



# PTTEP

MEMBER OF  
**Dow Jones  
Sustainability Indices**  
In Collaboration with RobecoSAM



## Opportunity Day

*22 February 2018*



**Key Achievements**

Industry Highlights

Financial Performance

Strategy and Growth

# A Firm Core for Accretive Growth

Reflected in 2017's performance



## Operation

- ✓ **299 KBOED**  
Sales volume as target
- ✓ **29 \$/BOE**  
Competitive unit cost
- ✓ Diversified into **MLNG Train 9**
- ✓ **0.1 LTIF**  
Safety record in top quartile



## Financials

- ✓ **Healthy margin and liquidity**
  - **70%** EBITDA Margin
  - **\$4.5Bn** Cash on hand
  - **0.25x** Gearing ratio
- ✓ **Dividend commitment**
  - **4.25 THB/Share** (90% Payout)

## Unlocking value through concrete growth platforms



Bongkot

Acquired 22.2222% stake  
from Shell



2 Deepwater  
blocks in Mexico

Expanded to new prolific areas  
with experienced partners



Key Achievements

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# Oil Prices

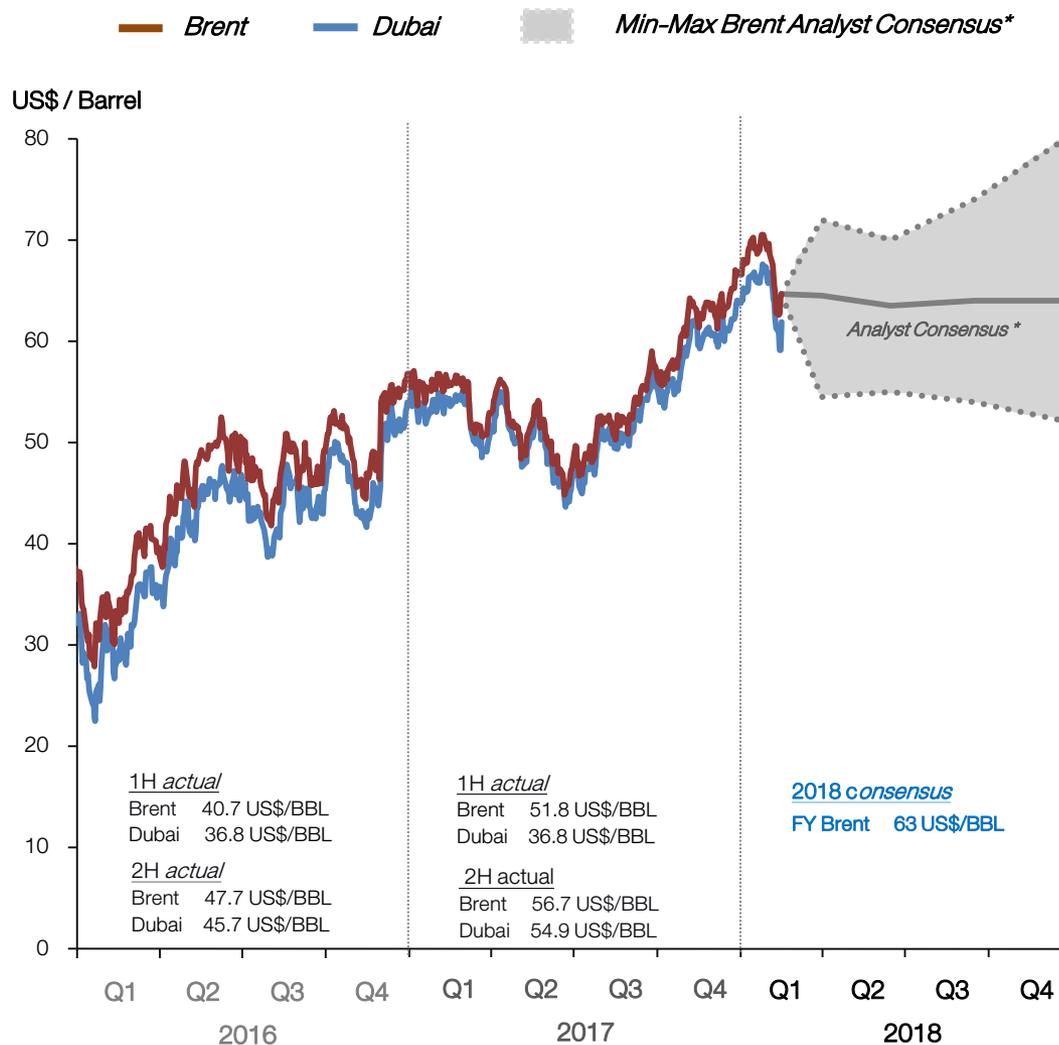
Market upturn despite facing the headwinds from the U.S. supply

## 2017 Highlights

- ↑ OPEC and Non-OPEC supply cut extension  
*Compliance Rate Achieved*  
**OPEC 95% | Non-OPEC 82%**
- ↓ Continued growth in the U.S. supply
- ↑ Key facilities disruption
- ↑ Crude demand growth from global economic expansion
- ↑ Other factors: geopolitical tension and the U.S. crude stock decline

## 2018 Outlook

- ↑ Growth in crude demand led by India and OECD countries
- ↓ Increase in the U.S. production volume and Keystone XL expansion
- ↓ Watching list: production policies of key producers and monetary policies of major economy countries



Remark: \* Bloomberg Analyst Consensus (CPFC) as of 14 February 2018 and IEA (as of Jan 2018)



Key Achievements

Industry Highlights

**Financial Performance**

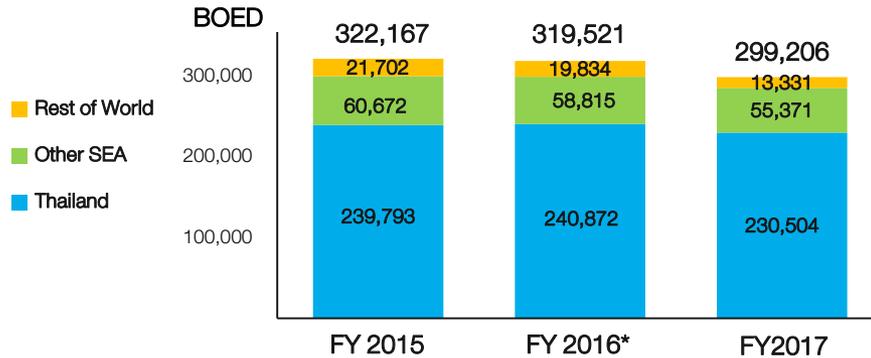
Strategy and Growth

# Sales Volume & Unit Cost

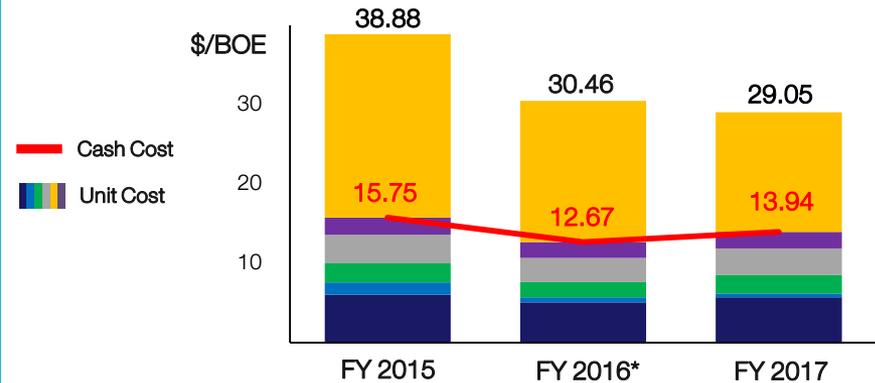
Achieved target sales volume with competitive cost



### Sales Volume and Price



### Unit Cost



Gas (\$/MMBTU)	7.20	5.60	<b>5.59</b>
Liquid (\$/BBL)	50.05	41.17	<b>52.26</b>
Weighted Avg. (\$/BOE)	45.29	35.91	<b>39.20</b>
Avg. Dubai (\$/BBL)	50.91	41.27	<b>53.14</b>
Avg. HSFO (\$/BBL) (High Sulphur Fuel Oil)	44.89	35.48	<b>49.64</b>
Volume Mix (Gas : Liquid)	70 : 30	69 : 31	<b>70 : 30</b>
Revenue Mix (Gas : Liquid)	66 : 34	65 : 35	<b>60 : 40</b>

DD&A	23.13	17.79	<b>15.11</b>
Finance Cost	2.14	2.01	<b>2.07</b>
Royalties	3.62	3.02	<b>3.37</b>
G&A	2.39	1.93	<b>2.30</b>
Exploration Expenses	1.56	0.63	<b>0.48</b>
Operating Expenses	6.04	5.08	<b>5.72</b>
Lifting Cost	4.62	4.18	<b>4.19</b>

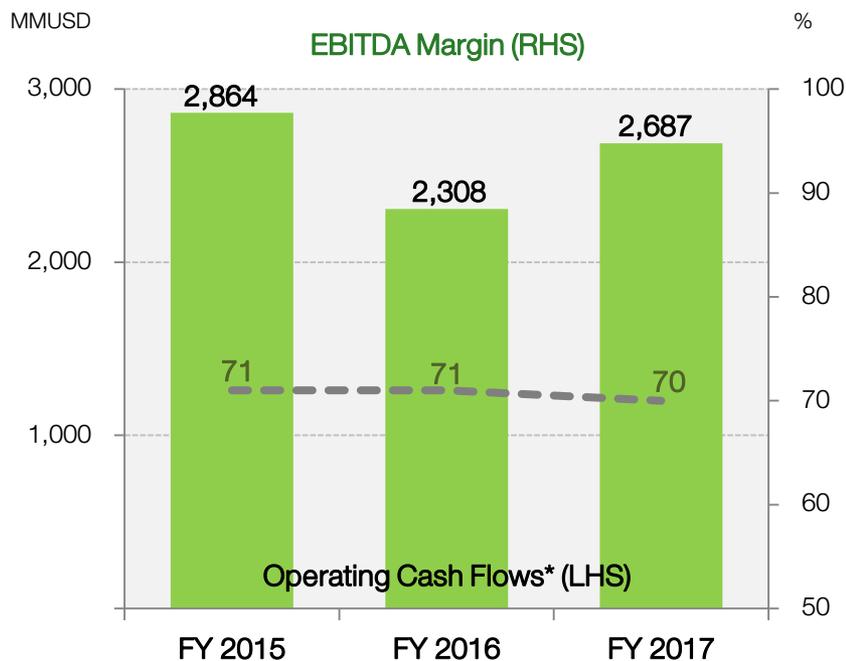
Note: \* Represented and includes discontinued operations until end of August 2016  
The formulas for calculating ratios are provided in the supplementary section for your reference

