dated as of 9M 2018

Thailand and other Southeast Asia

Strong base maintaining production plateau and significant contribution to growth

Thailand

Bongkot (66.6667% WI)

- Average natural gas and condensate sales volume of 739 MMSCFD and 25 KBPD in 9M2018

S1 (100% WI)

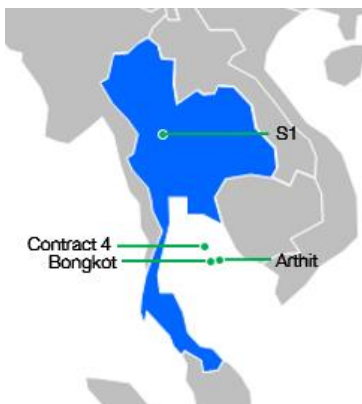
- The largest onshore crude oil production field in Thailand with 9M2018 average crude oil sales volume of 27 KBPD

Arthit (80% WI)

- Average sales volume in 9M2018 was 206 MMSCFD of natural gas and 10 KBPD of condensates

Contract 4 (60% WI)

- Average sales rate of 403 MMSCFD for natural gas and 17 KBPD for condensate in 9M2018



● Production / Ramp-up Projects

Myanmar



- 3 producing gas fields supplying gas to both Thailand and Myanmar: Yadana, Yetagun, and Zawtika
- Operate Zawtika project, brought online in March 2014 with current gas supply of 301 MMSCFD in 9M2018
- Significant exploration acreage both onshore and offshore in the Moattama Basin

Project Status

Producing

- Yadana (25.5% WI)
- Yetagun (19.3% WI)
- Zawtika (80% WI)

Appraisal

- M3 (80% WI)

Exploration

- MOGE 3 (75% WI)
- M11 (100% WI)
- MD-7 (50% WI)

Vietnam and Indonesia

“Reinforcing regional exposure through strategic partnerships”

Natuna Sea A (11.5% WI)

- Average sales volume of natural gas was 222 MMSCFD in 9M2018



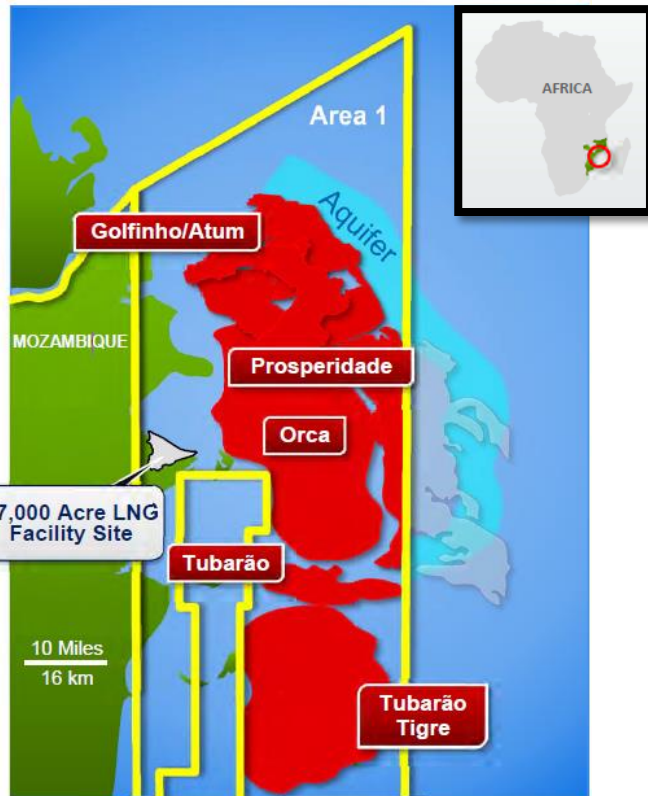
● Production / Ramp-up Projects

Vietnam 16-1 (28.5% WI)

- Average sales volume of crude oil was 18 KBPD in 9M2018
- The project is preparing further production drilling plan aiming to maintain production plateau.

