

Dow Jones Sustainability Indices In Collaboration with RobecoSAM (

# Non-Deal Roadshow in Bangkok

20 February 2018





# Company Overview

# **Financial Performance**

Strategy and Growth

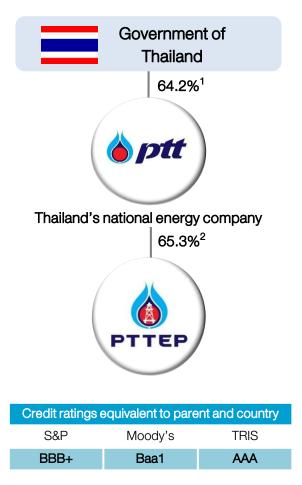
**Investment Plan & Outlook** 

# PTTEP: the E&P Flagship of PTT Group

Plays a pivotal role in Thailand's oil and gas production





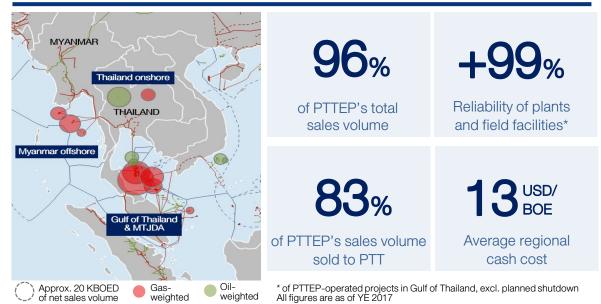


*Largest* oil and gas producers in Thailand and Myanmar

*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



Notes:

1. 51.1% is directly held by the Government of Thailand (Ministry of Finance), with the remaining 13.1% held by the state-controlled Vayupak Fund I as of 5 September 2017

2. Ownership as of 7 February 2018

# A Firm Core for Accretive Growth

Reflected in 2017's performance





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





- ✓ 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



Acquired 22.2222% stake from Shell



Expanded to new prolific areas with experienced partners





# **Company Overview**

# Financial Performance

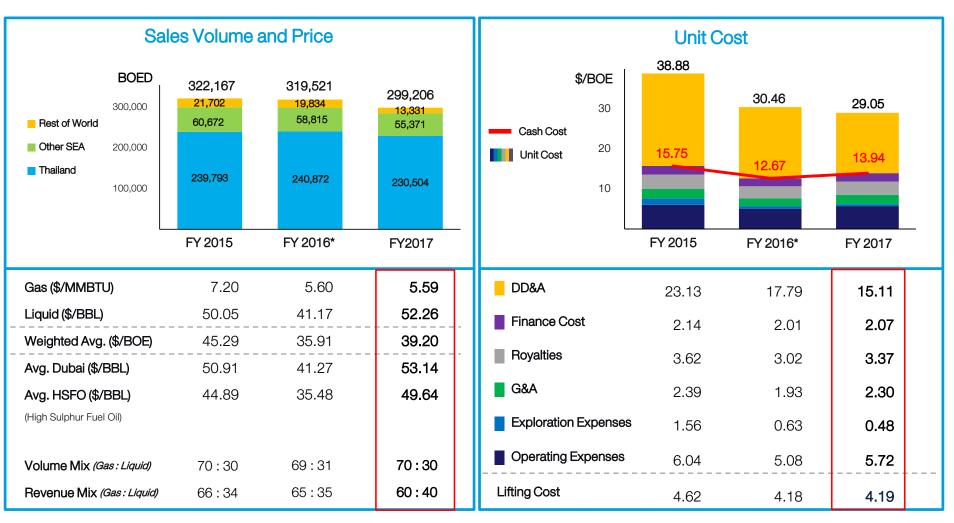
Strategy and Growth

**Investment Plan & Outlook** 

### Sales Volume & Unit Cost

Achieved target sales volume with competitive cost



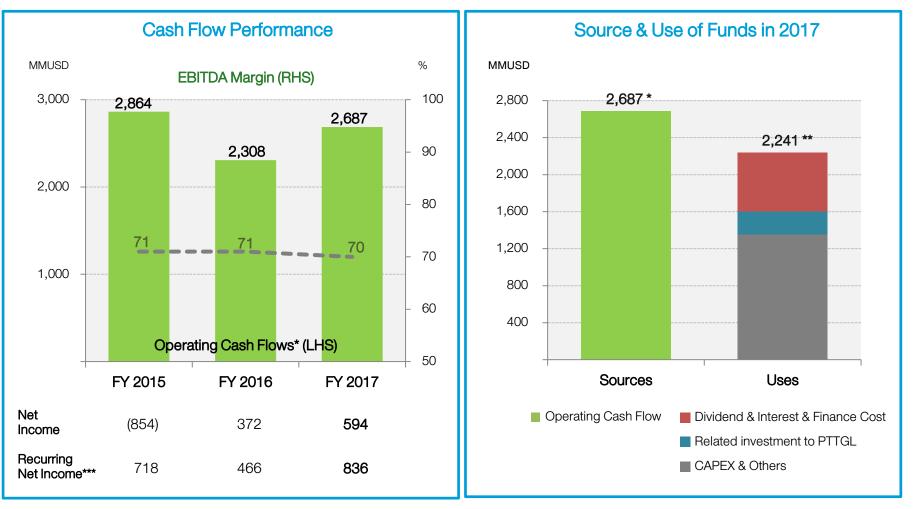


Note: \* Represented and includes discontinued operations until end of August 2016