# Cash Flow Performance

Solid cash flows and liquidity for future growth

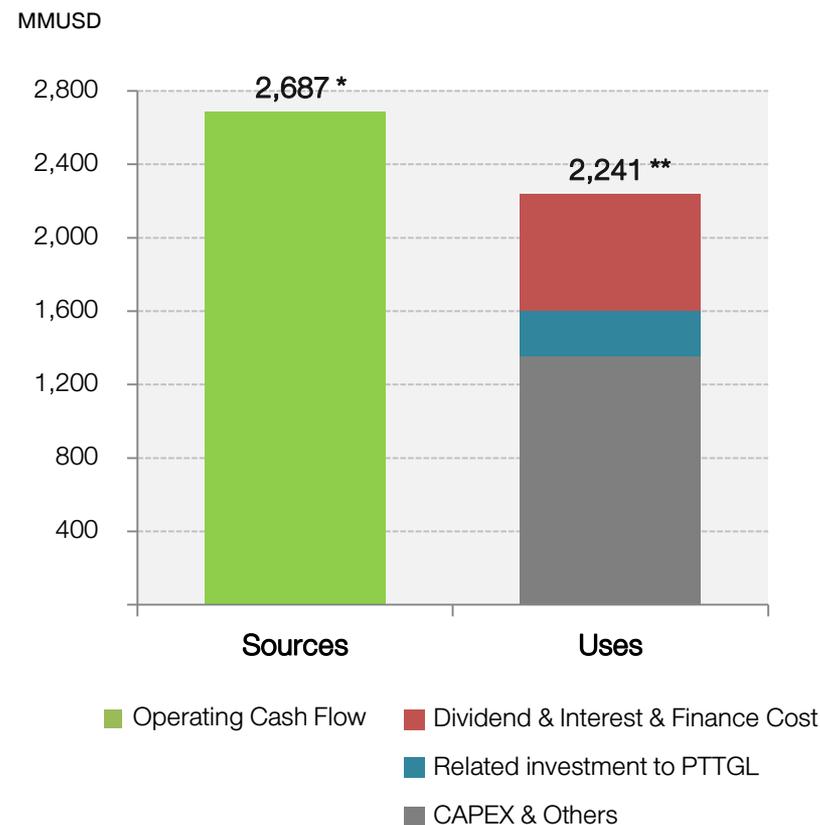


## Cash Flow Performance



<b>Net Income</b>	(854)	372	<b>594</b>
<b>Recurring Net Income***</b>	718	466	<b>836</b>

## Source & Use of Funds in 2017



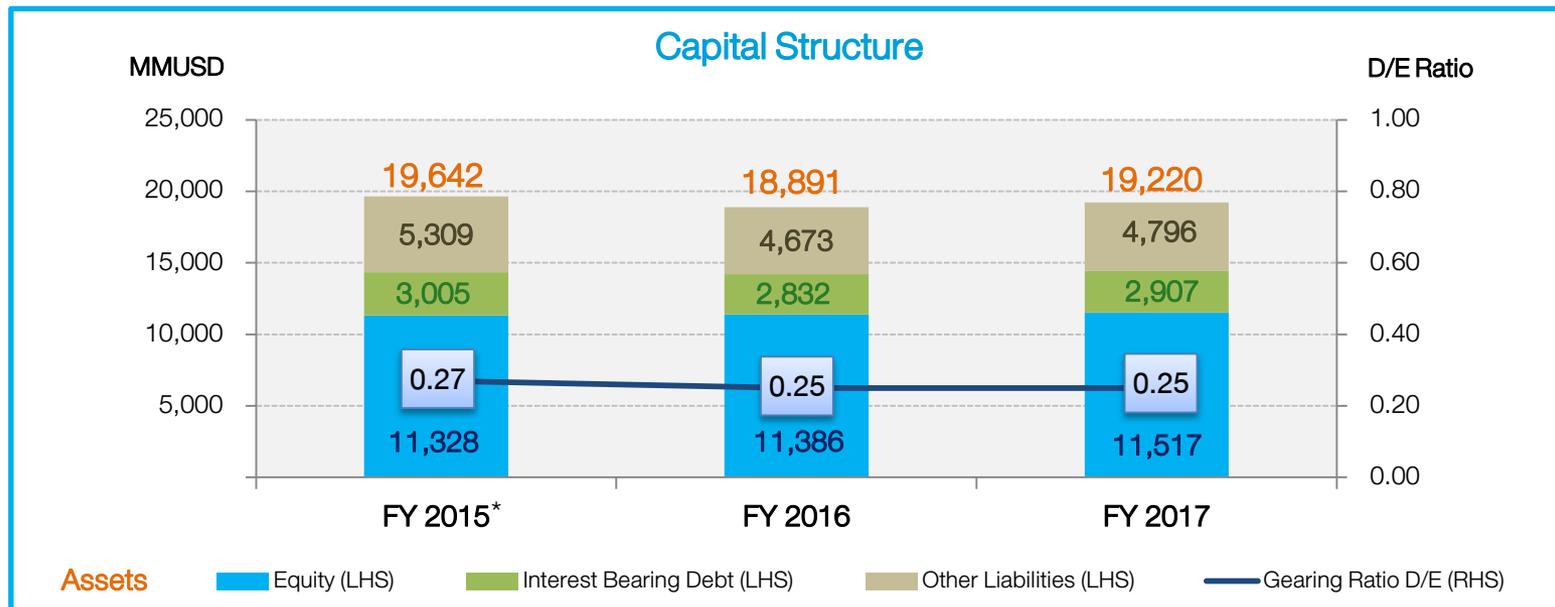
Remark: \* Net of adjustment for the effect of exchange rate changes on cash and cash equivalents