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 – targeting at 1H2019

Technical

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

Commercial

- ✓ Recently signed SPA of 1.2 MTPA with EDF (French) and 0.28 MTPA signed with Tohoku Electric

Regulatory

- ✓ Received approval on marine concession and development plan of Golfinho–Atum Field
- ✓ Commenced the resettlement plan in Q4 2017

Financing

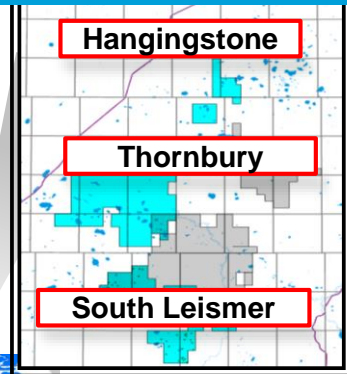
- ✓ On-going negotiation for project financing

Onwards to initial phase of 12 MMTPA

Canada Oil Sands

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

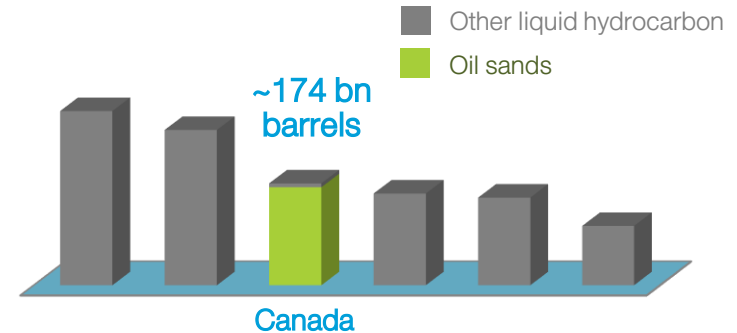
Mariana Oil Sands Project



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
- 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

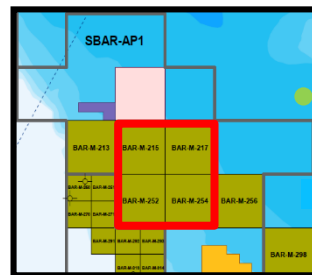


Brazil Deepwater

Entry into high potential petroleum province at exploration phase

Barreirinhas AP1

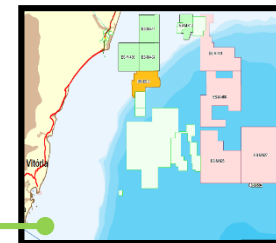
- Farm-in 25% from BG Group in 2014
- Operated by Shell Brasil (65% interest)
- Four offshore exploration blocks: BAR-M-215, BAR-M-217, BAR-M-252 and BAR-M-254
- Completed 3D seismic activities and is in the process of assessing the petroleum potential



Barreirinhas Basin



Espirito Santo Basin



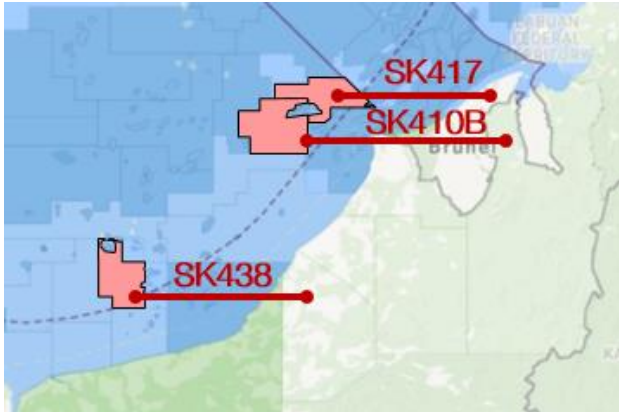
BM-ES-23

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

Unlocking the Exploration Potentials

Expanded portfolio in high prolific areas: Malaysia and Mexico

Sarawak Basin, Malaysia



PTTEP's Block: SK410B (42.5%), SK417 (80%) and SK438 (80%) with operatorship

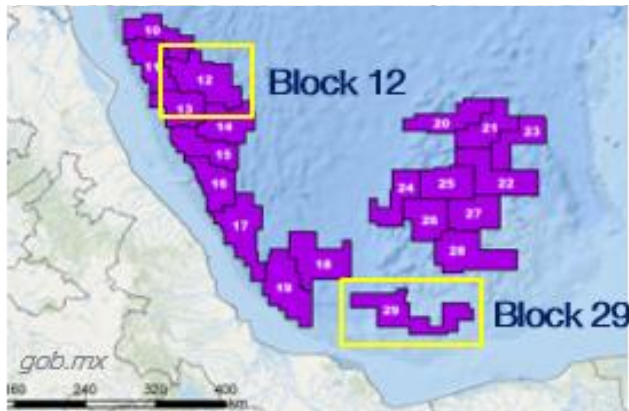
Location: Sarawak Basin, Malaysia

Characteristic: Shallow-water with low operational risk

Exploration Strategy:

- Expect exploration drilling activities during 2018-2021
- "Cluster Model" synergy operations within basin to optimize costs
- In place production infrastructure in nearby area