### **Cash Flow Performance**

Solid cash flows and liquidity for future growth





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

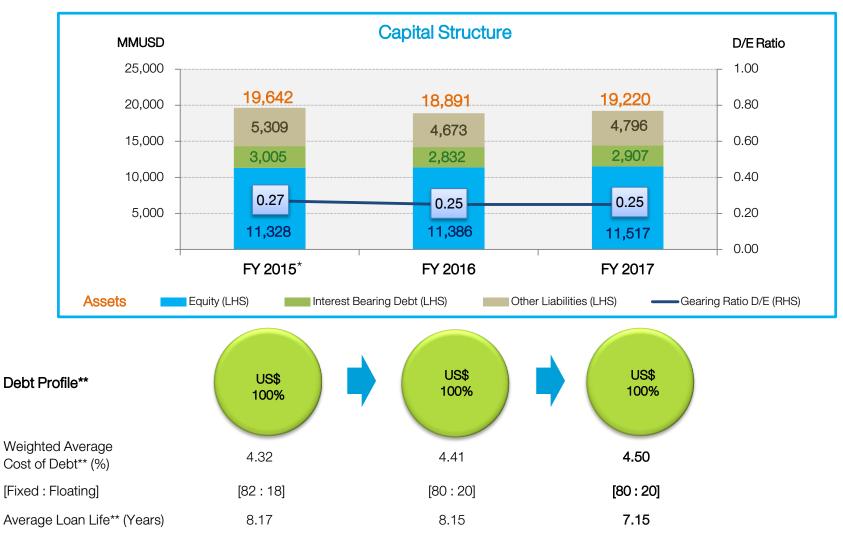
\*\* Excludes cash flows for investing in short-term investments (Fixed deposit > 3 months)

\*\*\* 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





Remark: \* Restated

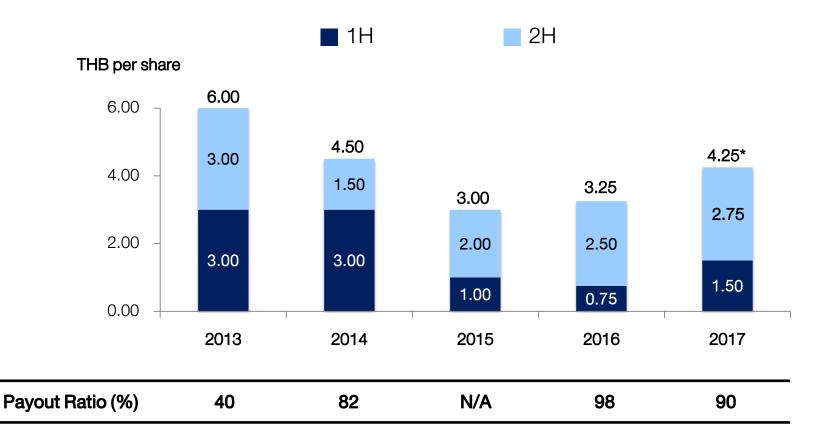
\*\* Excludes Hybrid bonds

### Dividends

Assuring our dividend commitment to shareholders



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



\* Subject to 2018 AGM's approval





# **Company Overview**

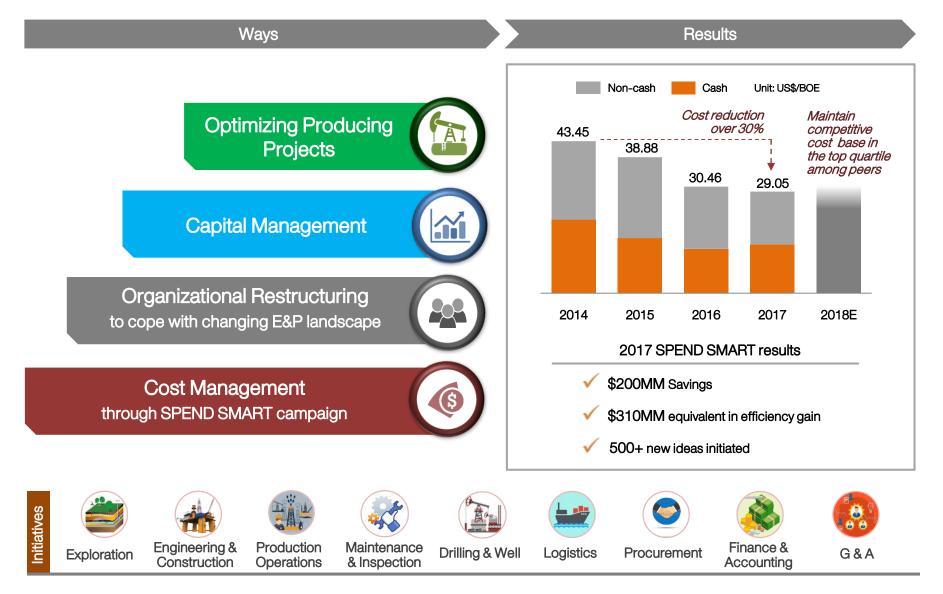
# **Financial Performance**

# Strategy and Growth

# **Investment Plan & Outlook**

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

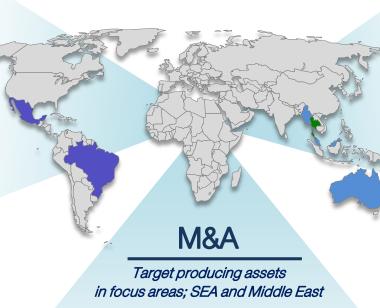




**REFOCUS** for sustainable future growth



#### Exploration Reinforce activities in prolific areas 2018 Budgets Seismic study & others Drilling 232 33% activities MMUSD 67% **Expanded to Mexico** New 2 Blocks in Gulf of Mexico $|\mathbf{V}|$ Materiality: Prolific area in major prospective resources $\mathbf{\nabla}$ Optimize Value: Attractive fiscal terms and entry cost, Decreasing cost trend $\mathbf{\nabla}$ Infrastructure: Well-established market and infrastructure $\checkmark$ **Consortium:** Partnership with experienced operators



