

PTT Exploration and Production Public Company Limited

2017 Q1 Opportunity Day

Stock Exchange of Thailand

23 May 2017



PTTEP

MEMBER OF

**Dow Jones
Sustainability Indices**

In Collaboration with RobecoSAM 





Safety Performance

Industry Highlights

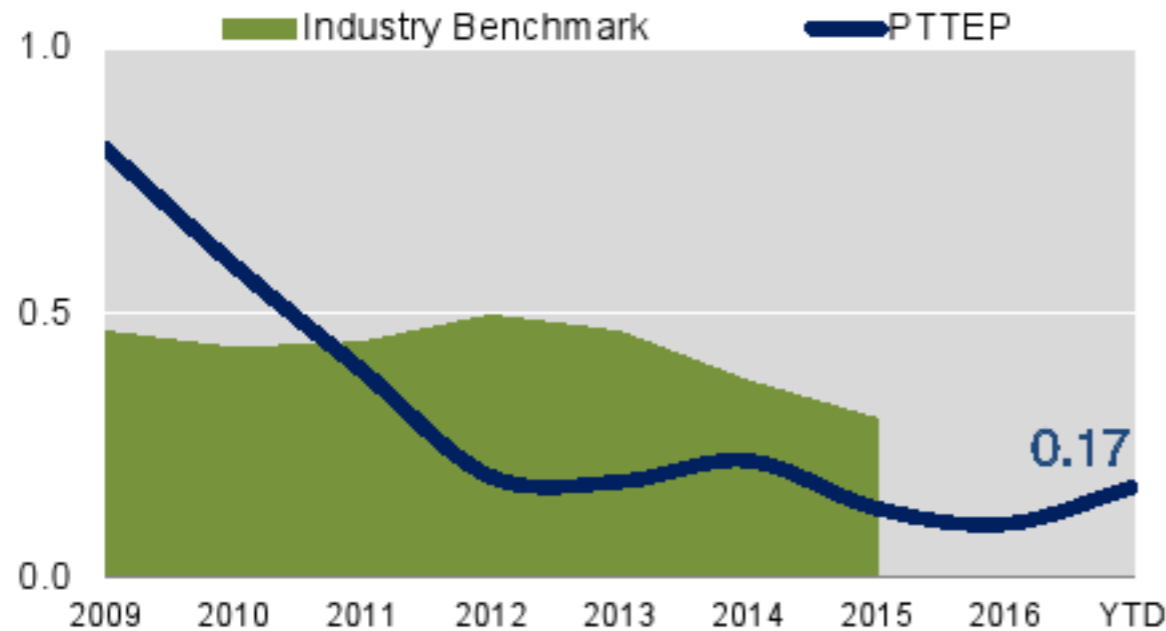
Financial Performance

Operational Outlook & Growth

Safety

Maintain high safety standard

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



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

DJSI

Listed for three consecutive years

MEMBER OF

Dow Jones Sustainability Indices

In Collaboration with RobecoSAM



ROBECOSAM
Sustainability Award
Industry Leader 2016



ROBECOSAM
Sustainability Award
Gold Class 2017

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



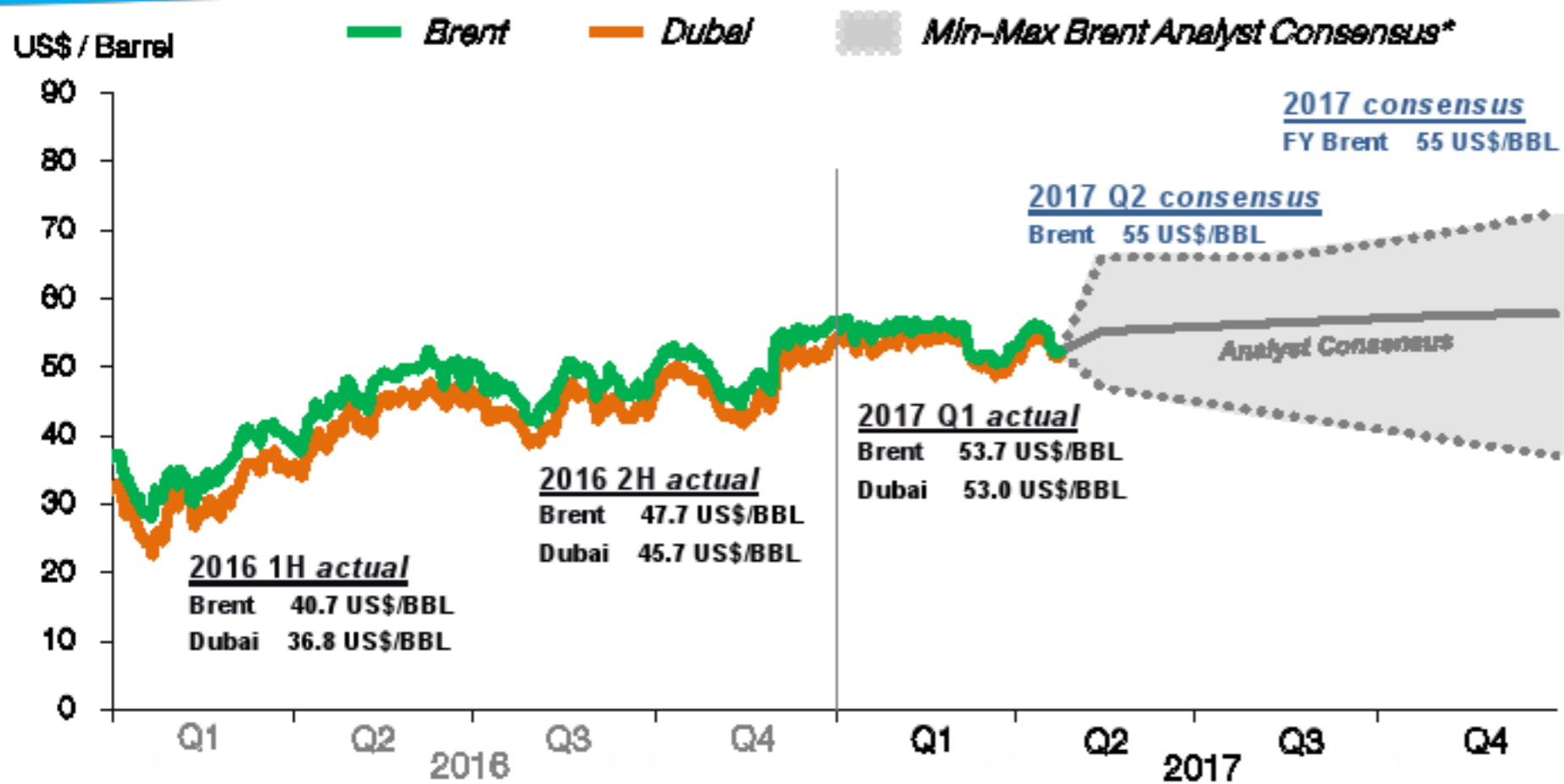


Safety Performance

Industry Highlights

Financial Performance

Operational Outlook & Growth



Compliance rate

OPEC: 104%
achieved




Production from most members bound by the six-month output deal edged lower

Non-OPEC: 64%
achieved





Improved compliance led by further output cuts in Russia

Source: IEA (as of March 2017)

Q1 2017 Highlights

-  High compliance on the production cut agreement by OPEC and Non-OPEC members
-  The re-sanctioning of Iran by the US and unrest situation in Middle East
-  Addition supply from the US following oil price recovery

Outlook from the Remainder of 2017

-  Continued growth in crude oil demand
-  Rising tension among the US and Middle East
-  The renewal of the production cut agreement
-  Reoccurrence of supply glut situation driven by increasing production from the US

Remark: * Bloomberg Analyst Consensus (CPFC) as of 5 May 2017



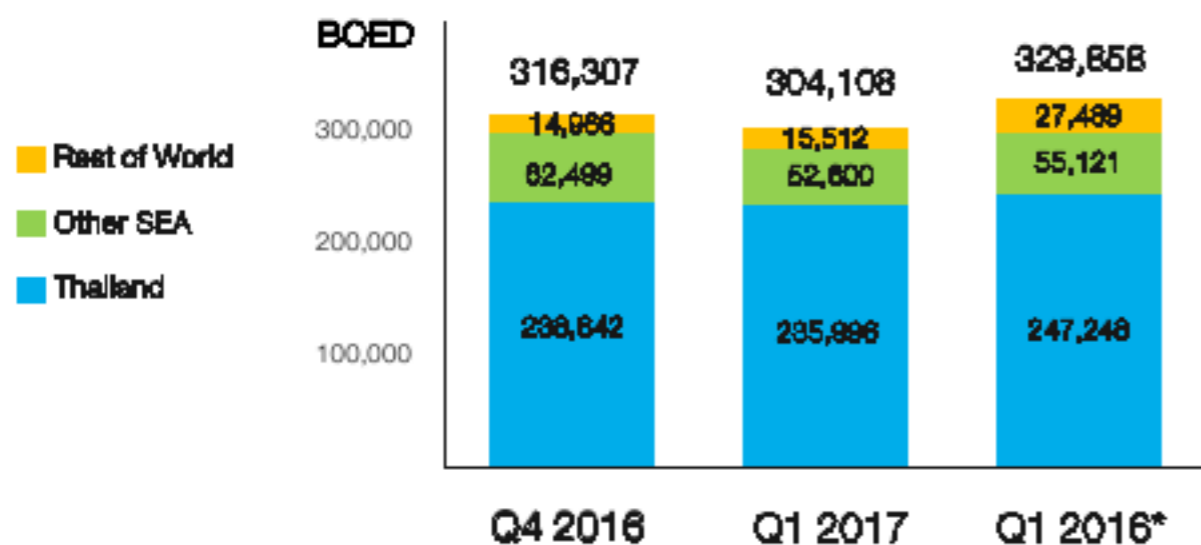
Safety Performance

Industry Highlights

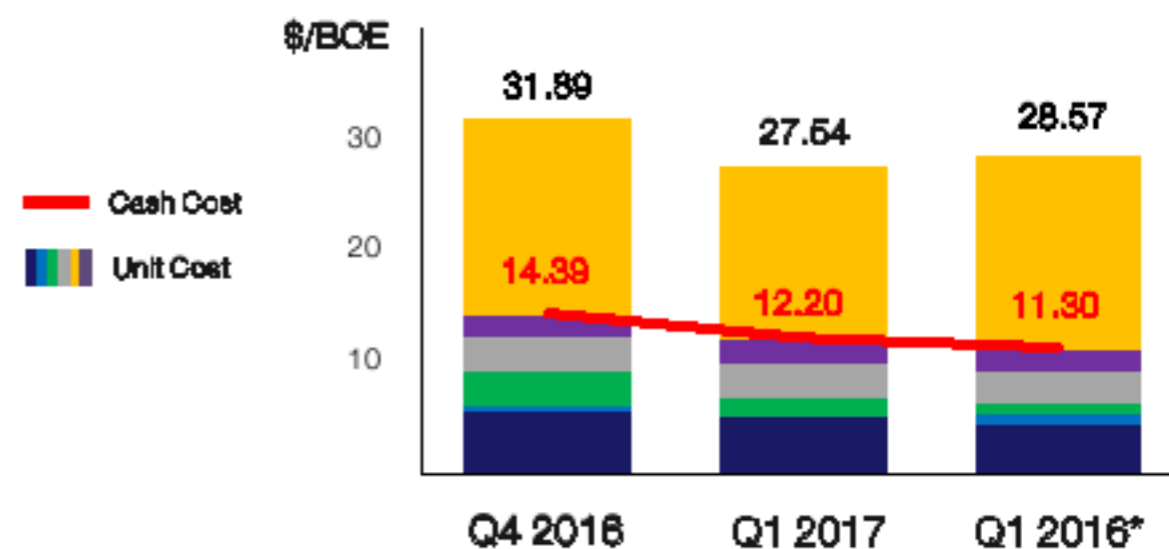
Financial Performance

Operational Outlook & Growth

Sales Volume and Price



Unit Cost



Gas (\$/MMBTU)	5.15	5.24	6.09
Liquid (\$/BBL)	46.80	52.79	32.04
Weighted Avg. (\$/BOE)	35.65	38.00	35.08
Avg. Dubai (\$/BBL)	48.32	53.03	30.42
Avg. HSFO (\$/BBL) (High Sulphur Fuel Oil)	45.59	48.72	24.67
Volume Mix (Gas : Liquid)	70 : 30	69 : 31	68 : 32
Revenue Mix (Gas : Liquid)	61 : 39	57 : 43	71 : 29

