

PTT Exploration and Production Public Company Limited

Non-Deal Roadshow

New York City and Boston, USA

31 January – 3 February 2017



PTTEP

MEMBER OF

**Dow Jones
Sustainability Indices**

In Collaboration with RobecoSAM





Company Overview

Key Achievement and
Financial Performance

Growth & Opportunities

Investment Plan & Outlook



As PTT's Upstream Flagship



Government of
Thailand

66.0%²



Thailand's national energy company

65.3%¹



Credit ratings equivalent to parent and country

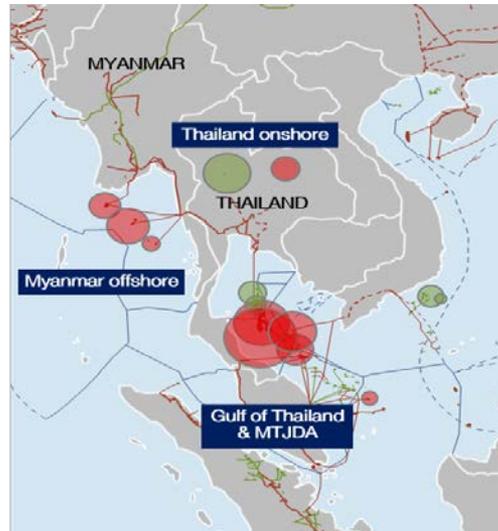
S&P	Moody's	TRIS	JCR
BBB+	Baa1	AAA	A-

Largest oil and gas producers in Thailand and Myanmar

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

Opportunities to expand into regional investments

PTTEP's operations in SEA



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

94%

of PTTEP's total sales volume

98%

Reliability of plants and field facilities*

81%

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 FY2016

Notes:

1. Ownership as of 15 August 2016

2. 51.1% is directly held by the Government of Thailand (Ministry of Finance), with the remaining 14.9% held by the state-controlled Vayupak Fund I



Company Overview

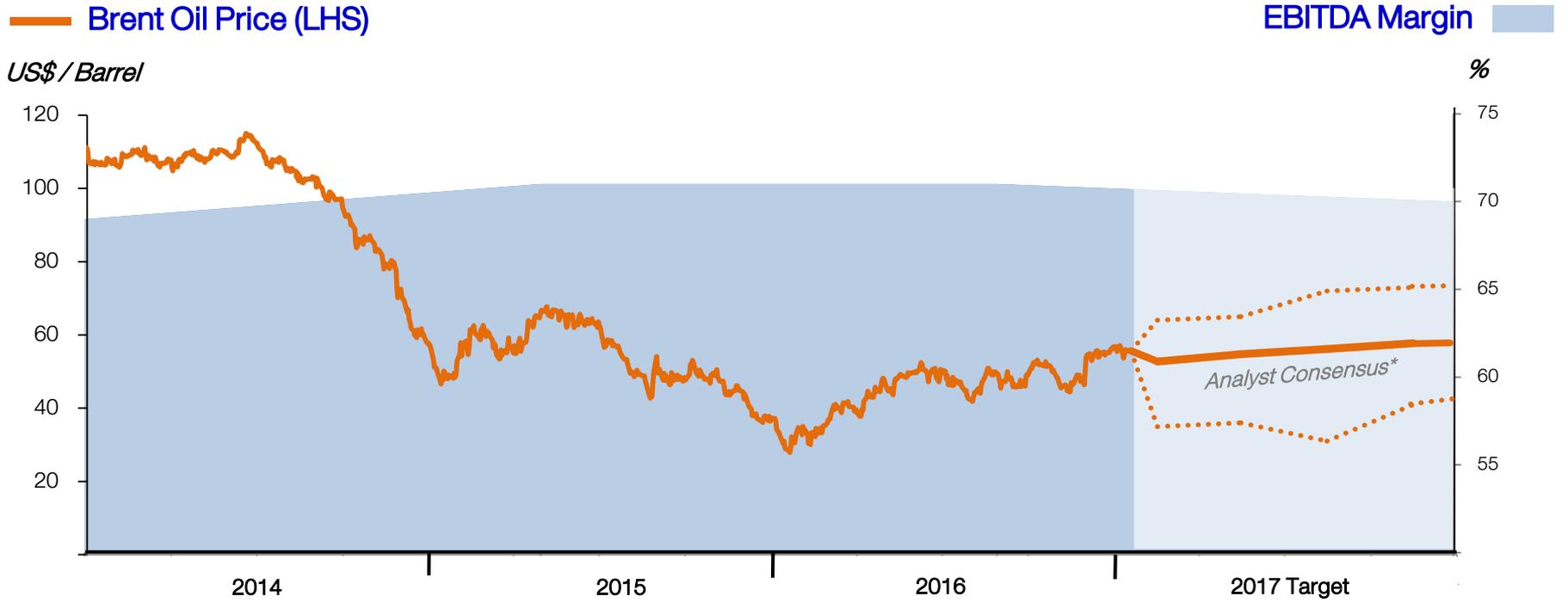
**Key Achievement and
Financial Performance**

Growth & Opportunities

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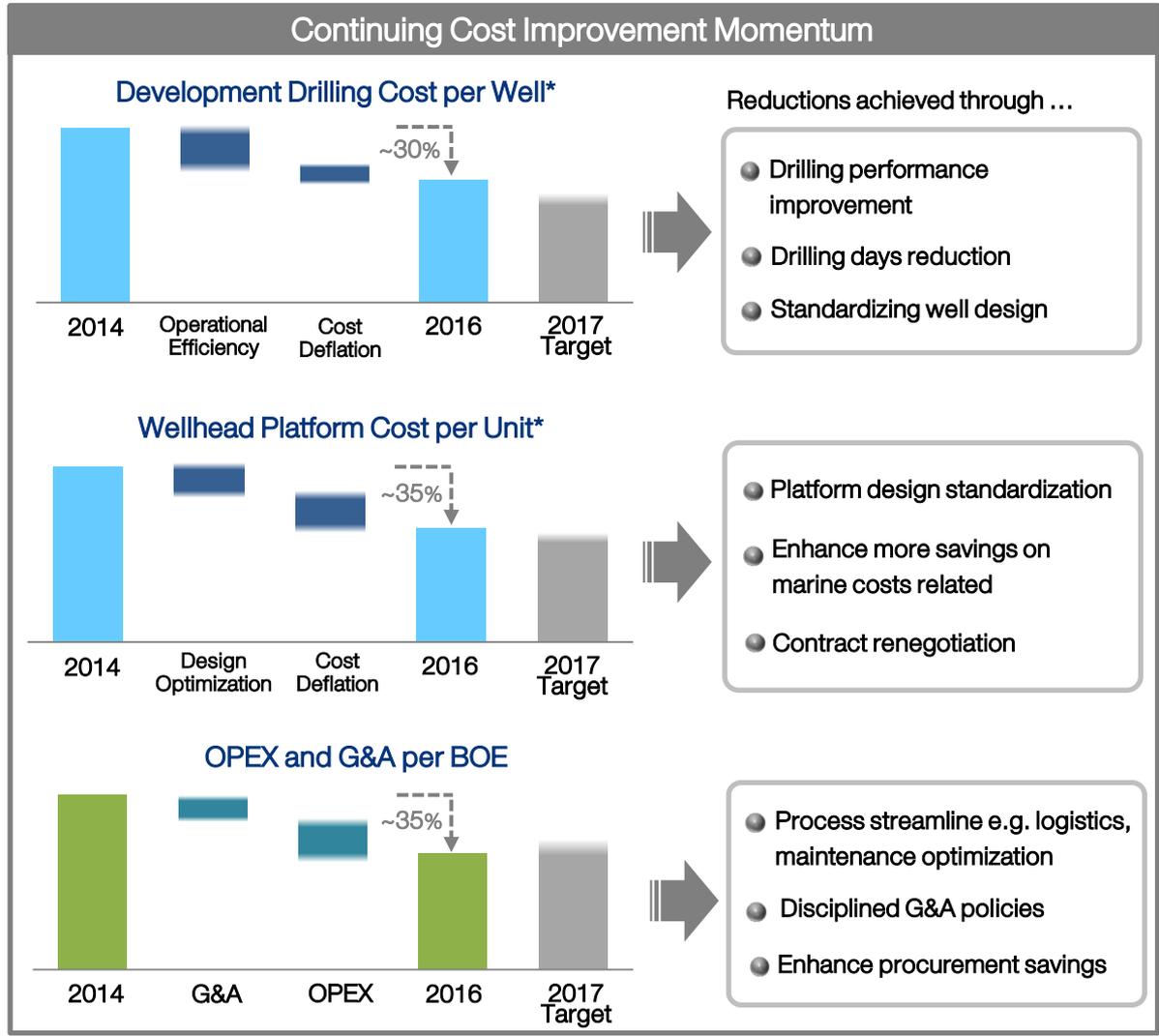
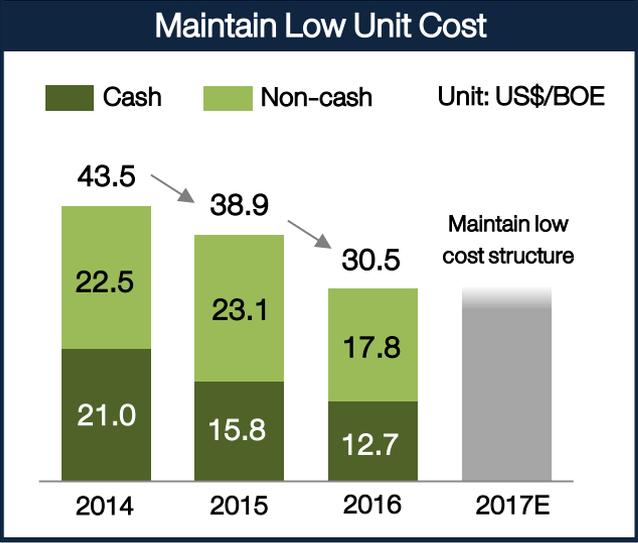
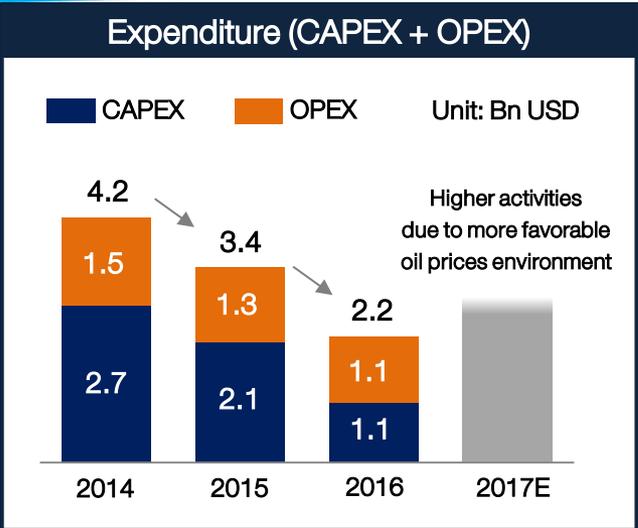
Survived through the Downturn and Ready to Strike