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

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

# Financial Position

Strengthened balance sheet with net cash position



## Debt Profile\*\*



Remark: \* Restated

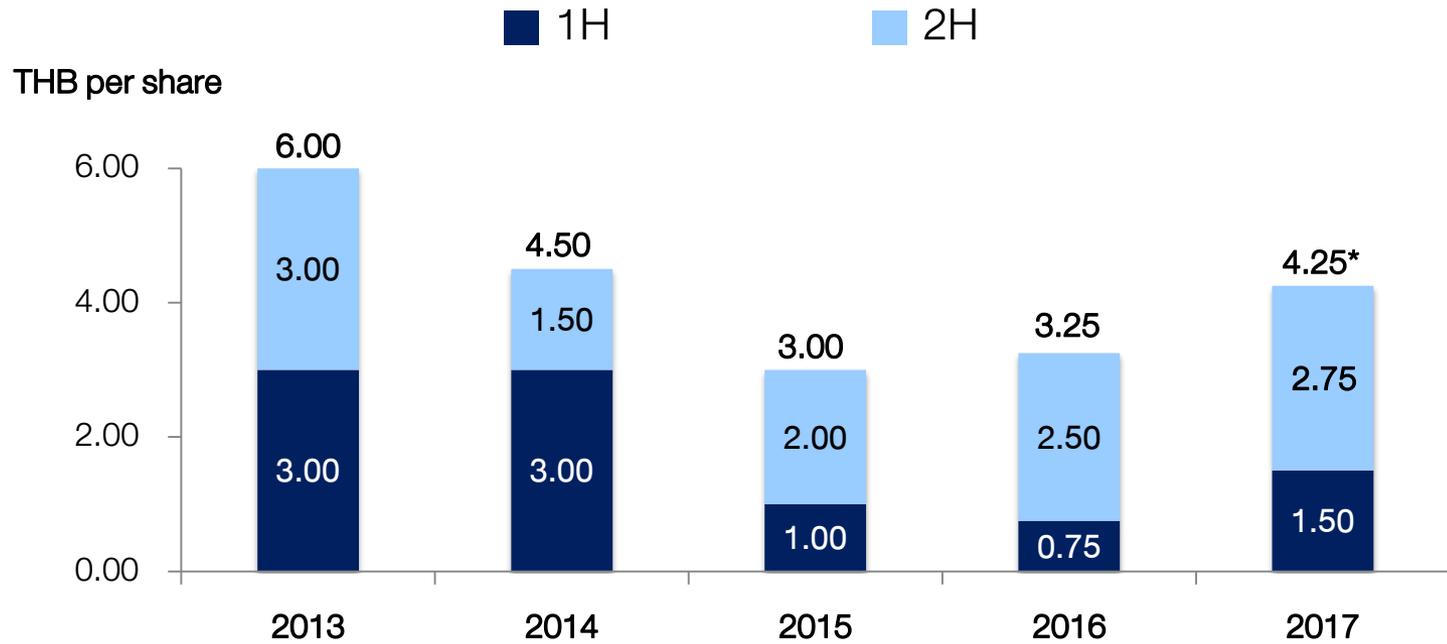
\*\* Excludes Hybrid bonds

# Dividends

Assuring our dividend commitment to shareholders



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



**Payout Ratio (%)**

**40**

**82**

**N/A**

**98**

**90**

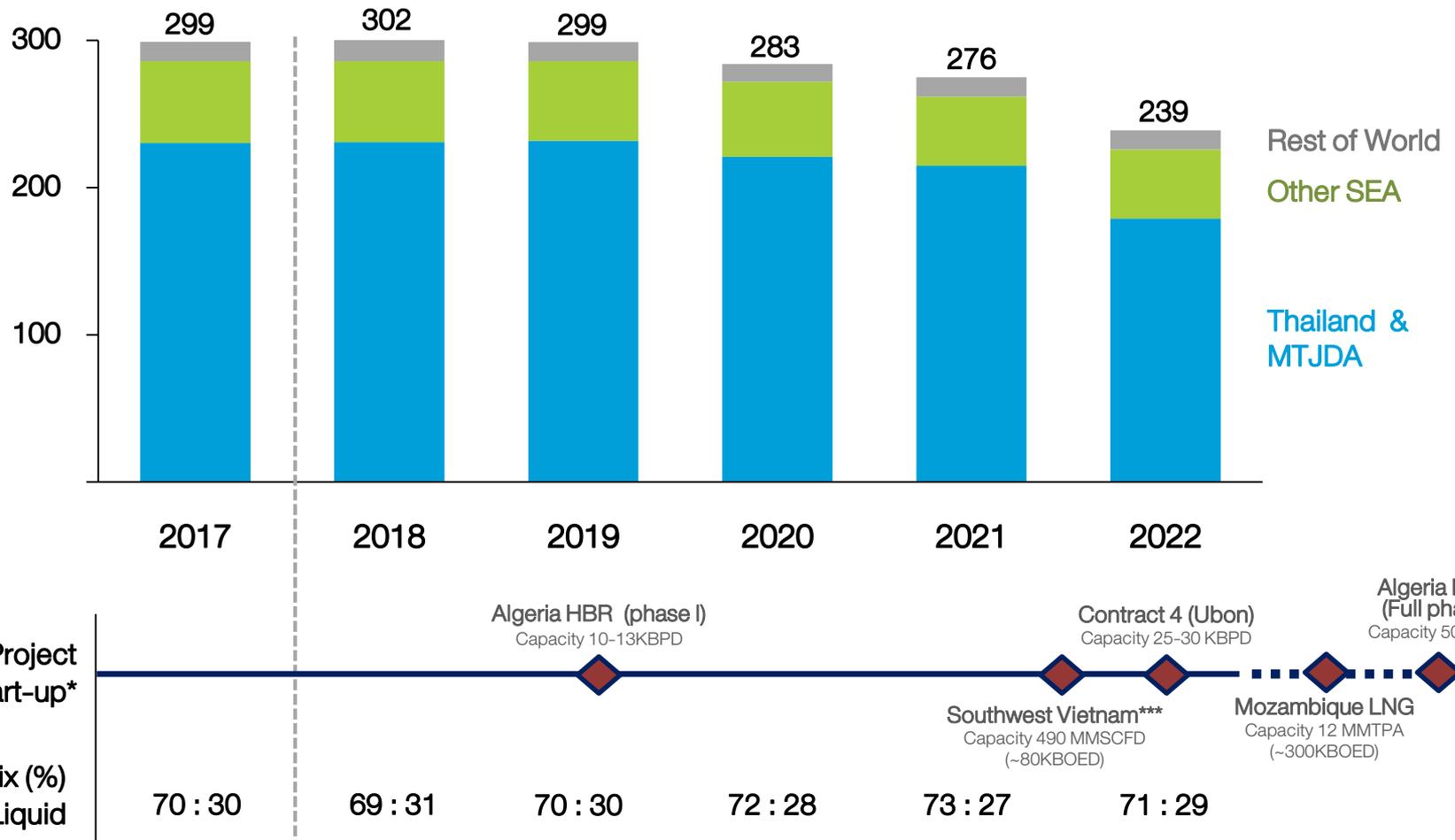
\* Subject to 2018 AGM's approval

# Sales Volume (excluding additional stakes in Bongkot)

M&As and concession bidding remain key upside



Unit : KBOED



Note: Excludes the sales volume contribution from the acquisition of additional 22.2222% stakes in Bongkot from Shell

\* Subject to FID timing

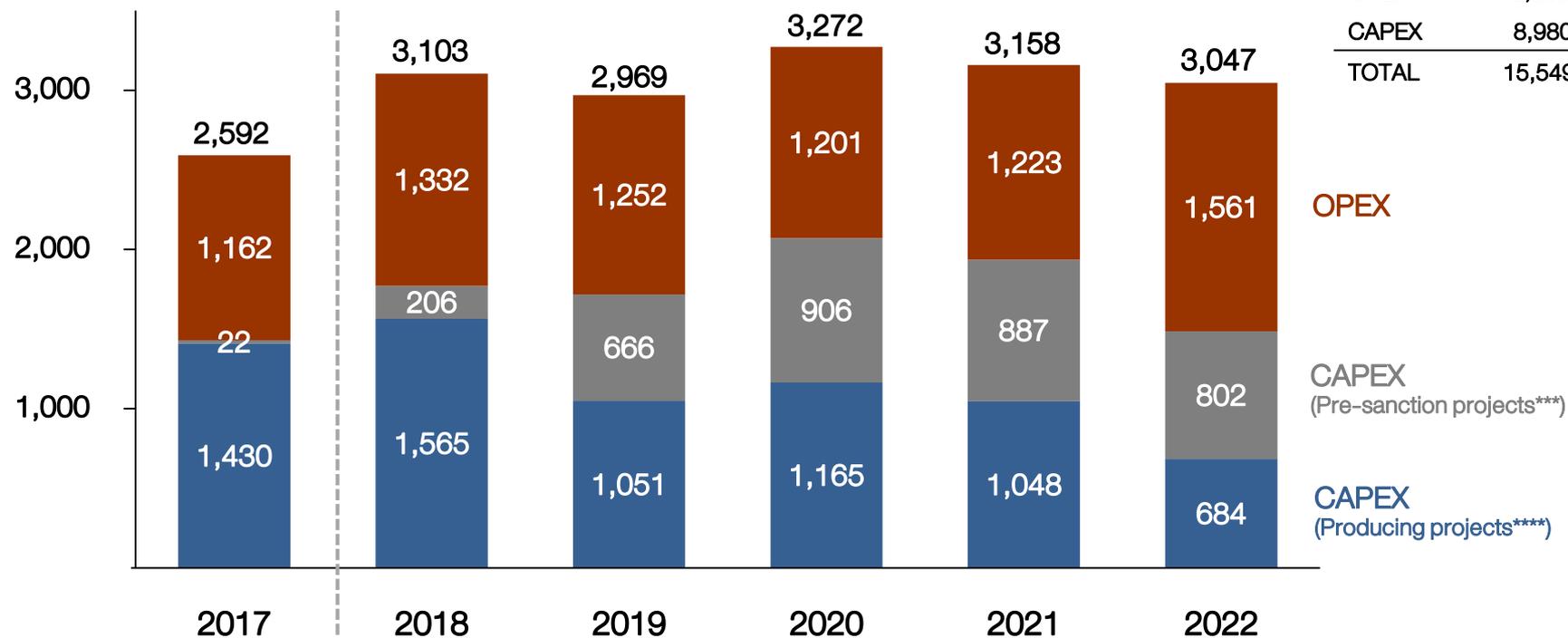
\*\* Expected project start-up in late 2021

# Investment Plan (excluding additional stakes in Bongkot)

Disciplined spending on core assets for future production growth



Unit : MMUSD



5 Years (2018 – 2022)	
OPEX	6,569
CAPEX	8,980
<b>TOTAL</b>	<b>15,549</b>



Note: Excludes the related investment from the acquisition of additional 22.2222% stakes in Bongkot from Shell

\* Subject to FID timing

\*\*\* Pre-sanction projects include Mozambique LNG, Contract 4 (Ubon), Algeria HBR and Southwest Vietnam

\*\* Expected project start-up in late 2021

\*\*\*\* Includes exploration and appraisal in all projects and head office CAPEX

# Financial Outlook

Expect revenue growth and robust financial performance



**Average Sales Volume\***  
KBOED

**Average Gas Price\*\***  
USD/MMBTU

**Unit Cost**  
USD/BOE

**EBITDA Margin**  
% of sales volume

Q1 2018

FY 2018

~300

302

~6.0

~6.2

~30

30-31

~70

Note: \* Excludes sales volume from the acquisition of additional stakes in Bongkot

\*\* Based on FY2018 Dubai oil price at 60 \$/BBL



Key Achievements

Industry Highlights

Financial Performance

Strategy and Growth

# A Firm Core Sustained by 3Rs Strategy

**RESET** to optimize cost level and uphold competitiveness

Ways

Results

Optimizing Producing Projects



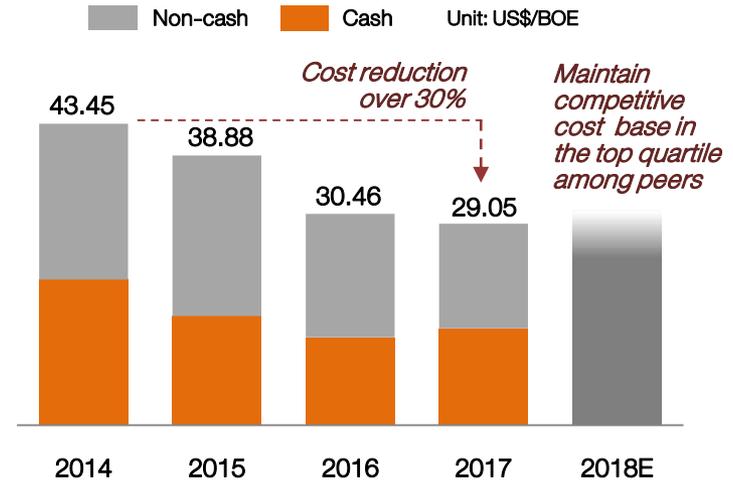
Capital Management



Organizational Restructuring  
to cope with changing E&P landscape



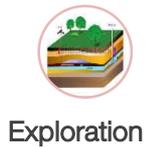
Cost Management  
through SPEND SMART campaign



2017 SPEND SMART results

- ✓ \$200MM Savings
- ✓ \$310MM equivalent in efficiency gain
- ✓ 500+ new ideas initiated

Initiatives



Exploration



Engineering & Construction



Production Operations



Maintenance & Inspection



Drilling & Well



Logistics



Procurement



Finance & Accounting



G & A

# A Firm Core Sustained by 3Rs Strategy

**REFOCUS** for sustainable future growth



## Exploration

## LNG Value Chain

Reinforce activities in prolific areas

2018 Budgets



Expanded to Mexico

New 2 Blocks in Gulf of Mexico

- ✓ **Materiality:** Prolific area in major prospective resources
- ✓ **Optimize Value:** Attractive fiscal terms and entry cost, Decreasing cost trend
- ✓ **Infrastructure:** Well-established market and infrastructure
- ✓ **Consortium:** Partnership with experienced operators