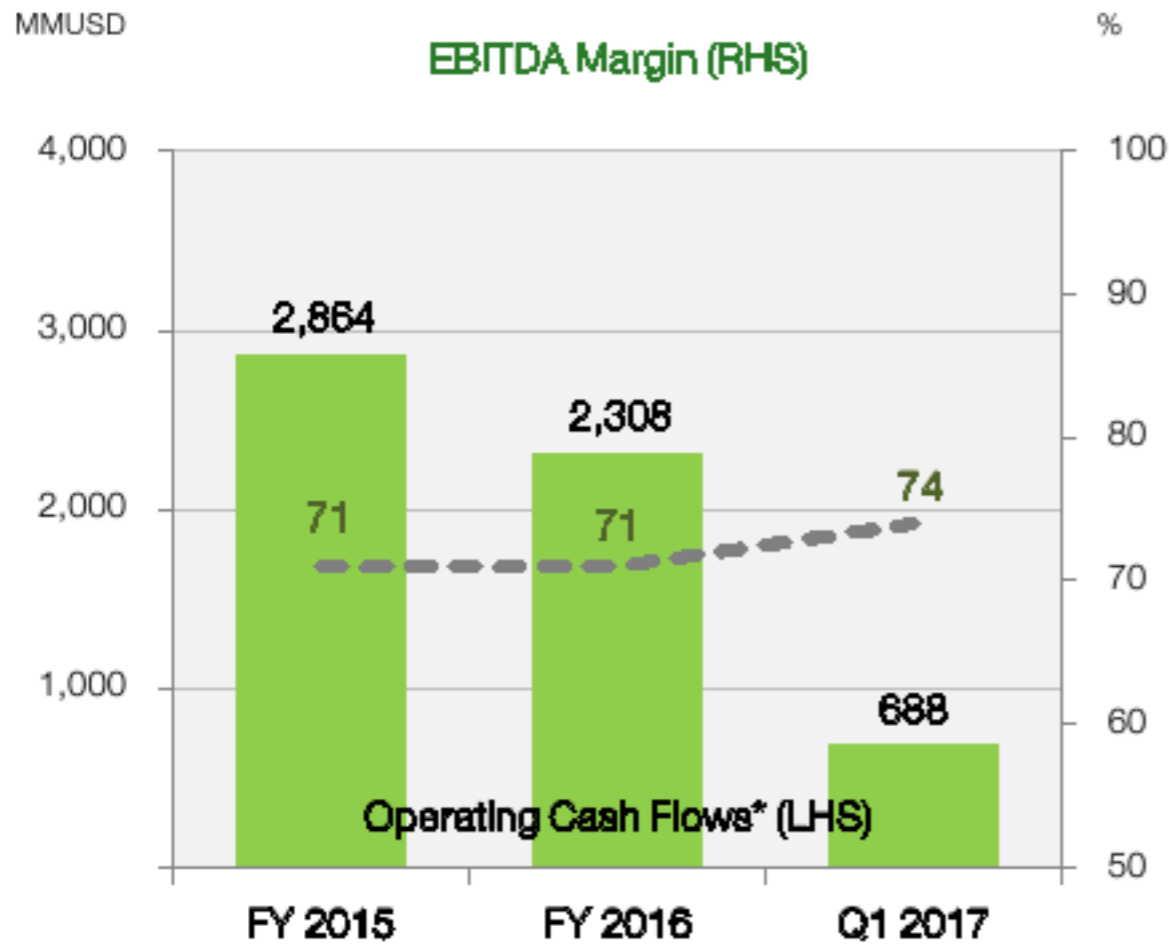
DD&A	17.50	15.34	17.27
Finance Cost	1.99	2.08	1.94
Royalties	3.02	3.34	2.94
G&A	3.22	1.54	1.08
Exploration Expenses	0.41	0.05	0.86
Operating Expenses	5.75	5.19	4.48
Lifting Cost	4.63	3.83	3.90
Drilling Success Ratio**	1 : 1	0 : 2	2 : 3

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

** Exploration and Appraisal Wells

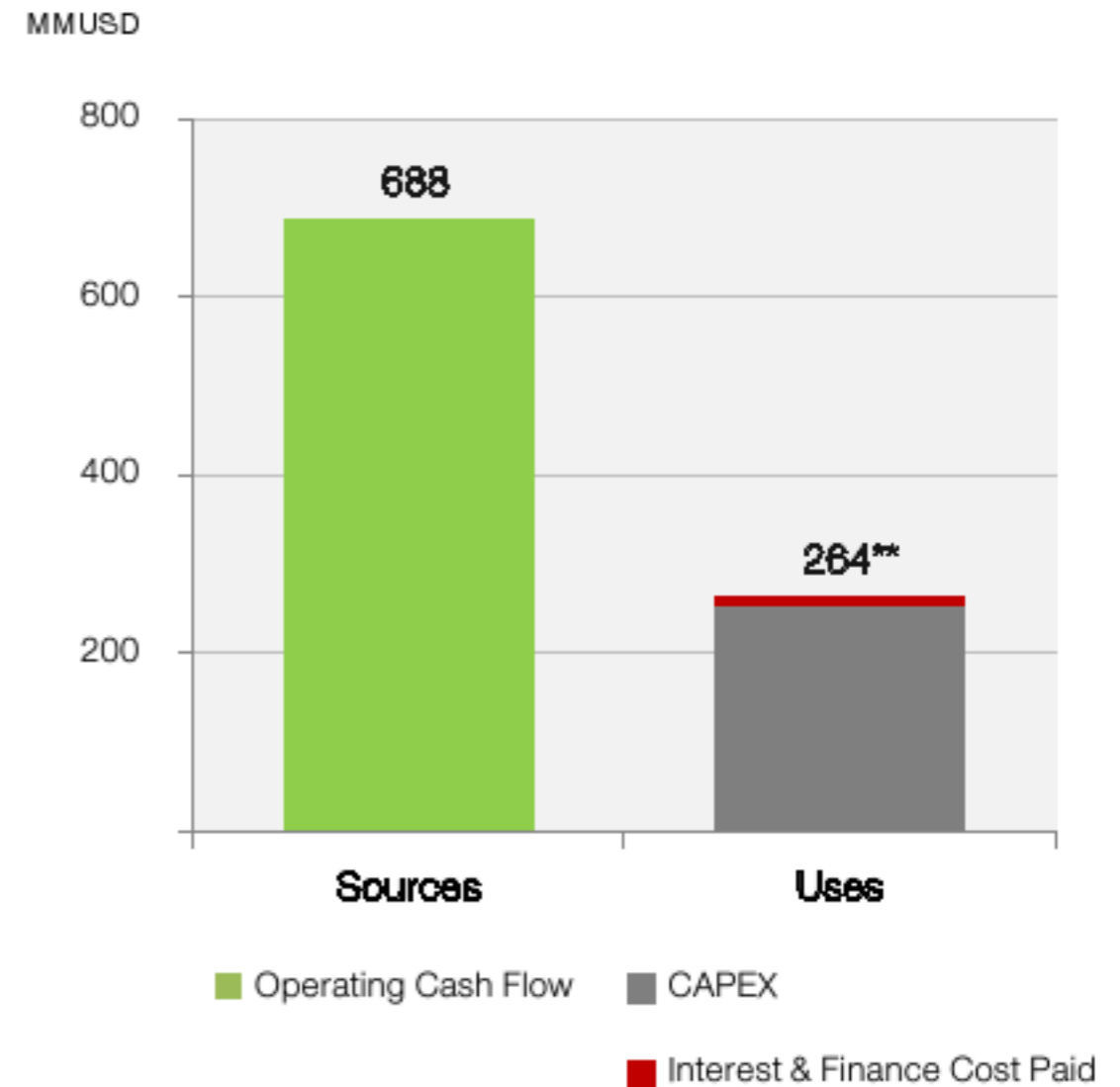
The formulas for calculating ratios are provided in the supplementary section for your reference