Strong operational and financial performance amid the oil price crisis



EBITDA Margin 69 - 71 %	Annual Operating Cash Flow 2.3 - 2.9 \$ Billion	Cash on Hand 3.5 - 4.0 \$ Billion	Outlook Expect to maintain strong EBITDA margin throughout 2017 and beyond
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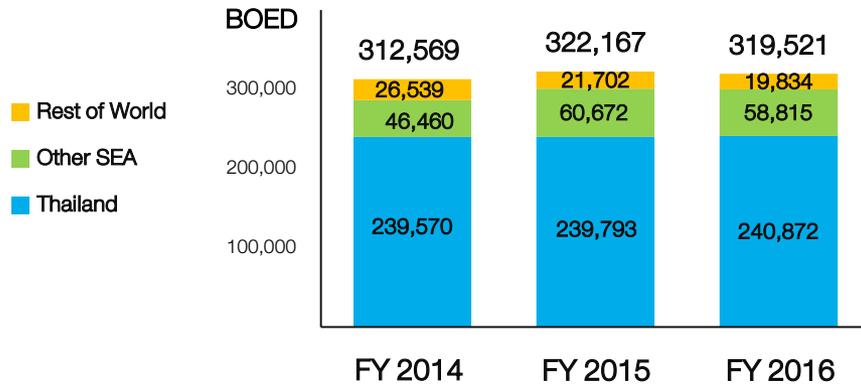
Remark * Brent oil prices consensus range: Bloomberg Analyst Consensus (CPFC) as of 17 January 2017



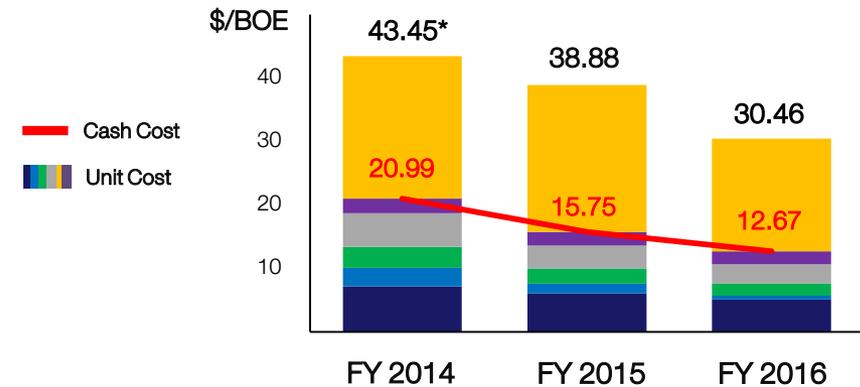
Remark * Primarily applicable in PTTEP-operated projects in the Gulf of Thailand
 Note : For Wellhead Platform Cost: Graph represents cost reduction captured but not yet fully realized



Sales Volume and Price



Unit Cost



Gas (\$/MMBTU)	8.06	7.20	5.60
Liquid (\$/BBL)	94.82	50.05	41.17
Weighted Avg. (\$/BOE)	63.71	45.29	35.91
Avg. Dubai (\$/BBL)	96.60	50.91	41.27
Avg. HSFO (\$/BBL) (High Sulphur Fuel Oil)	86.74	44.86	35.48
Volume Mix (Gas : Liquid)	67 : 33	70 : 30	69 : 31
Revenue Mix (Gas : Liquid)	51 : 49	66 : 34	65 : 35

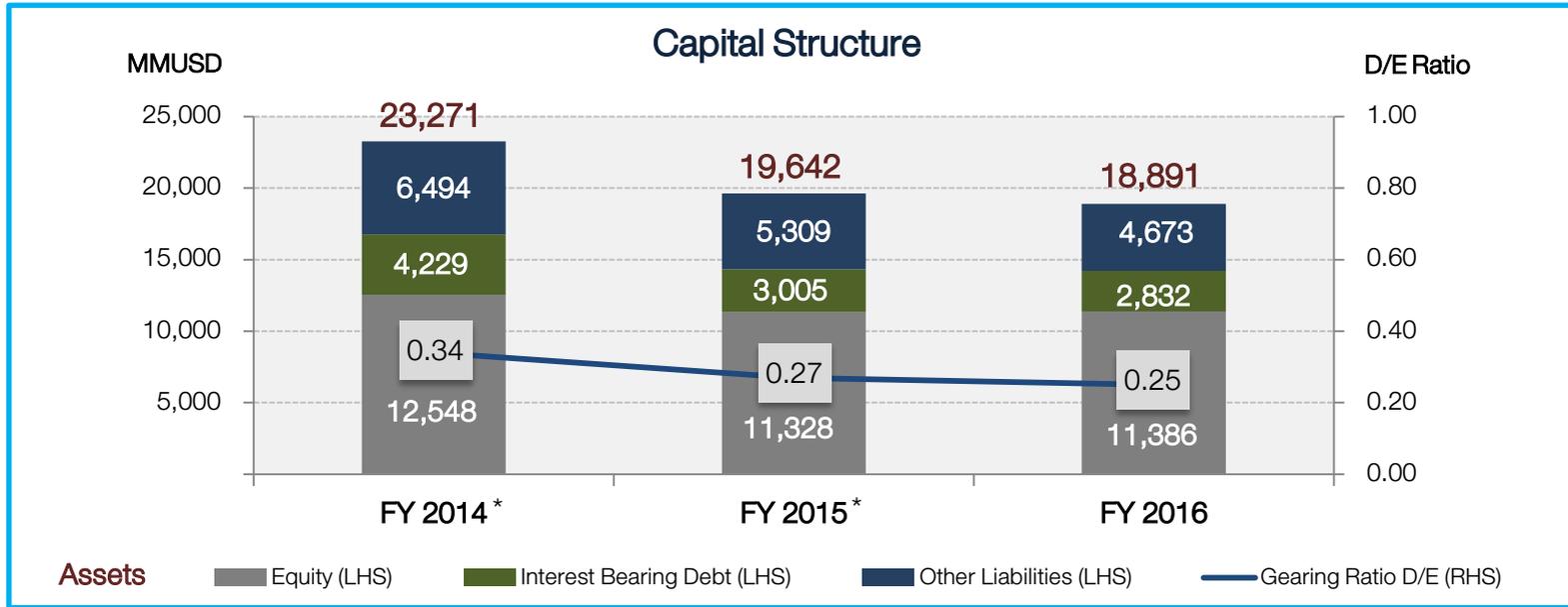
DD&A	22.46	23.13	17.79
Finance Cost	2.27	2.14	2.01
Royalties	5.34	3.62	3.02
G&A	3.30	2.39	1.93
Exploration Expenses	2.92	1.56	0.63
Operating Expenses**	7.16	6.04	5.08
Lifting Cost	5.26	4.62	4.18
Drilling Success Ratio***	25 : 43	31 : 47	6 : 8

Remark: Sales Volume & Royalties: after reclassification of PSC royalty

* If exclude extra expense from Montara's Development well (H5): For 2014, Operating Exp: 6.73 \$/BOE / Unit cost: 43.02 \$/BOE

** Exclude diluent cost for blending bitumen in KKD Oil Sands project

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



Debt Profile **



Weighted Average Cost of Debt** (%)

4.14

4.32

4.41

[Fixed : Floating]

[77 : 23]

[82 : 18]

[80 : 20]

Average Loan Life** (Years)

7.05

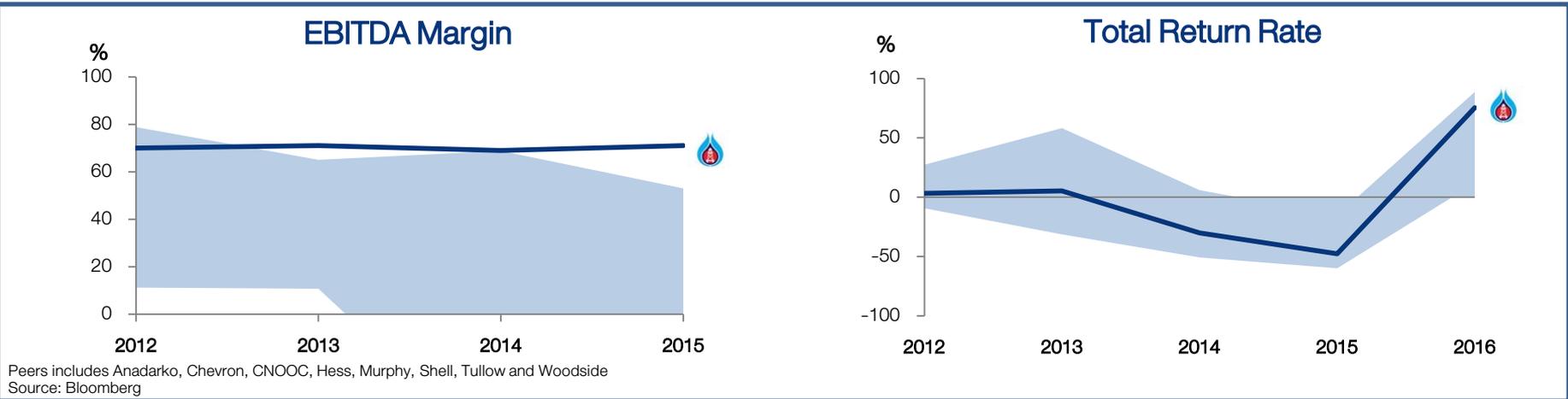
8.17

8.15

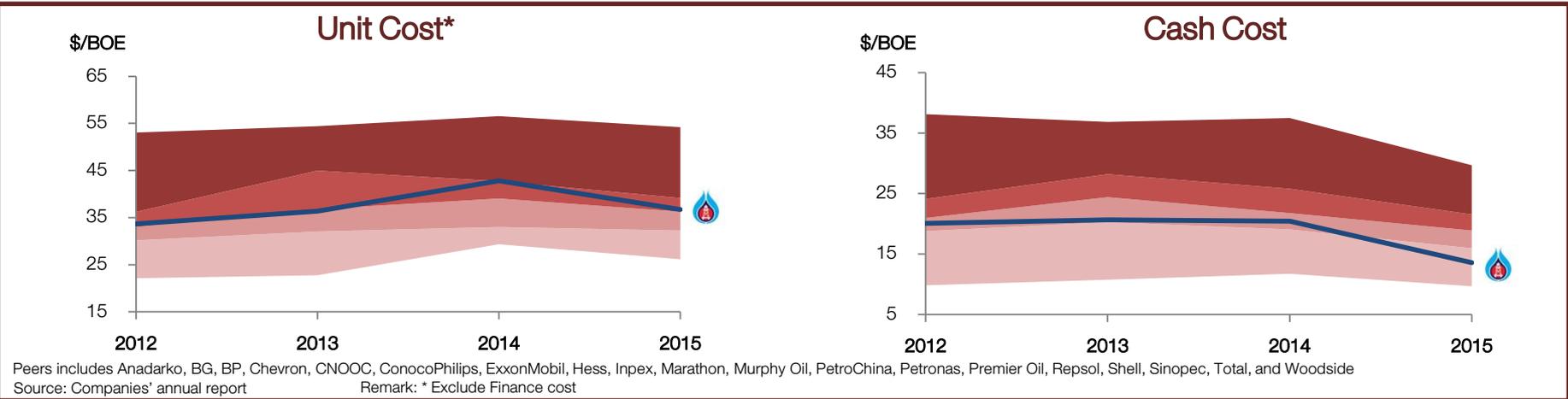
Remark: * Restated
 ** Excludes Hybrid bonds



Deliver better performance...