#### Thailand

Additional 22.2222% in Bongkot\*



# LNG Value Chain

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

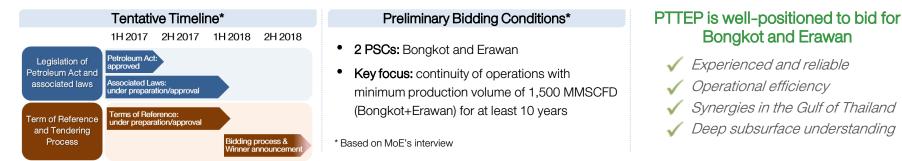


Marked as first step into midstream LNG business and in vicinity of current and future upstream opportunities

### **REFOCUS** for sustainable future growth



### Strive to win Bongkot and Erawan bidding



### Progressing toward FID of key pre-development projects

### Mozambique Rovuma Offshore Area 1



(operated by

Anadarko

#### Production 12<sub>MMTPA</sub> Expected Start-up 2023

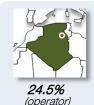
Approval of key legal framework and development plan

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

### 🔶 Algeria HBR



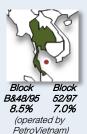
#### Production 50KBPD Expected Start-up 2023

Submitted development plan in Q4 2017

FID once government approval is received

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

#### Southwest Vietnam



#### 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

### Ubon (Contract 4)



Production 25-30KBPD Expected Start-up 2021

In process of FEED

During development preparation with current partners

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



Enhancing Core Capability in Exploration & Production Value through Business Diversification



#### ORGANIZATIONAL TRANSFORMATION Innovative, agile and result-driven



#### **E&P-RELATED BUSINESS**

Explore for value enhancement e.g. decommissioning

#### GAS VALUE CHAIN Extend presence across the gas chain



E&P TECHNOLOGY Drive exploration success, production enhancement and green practices



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

Gas Market:

S Create market beyond Thailand; and capturet: value along the gas-to-power chain



DIGITAL TRANSFORMATION Embrace digital technologies to drive efficiency



#### **RENEWABLE ENERGY**

Evaluate strategic and competency compatibility





# **Company Overview**

# **Financial Performance**

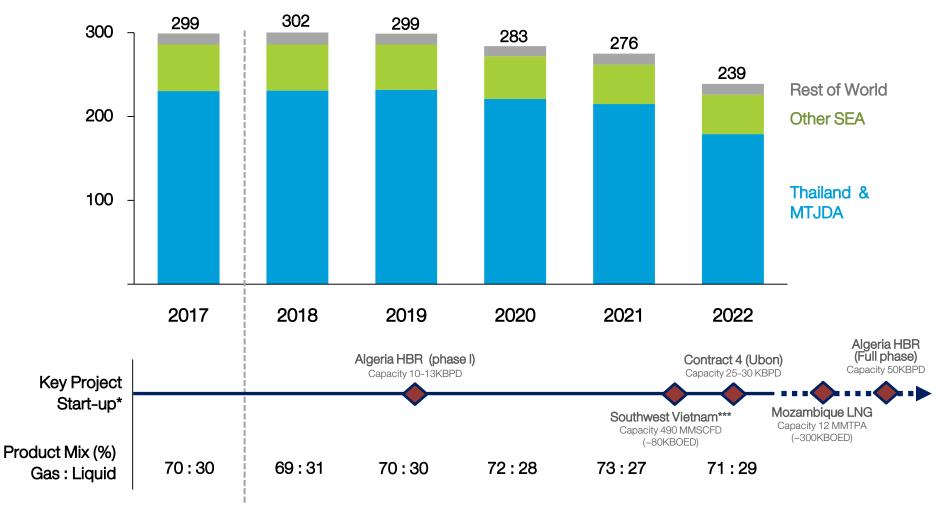
# Strategy and Growth

# Investment Plan & Outlook

### 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



5 Years (2018 - 2022) Unit : MMUSD OPEX 6,569 3,272 CAPEX 8,980 3,158 3,103 3,047 TOTAL 15,549 2,969 3,000 2,592 1,201 1,223 1,332 1,252 **OPEX** 1,561 2,000 1,162 206 906 887 22 666 CAPEX 802 1,000 (Pre-sanction projects\*\*\*) 1,565 1,430 1,165 1,051 1.048 CAPEX 684 (Producing projects\*\*\*\*) 2017 2018 2019 2020 2021 2022 Algeria HBR (Full phase) Algeria HBR (phase I) Contract 4 (Ubon) Capacity 50KBPD Capacity 10-13KBPD Capacity 25-30 KBPD **Key Project** Start-up\* Southwest Vietnam\*\* Mozambique LNG Capacity 12 MMTPA Capacity 490 MMSCFD

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

Subject to FID timing

\*\*

- Expected project start-up in late 2021
- \*\*\* Pre-sanction projects include Mozambique LNG, Contract 4 (Ubon), Algeria HBR and Southwest Vietnam

(~80KBOED)