## M&A

Target producing assets  
in focus areas; SEA and Middle East

Thailand

Additional 22.2222%  
in Bongkot\*

Daily Production

👍 Add 35 KBOED

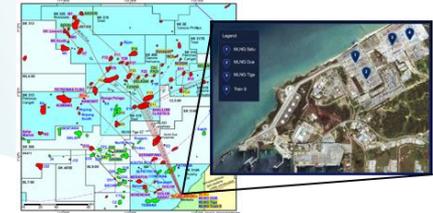
Cash Flow

👍 Immediate cash-generation

Join-hand with PTT  
to capture LNG demand growth in Asia

1<sup>st</sup> step in Malaysia

10% in MLNG Train 9 in Malaysia



Marked as first step into midstream LNG business and in vicinity of current and future upstream opportunities

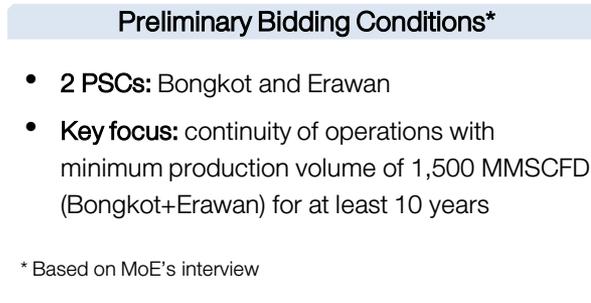
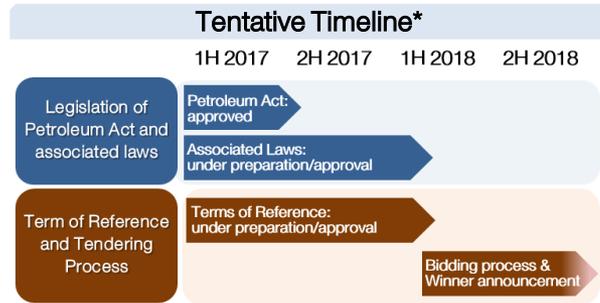
Note: \* Subject to deal closing

# A Firm Core Sustained by 3Rs Strategy

**REFOCUS** for sustainable future growth



## Strive to win Bongkot and Erawan bidding



**PTTEP is well-positioned to bid for Bongkot and Erawan**

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

## Progressing towards FID of key pre-development projects

### ◆ Mozambique Rovuma Offshore Area 1

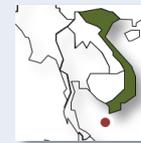


8.5%  
(operated by Anadarko)

**Production** 12MMTPA **Expected Start-up** 2023

- Approval of key legal framework and development plan
- Commencement of the resettlement action plan
- Significant progress on SPA negotiation with the execution of 1<sup>st</sup> SPA of 1.2MTPA
- Project finance is ongoing as planned

### ◆ Southwest Vietnam



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

**Production** 490MMSCFD **Expected Start-up** 2021

- Signed letter of agreement on wellhead gas prices and pipeline tariff in Q3 2017
- Finalizing commercial agreements and FID once government approval on FDP is received

### ◆ Algeria HBR



24.5%  
(operator)

**Production** 50KBPD **Expected Start-up** 2023

- Submitted development plan in Q4 2017
- FID once government approval is received

Note: First phase production of 10-13 KBPD, expected in 2019

### ◆ Ubon (Contract 4)



60%  
(operated by Chevron)

**Production** 25-30KBPD **Expected Start-up** 2021

- In process of FEED
- During development preparation with current partners

# A Firm Core Sustained by 3Rs Strategy

**RENEW** to adapt in response to changing industry landscape

## Enhancing Core Capability in Exploration & Production



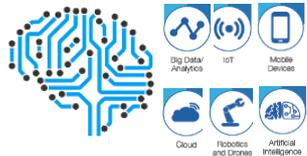
### ORGANIZATIONAL TRANSFORMATION

*Innovative, agile and result-driven*



### E&P TECHNOLOGY

*Drive exploration success, production enhancement and green practices*



### DIGITAL TRANSFORMATION

*Embrace digital technologies to drive efficiency*

## Value through Business Diversification



### E&P-RELATED BUSINESS

*Explore for value enhancement  
e.g. decommissioning*



### GAS VALUE CHAIN

*Extend presence across the gas chain*

**Midstream LNG:** Invest to support E&P and develop diversified LNG supply and trading portfolio for Asian market

**Gas Market:** Create market beyond Thailand; and capture value along the gas-to-power chain



### RENEWABLE ENERGY

*Evaluate strategic and competency compatibility*

# Key Takeaways

Maximizing value through solid growth platforms

## Concrete plans for reserve accretion

- Strive to win Bongkot and Erawan bidding
- Series of M&A deals execution
- Accelerate FID of key pre-development projects
- Exploration expansion to prolific areas

## Competitive cost base and strong margin

- Competitive cost base in top quartile
- Sustain ~70% EBITDA margin amid oil price volatility
- \$4.5 Bn cash on hand and solid capital structure with low gearing

## Commitment to shareholders' value creation

- A consistent dividend-paying company with a track record of over 15 years

## Well prepared for future challenges

- Organizational transformation to cope with changing industry landscape as well as to enhance operational efficiency
- Gas-weighted portfolio in line with global energy trend
- Diversification to LNG value chain with PTT
- Explore new business opportunities



# Thank you and Q&A



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



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Passion to Explore  
For a Sustainable Future



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# Summary of 2017 Financial Results

Strong core profits led by improved average selling price



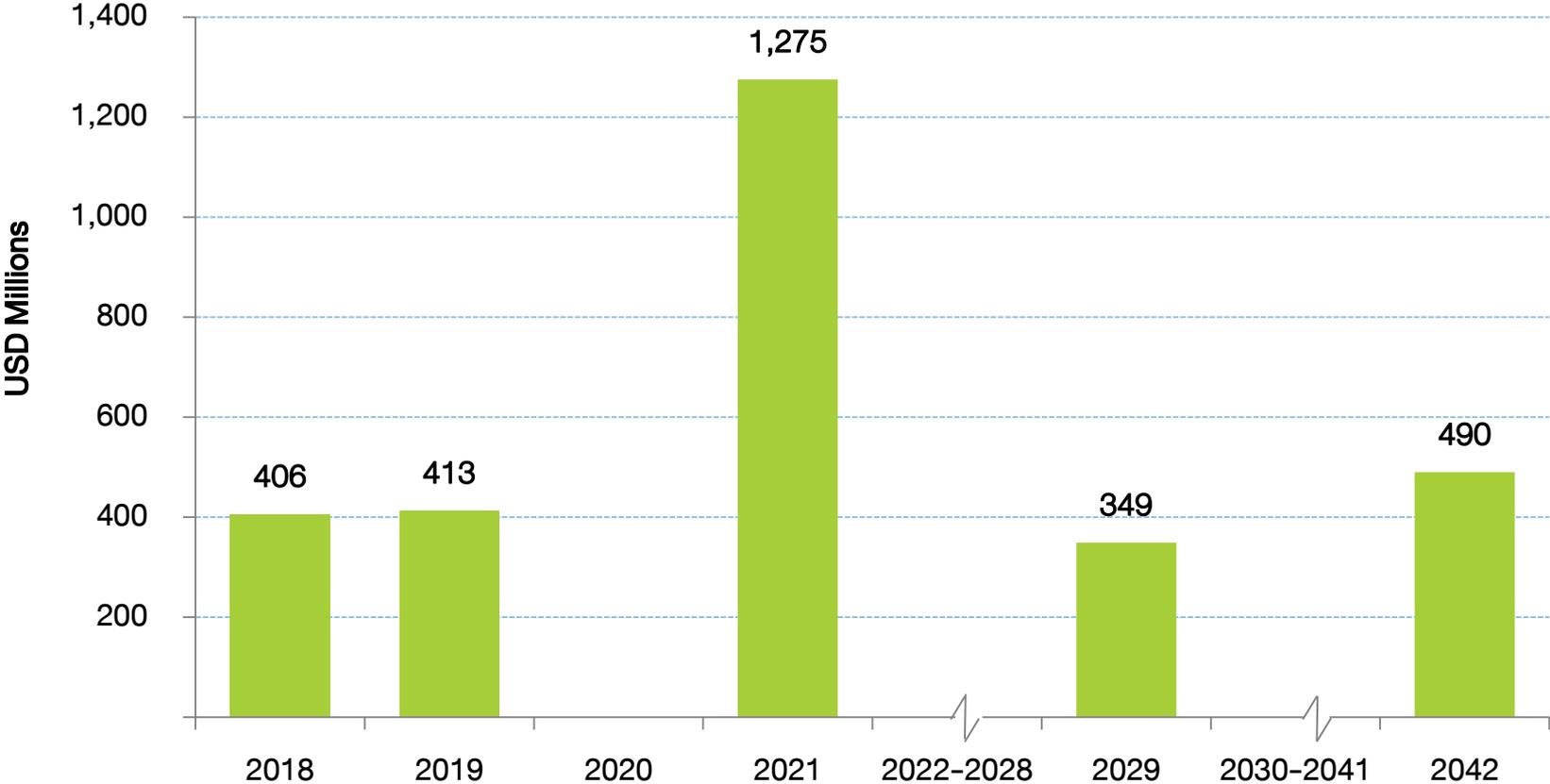
Unit : MMUSD

Statement of Income	2017	2016	% YTD	Q3 17	Q4 17	% QoQ	Q4 16	% YoY
<b>Total Revenues</b>	<b>4,523</b>	<b>4,339</b>	4%	<b>1,134</b>	<b>1,271</b>	12%	<b>1,089</b>	17%
Sales	4,281	4,190	2%	1,064	1,202	13%	1,038	16%
Others	242	149	62%	70	69	(1%)	51	35%
Sales Volume (BOED)	299,206	319,521*	(6%)	298,139	313,054	5%	316,307	(1%)
Sales Price (USD/BOE)	39.20	35.91	9%	38.78	41.74	8%	35.65	17%
<b>Total Expenses</b>	<b>3,929</b>	<b>3,987</b>	(1%)	<b>1,398</b>	<b>982</b>	(30%)	<b>1,122</b>	(12%)
<b>Major Expenses:</b>								
Operating Expenses	625	582	7%	162	168	4%	167	1%
Exploration Expenses	52	73	(29%)	9	23	>100%	12	92%
DD&A	1,650	2,079	(21%)	413	436	6%	509	(14%)
Impairment Loss on Assets	558	47	>100%	558	-	(100%)	47	(100%)
Income Tax Expense	180	285	(37%)	57	64	12%	133	(52%)
(Gain)/Loss on FX	(51)	(12)	(>100%)	(23)	(14)	39%	16	(>100%)
<b>Net Income from Continuing Operations</b>	<b>594</b>	<b>352</b>	69%	<b>(264)</b>	<b>289</b>	>100%	<b>(33)</b>	>100%
Profit (Loss) from Discontinued Operations	-	20	(100%)	-	-	-	17	(100%)
<b>Net Income</b>	<b>594</b>	<b>372</b>	60%	<b>(264)</b>	<b>289</b>	>100%	<b>(16)</b>	>100%
Recurring Net Income	836	466	79%	218	240	10%	123	95%
Non-Recurring**	(242)	(94)	(>100%)	(482)	49	>100%	(139)	>100%

Note: \* Sales volume includes discontinued operations

\*\* 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.