...with competitive cost structure

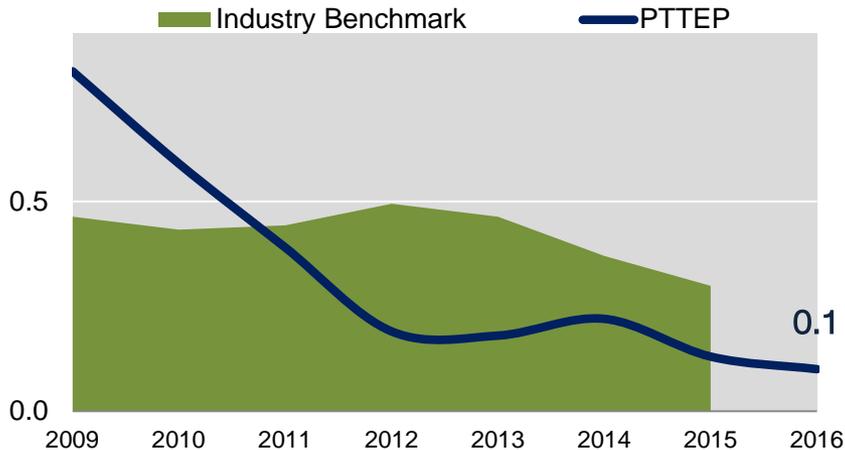




Safety

Maintain high safety standard

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



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

DJSI

Listed for three consecutive years

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ROBECOSAM
Sustainability Award
Industry Leader 2016



ROBECOSAM
Sustainability Award
Gold Class 2017

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





Company Overview

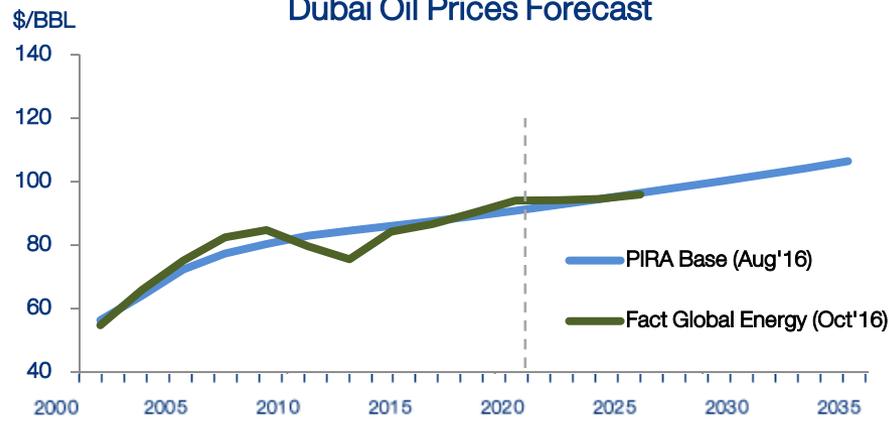
Key Achievement and
Financial Performance

Growth & Opportunities

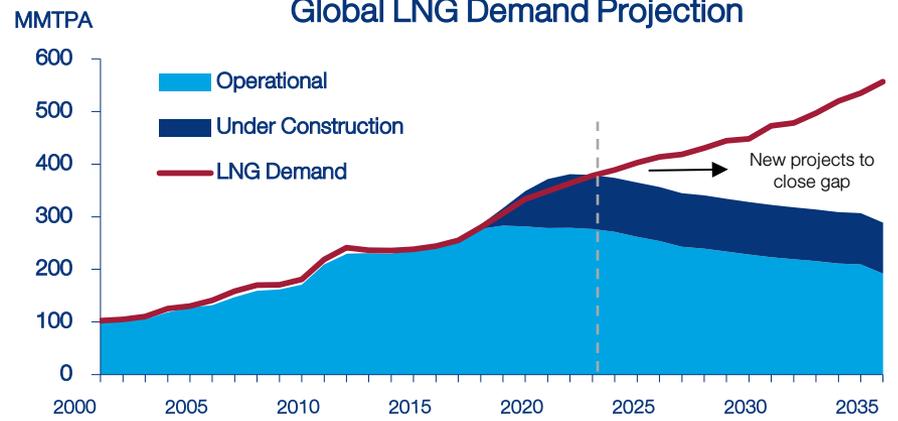
Investment Plan & Outlook



Dubai Oil Prices Forecast



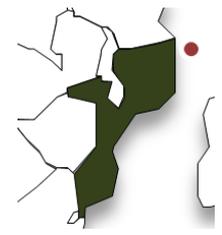
Global LNG Demand Projection



Source: Wood Mackenzie

Good mix of LNG & Oil projects to start-up during 2021-2023 to capture the industry upturn

Mozambique Rovuma Offshore Area 1



Production
12 MMTPA

Expected Start-up
2022/23

- 8.5% interest (operated by Anadarko)
- Substantial recoverable resources of 70+ TCF
- Initial development for 12 MMTPA LNG (2 trains)

Ubon (Contract 4)

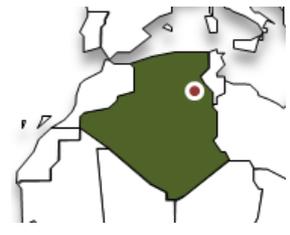


Production
25-30 KBPD

Expected Start-up
2021

- 60% interest (operated by Chevron)
- Oil resources in the Gulf of Thailand

Algeria HBR



Production
50 KBPD

Expected Start-up
2023

- 24.5% interest (operator)
- Successful appraisal wells result
- Accelerate development plan



Exploration	Focus	Known area, acceptable risk and quick commercialization opportunity
	Seismic Activity:	MOGE-3, Zawtika West Area, SK410B
	2017/18 Drilling:	Onshore and offshore Myanmar
M&A	Geographical focus:	Thailand, SEA, Middle East
	Financially well positioned:	\$ 4 Bn Cash on hand and low gearing (0.25x D/E)
	Product appetite:	Gas-weighted

Cooperation with PTT in LNG Opportunities

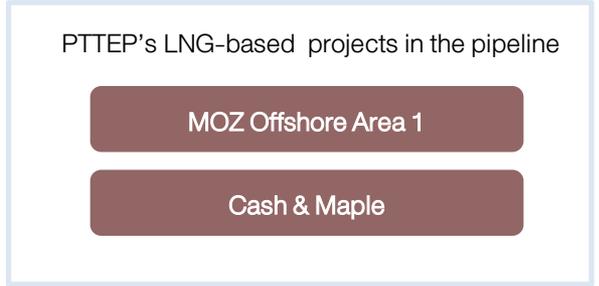
Synergy to capture value in the LNG chain