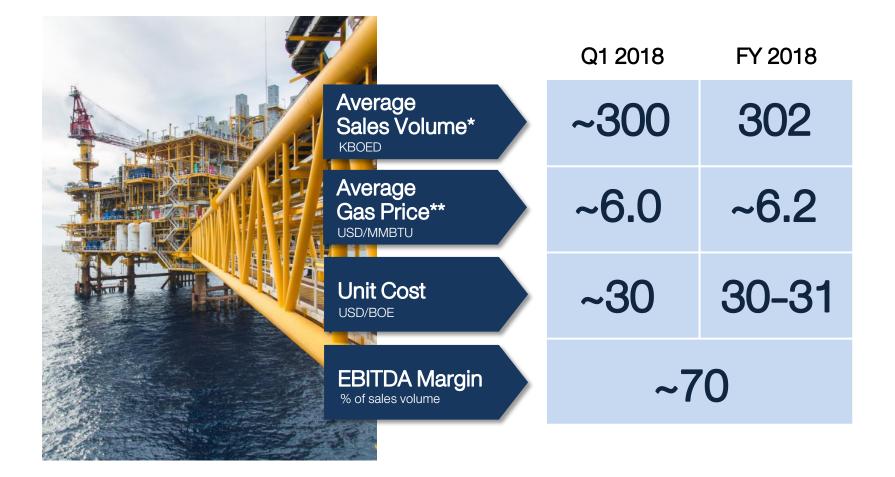
(~300KBOED)

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

# Financial Outlook

Expect revenue growth and robust financial performance





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

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

# 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



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





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# Supplementary information





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### Summary of 2017 Financial Results

Strong core profits led by improved average selling price



Unit: MMUSD

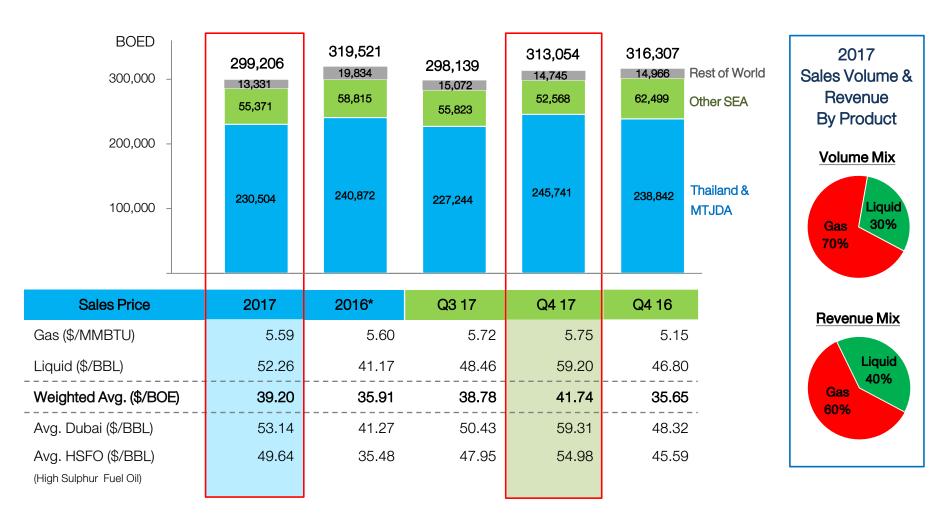
Statement of Income	2017	2016	% YTD	Q3 17	Q4 17	% QoQ	Q4 16	% YoY
Total Revenues	4,523	4,339	4%	1,134	1,271	12%	1,089	17%
Sales	4,281	4,190	2%	1,064	1,202	13%	1,038	16%
Others	242	149	62%	70	69	(1%)	51	35%
Sales Volume (BOED)	299,206	319,521*	(6%)	298,139	313,054	5%	316,307	(1%)
Sales Price (USD/BOE)	39.20	35.91	9%	38.78	41.74	8%	35.65	17%
Total Expenses	3,929	3,987	(1%)	1,398	982	(30%)	1,122	(12%)
Major Expenses:								
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%)
Net Income from Continuing Operations	594	352	69%	(264)	289	>100%	(33)	>100%
Profit (Loss) from Discontinued Operations	-	20	(100%)	-	-	-	17	(100%)
NetIncome	594	372	60%	(264)	289	>100%	(16)	>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.

# PTTEP Sales Volume & Average Selling Price

Achieved target sales volume by successful production uplift plan



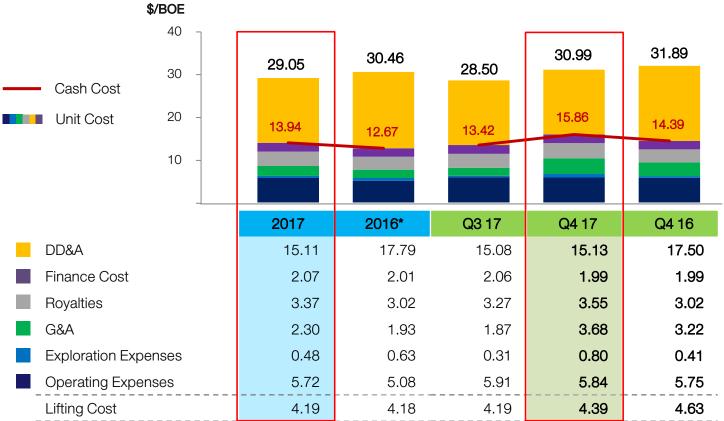
Sales Volume



## **Operating Performance**

Upheld cost competitiveness and continual efficiency improvement





Unit Cost

Note: \* Includes discontinued operations until end of August 2016

### Financial Performance : Income Statement

### Delivered healthy EBITDA margin and core profits



	2017	2016*	Q3 17	Q4 17	Q4 16
Sales and Revenue from pipeline transportation (MMUSD)	4,359	4,274	1,089	1,224	1,054
EBITDA (MMUSD)	3,063	3,027	777	825	690
Net Income (MMUSD)	594	372	(264)	289	(16)
Recurring Net Income (MMUSD)	836	466	218	240	123
Earning Per Share (USD)	0.13	0.08	(0.07)	0.07	(0.01)
Key Financial Ratios					
EBITDA Margin (%)	70	71	71	67	65
Return on Equity (%) (LTM)	5	3	3	5	3
Return on Capital Employed (%) (LTM)	5	3	3	5	3
Return on Equity (%) (LTM, Recurring Net Income)	7	4	6	7	4
Return on Capital Employed (%) (LTM, Recurring Net Income)	7	4	6	7	4