Cash Flow Performance

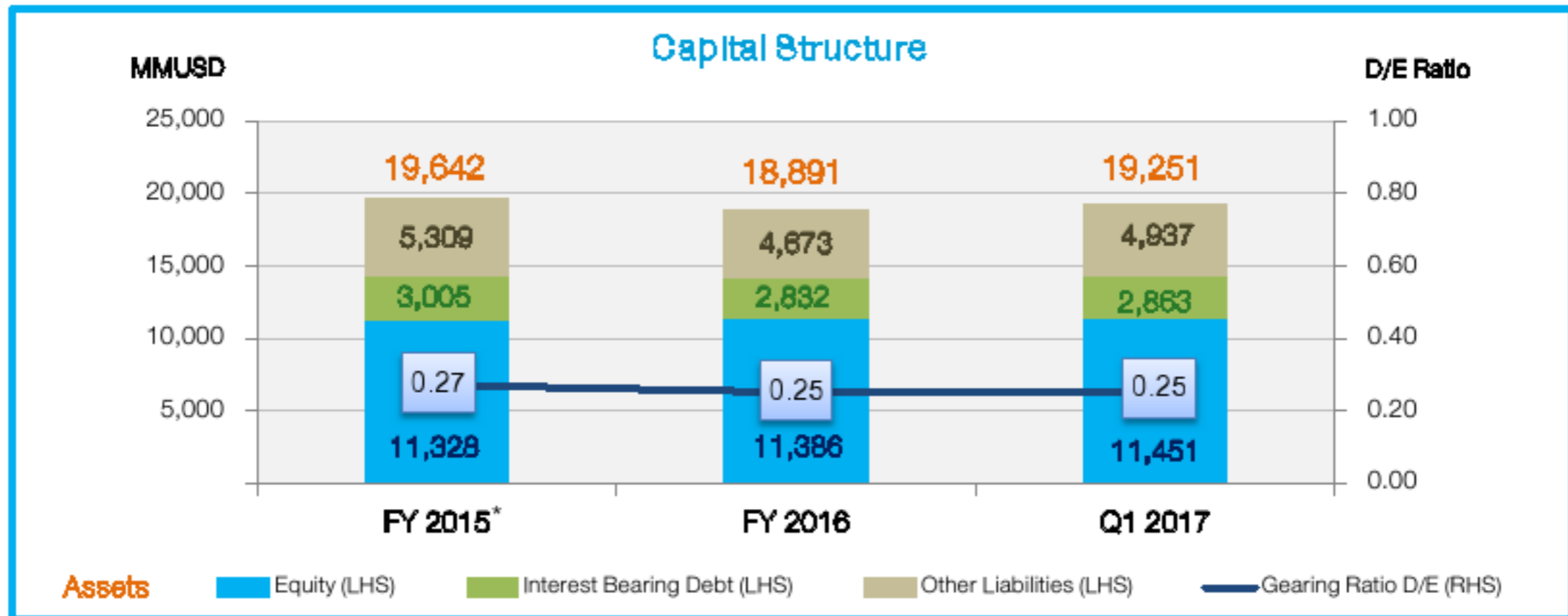


Net Income	(854)	372	349
Recurring Net Income***	718	466	211

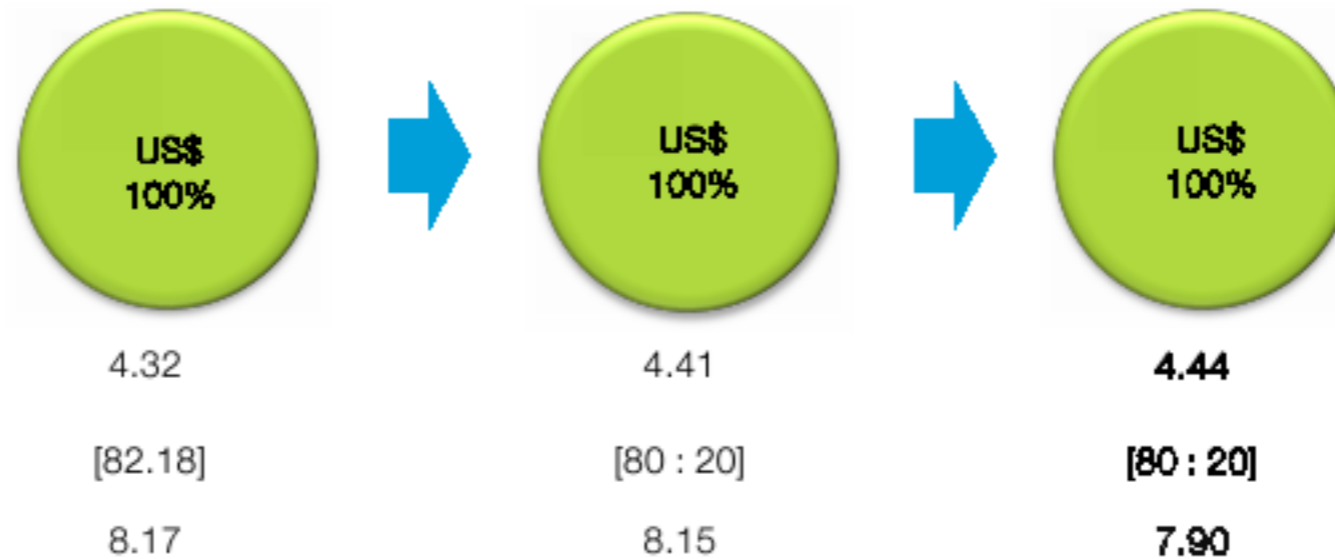
Source & Use of Funds in Q1 2017



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**



Remark: * Restated
 ** Excludes Hybrid bonds



Financial Outlook

Average Sales Volume (KBOED)

Q2 2017	FY 2017
~ 300	300-310

Average Gas Price (USD/MMBTU)

Q2 2017	FY 2017*
~ 5.5	~ 5.5

Unit Cost (USD/BOE)

Q2 2017	FY 2017
~ 29	~ 29

EBITDA margin

FY 2017
~ 70 %

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



Safety Performance

Industry Highlights

Financial Performance

Operational Outlook & Growth

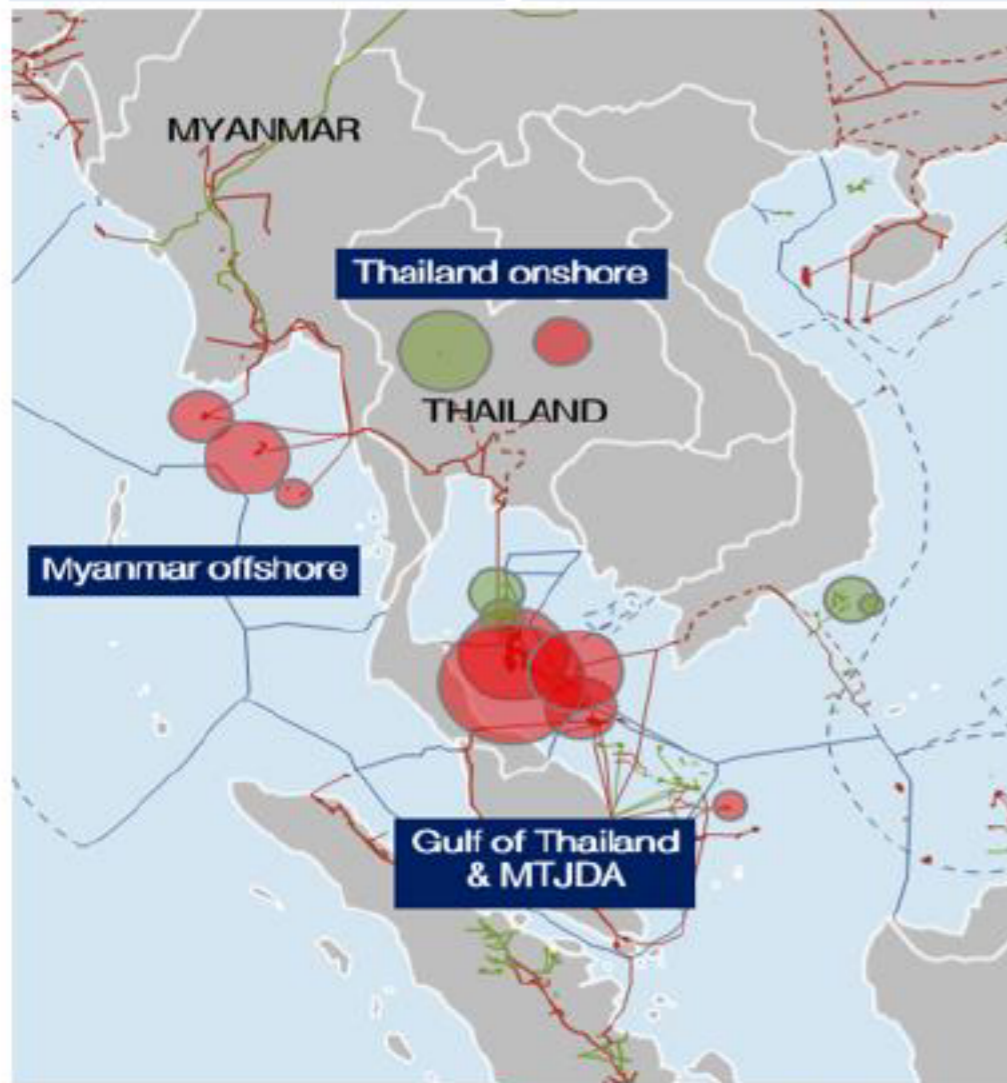
Producing assets in SEA

95%

of PTTEP's total sales volume

83%

of PTTEP's sales volume sold to PTT



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

Mitigation plan on lower gas sales

Situation

- Potential of low nomination of natural gas fields in GoT and utilization of carry forward volume from buyer due to low LNG prices
- Technical problem on receiving plant of Malaysian buyer in MTJDA project

Impact to PTTEP

- Lower 2017 sales volume approx. 5-10 KBOED, which already incorporated in the 2017 revised guidance

Mitigation Plan

- Increase oil/condensate production to compensate low gas nomination
- Improve Enhanced Oil Recovery (EOR) technique on current producing assets e.g. S1
- Cost optimization to compensate bottom line

Key pre-development projects

► Mozambique Rovuma Offshore Area 1



Production

12 MMTPA

Expected Start-up

2022/23

Working Interest

8.5%
(operated by Anadarko)

- Substantial recoverable resources of 70+ TCF
- Initial development for 12 MMTPA LNG (2 trains)

Key elements towards FID

Legal/Contractual

Key agreements are now finalized; working through formal approval.

Resettlement

Resettlement action plan was approved, which will enable contracts finalization and begin construction of new villages.

Marketing

Secured HOAs with multiple customers. In the process of turning HOAs into SPAs.

Project Financing

Lenders are keenly engaged and have indicated the willingness to support.

► Ubon (Contract 4)



Production

25-30 KBPD

Expected Start-up

2021

Working Interest

60%
(operated by Chevron)

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

► Algeria HBR



Production

50 KBPD

Expected Start-up

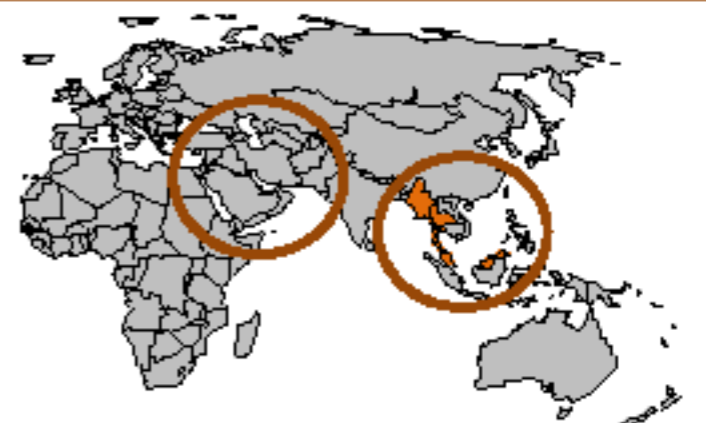
2023

Working Interest

24.5%
(operator)

- Accelerate development plan with early production phase of 10-13 KBPD
- Preparing development plan and target to submit in Q3 2017