Gulf of Mexico, Mexico



PTTEP's Block: Block 12 (20%) and Block 29 (16.67%), as non-operating partner

Location: Mexican Ridges Basin for Block 12 and Campeche Basin for Block 29

Characteristic: Deep-water with high petroleum potentials and attractive fiscal regime

Exploration Strategy:

- Joined hand with prudent operators being Petronas and Repsol
- Mexico still has high potential prospective resources with significant sizeable discoveries

LNG Value Chain Investment : MLNG Train 9

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 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

Project information 1/3

Production phase: Thailand and JDA

	Project	Status*	PTTEP's Share	Partners <i>(as of Q3 2018)</i>		9M2018 Average Sales Volume **		2018 Key Activities
						Gas	Oil and Other	
Production Phase								
Thailand and JDA								
1	Arthit	OP	80%	Chevron MOECO	16% 4%	212 MMSCFD	Condensate: 10 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">Prepare drilling plan
3	B8/32 & 9A		25%	Chevron MOECO KrisEnergy Palang Sophon	51.66% 16.71% 4.63% 2%	70 MMSCFD	Crude: 18 k BPD	<ul style="list-style-type: none">Drill development wellsPerform waterflood activities
4	Bongkot	OP	66.6667%	TOTAL	33.3333%	739 MMSCFD	Condensate: 25 k BPD	<ul style="list-style-type: none">Achieved production level as plannedDrill development wellscompleted the acquisition of 22.2222% from shellSubmitted bid proposals as sole operator
5	Contract 3 <i>(Formerly Unocal III)</i>		5%	Chevron MOECO	71.25% 23.75%	604 MMSCFD	Crude: 23 k BPD Condensate: 21 k BPD	<ul style="list-style-type: none">Drill exploration / appraisal / development wellsInstall wellhead platformsPerform waterflood activitiesPartnering with Mubadala to bid for Erawan
6	Contract 4 <i>(Formerly Pailin)</i>		60%	Chevron MOECO	35% 5%	408 MMSCFD	Condensate: 17 k BPD	<ul style="list-style-type: none">Ensure gas deliverability level at DCQ****Drill development wellsInstall wellhead platformsIn process of pre-development of Ubon field
7	E5		20%	ExxonMobil	80%	8.3 MMSCFD	-	
8	G4/43		21.375%	Chevron MOECO Palang Sophon	51% 21.25% 6.375%	1.4 MMSCFD	Crude: 4 k BPD	<ul style="list-style-type: none">Drill development wellsPerform waterflood activities
9	G4/48		5%	Chevron MOECO	71.25% 23.75%	6 MMSCFD	Crude: 1.4 k BPD	
10	L53/43 & L54/43	OP	100%			-	Crude: 1.1 k BPD	<ul style="list-style-type: none">Drill exploration / appraisal / development wells
11	PTTEP1	OP	100%			-	Crude: 263 BPD	<ul style="list-style-type: none">Drill development wellsPerform waterflood activities
12	S1	OP	100%			15 MMSCFD	Crude: 27 k BPD LPG: 0.2 k MT/D	<ul style="list-style-type: none">Drill development wellsEnhance oil recovery program includes waterflooding and artificial lift
13	Sinphuhorm	OP	55%	Apico ExxonMobil	35% 10%	69 MMSCFD	Condensate: 218 BPD	<ul style="list-style-type: none">Drill development wells
14	L22/43	OP	100%			-	Crude: 29 BPD	<ul style="list-style-type: none">Drill development wells
15	MTJDA	JOC	50%	Petronas-Carigali	50%	327 MMSCFD	Condensate: 6.8 k BPD	<ul style="list-style-type: none">Drill development wellsInstall wellhead platforms