Note: \* Includes discontinued operations until end of August 2016

### **Financial Performance : Balance Sheet**

#### Strengthened balance sheet with net cash position



	2017	2016
Total Assets (MMUSD)	19,220	18,891
- Cash & cash equivalents* (MMUSD)	4,468	4,022
Total Liabilities (MMUSD)	7,703	7,505
- Interest bearing debt (MMUSD)	2,907	2,832
Equity (MMUSD)	11,517	11,386
Key Financial Ratios**		
Total Debt to Equity (X)	0.25	0.25
Net Debt* to Equity (X)	(0.14)	(0.10)
Total Debt to Capital (X)	0.20	0.20
Total Debt to EBITDA (X)	0.95	0.94
EBITDA Interest Coverage (X)	23	22
		1

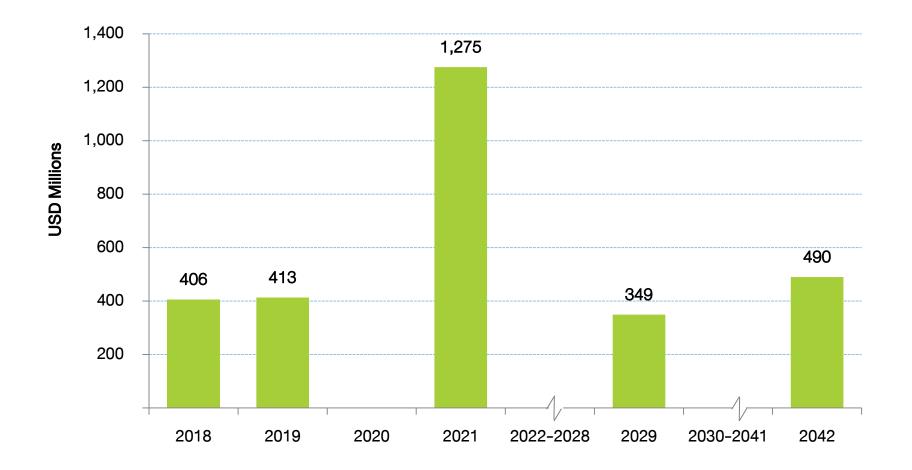
Credit Ratings :	BBB+ (S&P), Baa1 (Moody's), AAA (TRIS)
Weighted Average Cost of Debt*** :	4.50%
Average Loan Life*** :	7.15 years

Note: \* Cash & Cash Equivalents (Cash on hand) include Short-term Investments (Fixed deposit > 3 months) Net Debt = Total Debt less Cash & Cash Equivalents and Short-term Investments

\*\* Includes discontinued operations until end of August 2016

\*\*\* Excludes hybrid bonds





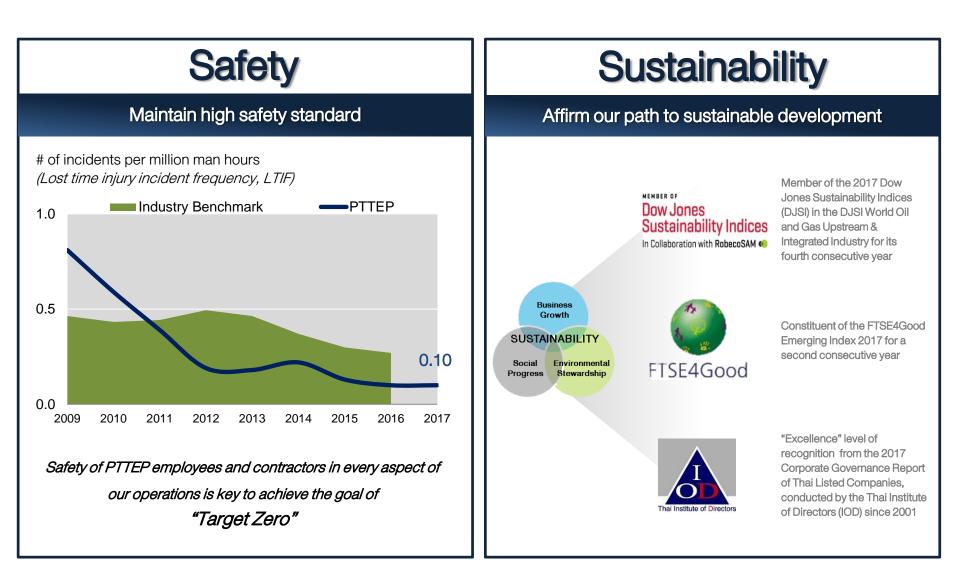
Note: Excludes Hybrid bonds

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





### Sustainable development

### Pursue long-term growth with social and environmental wellness



### 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.





# 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

### 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

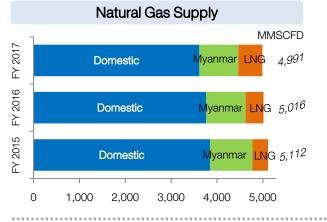
Bronze Stevie Award for SIOLA and Crab Hatchery Learning Center Project: *The Asia-Pacific Stevie Awards Program* 

### **Thailand Updates**

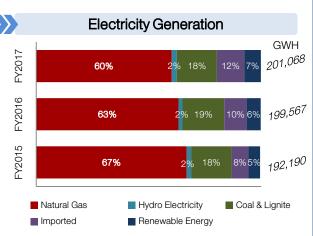
Domestic gas volume suppressed by LNG import; Uncertainty on Thai Baht remains