M&A and Exploration



Geographical

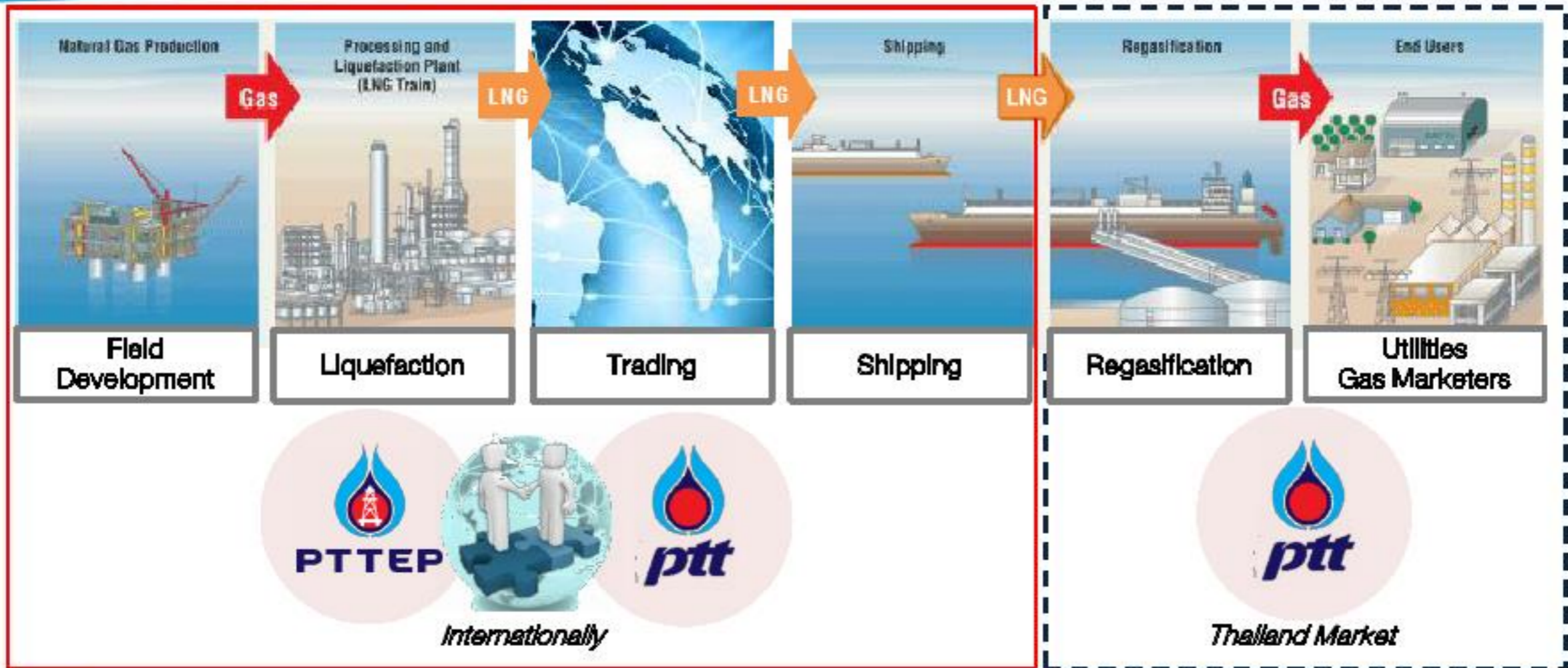
- Thailand, SEA and Middle East

M&A

- Focus on producing or near-producing

Exploration

- Known area & Acceptable risk
- Quick commercialization opportunities



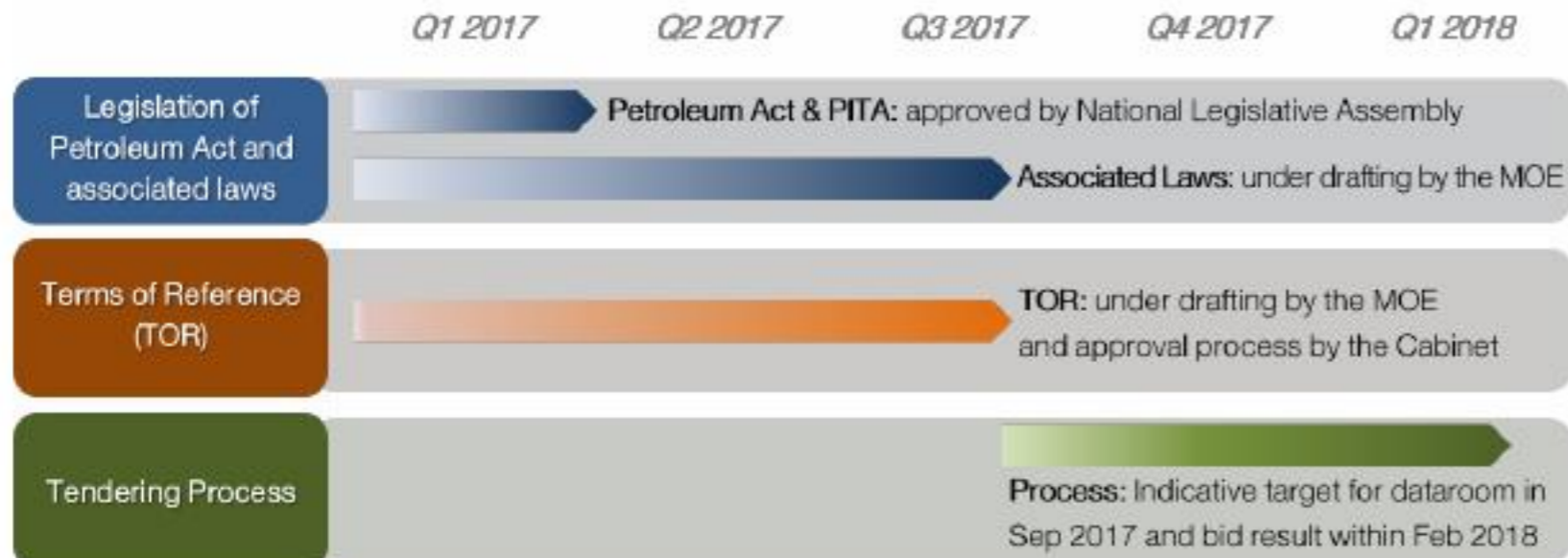
Key Rationales & Benefits

- LNG will be increasingly important to Thailand energy security
- Cooperation creates value from synergy between PTTEP's upstream expertise and PTT's midstream and gas business experiences
- LNG business cushions impact from oil prices volatility
- LNG business's risk is lower comparing to E&P business

Growing Thailand's LNG Demand



Path to re-tendering of expiring concessions



Source: Indicative timeline interpreted from the interview by Minister of Energy on 4 May 2017

Associated Laws

5 Ministerial Regulations

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

1 Announcement of Petroleum Committee

- Rules and procedures in determining E&P areas

PTTEP: Competitively positioned to continue as operator



Remark: * Bongkot field's performance as of 2016

● *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



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

- \$4.4 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
- Cooperation with PTT in LNG Value Chain Investments



You can reach the Investor Relations team for more Information and Inquiry through the following channels:



<http://www.pttep.com>



IR@pttep.com



+66 2 537 4000



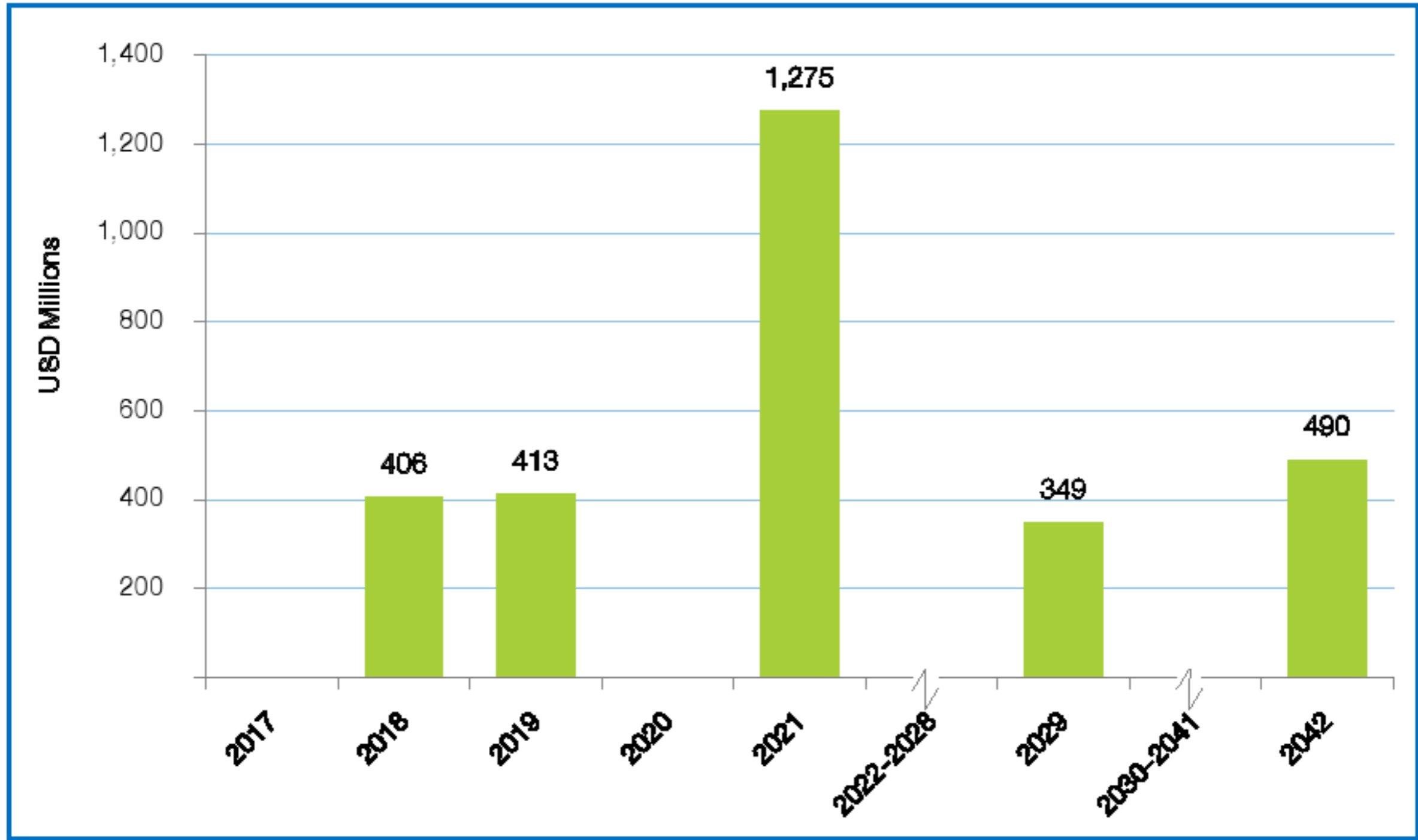
Q1 2017 Financial Results	19-20
Thailand Updates	21
Sustainable Development	22
Reserves and Resources	23
Key Project Highlights by Region	24-30
Project Details	31-34
Organization Structure	35
Ratios and Formula	36

Statement of Income	Q4 16	Q1 17	% QoQ	Unit : MMUSD	
				Q1 16*	% YoY
Total Revenues	1,089	1,092	0	1,085	1
Sales	1,038	1,040	0	1,045	0
Others	51	52	2	40	30
Sales Volume (BOED)	316,307	304,108	(4)	329,858***	(8)
Sales Price (USD/BOE)	35.65	38.00	7	35.08	8
Total Expenses	1,122	743	(34)	929	(20)
Major Expenses:					
Operating Expenses	167	142	(15)	130	9
Exploration Expenses	12	1	(92)	25	(96)
DD&A	509	420	(17)	518	(19)
Impairment loss on assets	47	-	(100)	-	-
Income Tax Expense	133	(8)	(>100)	30	(>100)
(Gain)/Loss on FX	16	(3)	(>100)	(6)	50
Net Income from Continuing Operations	(33)	349	>100	156	>100
Profit (loss) from Discontinued Operations	17	-	(100)	1	(100)
Net Income	(16)	349	>100	157	>100
Recurring Net Income	123	211	72	116	82
Non-Recurring **	(139)	138	>100	41	>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.