Growing Thailand's LNG Demand

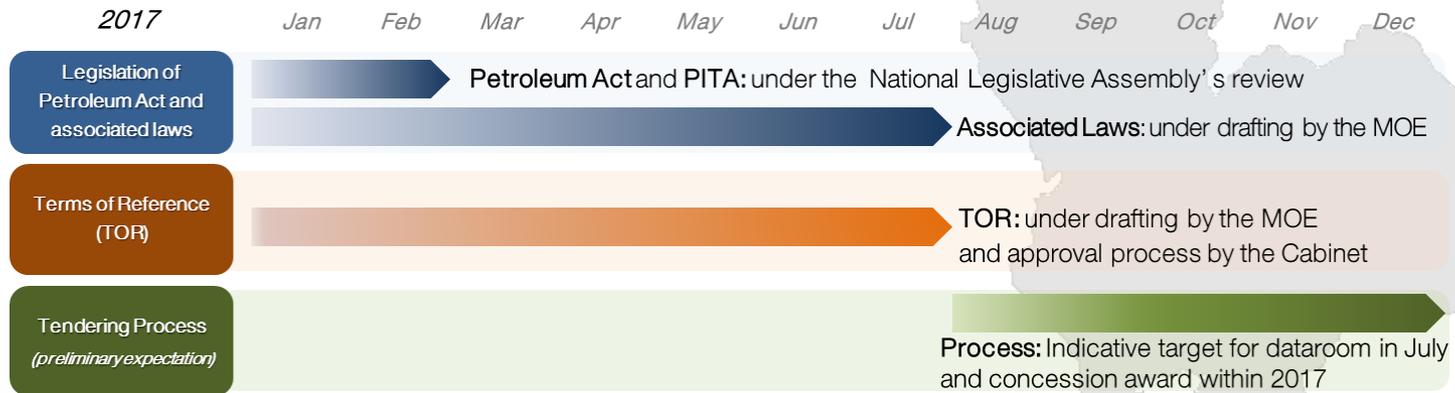


Enhance position in the LNG market





Path to re-tendering of expiring concessions



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



Company Overview

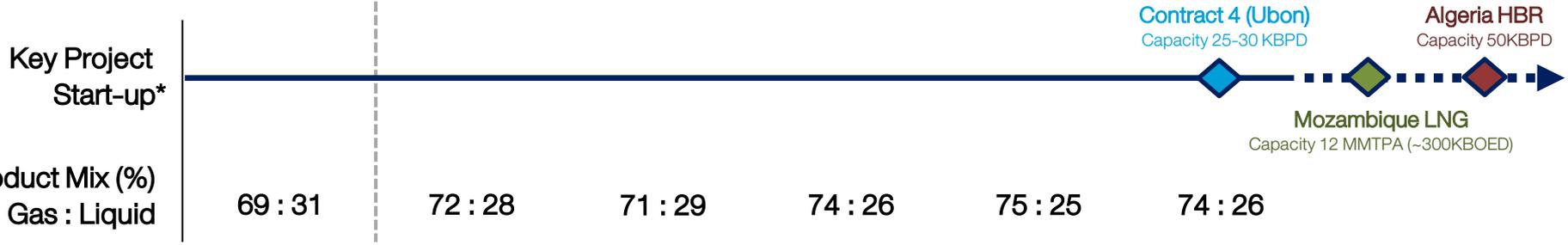
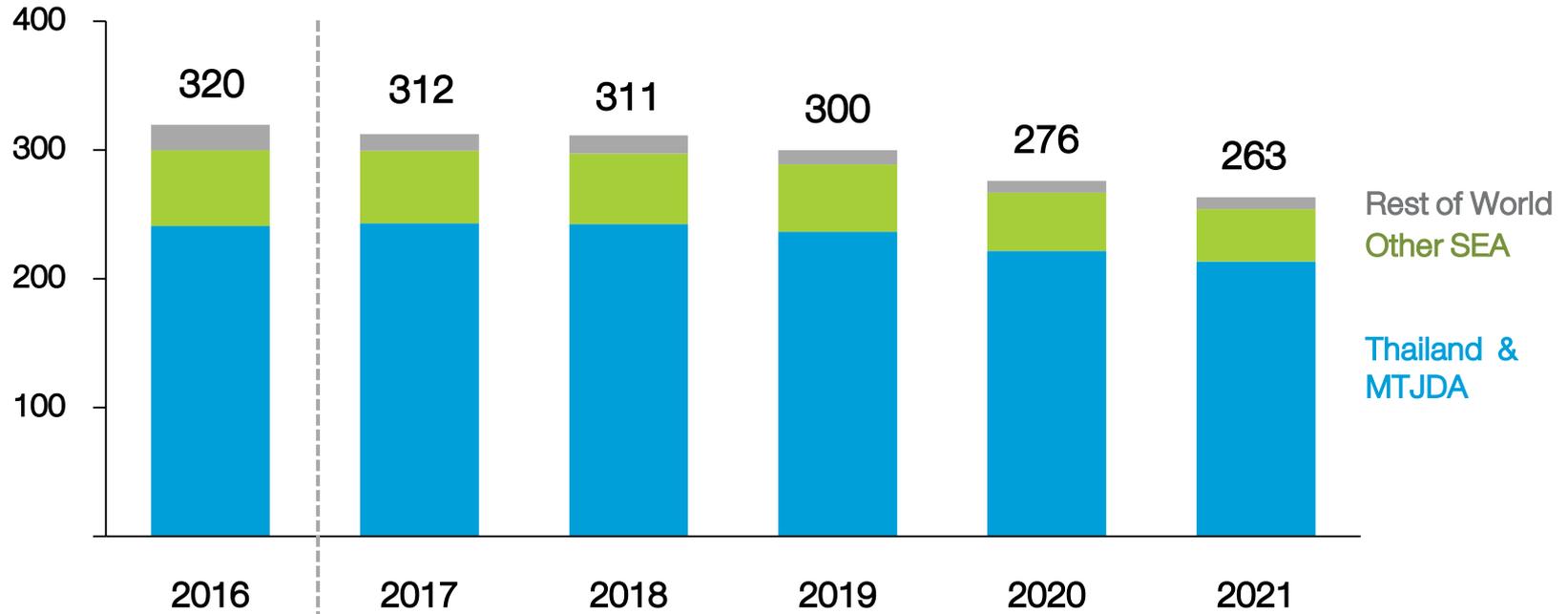
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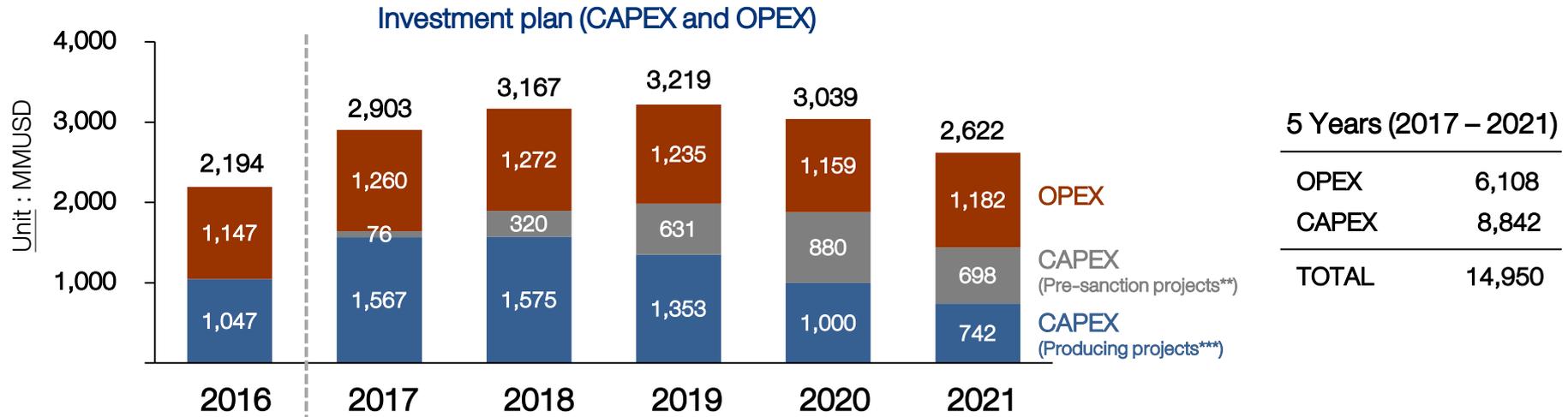
Investment Plan & Outlook



Unit : KBOED



Note: * Subject to FID timing

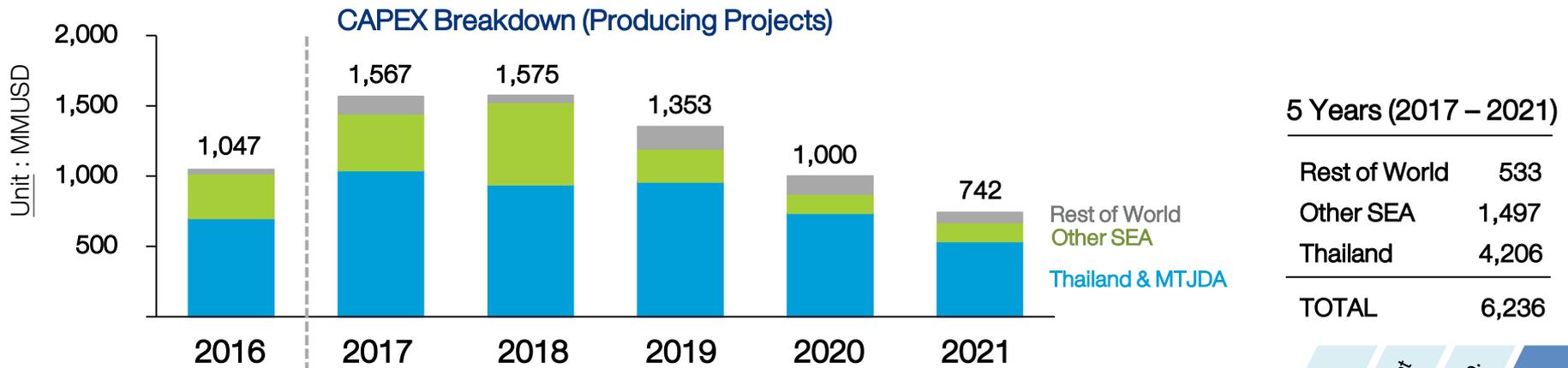


Key Project Start-up*

Contract 4 (Ubon)
Capacity 25-30 KBPD

Algeria HBR
Capacity 50KBPD

Mozambique LNG
Capacity 12 MMTPA (~300KBOED)



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



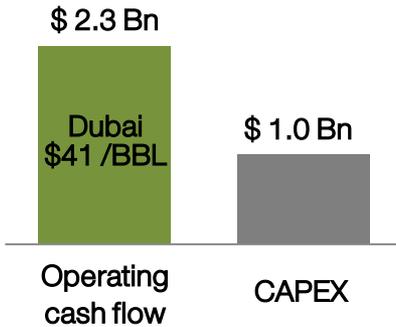
Strong Financial Capability

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)

Q1 2017	FY 2017
~ 310	~ 312

Average Gas Price* (USD/MMBTU)

Q1 2017	FY 2017
~ 5.1	~ 5.3

Unit Cost (USD/BOE)

Q1 2017	FY 2017
~ 31	30-31

EBITDA margin

FY 2017
~ 70 %

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



Focused Portfolio with revenue stability

Competitive Cost base and strong margin

Best Balance sheet and Capital Management

Well positioned for future growth

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

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

- \$4 Bn cash on hand and solid capital structure with low D/E ratio at 0.25x
- A consistent dividend-paying company for over 15 years

- Series of project developments in the pipeline and M&A
- Current gas-weighted portfolio in line with global trend towards gas.
- Continue strategy to seek LNG value chain opportunities with PTT Group



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



<http://www.pttep.com>



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Unit : MMUSD

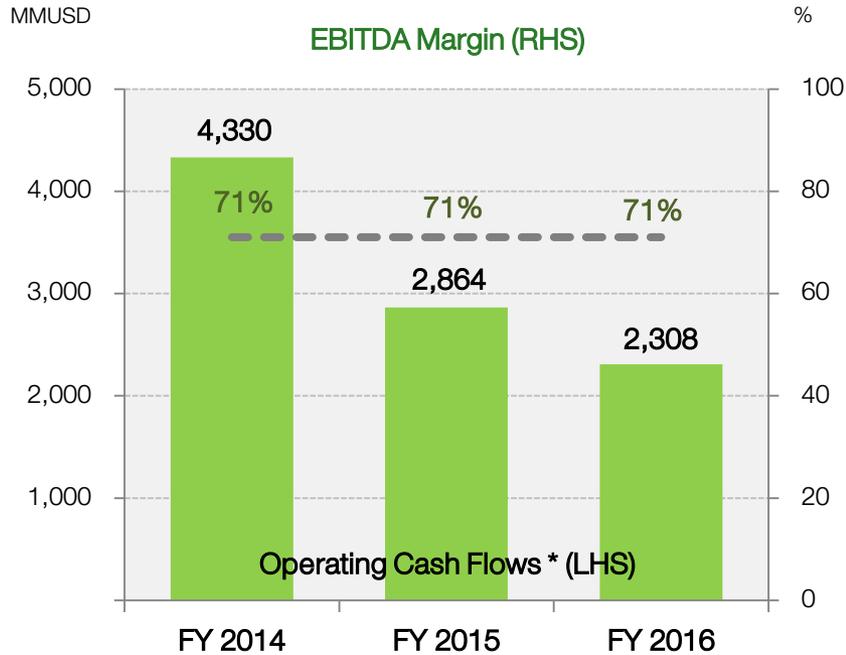
Statement of Income	2016	2015*	% YTD	Q3 16	Q4 16	% QoQ	Q4 15*	% YoY
Total Revenues	4,339	5,614	(23)	1,109	1,089	(2)	1,327	(18)
Sales	4,190	5,287	(21)	1,047	1,038	(1)	1,203	(14)
Others	149	327	(54)	62	51	(18)	124	(59)
Sales Volume (BOED)	319,521	322,167	(1)	311,386	316,307	2	336,363	(6)
Sales Price (USD/BOE)	35.91	45.29	(21)	36.32	35.65	(2)	39.18	(9)
Total Expenses	3,987	6,437	(38)	953	1,123	18	1,196	(6)
Major Expenses:								
Operating Expenses	582	685	(15)	146	167	14	170	(2)
Exploration Expenses	73	183	(60)	20	12	(40)	53	(77)
DD&A	2,079	2,708	(23)	534	509	(5)	613	(17)
Impairment Loss on Assets	47	1,350	(97)	-	47	>100	-	>100
Income Tax Expense	285	495	(42)	67	133	99	118	13
(Gain)/Loss on FX	(12)	69	(>100)	(14)	16	>100	(4)	>100
Net Income from Continuing Operations	352	(823)	>100	156	(34)	(>100)	131	(>100)
Profit (Loss) from Discontinued Operations	20	(31)	>100	0.27	18	>100	0.48	>100
Net Income	372	(854)	>100	156	(16)	(>100)	132	(>100)
Recurring Net Income	466	718	(35)	75	123	64	13	>100
Non-Recurring**	(94)	(1,572)	94	81	(139)	(>100)	119	(>100)