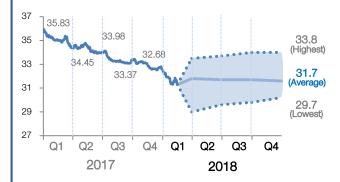
### Thailand Energy Overview



- Slight decline in domestic production and Myanmar piped gas imports while domestic demand remained flat
- Domestic volumes were pressured by low nomination due to growth in LNG import



Exchange Rate Movement (THB/USD)



# Consensus on the exchange rate mostly depends on

- Potential for inflation in the U.S.
- Continued uncertainty on the implementation of the U.S. Tax Reform, monetary policies of major global economies such as Europe
- Increasing geopolitical risks

Source: Bank of Thailand, Bloomberg Forecast based on Bloomberg Consensus as of 15 February 2018

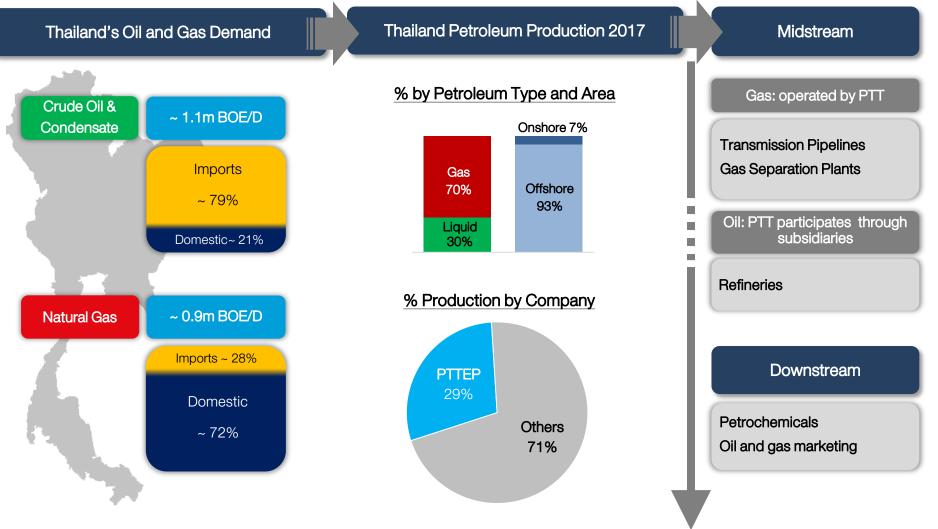
Natural Gas Consumption MMSCFD FY 2017 NGV 4,682 Electricity ndustry GSP 2016 NGV 4,714 Electricity ndustry GSP F 2015 NGV 4,764 Electricity Industry GSP 눈 5.000 0 1.000 2.000 3.000 4.000

Source: EPPO

### Thailand's Energy Value Chain

PTTEP contributes almost 1/3 of Thailand's petroleum production



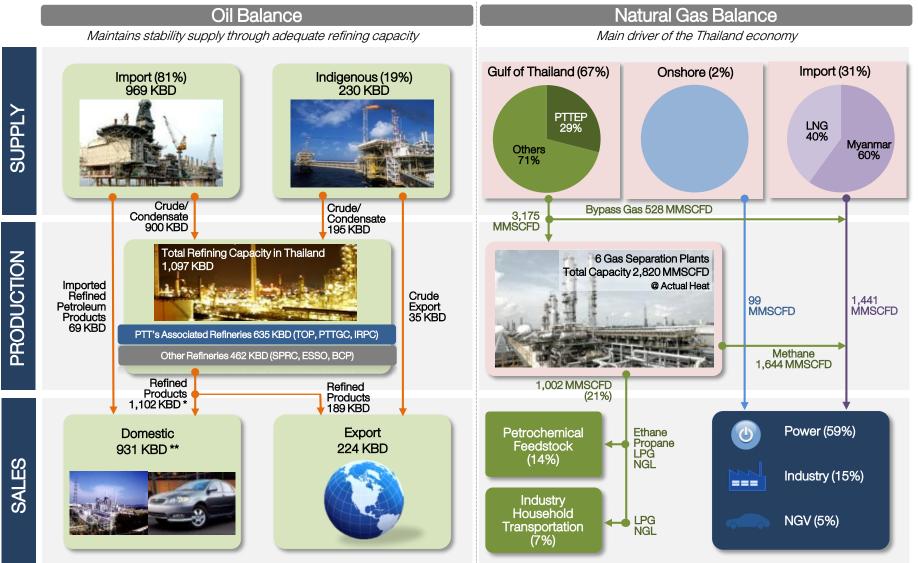


Source: Energy Policy and Planning Office (EPPO) and Department of Mineral Fuels (DMF)

### Thailand's Oil and Gas Balance

### January – September 2017





Source: PTIT

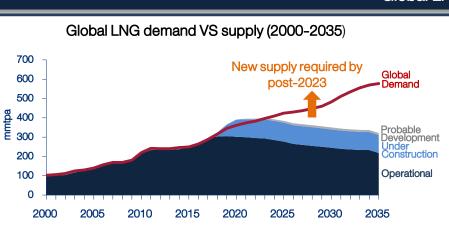
Remark: \* Refined product from refineries = 994 KBD, including domestic supply of LPG from GSPs and Petrochemical Plants = 108 KBD \*\* Not included Inventory

MMSCFD @ Heating Value 1,000 Btu/ft<sup>3</sup>

### **LNG Updates**

Abundant supply with an expectation to rebalance by 2023





Supply

 Market expects supply grow rapidly by over 40% from 2016 base to 2020 mainly from start-up of under construction projects in US, Russia and Australia