# Debt Maturity Profile



Note: Excludes Hybrid bonds

Unit: USD Millions or equivalent after cross currency swap

# Priority on Safety and Sustainability

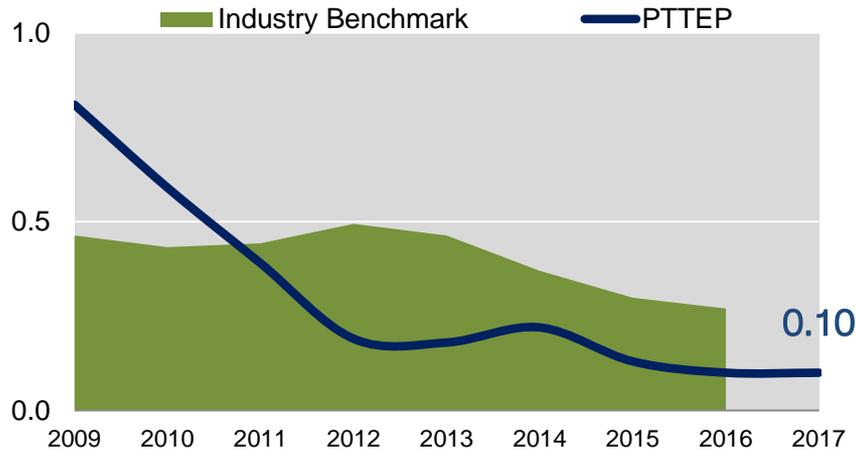
Top quartile safety performance; Fourth consecutive year as a DJSI listed company



## Safety

Maintain high safety standard

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



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

## Sustainability

Affirm our path to sustainable development

MEMBER OF  
**Dow Jones Sustainability Indices**  
In Collaboration with RobecoSAM

Member of the 2017 Dow Jones Sustainability Indices (DJSI) in the DJSI World Oil and Gas Upstream & Integrated Industry for its fourth consecutive year

SUSTAINABILITY  
Business Growth  
Social Progress  
Environmental Stewardship

FTSE4Good

Constituent of the FTSE4Good Emerging Index 2017 for a second consecutive year

IOD  
Thai Institute of Directors

"Excellence" level of recognition from the 2017 Corporate Governance Report of Thai Listed Companies, conducted by the Thai Institute of Directors (IOD) since 2001

# Sustainable development

Pursue long-term growth with social and environmental wellness



MEMBER OF

**Dow Jones  
Sustainability Indices**

In Collaboration with RobecoSAM

## 2017 DJSI Listed Company

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



## Proven business integrity

Outstanding Sustainability Report Award 2016  
*Thai Listed Companies Association*

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

CG Asia Recognition Awards  
*Corporate Governance Asia Magazine*



## Exemplary social contributor

Platinum Award for SIOLA Project:  
Best Community Program  
*the 9<sup>th</sup> Annual Global CSR Summit 2017*

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



FTSE4Good

## FTSE4Good Emerging Index 2017

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



## Green driver to environment

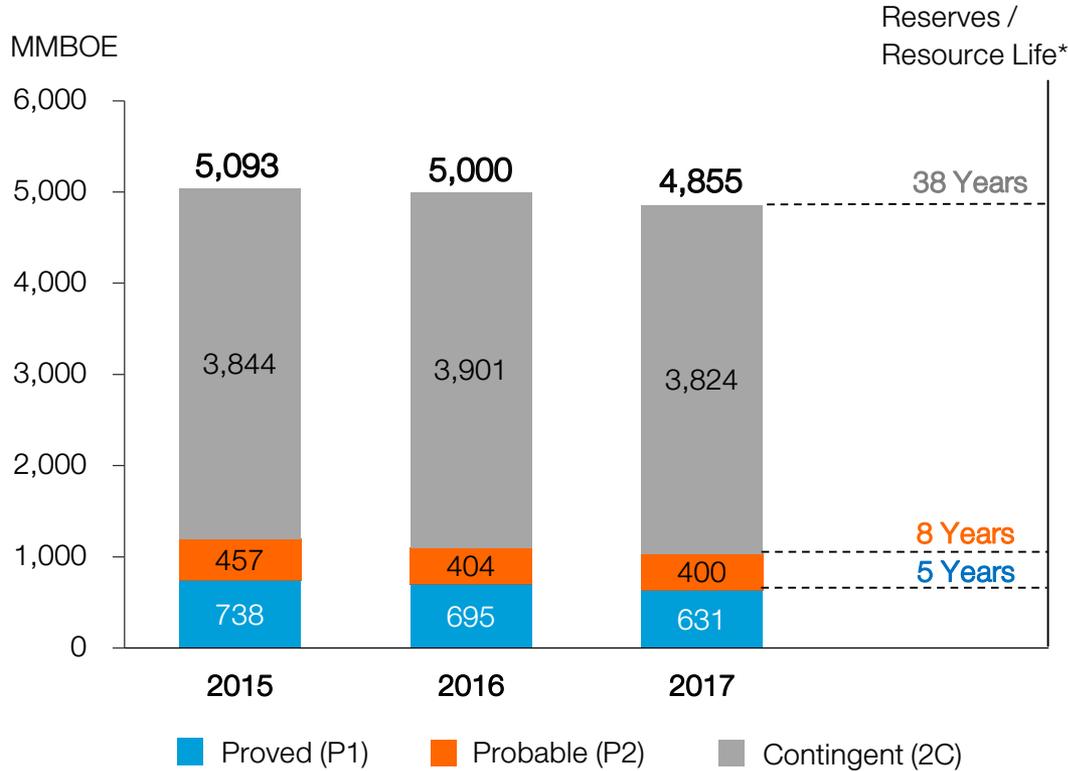
Water A List Award  
*Carbon Disclosure Project (CDP)*

2017 LESS Award Letter of Recognition  
*Thailand Greenhouse Gas Management Organization*

Thailand Occupational Safety and Health Awards  
*the Ministry of Labour*

# Reserves and Resources

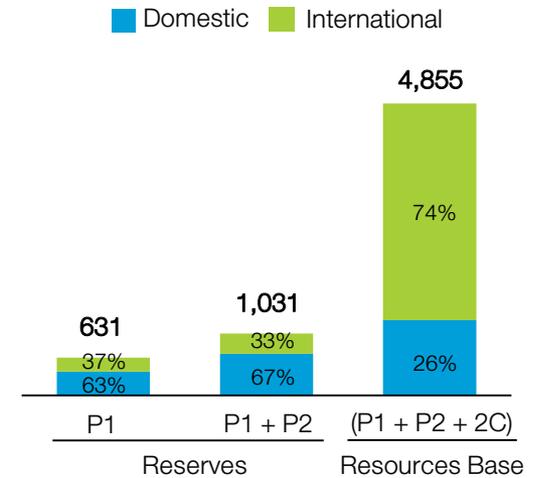
Maintained reserve life with majority of reserves base in SEA



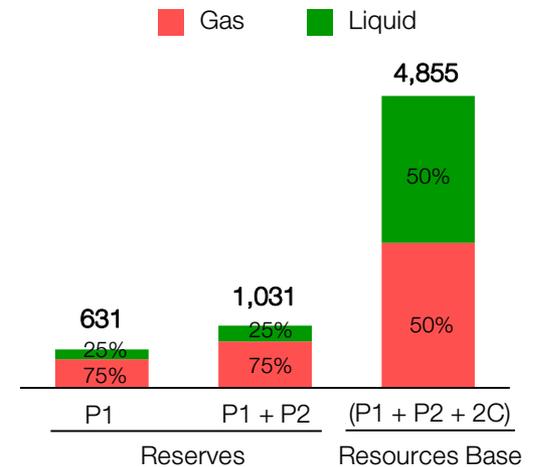
5-Year Average Proved Reserves Replacement Ratio (RRR)