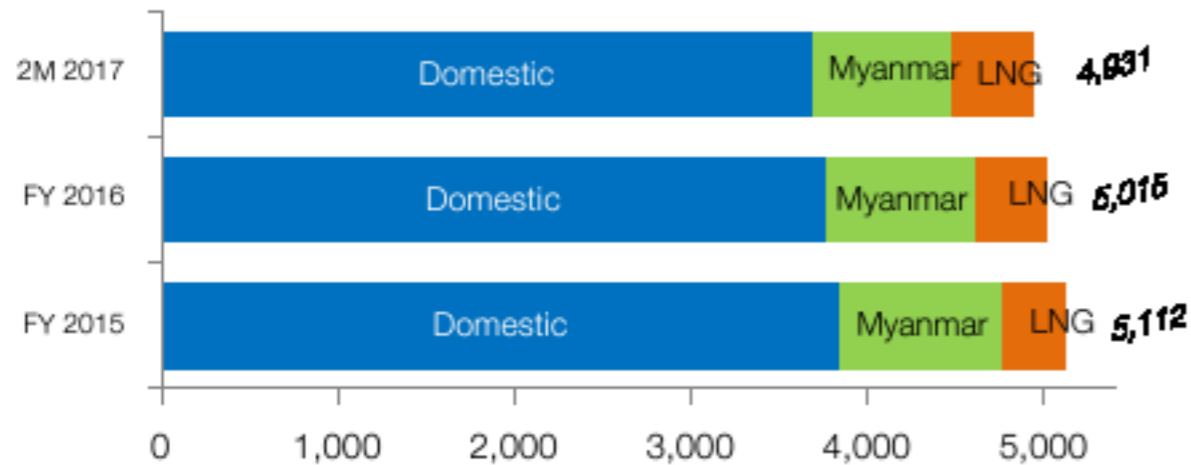
*** Sales volume includes discontinued operations



Note: Excludes Hybrid bonds

Unit: USD Millions or equivalent after cross currency swap

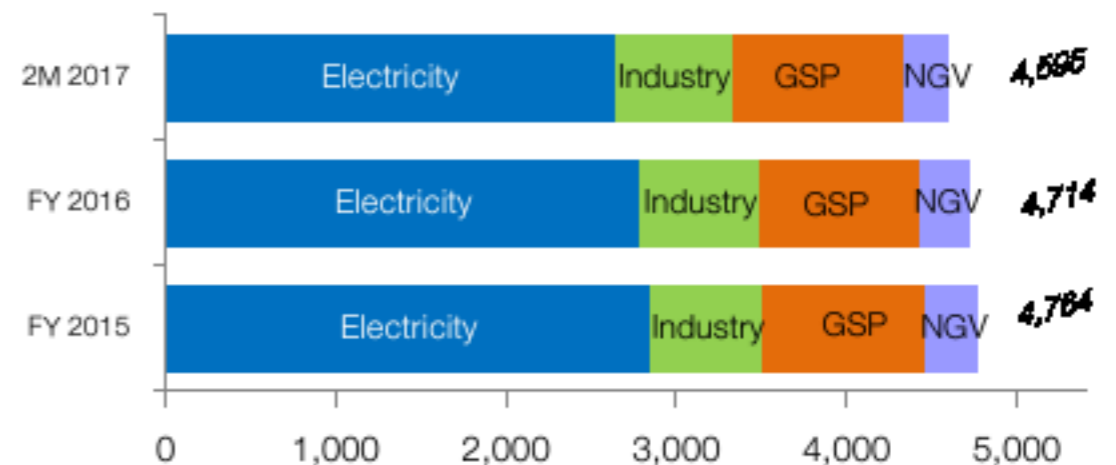
Thailand's Natural Gas Supply by Source



Source: EPPO

MMSCFD

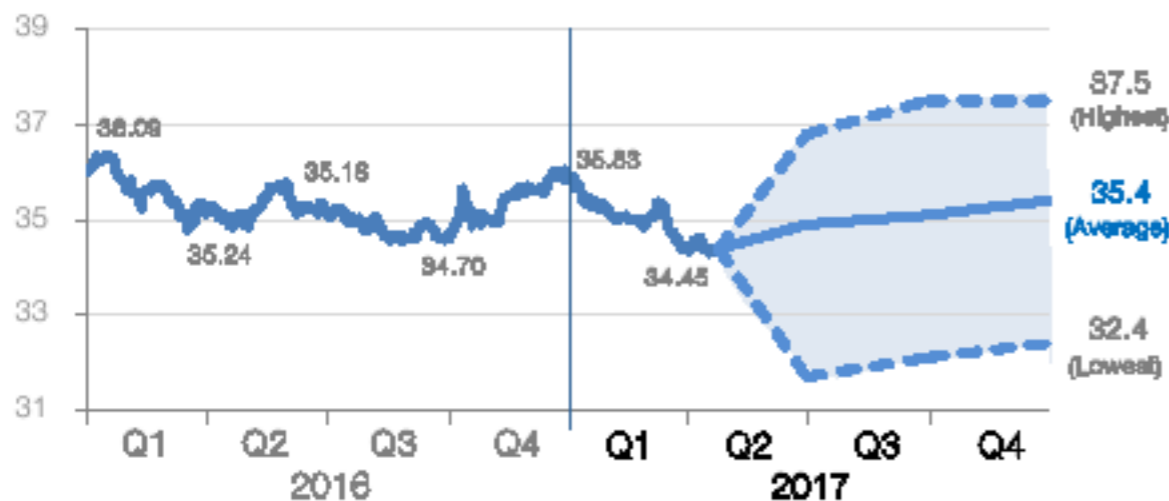
Thailand's Natural Gas Consumption by Sector



Source: EPPO

MMSCFD

Exchange Rate Movement (THB/USD)



Source: Bank of Thailand, Bloomberg

Forecast based on Bloomberg Consensus as of 24 April 2017

- **Thailand's Gas Market**

- In meeting stable domestic demand, saw a slight increase in LNG import and Myanmar volumes declined due to planned shutdown in 2M 2017.

- **Consensus on the exchange rate mostly depends on**

- FOMC's interest rate hike decision may cause the USD to appreciate against the THB
- Uncertainties surrounding Trump's Fiscal and Monetary policies

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2016 DJSI Listed Company

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Proven business integrity

Outstanding Sustainability Report Award 2016
Thai Listed Companies Association

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

CG Asia Recognition Awards
Corporate Governance Asia Magazine



FTSE4Good

FTSE4Good Emerging Index

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



Exemplary social contributor

Platinum Award for Best Community Program at the 9th Annual Global CSR Summit 2017

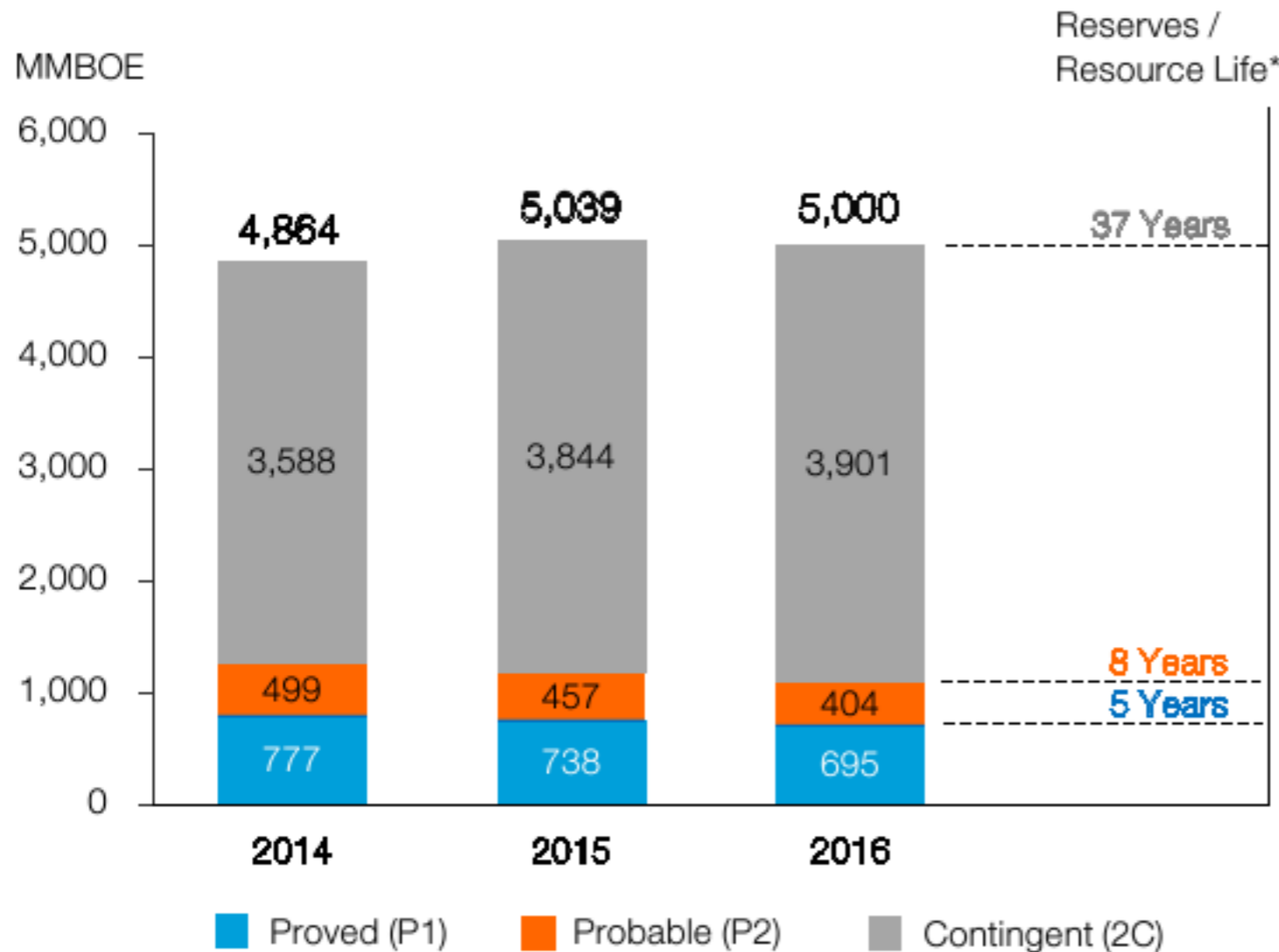
Stimulation, Intervention, Optimization of Services for Children (SIOLA) Program in Indonesia

Green driver to environment

Best Initiative Environmental Responsibility Award
The Asset Magazine

CDP's Climate Leadership Level
CDP

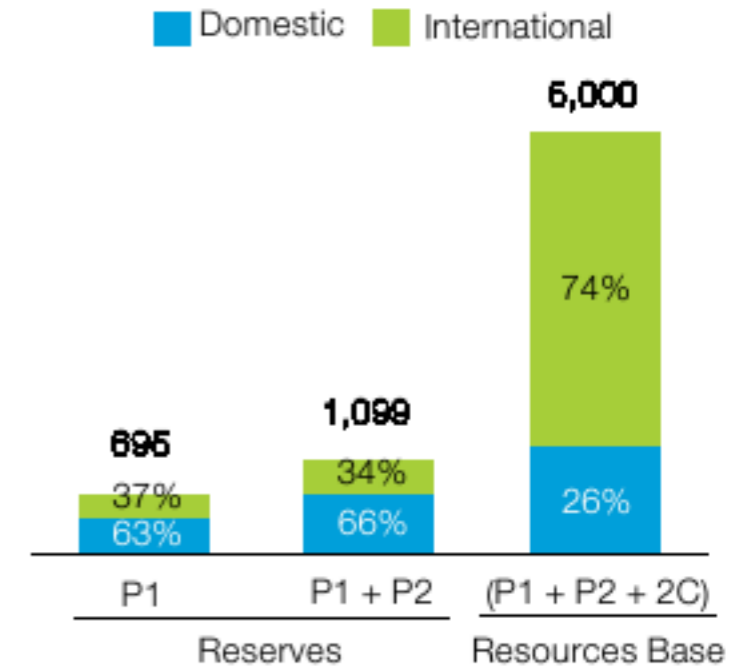
Excellence in the safety, health and environmental management awards
2016 SHE Award