Oversupply condition should pressure LNG spot price until early 2020s and

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

cause the delay of new project sanction

#### **Global LNG Situation**



#### Demand

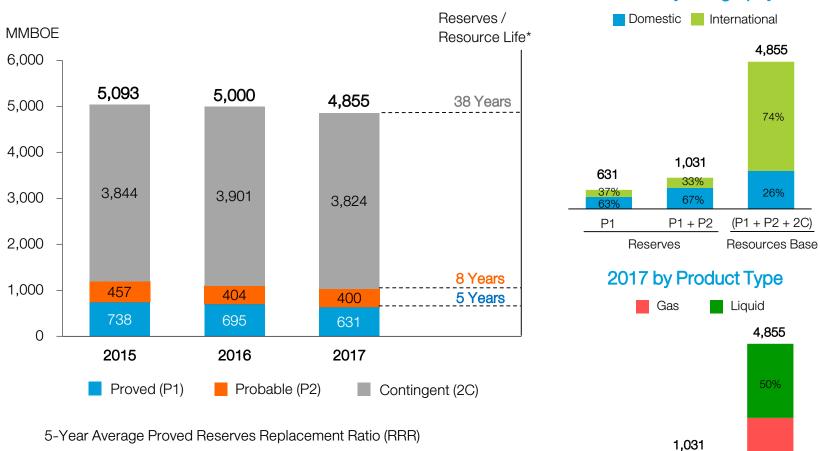
- The Asian Markets forecasts to be a key driver for future LNG demand
- While LNG demand from Japan will decline due to renewable growth, China, Taiwan and South Korea accounts for the bulk of incremental demand, mainly driven by the Government policy to switch from coal and nuclear power

Key Determinants for Proposed LNG Projects to Reach FID							
Proximity to Asian markets	Competitive Facility Development Costs	Feed Gas Sourcing	Secure Markets with termed contracts				
<ul> <li>Competitive shipping cost and duration</li> </ul>	<ul> <li>Priority on expansion of brownfield projects but opportunities are limited.</li> <li>Advantaged greenfield needs competitive cost and scalability</li> </ul>	<ul> <li>Adequacy and low feed gas cost throughout the project life</li> </ul>	<ul> <li>Quick to secure markets</li> <li>Flexibility to cater for buyer's need in price and non-price factors</li> </ul>				

### **Reserves and Resources**

### Maintained reserve life with majority of reserves base in SEA





#### 2017 by Geography

631

25%

75%

P1

5-Year Average Proved Reserves Replacement Ratio (RRR)

2015	2016	2017
0.50x	0.57x	0.58x

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

50%

(P1 + P2 + 2C)

**Resources Base** 

75%

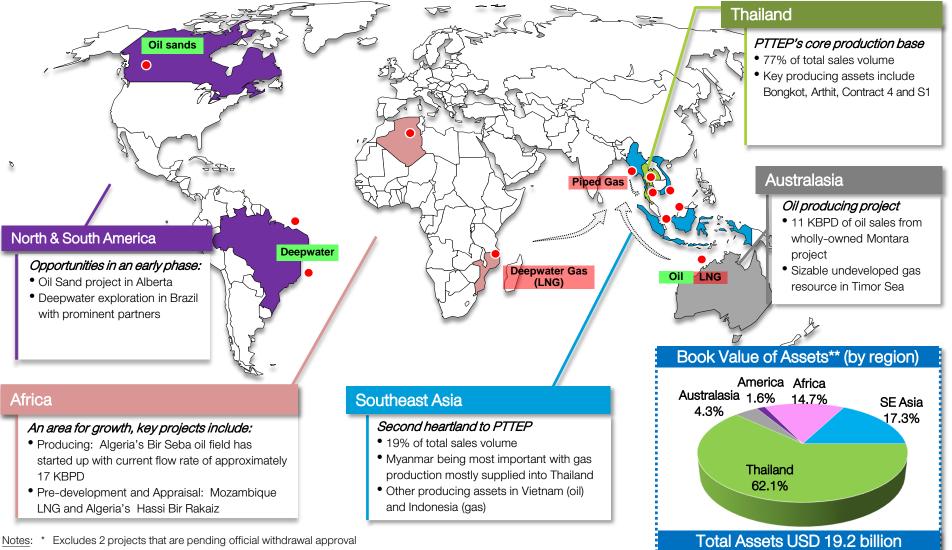
P1 + P2

Reserves

### Diversified international portfolio

Worldwide operations: 36 projects\* in 10 countries





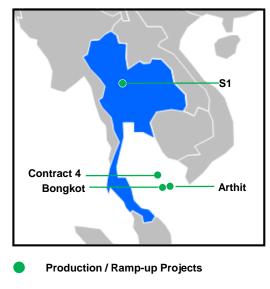
\*\* Information dated as of 31 December 2017