Note: * Restated / Represented

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

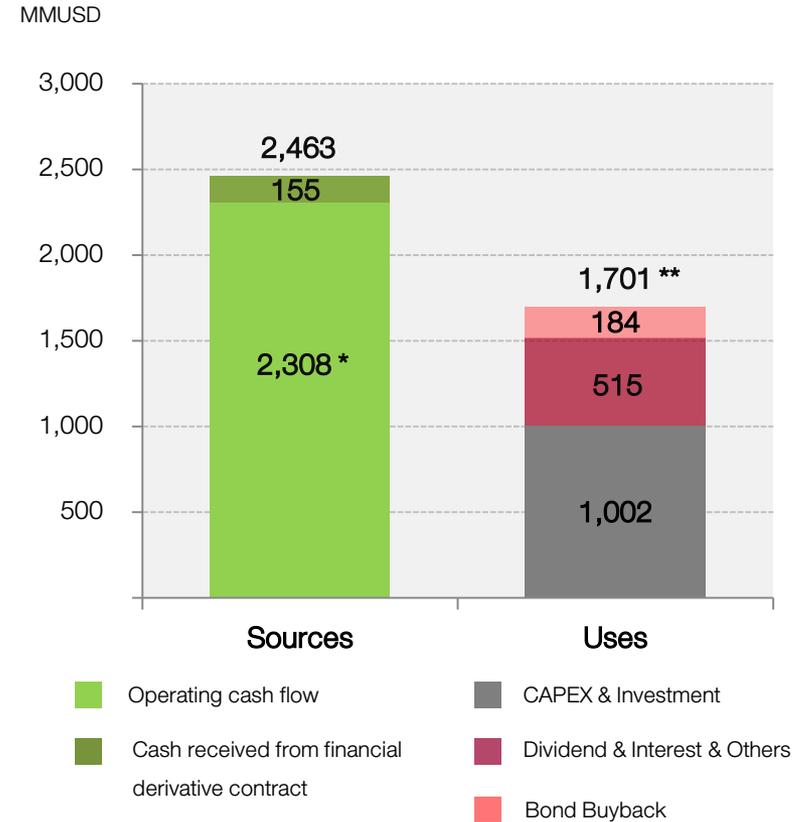


Cash Flow Performance



Net Income	677	(854)	372
Recurring Net Income ***	1,538	718	466

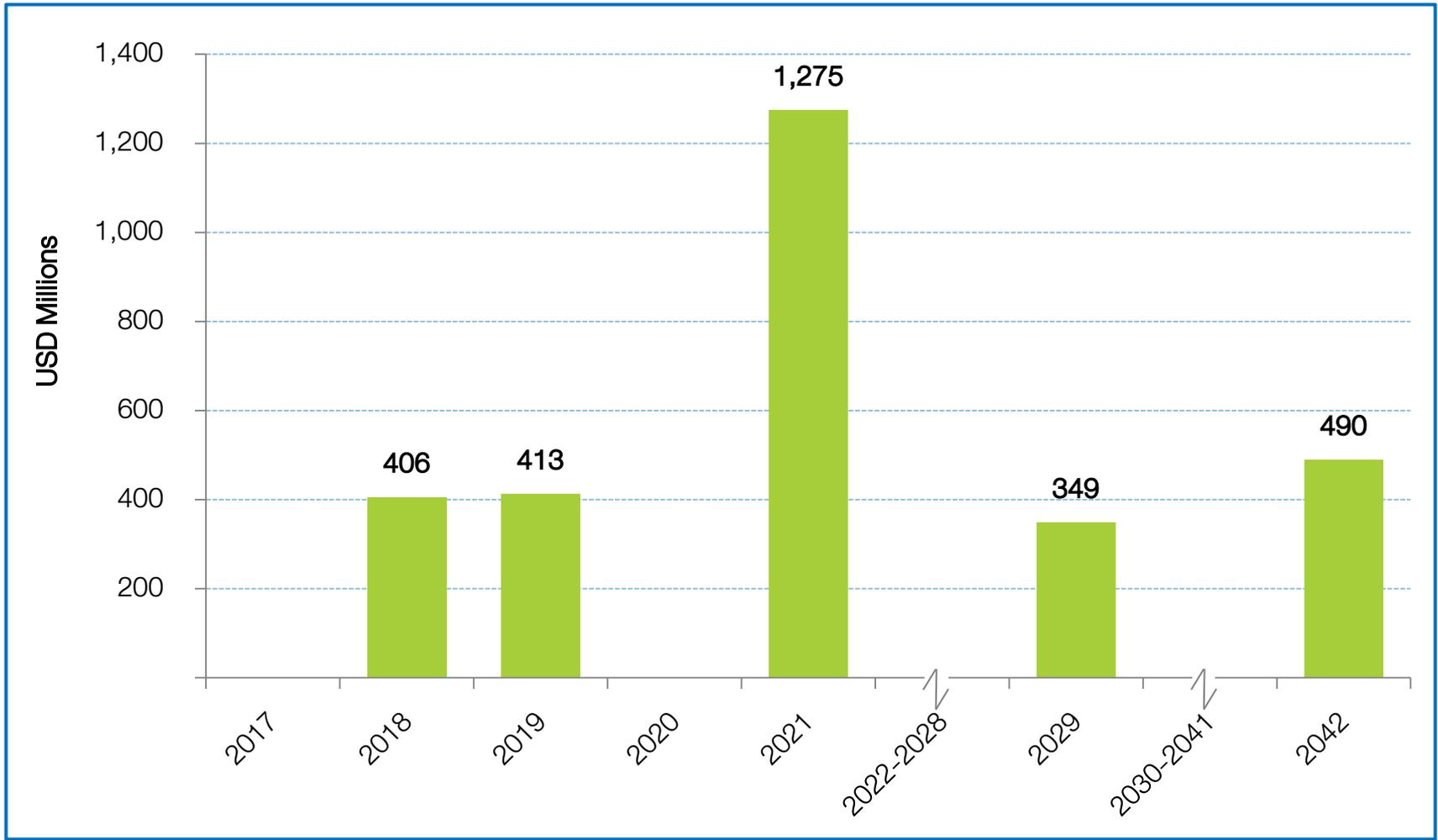
Source & Use of Funds in 2016



Remark: * Net of adjustment for the effect of exchange rate changes on cash and cash equivalents

** Excludes cash flows for investing in short-term investments (Fixed deposit > 3 months)

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

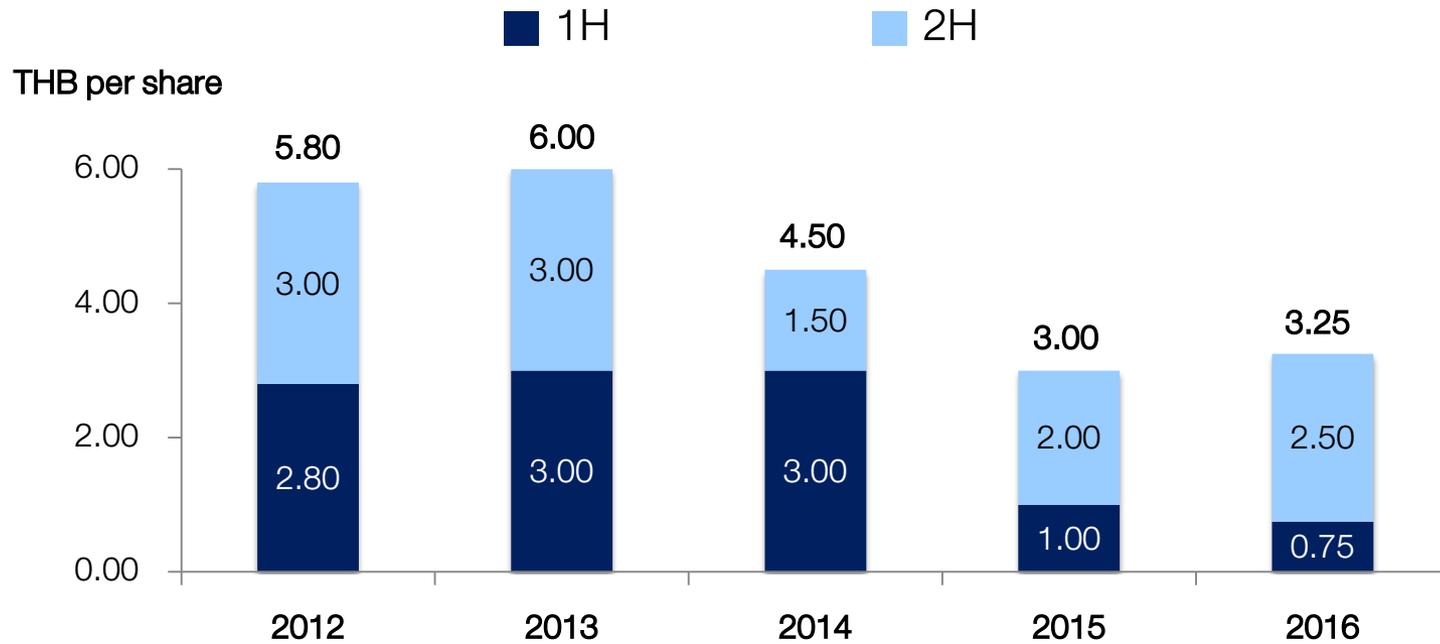


Note: Excludes Hybrid bonds

Unit: USD Millions or equivalent after cross currency swap



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



Payout Ratio (%)

38

40

82

N/A

98



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ROBECOSAM
 Sustainability Award
 Industry Leader 2016

ROBECOSAM
 Sustainability Award
 Gold Class 2017

2016 DJSI Listed Company

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



Proven business integrity

- Outstanding Sustainability Report Award 2016
Thai Listed Companies Association
- Certified Member
Thailand's Private Sector Collective Action Coalition Against Corruption (CAC)
- CG Asia Recognition Awards
Corporate Governance Asia Magazine



FTSE4Good

FTSE4Good Emerging Index

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

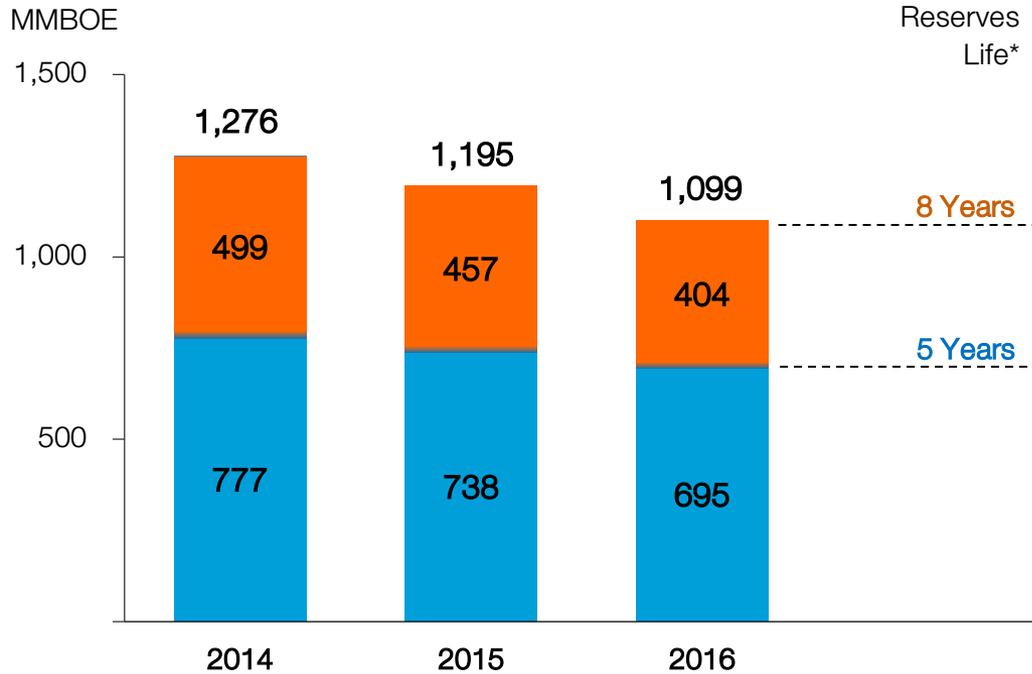


Green driver to environment

- Best Environmental Responsibility
Corporate Governance Asia Magazine
- CDP's Climate Leadership Level
CDP
- Excellence in the safety, health and environmental management awards
2016 SHE Award