2015	2016	2017
0.50x	0.57x	0.58x

## 2017 by Geography



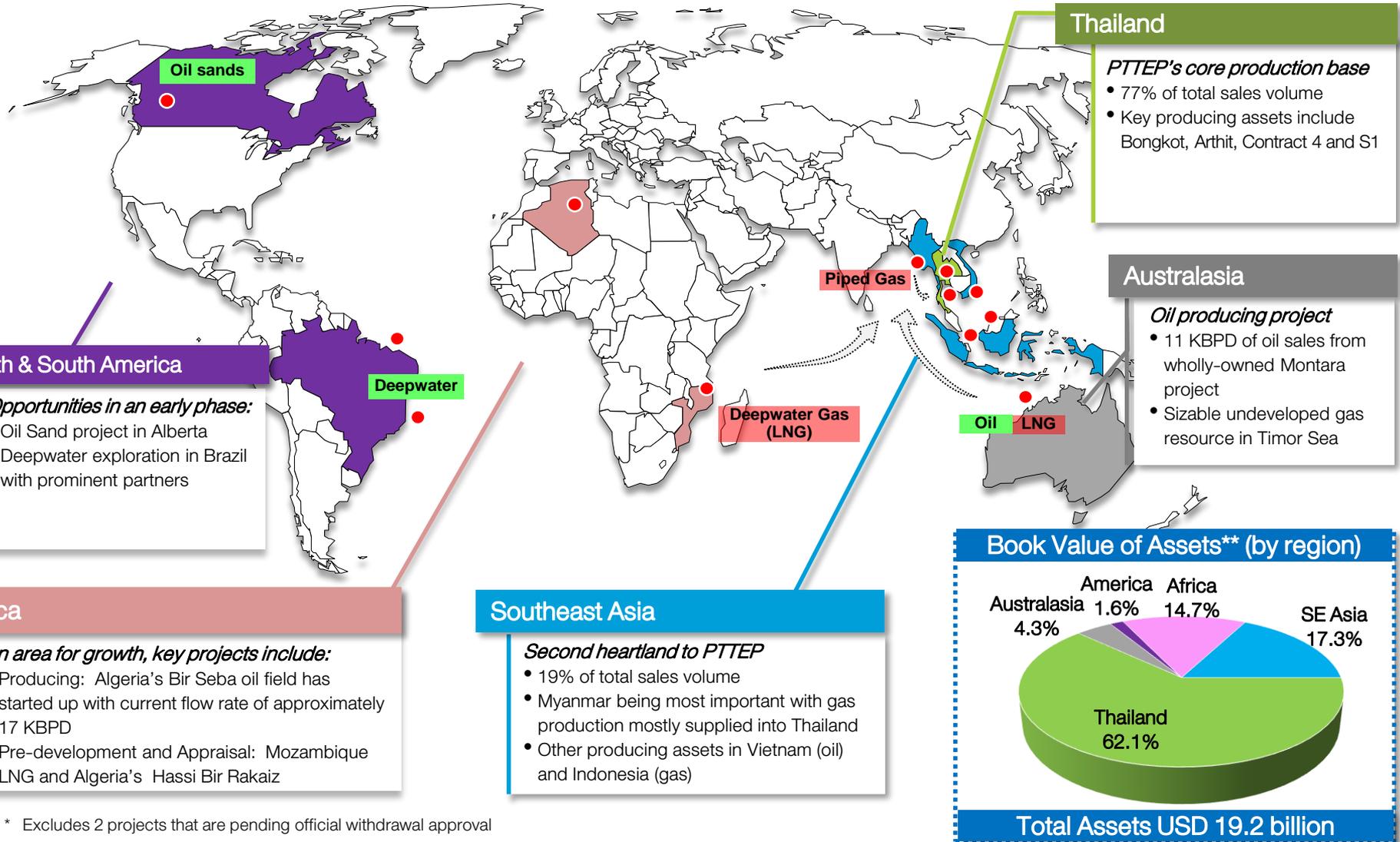
## 2017 by Product Type



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

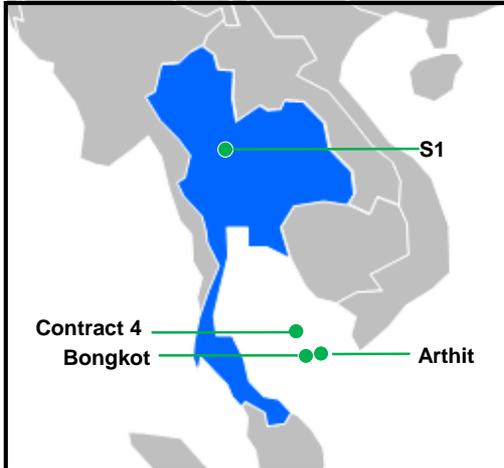
# Diversified international portfolio

Worldwide operations: 36 projects\* in 10 countries



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

\*\* Information dated as of 31 December 2017



● Production / Ramp-up Projects

### Bongkot (44.4445% interest)

- Bongkot's natural gas sales volume of 856 MMSCFD in 2017
- Average condensate sales volume was 26 KBPD in 2017

### S1 (100% interest)

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

### Arthit (80% interest)

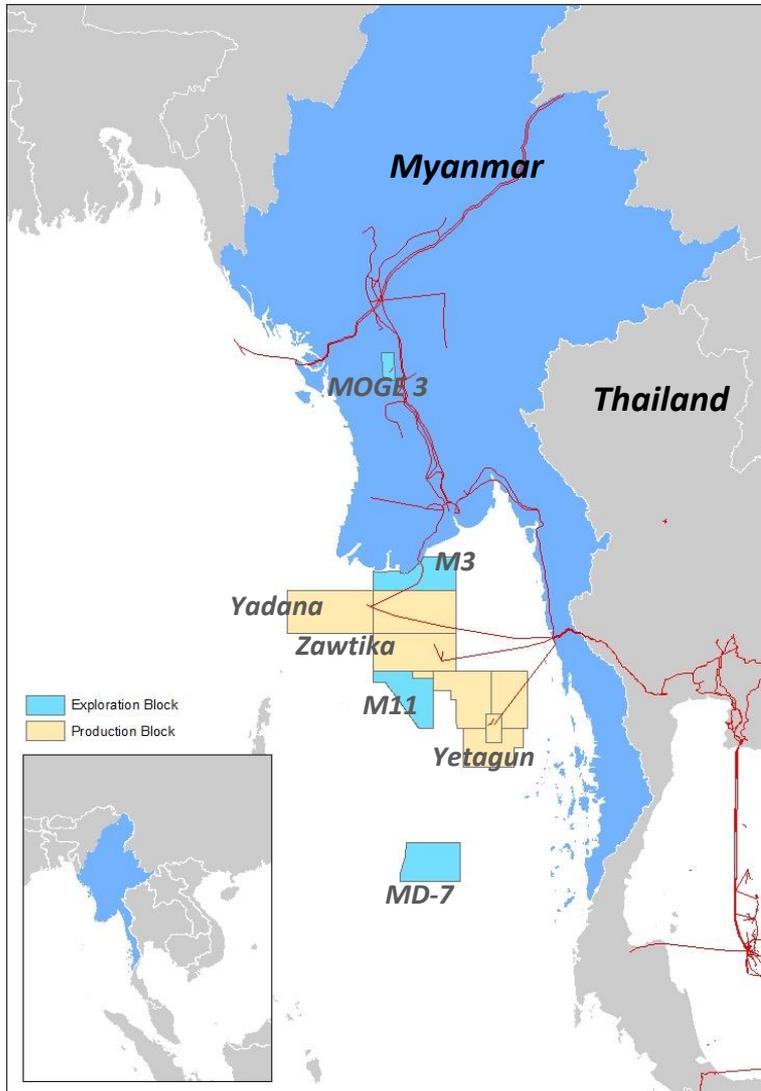
- Average sales volume in 2017 was 218 MMSCFD of natural gas and 9.8 KBPD of condensates

### Contract 4 (60% interest)

- Acquired from Hess Corporation in 2014.
- The Contract 4 project had an average sales rate of 347 MMSCFD for natural gas and 16 KBPD for condensate in 2017

# Southeast Asia: Myanmar

Significant contribution to growth



- Participating in three producing gas fields which supply gas to both Thailand and Myanmar: Yadana, Yetagun, Zawtika
- Operate Zawtika project, brought online in March 2014 with current gas supply of 301 MMSCFD in 2017.
- Significant exploration acreage both onshore and offshore in the Moattama Basin

Project Status		
<b>Producing</b> <ul style="list-style-type: none"><li>• Yadana (25.5% WI)</li><li>• Yetagun (19.3% WI)</li><li>• Zawtika (80% WI)</li></ul>	<b>Appraisal</b> <ul style="list-style-type: none"><li>• M3 (80% WI)</li></ul>	<b>Exploration</b> <ul style="list-style-type: none"><li>• MOGE 3 (75% WI)</li><li>• M11 (100% WI)</li><li>• MD-7 (50% WI)</li></ul>

Note: WI – working interest

# Southeast Asia: Vietnam and Indonesia

Reinforcing regional exposure through strategic partnerships

## Vietnam 16-1



● Production / Ramp-up Projects

## Natuna Sea A



### Vietnam 16-1 (28.5% interest)

- Average crude oil sales volume of 21 KBPD in 2017
- Commissioned production platform in the H5 area to support current production level

### Natuna Sea A (11.5% interest)

- Average sales volume of natural gas was 221 MMSCFD in 2017

# East Africa: Mozambique

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

*Substantial recoverable resources of **70+ tcf** with scalable offshore development of **more than 6 LNG trains***

## Key Milestones to Final Investment Decision

### Technical

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

### Commercial

- ✓ Secured more than 8 MMTPA of non-binding HOAs

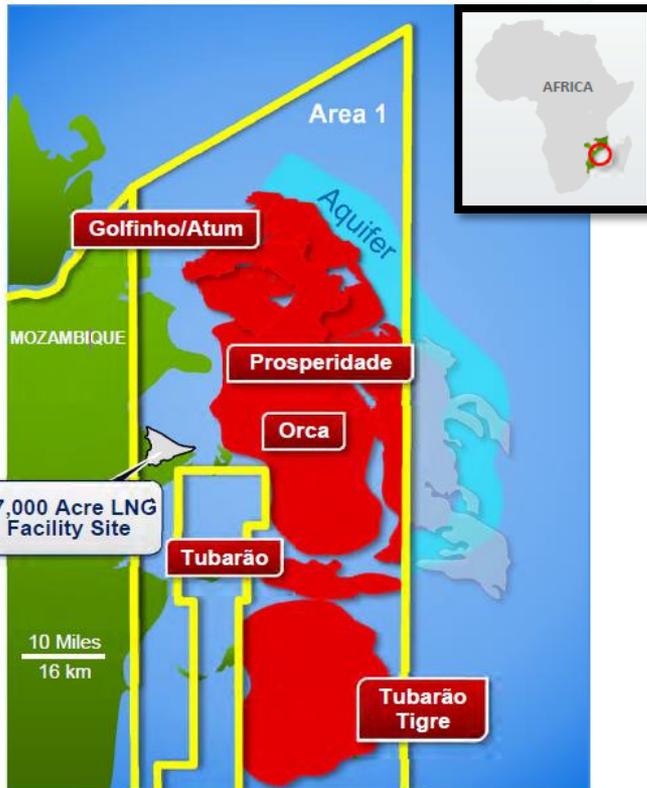
### Regulatory

- ✓ Received approval on marine concession
- ✓ Commenced the resettlement plan in Q4 2017