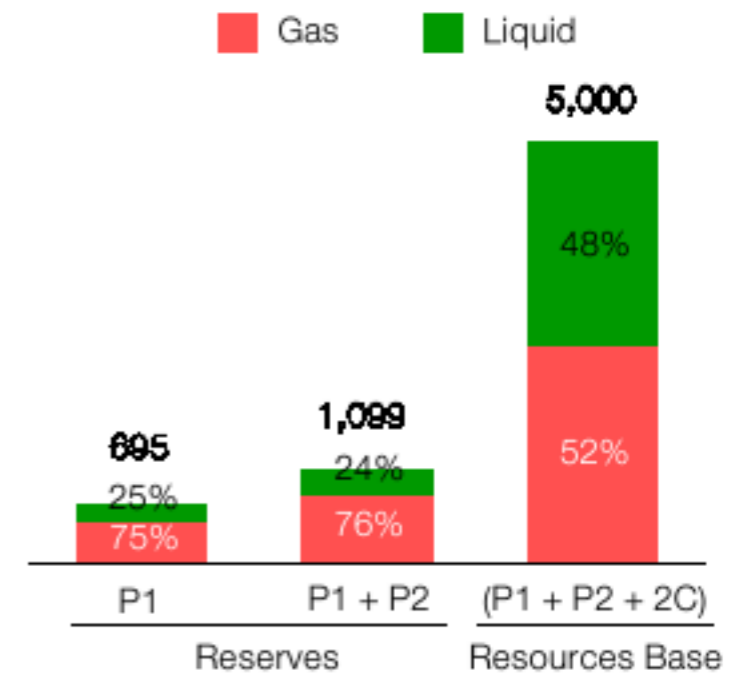
5-Year Average Proved Reserves Replacement Ratio (RRR)

2014	2015	2016
0.45x	0.50x	0.57x

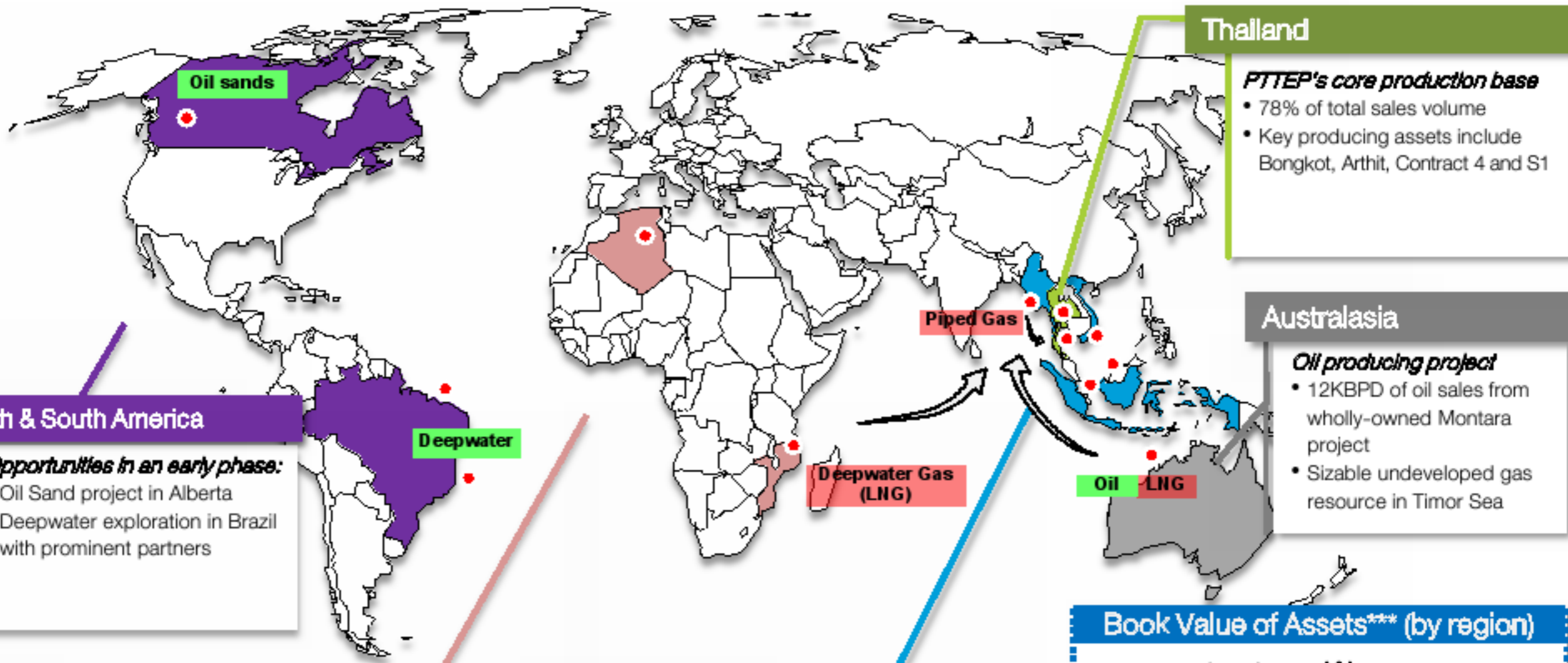
2016 by Geography



2016 by Product Type



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



North & South America

Oil sands

Deepwater

Opportunities in an early phase:

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

Africa

An area for growth, key projects include:

- Producing: Algeria's Bir Seba oil field has started up with current flow rate of approximately 19 KBPD
- Pre-development and Appraisal: Mozambique LNG and Algeria's Hassi Bir Rakaiz

Southeast Asia

Second heartland to PTTEP

- 17% 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

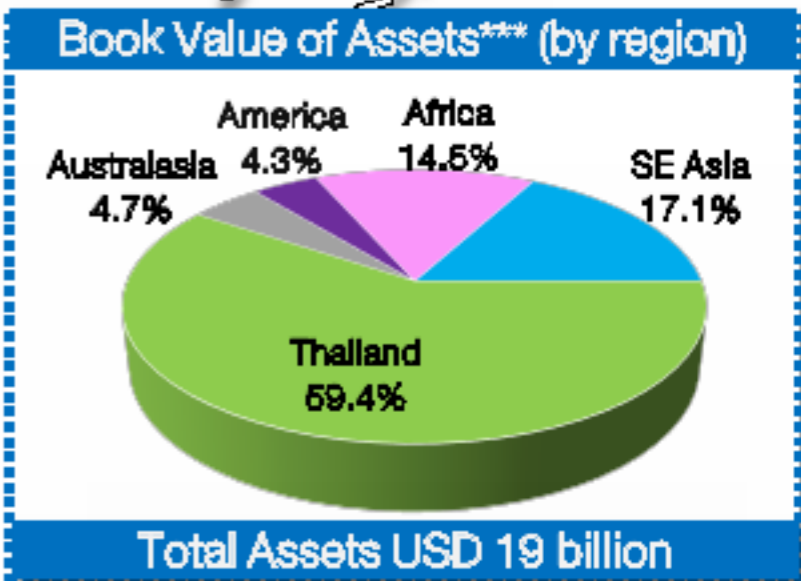
PTTEP's core production base

- 78% of total sales volume
- Key producing assets include Bongkot, Arthit, Contract 4 and S1

Australasia

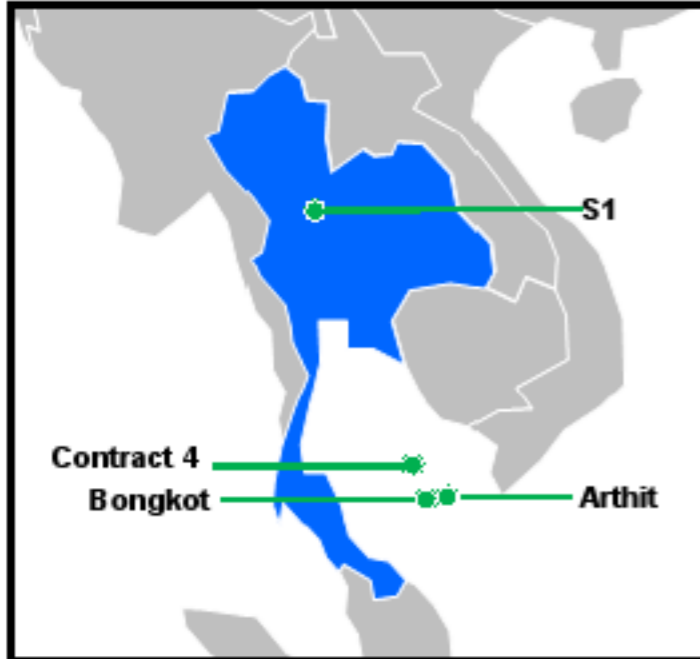
Oil producing project

- 12KBPD 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 March 2017

*** Information as of 31 March 2017



 Production / Ramp-up Projects

Bongkot (44.4445% interest)

- Bongkot's natural gas sales volume of 928 MMSCFD in 3M 2017
- Average condensate sales volume was 26 KBPD in 3M 2017

S1 (100% Interest)

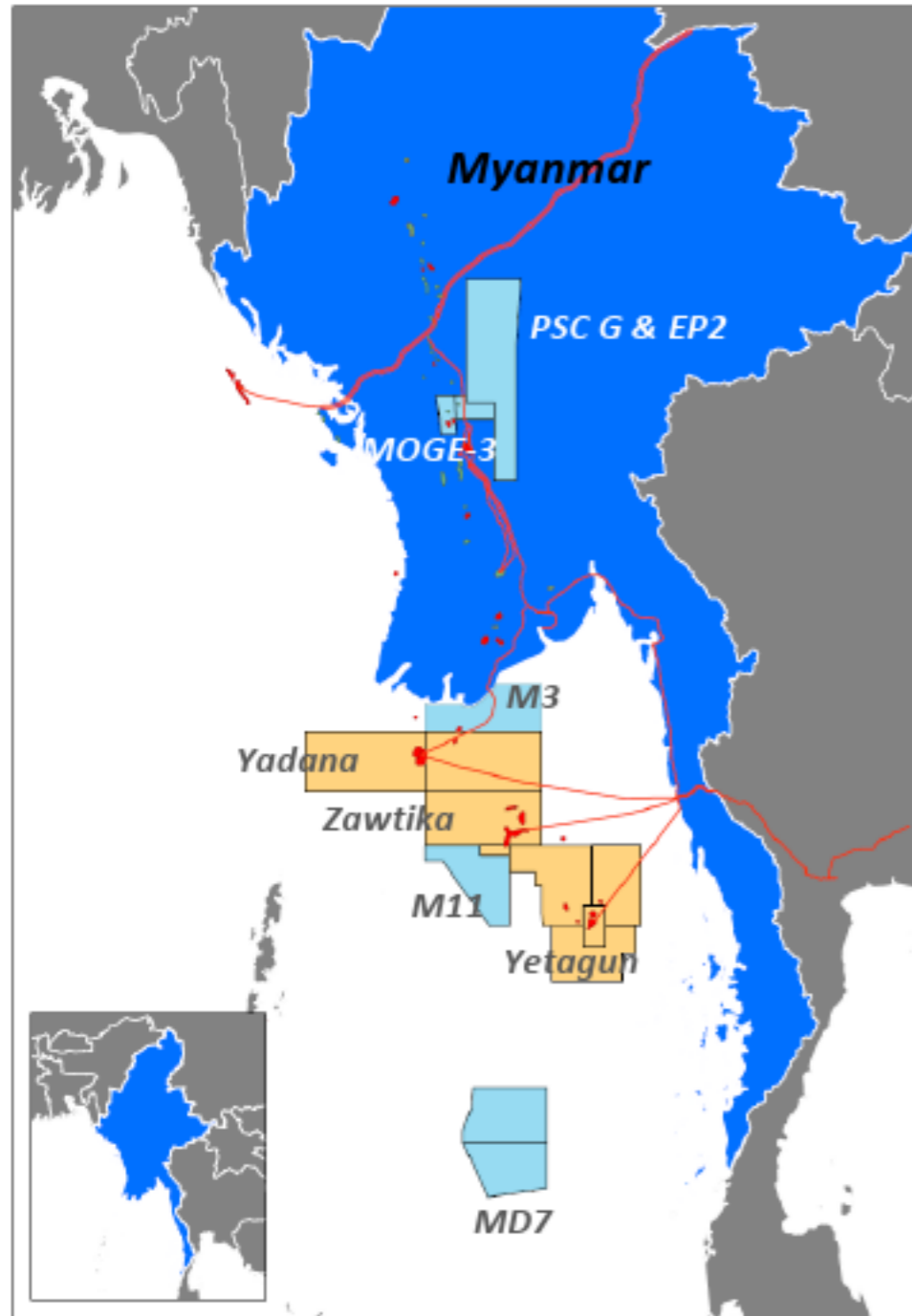
- S1 is the largest onshore crude oil production field in Thailand
- Average crude oil sales volume was 29 KBPD in 3M 2017