Exemplary social contributor

- Bronze Stevie Award
Parasite-Free School Program
- Platinum Award
Free healthcare Center Project Indonesia

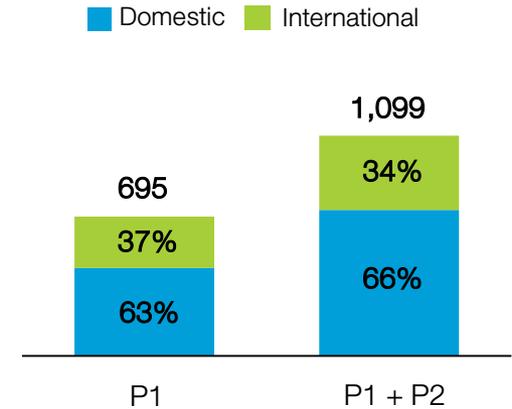


■ Proved (P1) ■ Probable (P2)

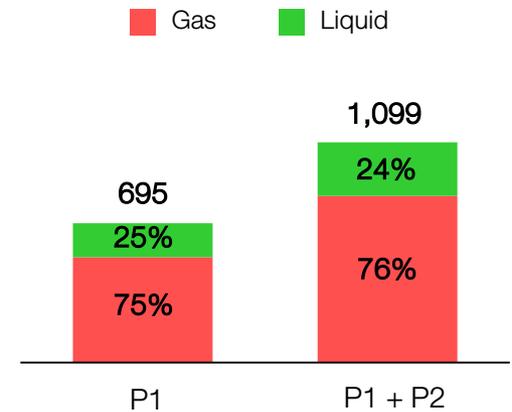
5-Year Average Proved Reserves Replacement Ratio (RRR)

2014	2015	2016
0.45x	0.50x	0.57x

2016 by Geography



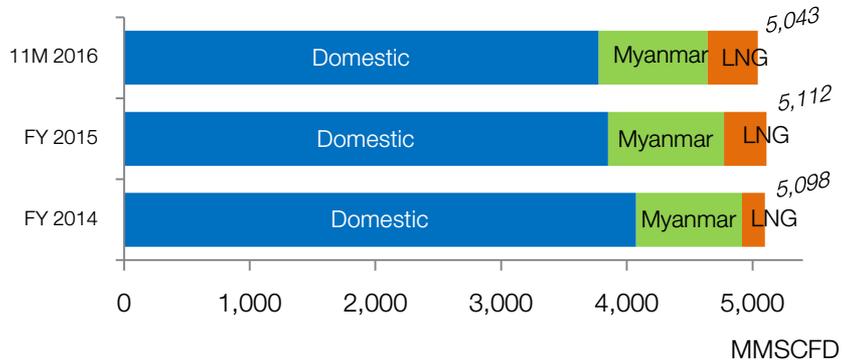
2016 by Product Type



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

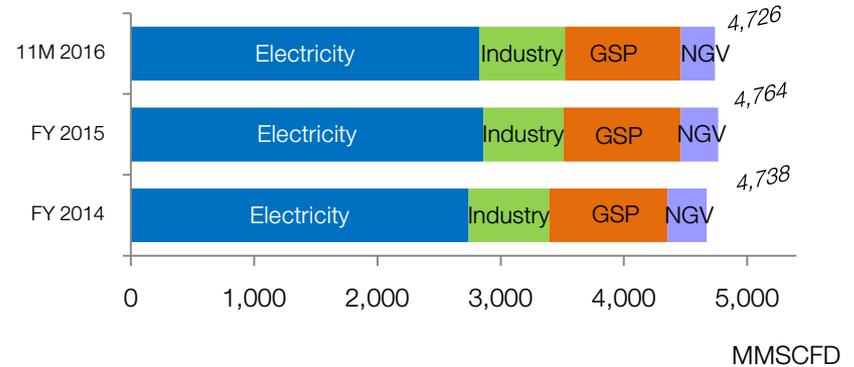


Thailand's Natural Gas Supply by Source



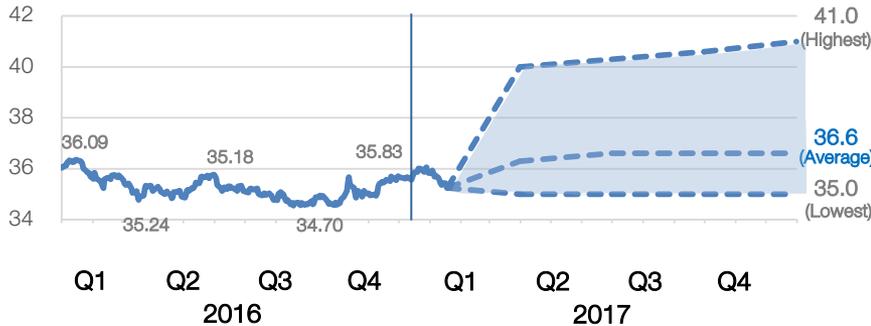
Source: EPPO

Thailand's Natural Gas Consumption by Sector



Source: EPPO

Exchange Rate Movement (THB/USD)



Source: Bank of Thailand, Bloomberg

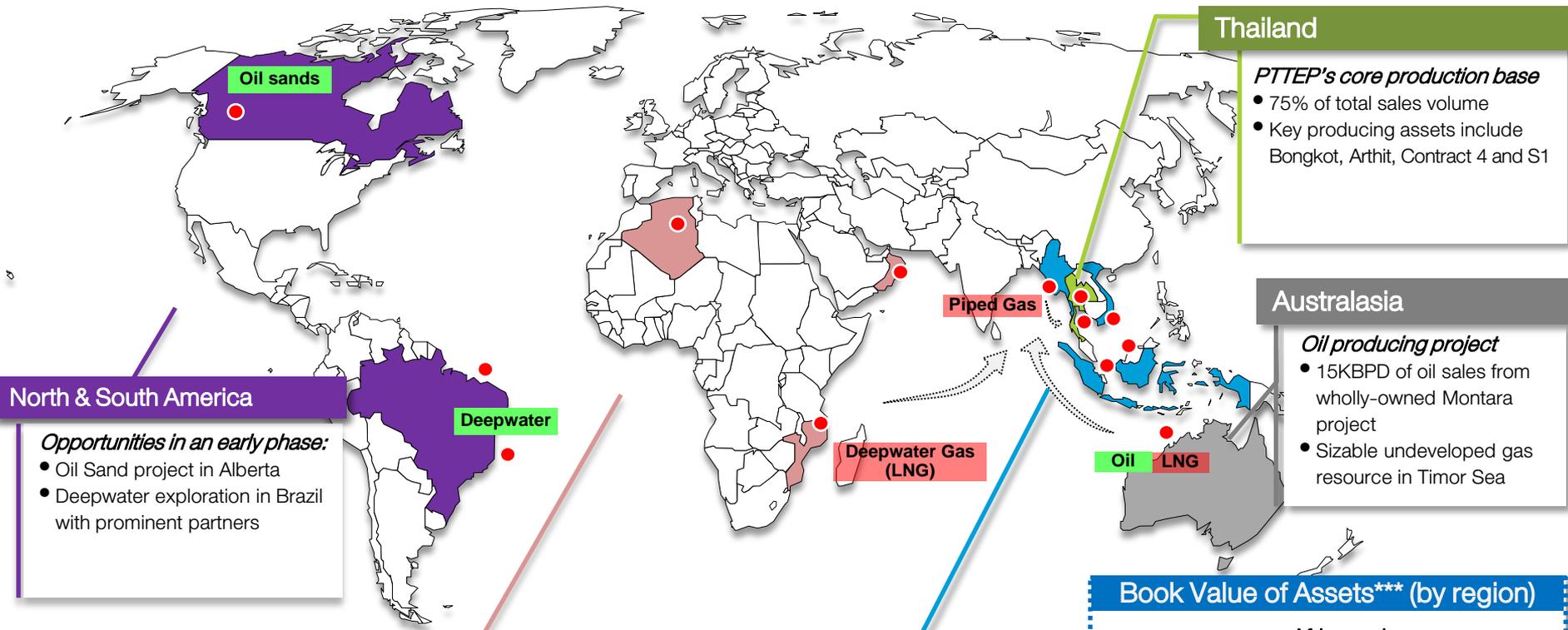
Forecast based on Bloomberg Consensus as of 17 January 2017

Thailand's Gas Market:

- In meeting stable domestic demand, saw a slight increase in LNG imports and Myanmar volumes decline due to planned shutdown in 11M 2016

Exchange Rate:

- Continue to be volatile; risk to weakening THB if FED increases interest rate in 2017



North & South America

Opportunities in an early phase:

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

Africa and Middle East

An area for growth, key projects include:

- Producing: Algeria's Bir Seba oil field has started up with current flow rate of approximately 15 KBPD
- Pre-development and Appraisal: Mozambique LNG and Algeria's Hassi Bir Rakaiz

Southeast Asia

Second heartland to PTTEP

- 18% of total sales volume
- Myanmar being most important with gas production mostly supplied into Thailand
- Other producing assets in Vietnam (oil) and Indonesia (gas)

Thailand

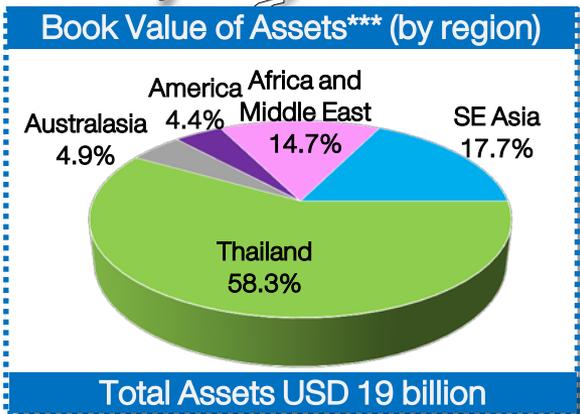
PTTEP's core production base

- 75% of total sales volume
- Key producing assets include Bongkot, Arthit, Contract 4 and S1