### Financing

- ✓ On-going negotiation for project financing

**Onwards to initial phase of 12 MMTPA**

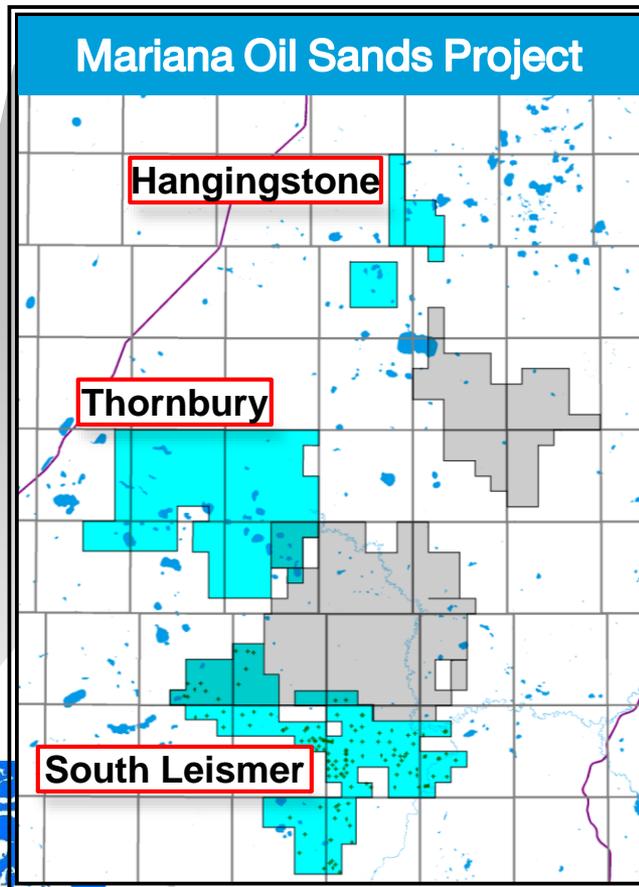


### Location and Cost Advantage

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

# America: Canada Oil Sands

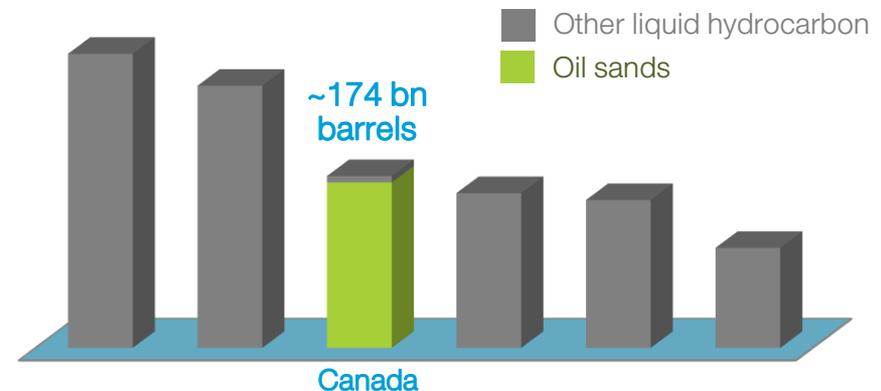
Flexibility to pursue long-term investment from the oil sands project



## Project Overview

- Operates 100% interest of the Thornbury, Hangingstone and South Leismer (THSL) areas (exploration and appraisal phase)
- Potential large resource base with over a billion barrel
- 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

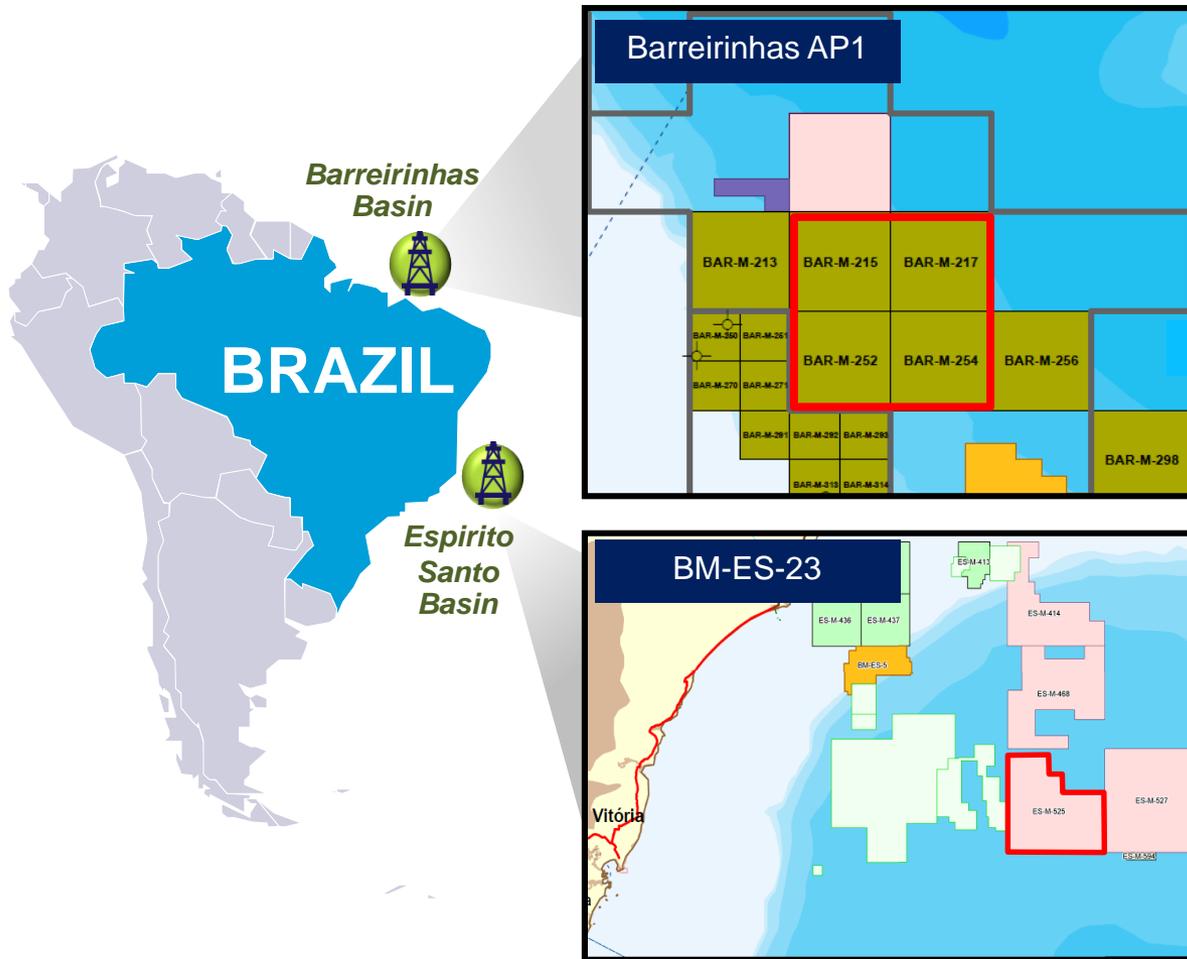
Approximately 96% of the reserves in Canada, the world's 3<sup>rd</sup> largest oil reserves, is oil sands



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

# America: Brazil Deepwater

Entry into high potential petroleum province at exploration phase



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

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

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

# 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)	<table border="0"> <tr> <td>Petronas</td> <td>80%</td> <td></td> </tr> <tr> <td>JX Nippon</td> <td>10%</td> <td></td> </tr> <tr> <td>PTT Global LNG</td> <td>10%</td> <td></td> </tr> </table>	Petronas	80%		JX Nippon	10%		PTT Global LNG	10%	
Petronas	80%									
JX Nippon	10%									
PTT Global LNG	10%									

Investment Rationales	
<ul style="list-style-type: none"> <li>• Capture opportunity from increasing LNG demand as a supplement to Thailand gas production</li> <li>• 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</li> <li>• Low risk and highly market secured opportunity                             <ul style="list-style-type: none"> <li>- Highly experienced operator</li> <li>- Already commenced commercial production with immediate revenue stream</li> </ul> </li> <li>• In vicinity of future upstream opportunities in focus area – offshore Sarawak</li> </ul>	

# Project information 1/3

Production phase: Thailand and JDA



Project	Status*	PTTEP's Share	Partners (as of 2017)	2017 Average Sales Volume **		2018 Key Activities		
				Gas	Oil and Other			
<b>Production Phase</b>								
<b>Thailand and JDA</b>								
1	Arthit	OP	80%	Chevron MOECO	16% 4%	218 MMSCFD	Condensate: 9.8 k BPD	<ul style="list-style-type: none"> <li>Ensure gas deliverability level at DCQ****</li> <li>Drill development wells</li> </ul>
2	B6/27	OP	100%			-	-	<ul style="list-style-type: none"> <li>Prepare drilling plan</li> </ul>
3	B8/32 & 9A		25%	Chevron MOECO KrisEnergy PSTL	51.66% 16.71% 4.63% 2%	94 MMSCFD	Crude: 25 k BPD	<ul style="list-style-type: none"> <li>Drill development wells</li> <li>Perform waterflood activities</li> </ul>
4	Bongkot	OP	44.4445%	TOTAL Shell	33.3333% 22.2222%	856 MMSCFD	Condensate: 26 k BPD	<ul style="list-style-type: none"> <li>Ensure gas deliverability level at DCQ****</li> <li>Drill development wells</li> <li>Install wellhead platforms</li> </ul>
5	Contract 3 (Formerly Unocal III)		5%	Chevron MOECO	71.25% 23.75%	577 MMSCFD	Crude: 22 k BPD Condensate: 21 k BPD	<ul style="list-style-type: none"> <li>Drill exploration / appraisal / development wells</li> <li>Install wellhead platforms</li> <li>Perform waterflood activities</li> </ul>
6	Contract 4 (Formerly Pailin)		60%	Chevron MOECO	35% 5%	347 MMSCFD	Condensate: 16 k BPD	<ul style="list-style-type: none"> <li>Ensure gas deliverability level at DCQ****</li> <li>Drill development wells</li> <li>Install wellhead platforms</li> <li>Review development plan of Ubon field</li> </ul>
7	E5		20%	ExxonMobil	80%	9.1 MMSCFD	-	
8	G4/43		21.375%	Chevron MOECO PSTL	51% 21.25% 6.375%	2.2 MMSCFD	Crude: 6.1 k BPD	<ul style="list-style-type: none"> <li>Drill development wells</li> <li>Perform waterflood activities</li> </ul>
9	G4/48		5%	Chevron MOECO	71.25% 23.75%	5.4 MMSCFD	Crude: 1.3 k BPD	
10	L53/43 & L54/43	OP	100%			-	Crude: 627 BPD	<ul style="list-style-type: none"> <li>Drill exploration / appraisal / development wells</li> </ul>
11	PTTEP1	OP	100%			-	Crude: 253 BPD	<ul style="list-style-type: none"> <li>Drill development wells</li> <li>Perform waterflood activities</li> </ul>
12	S1	OP	100%			21 MMSCFD	Crude: 26 k BPD	<ul style="list-style-type: none"> <li>Drill exploration / development wells</li> <li>Enhance oil recovery program includes waterflooding and artificial lift</li> </ul>
13	Sinphuhorm	OP	55%	Apico ExxonMobil	35% 10%	78 MMSCFD	Condensate: 250 BPD	<ul style="list-style-type: none"> <li>Drill development wells</li> </ul>
14	MTJDA	JOC	50%	Petronas-Carigali	50%	263 MMSCFD	Condensate: 7.0 k BPD	<ul style="list-style-type: none"> <li>Drill development wells</li> <li>Install wellhead platforms</li> </ul>
15	L22/43	OP	100%			-	Crude: 141 BPD	<ul style="list-style-type: none"> <li>Drill development wells</li> </ul>