Arthit (80% Interest)

- Average sales volume in 3M 2017 was 214 MMSCFD of natural gas and 9.4 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 317 MMSCFD for natural gas and 13 KBPD for condensate in 3M 2017



- 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 272 MMSCFD in 3M 2017.
- Significant exploration acreage both onshore and offshore in the Moattama Basin

Project Status		
<p>Producing</p> <ul style="list-style-type: none"> • Yadana (25.5% WI) • Yetagun (19.3% WI) • Zawtika (80% WI) 	<p>Appraisal</p> <ul style="list-style-type: none"> • M3 (80% WI) 	<p>Exploration</p> <ul style="list-style-type: none"> • PSC G & EP2 (70% WI) • MOGE-3 (75% WI) • M11 (100% WI) • MD7 (50% WI)

Note: WI – working interest

Vietnam 16-1



● Production / Ramp-up Projects

Natuna Sea A

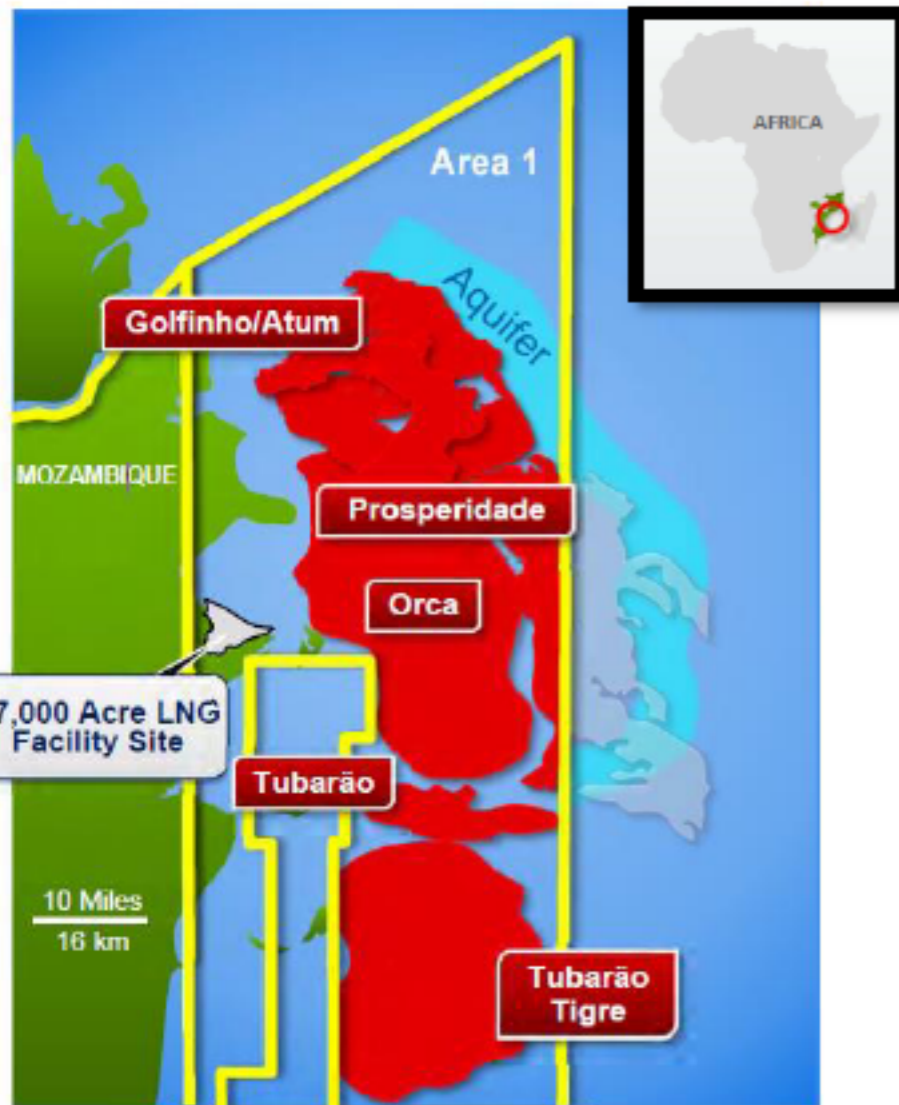


Vietnam 16-1 (28.5% interest)

- Average crude oil sales volume of 20 KBPD in 3M 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 224 MMSCFD in 3M 2017



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

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

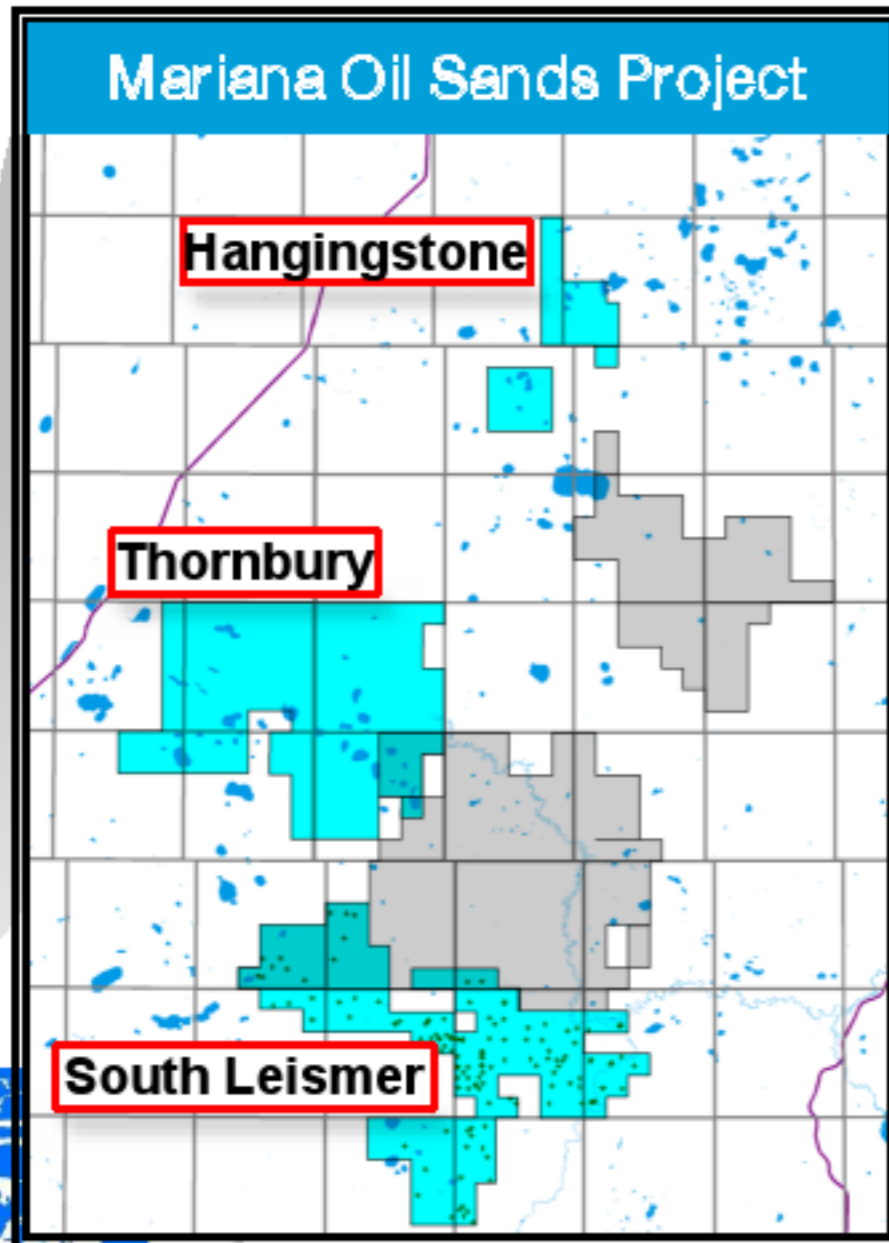
Financing

- ✓ Positive indications on project financing

Onwards to initial phase of 12 MMTPA

Location and Cost Advantage

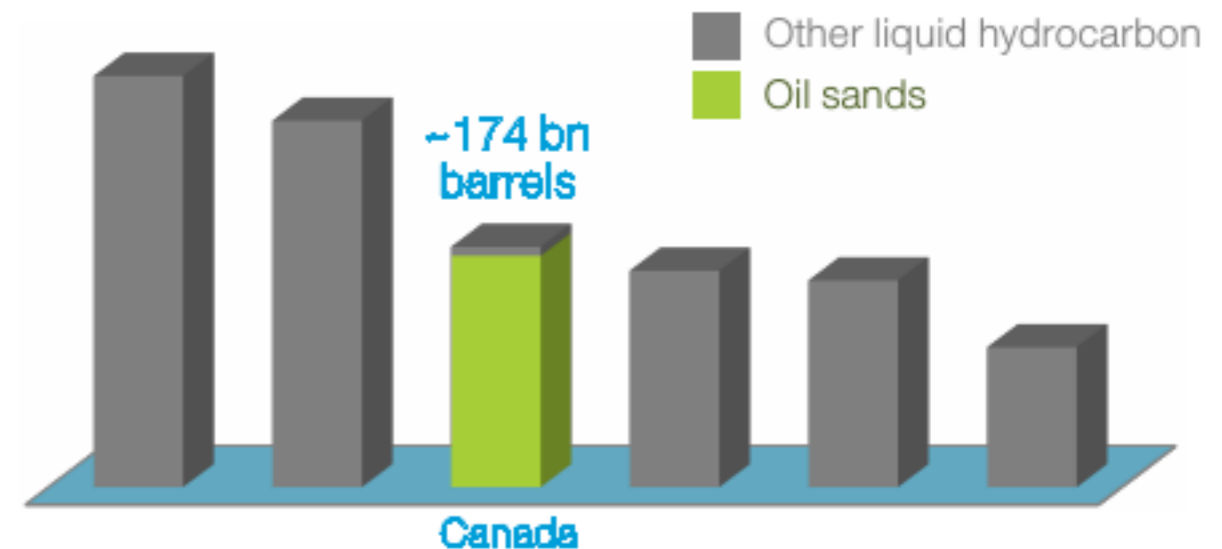
- Close proximity to shore
- High quality reservoirs
- Access to Asian markets