Australasia

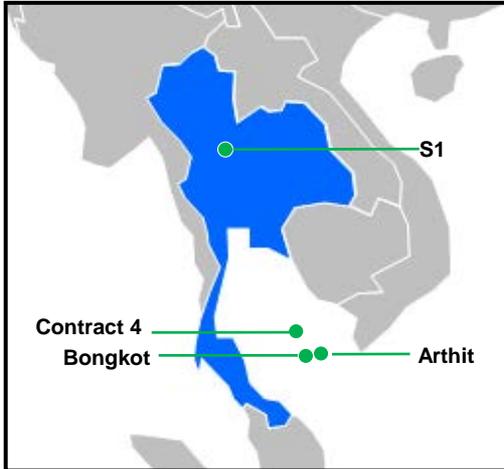
Oil producing project

- 15KBPD of oil sales from wholly-owned Montara project
- Sizable undeveloped gas resource in Timor Sea



Notes: * Excludes 2 projects that are pending official withdrawal approval
 ** Information dated as of 31 December 2016

*** Information as of 31 December 2016



● Production / Ramp-up Projects

Bongkot (44.4% interest)

- Bongkot's natural gas sales volume of 887 MMSCFD (2016)
- Average condensate sales volume was 27 KBPD in 2016

S1 (100% interest)

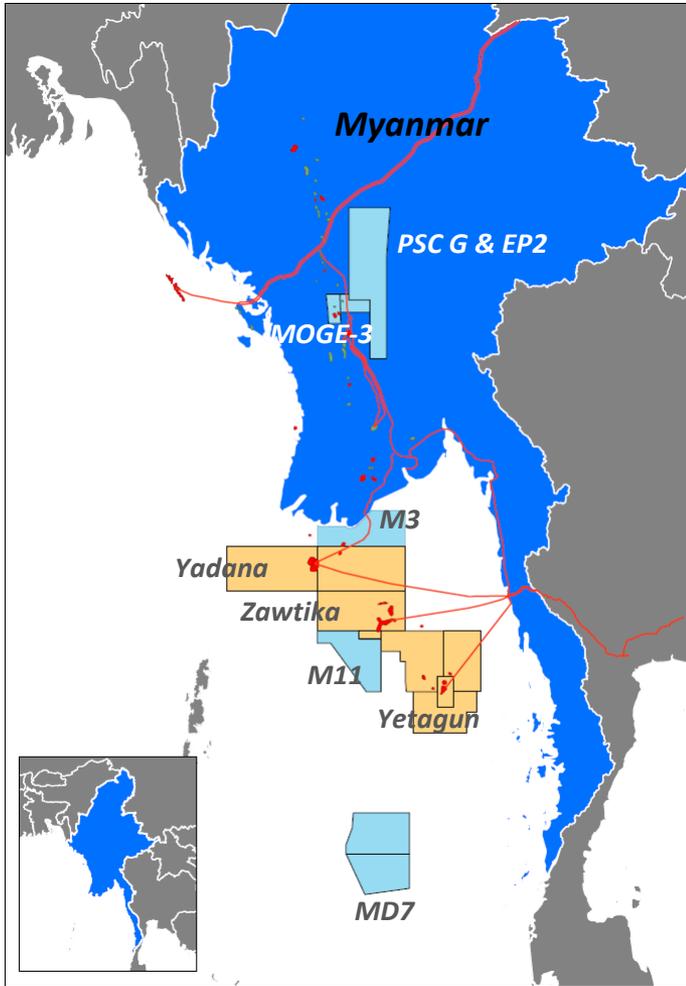
- S1 is the largest onshore crude oil production field in Thailand
- Average crude oil sales volume was 27 KBPD in 2016

Arthit (80% interest)

- Average sales volume in 2016 was 222 MMSCFD of natural gas and 9.3 KBPD of condensates

Acquisition of Hess Assets in Thailand

- PTTEP successfully acquired Hess Corporation's working interests in the Contract 4 project and Sinphuhorm project, and now holds 60% working interest in the Contract 4 project and 55% working interest in the Sinphuhorm project . PTTEP has also become the operator of the Sinphuhorm project
- The Contract 4 project had an average sales rate of 328 MMSCFD for natural gas and 15 KBPD for condensate in 2016



Exploration block
 Production block

- Participating in three producing gas fields which supply gas to both Thailand and Myanmar: Yadana, Yetagun, Zawtika
- Operate Zawtika project, brought online in August 2014. Deliver gas supply of 305 MMSCFD in 2016.
- Significant exploration acreage both onshore and offshore in the Moattama Basin

Project Status		
<p style="text-align: center;">Producing</p> <ul style="list-style-type: none"> • Yadana <i>(25.5% WI)</i> • Yetagun <i>(19.3% WI)</i> • Zawtika <i>(80% WI)</i> 	<p style="text-align: center;">Appraisal</p> <ul style="list-style-type: none"> • M3 <i>(80% WI)</i> 	<p style="text-align: center;">Exploration</p> <ul style="list-style-type: none"> • PSC G & EP2 <i>(70% WI)</i> • MOGE-3 <i>(75% WI)</i> • M11 <i>(100% WI)</i> • MD7 <i>(100% WI)</i>

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 27 KBPD in 2016
- 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 226 MMSCFD in 2016



*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-blinding HOAs

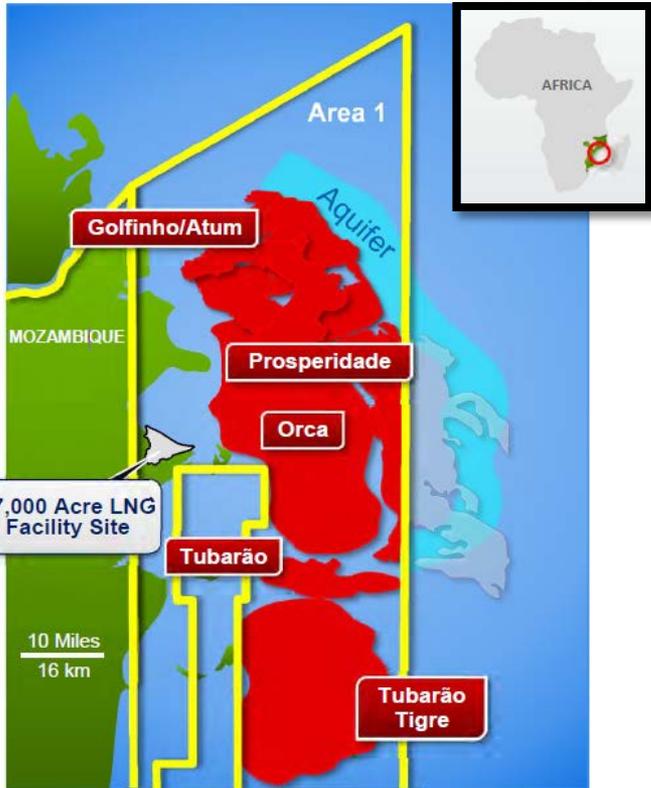
Regulatory

- ✓ Decree law ratified
- ✓ Substantial engagement with government to progress on remaining agreements and approvals to support investment

Financing

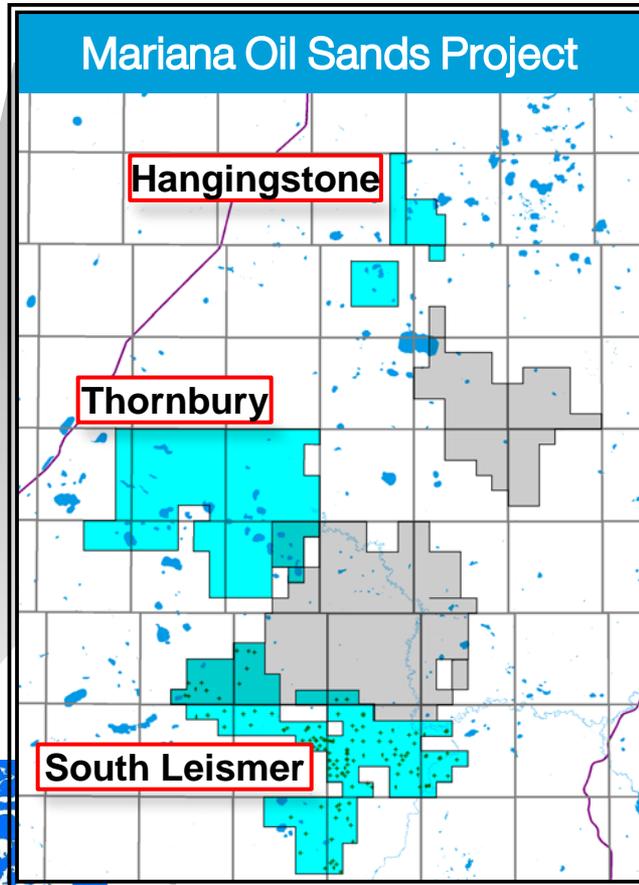
- ✓ Positive indications on project financing

Onwards to initial phase of 12 MMTPA



Location and Cost Advantage

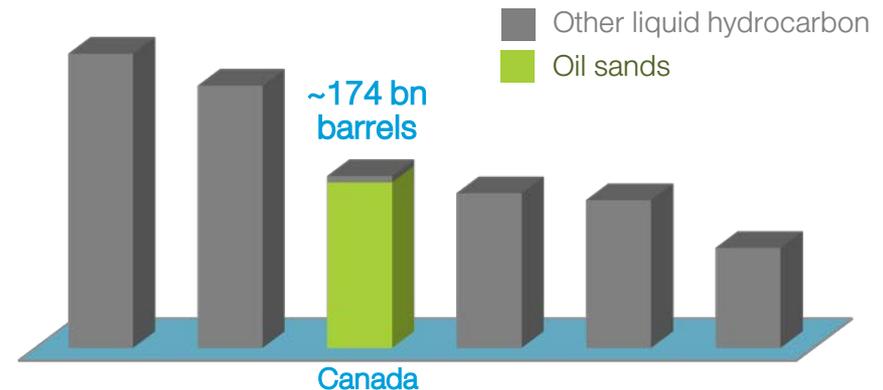
- Close proximity to shore
- High quality reservoirs
- Access to Asian markets



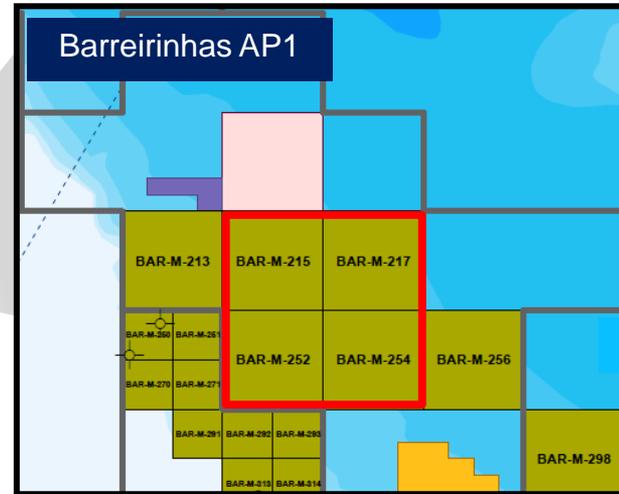
Project Overview

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

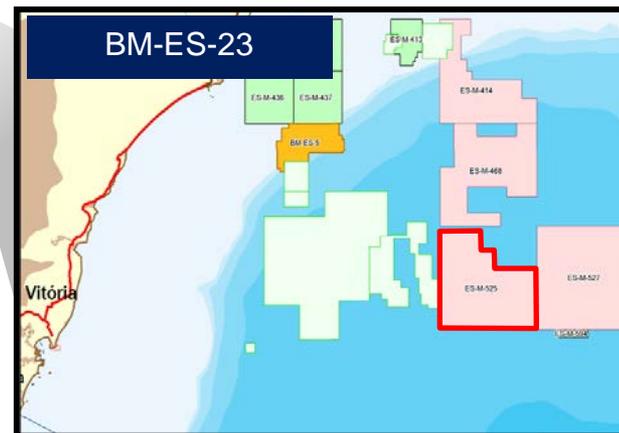
Approximately 96% of the reserves in Canada, the world's 3rd largest oil reserves, is oil sands