\* 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 2017)	2017 Average Sales Volume **		2018 Key Activities
					Gas	Oil and Other	
<b>Production Phase</b>							
<b>Overseas</b>							
16	Vietnam 9-2	JOC	25%	PetroVietnam 50% SOCO 25%	12 MMSCFD	Crude: 4.2 k BPD	<ul style="list-style-type: none"> <li>Maintain production operation</li> <li>Perform reservoir management</li> </ul>
17	Yadana		25.5%	TOTAL 31.24% Chevron 28.26% MOGE 15%	741 MMSCFD	-	<ul style="list-style-type: none"> <li>Ensure gas deliverability level at DCQ***</li> </ul>
18	Yetagun		19.3178%	Petronas-Carigali 30.00140% MOGE 20.4541% Nippon Oil 19.3178% PC Myanmar (Hong Kong) 10.90878%	215 MMSCFD	Condensate: 5.5 k BPD	<ul style="list-style-type: none"> <li>Drill appraisal / development wells</li> <li>Perform reservoir Management</li> </ul>
19	Vietnam 16-1	JOC	28.5%	PetroVietnam 41% SOCO 28.5% OPECO 2%	2.0 MMSCFD	Crude: 21 k BPD	<ul style="list-style-type: none"> <li>Drill development wells</li> <li>Maintain production operation</li> </ul>
20	PTTEP Australasia (PTTEP AA)	OP	90%-100% (varied by permits)		-	Crude: 11 k BPD	<ul style="list-style-type: none"> <li>Maintain production operation</li> </ul>
21	Natuna Sea A		11.5%	Premier Oil 28.67% KUFPEC 33.33% Petronas 15% Pertamina 11.5%	221 MMSCFD	Crude: 1.5 k BPD	<ul style="list-style-type: none"> <li>Maintain production operation</li> </ul>
22	Zawtika (M9 & a part of M11)	OP	80%	Myanma Oil and Gas Enterprise (MOGE) 20%	301 MMSCFD	-	<ul style="list-style-type: none"> <li>Maintain production rate</li> <li>Drill development wells</li> <li>Install wellhead platforms</li> </ul>
23	Algeria 433a & 416b (Bir Seba)	JOC	35%	PetroVietnam 40% Sonatrach 25%	-	Crude: 2.8 k BPD (net entitlement)	<ul style="list-style-type: none"> <li>Maintain production operation</li> </ul>

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

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

\*\*\* DCQ = Daily Contractual Quantity

# Project information 3/3

## Exploration phase



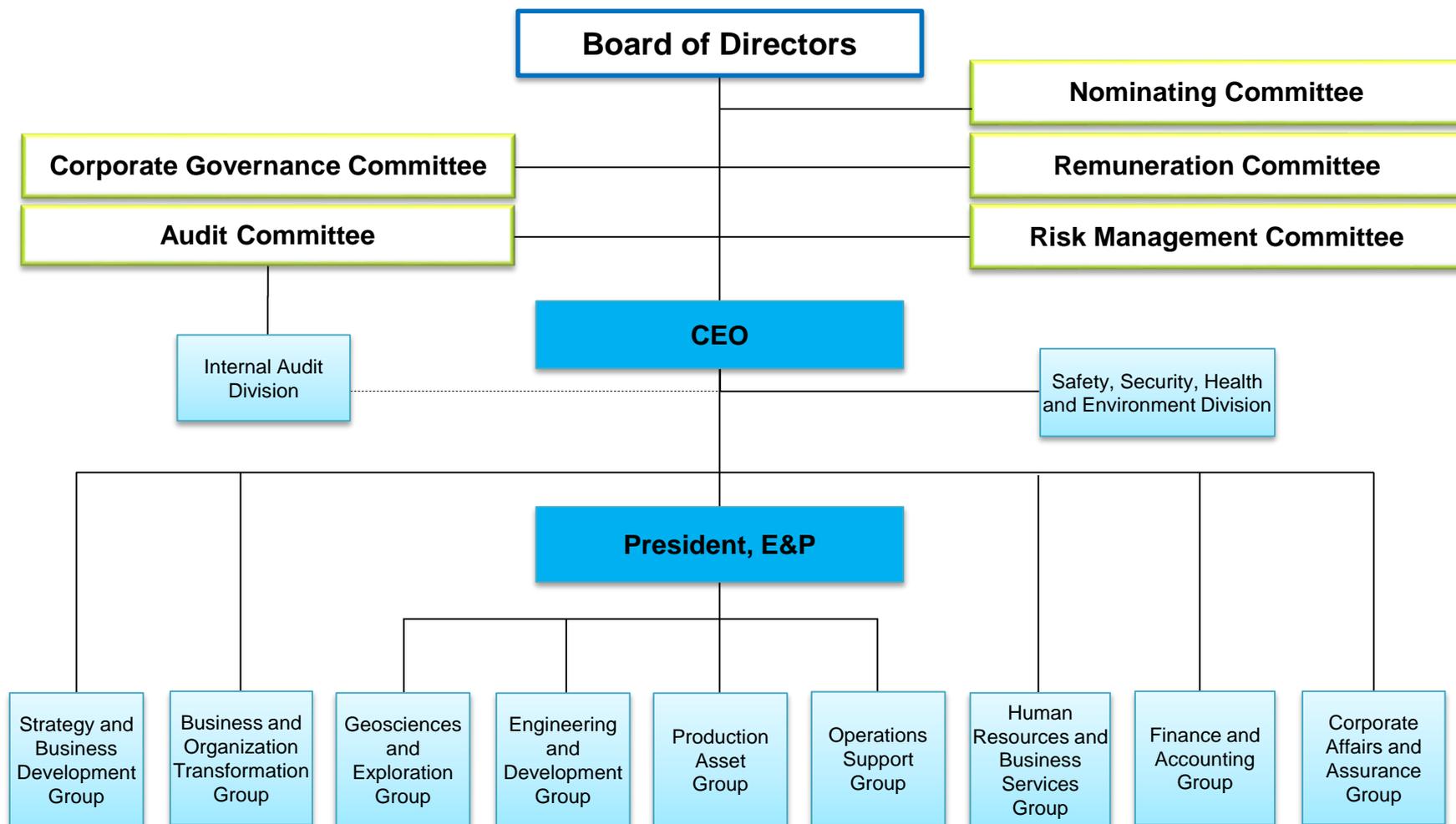
	Project	Status*	PTTEP's Share	Partners (as of 2017)	2018 Key Activities
<b>Exploration Phase</b>					
<b>Thailand and JDA</b>					
24	G9/43	OP	100%		
<b>Overseas</b>					
25	Myanmar M3	OP	80%	MOECO 20%	<ul style="list-style-type: none"> <li>Negotiate the commercial framework with the Myanmar government</li> </ul>
26	Mozambique Rovuma Offshore Area 1		8.5%	Anadarko, Mitsui, 26.5%, 20% ENH, ONGC 15%, 10% Beas Rovuma, Bharat 10%, 10%	<ul style="list-style-type: none"> <li>Preparatory work for Final Investment Decision (FID) including LNG marketing and finalization of remaining commercial contracts</li> </ul>
27	Algeria Hassi Bir Rekaiz	OP	24.5%	CNOOC 24.5% Sonatrach 51%	<ul style="list-style-type: none"> <li>Conduct pre-development study and prepare project development plan</li> </ul>
28	Myanmar M11	OP	100%		<ul style="list-style-type: none"> <li>Acquire 3D seismic</li> </ul>
29	Vietnam B & 48/95		8.5%	PVN 65.88% MOECO 25.62%	<ul style="list-style-type: none"> <li>Negotiate a GSA with the Vietnamese government</li> </ul>
30	Vietnam 52/97		7%	PVN 73.4% MOECO 19.6%	<ul style="list-style-type: none"> <li>Negotiate a GSA with the Vietnamese government</li> </ul>
31	Myanmar MD-7	OP	50%	TOTAL 50%	<ul style="list-style-type: none"> <li>Assess resource potential and prepare exploration drilling</li> </ul>
32	Mariana Oil Sands	OP	100%		<ul style="list-style-type: none"> <li>Assess appropriated development approach</li> </ul>
33	Barreirinhas AP1		25%	Shell Brasil 65% Mitsui E&P Brasil 10%	<ul style="list-style-type: none"> <li>Assess petroleum potential</li> </ul>
34	Myanmar MOGE 3	OP	75%	Palang Sophon 10% MOECO 10% WinPreciousResources 5%	<ul style="list-style-type: none"> <li>Assess petroleum potential and prepare exploration drilling plan</li> </ul>
35	Brazil BM-ES-23		20%	Petrobras 65% INPEX 15%	<ul style="list-style-type: none"> <li>Assess petroleum potential</li> </ul>
36	Sarawak SK410B	OP	42.5%	KUFPEC 42.5% PSCB 15%	<ul style="list-style-type: none"> <li>Assess petroleum potential and prepare exploration drilling plan</li> </ul>

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

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

# Organization structure

Ensuring transparency, integrity and good corporate governance



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