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

** Sales volume stated at 100% basis.

*** DCQ = Daily Contractual Quantity

Project information 2/3

Production phase: Overseas



	Project	Status*	PTTEP's Share	Partners (as of Q3 2018)	9M2018 Average Sales Volume **		2018 Key Activities
					Gas	Oil and Other	
Production Phase							
Overseas							
16	Vietnam 9-2	JOC	25%	PetroVietnam 50% SOCO 25%	13 MMSCFD	Crude: 3.7 k BPD	<ul style="list-style-type: none">Maintain production operationPerform reservoir management
17	Vietnam 16-1	JOC	28.5%	PetroVietnam 41% SOCO 28.5% OPECO 2%	6.7 MMSCFD	Crude: 18 k BPD	<ul style="list-style-type: none">Drill development wellsMaintain production operation
18	Natuna Sea A		11.5%	Premier Oil 28.67% KUFPEC 33.33% Petronas 15% Pertamina 11.5%	222 MMSCFD	Crude: 1.3 k BPD	<ul style="list-style-type: none">Maintain production operation
19	Yadana		25.5%	TOTAL 31.24% Chevron 28.26% MOGE 15%	794 MMSCFD	-	<ul style="list-style-type: none">Ensure gas deliverability level at DCQ***
20	Yetagun		19.3178%	Petronas-Carigali 30.00140% MOGE 20.4541% Nippon Oil 19.3178% PC Myanmar 10.90878% (Hong Kong)	154 MMSCFD	Condensate: 2.9 k BPD	<ul style="list-style-type: none">Drill appraisal / development wellsPerform reservoir Management
21	Zawtika (M9 & a part of M11)	OP	80%	Myanma Oil and Gas Enterprise (MOGE) 20%	301 MMSCFD	-	<ul style="list-style-type: none">Completed production drilling from 2 out of 4 production platforms in Phase 1C aiming to maintain output levelDrill development wellsInstall wellhead platforms
22	PTTEP Australasia (PTTEP AA)	OP	90%-100% (varied by permits)		-	Crude: 7.2 k BPD	<ul style="list-style-type: none">Completion of Montara field divestment to Jadestone on 28 Sep 18
23	Algeria 433a & 416b (Bir Seba)	JOC	35%	PetroVietnam 40% Sonatrach 25%	-	Crude: 2.3 k BPD (net entitlement)	<ul style="list-style-type: none">Maintain production operation