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



- Farm-in 25% from BG Group in 2014
- Operated by BG Group (75% 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 2016)		2016 Average Sales Volume **		2017 Key Activities
						Gas	Oil and Other	
Production Phase								
Thailand and JDA								
1	Arthit	OP	80%	Chevron MOECO	16% 4%	222 MMSCFD	Condensate: 9.3 k BPD	<ul style="list-style-type: none"> Ensure gas deliverability level at DCQ**** Drill development wells
2	B6/27	OP	60%***			N/A	N/A	<ul style="list-style-type: none"> Subsurface study
3	B8/32 & 9A		25%	Chevron MOECO KrisEnergy PSTL	51.66% 16.71% 4.63% 2%	127 MMSCFD	Crude: 28 k BPD	<ul style="list-style-type: none"> Drill development wells Perform waterflood activities
4	Bongkot	OP	44.4445%	TOTAL British Gas	33.3333% 22.2222%	887 MMSCFD	Condensate: 27 k BPD	<ul style="list-style-type: none"> Ensure gas deliverability level at DCQ**** Drill development wells Install wellhead platforms
5	Contract 3 (Formerly Unocal III)		5%	Chevron MOECO	71.25% 23.75%	583 MMSCFD	Crude: 24 k BPD Condensate: 21 k BPD	<ul style="list-style-type: none"> Drill exploration / appraisal / development wells Install wellhead platforms Perform waterflood activities
6	Contract 4 (Formerly Pailin)		60%	Chevron MOECO	35% 5%	328 MMSCFD	Condensate: 15 k BPD	<ul style="list-style-type: none"> Ensure gas deliverability level at DCQ**** Drill development wells Install wellhead platforms Review development plan of Ubon field
7	E5		20%	ExxonMobil	80%	11 MMSCFD	-	
8	G4/43		21.375%	Chevron MOECO PSTL	51% 21.25% 6.375%	2 MMSCFD	Crude: 6.1 k BPD	<ul style="list-style-type: none"> Drill development wells Perform waterflood activities
9	G4/48		5%	Chevron MOECO	71.25% 23.75%	7 MMSCFD	Crude: 1.6 k BPD	
10	L53/43 & L54/43	OP	100%			-	Crude: 530 BPD	<ul style="list-style-type: none"> Drill exploration / appraisal / development wells
11	PTTEP1	OP	100%			-	Crude: 367 BPD	<ul style="list-style-type: none"> Drill development wells Perform waterflood activities
12	S1	OP	100%			22 MMSCFD	Crude: 27 k BPD	<ul style="list-style-type: none"> Drill exploration / development wells Enhance oil recovery program includes waterflooding and artificial lift
13	Sinphuhorm	OP	55%	Apico ExxonMobil	35% 10%	118 MMSCFD	Condensate: 435 BPD	<ul style="list-style-type: none"> Drill development wells
14	MTJDA	JOC	50%	Petronas-Carigali	50%	300 MMSCFD	Condensate: 7.8 k BPD	<ul style="list-style-type: none"> Drill development wells Install wellhead platforms
15	L22/43	OP	100%			-	Crude: 205 BPD	<ul style="list-style-type: none"> Drill development wells

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

** Sales volume stated at 100% basis.

*** Pending the approval of the partner divestment from DMF

**** DCQ = Daily Contractual Quantity



	Project	Status*	PTTEP's Share	Partners (as of 2016)	2016 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: 4.4 k BPD	<ul style="list-style-type: none"> Maintain production operation Perform reservoir management
17	Yadana		25.5%	TOTAL 31.24% Chevron 28.26% MOGE 15%	747 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%	229 MMSCFD	Condensate: 4.9 k BPD	<ul style="list-style-type: none"> Drill appraisal / development wells Perform reservoir Management
19	Vietnam 16-1	JOC	28.5%	PetroVietnam 41% SOCO 28.5% OPECO 2%	10 MMSCFD	Crude: 27 k BPD	<ul style="list-style-type: none"> Drill development wells Maintain production operation
20	PTTEP Australasia (PTTEP AA)	OP	90%-100% (varied by permits)		-	Crude: 15 k BPD	<ul style="list-style-type: none"> 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%	226 MMSCFD	Crude: 1 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 rate Drill development wells Install wellhead platforms
23	Algeria 433a & 416b (Bir Seba)	JOC	35%	PetroVietnam 40% Sonatrach 25%	-	Crude: 2.2 k BPD (net entitlement)	<ul style="list-style-type: none"> Maintain production 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

*** Completion of divestment transaction in Dec 16

**** DCQ = Daily Contractual Quantity



	Project	Status*	PTTEP's Share	Partners (as of 2016)	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, Bharat Petroleum, 15%,10% BREML, OVL 10%,10%	<ul style="list-style-type: none"> Preparatory work for Final Investment Decision (FID) including LNG marketing and finalization of remaining commercial contracts
27	Algeria Hassi Bir Rekaiz	OP	24.5%	CNOOC 24.5% Sonatrach 51%	<ul style="list-style-type: none"> Conduct pre-development study and prepare project development plan
28	Myanmar M11	OP	100%		<ul style="list-style-type: none"> Acquire 3D seismic
29	Vietnam B & 48/95		8.5%	PVN 65.88% MOECO 25.62%	<ul style="list-style-type: none"> Negotiate a GSA with the Vietnamese government
30	Vietnam 52/97		7%	PVN 73.4% MOECO 19.6%	<ul style="list-style-type: none"> Negotiate a GSA with the Vietnamese government
31	Myanmar PSC G and EP 2	OP	70%	WinPreciousResources 10% MOECO 10% Palang Sophon Offshore 10%	<ul style="list-style-type: none"> Conduct G&G studies
32	Myanmar MD 7	OP	100%		<ul style="list-style-type: none"> Assess resource potential
33	Mariana Oil Sands	OP	100%		<ul style="list-style-type: none"> Assess development approach and cost reduction opportunity
34	Barreirinhas AP1		25%	BG Brasil 75%	<ul style="list-style-type: none"> Acquire 3D seismic

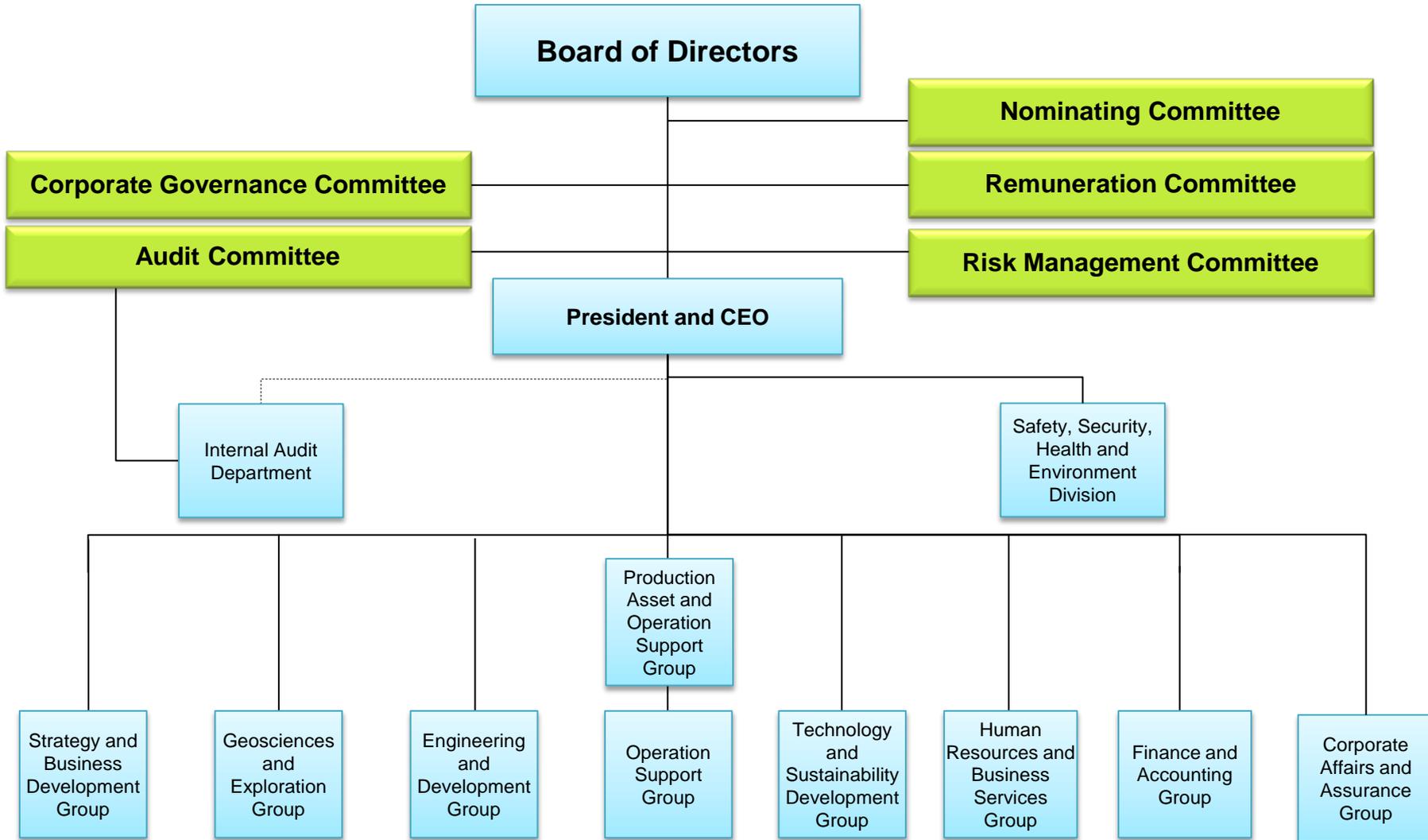
* Status: OP = PTTEP operatorship / JOC = PTTEP joint operatorship



	Project	Status*	PTTEP's Share	Partners (as of 2016)	2017 Key Activities
Exploration Phase					
Overseas (Cont'd)					
35	Myanmar MOGE 3	OP	75%	Palang Sophon Offshore MOECO WinPreciousResources	10% 10% 5% • Acquire 2D and 3D seismic
36	Brazil BM-ES-23		20%	Petrobras INPEX	65% 15% • Assess petroleum potential
37	Malaysia SK410B	OP	42.5%	KUFPEC PSCB	42.5% 15% • Acquire 3D seismic

Remarks: 37 projects exclude 2 projects that are pending official withdrawal approval

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





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