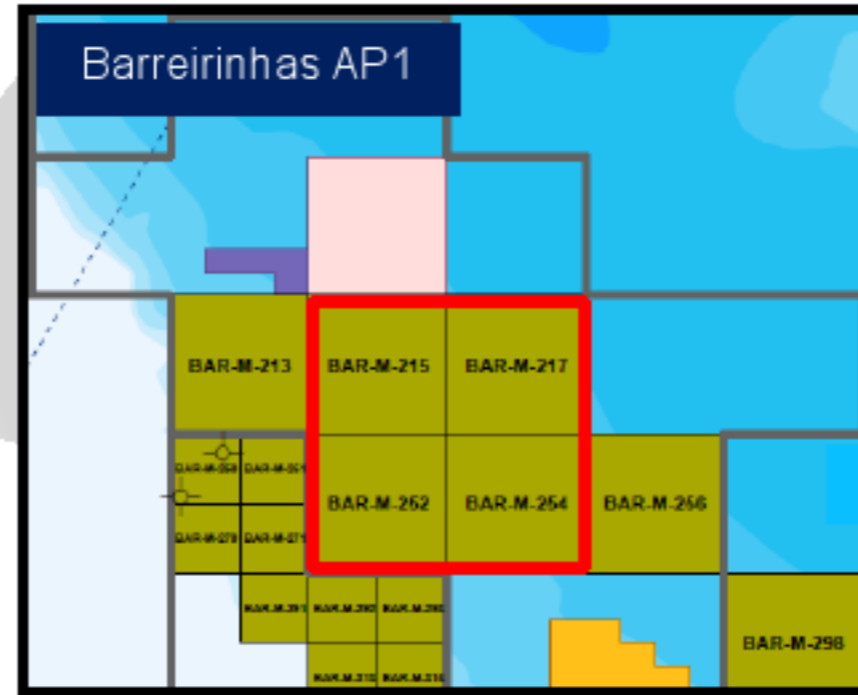


Project Overview

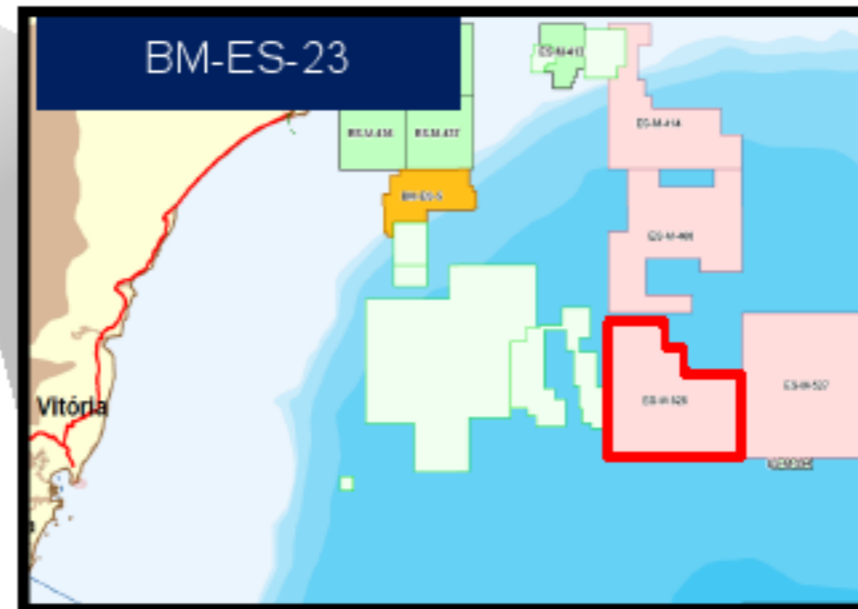
- Operates 100% interest of the Thornbury, Hangingsstone and South Leismer (THSL) areas (exploration and appraisal phase)
- Potential large resource base with over a billion barrel
- Current focus on assessing cost reduction opportunity in light of low oil price environment.

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





- 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 Q1 2017)	3M 2017 Average Sales Volume ^{**}		2017 Key Activities	
					Gas	Oil and Other		
Production Phase								
Thailand and JDA								
1	Arthit	OP	80%	Chevron MOECO	16% 4%	214 MMSCFD	Condensate: 9.4 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%	114 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%	928 MMSCFD	Condensate: 26 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%	517 MMSCFD	Crude: 22 k BPD Condensate: 16 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%	317 MMSCFD	Condensate: 13 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%	10 MMSCFD	-	
8	G4/43		21.375%	Chevron MOECO PSTL	51% 21.25% 6.375%	2.5 MMSCFD	Crude: 5.8 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: 2.6 k BPD	
10	L53/43 & L54/43	OP	100%			-	Crude: 633 BPD	<ul style="list-style-type: none"> • Drill exploration / appraisal / development wells
11	PTTEP1	OP	100%			-	Crude: 287 BPD	<ul style="list-style-type: none"> • Drill development wells • Perform waterflood activities
12	S1	OP	100%			24 MMSCFD	Crude: 29 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%	123 MMSCFD	Condensate: 424 BPD	<ul style="list-style-type: none"> • Drill development wells
14	MTJDA	JOC	50%	Petronas-Carigali	50%	229 MMSCFD	Condensate: 6.5 k BPD	<ul style="list-style-type: none"> • Drill development wells • Install wellhead platforms
15	L22/43	OP	100%			-	Crude: 273 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 Q1 2017)	3M 2017 Average Sales Volume ^{**}		2017 Key Activities
					Gas	Oil and Other	
Production Phase							
Overseas							
16	Vietnam 9-2	JOC	25%	PetroVietnam 50% SOCO 25%	13 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%	693 MMSCFD	-	<ul style="list-style-type: none"> Ensure gas deliverability level at DCQ^{****}
18	Yetagan		19.3178%	Petronas-Carigali 30.00140% MOGE 20.4541% Nippon Oil 19.3178% PC Myanmar (Hong Kong) 10.90878%	212 MMSCFD	Condensate: 3.9 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%	-	Crude: 20 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: 12 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%	224 MMSCFD	Crude: 2.4 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%	272 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: 3.3 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

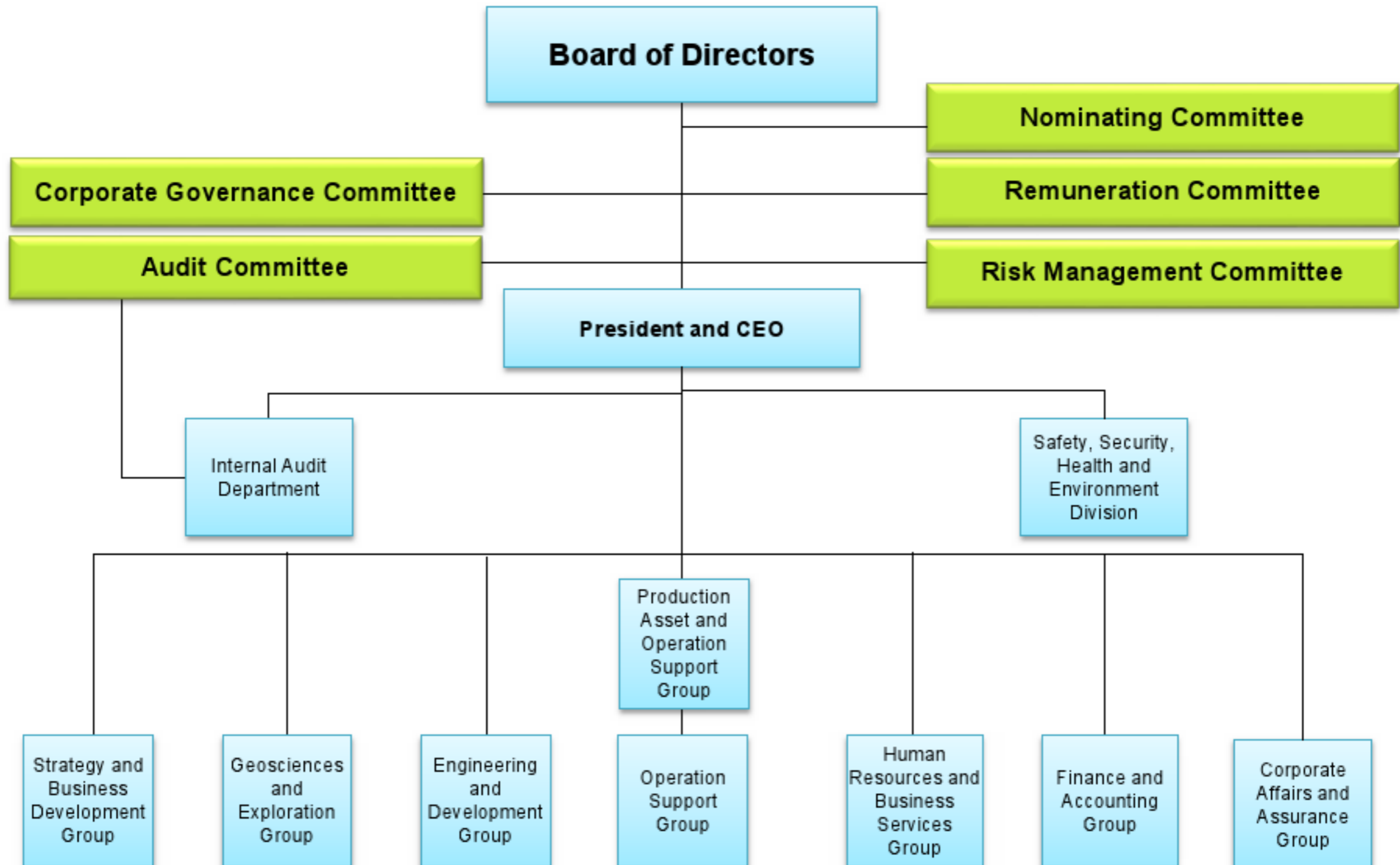
	Project	Status*	PTTEP's Share	Partners (as of Q1 2017)	2017 Key Activities
Exploration Phase					
Thailand and JDA					
24	G9/43	OP	100%		
Overseas					
25	Myanmar M3	OP	80%	MOECO 20%	<ul style="list-style-type: none"> Assess resource potential and commercial feasibility
26	Mozambique Rovuma Offshore Area 1		8.5%	Anadarko, Mitsui, 26.5%, 20% ENH, 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	50%	TOTAL 50%	<ul style="list-style-type: none"> Assess resource potential
33	Mariana Oil Sands	OP	100%		<ul style="list-style-type: none"> Assess development approach and cost reduction opportunity
34	Barreirinhas AP1		25%	Shell Brasil 65% Mitsui E&P Brasil 10%	<ul style="list-style-type: none"> Acquire 3D seismic

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

	Project	Status*	PTTEP's Share	Partners (as of Q1 2017)	2017 Key Activities	
Exploration Phase						
Overseas (Cont'd)						
35	Myanmar MOGE 3	OP	75%	Palang Sophon Offshore MOECO WinPreciousResources	10% 10% 5%	<ul style="list-style-type: none"> Acquire 2D and 3D seismic
36	Brazil BM-ES-23		20%	Petrobras INPEX	65% 15%	<ul style="list-style-type: none"> Assess petroleum potential
37	Malaysia SK410B	OP	42.5%	KUFPEC PSCB	42.5% 15%	<ul style="list-style-type: none"> Acquire 3D seismic

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

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



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