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

*** DCQ = Daily Contractual Quantity

Project information 3/3

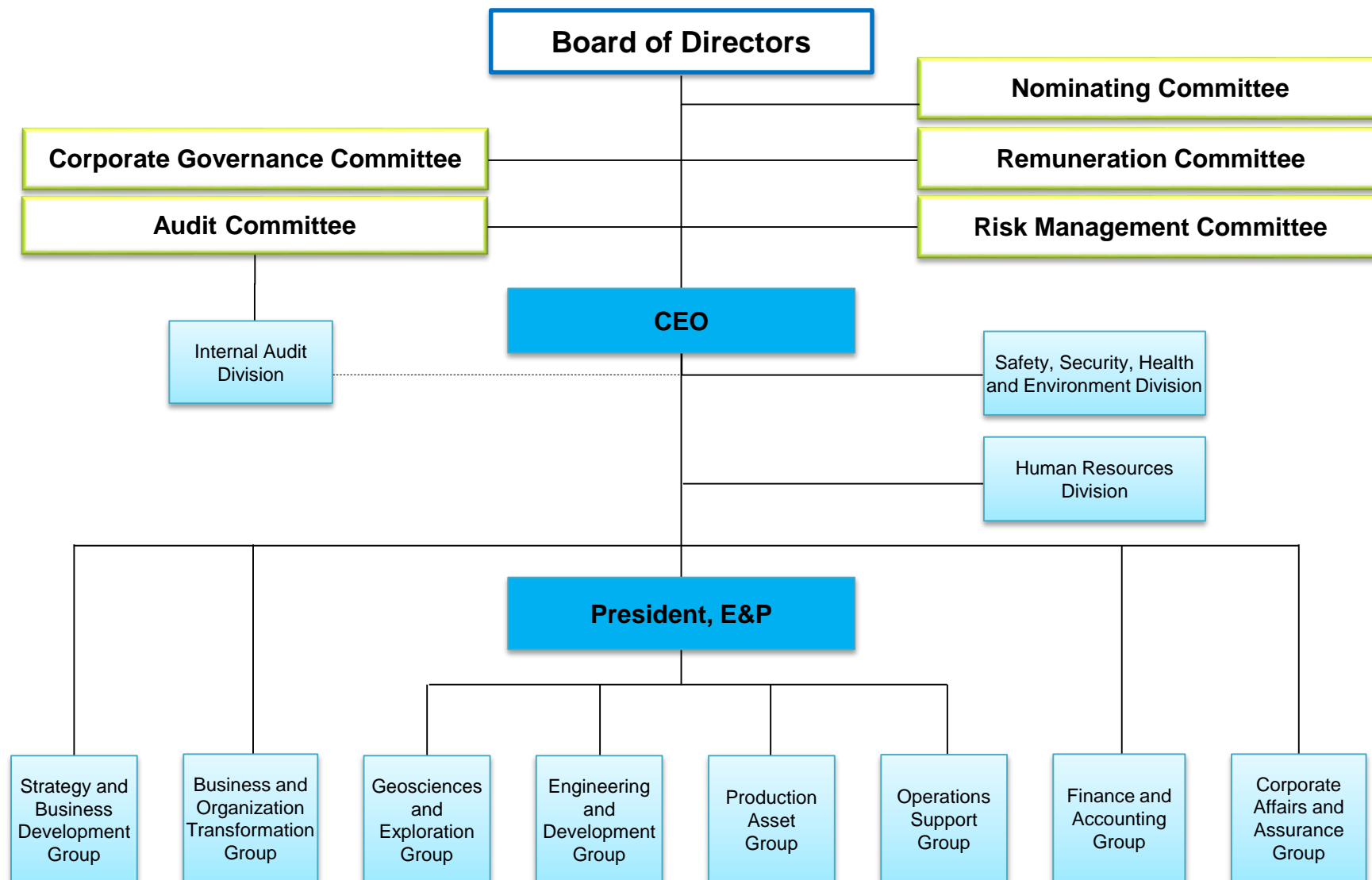
Exploration/Development phase

	Project	Status*	PTTEP's Share	Partners (as of Q3 2018)	2018 Key Activities
Exploration/Development Phase					
Thailand and JDA					
24	G9/43	OP	100%		
Overseas					
25	Myanmar M3	OP	80%	MOECO 20%	<ul style="list-style-type: none"> Negotiate the commercial framework with the Myanmar government Completed Pre-FEED study and expected to propose FDP in Q4/18
26	Myanmar M11	OP	100%		<ul style="list-style-type: none"> Preparation of exploration drilling plan and seeking partner to manage project's risk
27	Myanmar MD-7	OP	50%	TOTAL 50%	<ul style="list-style-type: none"> Under preparation of exploration drilling plan
28	Myanmar MOGE 3	OP	75%	Palang Sophon 10% MOECO 10% WinPreciousResources 5%	<ul style="list-style-type: none"> prepare exploration drilling well
29	Vietnam B & 48/95		8.5%	PVN 65.88% MOECO 25.62%	<ul style="list-style-type: none"> Got approval on FDP Negotiate a GSA with the Vietnamese government
30	Vietnam 52/97		7%	PVN 73.4% MOECO 19.6%	<ul style="list-style-type: none"> Got approval on FDP Negotiate a GSA with the Vietnamese government
31	Sarawak SK410B	OP	42.5%	KUFPEC 42.5% Petronas-Carigali 15%	<ul style="list-style-type: none"> Assess petroleum potential and prepare exploration drilling plan
32	Sarawak SK417	OP	80%	Petronas-Carigali 20%	<ul style="list-style-type: none"> Under preparation of exploration activities
33	Sarawak SK438	OP	80%	Petronas-Carigali 20%	<ul style="list-style-type: none"> Under preparation of exploration activities
34	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"> Under negotiation on construction agreement of onshore LNG liquefaction plant Preparatory work for Final Investment Decision (FID) including LNG marketing and finalization of remaining commercial contracts
35	Algeria Hassi Bir Rekaiz	OP	24.5%	CNOOC 24.5% Sonatrach 51%	<ul style="list-style-type: none"> Got approval on FDP
36	Mariana Oil Sands	OP	100%		<ul style="list-style-type: none"> Assess appropriated development approach
37	Barreirinhas AP1		25%	Shell Brasil 65% Mitsui E&P Brasil 10%	<ul style="list-style-type: none"> Assess petroleum potential
38	Brazil BM-ES-23		20%	Petrobras 65% INPEX 15%	<ul style="list-style-type: none"> Assess petroleum potential
39	Mexico block 12 (2.4)		20%	PC Carigali Mexico 60% Ophir Mexico 20%	<ul style="list-style-type: none"> Under preparation of exploration plan with submission timeline to the Mexico National Commission Hydrocarbon within Q4/2018
40	Mexico block 29 (2.4)		16.67%	Repsol Mexico 30% PC Carigali Mexico 28.33% Sierra Nevada 25%	<ul style="list-style-type: none"> Under preparation of exploration plan with submission timeline to the Mexico National Commission Hydrocarbon within Q4/2018

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Organization structure

Ensuring transparency, integrity and good corporate governance



Ratio	Formula
Lifting Cost (\$/BOE)	$(\text{Operating Exp.} - \text{Transportation Cost} - \text{Stock Variation} - \text{Other expenses not related to lifting}) / \text{Production Volume}$
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	$(\text{Trailing-12-month net income} + \text{Trailing-12-month Interest Expenses \& Amortization of Bond Issuing Cost}) / (\text{Average shareholders' equity and average total debt between the beginning and the end of the 12-month period})$
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	$\text{Trailing-12-month EBITDA} / \text{Trailing-12-month Interest Expenses \& Amortization of Bond Issuing Cost}$