### Thailand

### Strong home base with legacy assets maintaining production plateau







#### 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

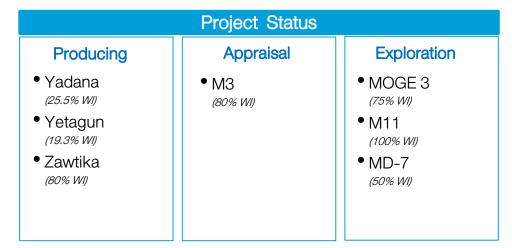
### Southeast Asia: Myanmar

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



Note: WI – working interest

### Southeast Asia: Vietnam and Indonesia

Reinforcing regional exposure through strategic partnerships





Production / Ramp-up Projects

### 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

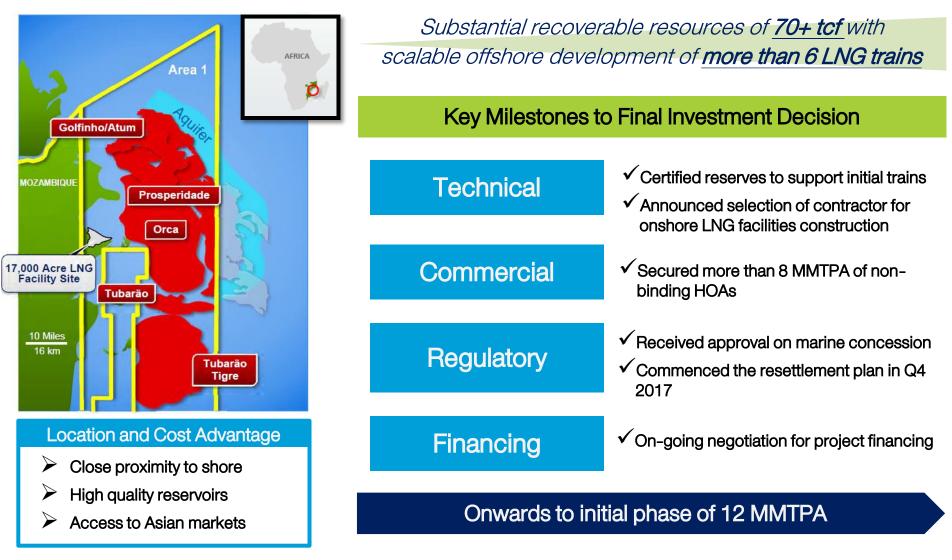
### Natuna Sea A (11.5% interest)

• 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



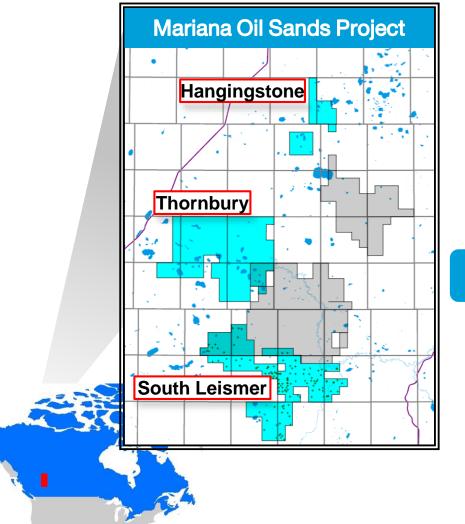


Source: Anadarko

### America: Canada Oil Sands

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

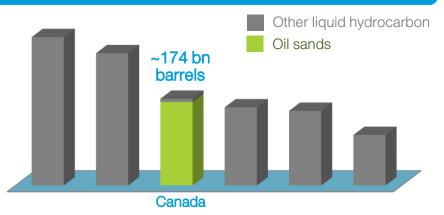




#### **Project Overview**

- 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

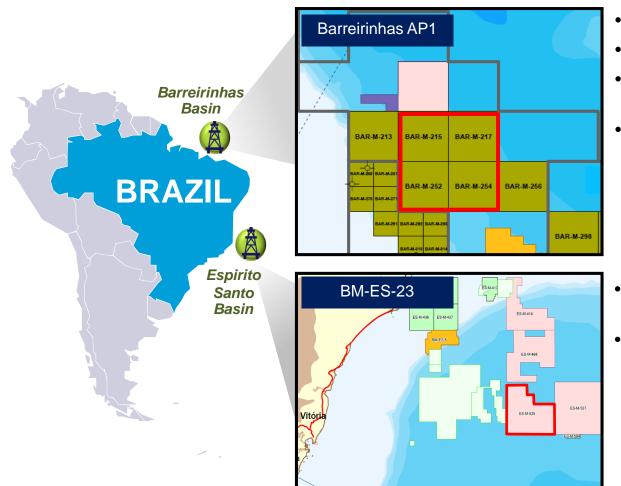


Source: Company data, BP Statistical Review of World Energy 2014

### **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)	Petronas80%JX Nippon10%PTT Global LNG10%						

#### **Investment Rationales**

- Capture opportunity from increasing LNG demand as a supplement to Thailand gas production
- Venture into midstream LNG as a mean to secure LNG supply and growth of PTT and PTTEP, as well as capture value added along with LNG value chain
- Low risk and highly market secured opportunity
  - Highly experienced operator
  - Already commenced commercial production with immediate revenue stream
- In vicinity of future upstream opportunities in focus area – offshore Sarawak

### Project information 1/3

Production phase: Thailand and JDA



	Project	Status*	PTTEP's	Partnei	-		ge Sales Volume **	2018 Key Activities		
			Share	(as of 20	17)	Gas	Oil and Other			
Pro	Production Phase									
Tha	ailand and JDA									
1	Arthit	OP	80%	Chevron MOECO	16% 4%	218 MMSCFD	Condensate: 9.8 k BPD	<ul> <li>Ensure gas deliverability level at DCQ****</li> <li>Drill development wells</li> </ul>		
2	B6/27	OP	100%			-	-	Prepare drilling plan		
3	B8/32 & 9A		25%	Chevron MOECO KrisEnergy PSTL	51.66% 16.71% 4.63% 2%	94 MMSCFD	Crude: 25 k BPD	<ul> <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> <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> <li>Drill exploration / appraisal / development wells</li> <li>Install wellhead platforms</li> <li>Perform waterflood activities</li> </ul>		
6	<b>Contract 4</b> (Formerly Pailin)		60%	Chevron MOECO	35% 5%	347 MMSCFD	Condensate: 16 k BPD	<ul> <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> <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	Drill exploration / appraisal / development wells		
11	PTTEP1	OP	100%			-	Crude: 253 BPD	Drill development wells     Perform waterflood activities		
12	S1	OP	100%			21 MMSCFD	Crude: 26 k BPD	<ul> <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	Drill development wells		
14	MTJDA	JOC	50%	Petronas-Carigali	50%	263 MMSCFD	Condensate: 7.0 k BPD	Drill development wells     Install wellhead platforms		
15	L22/43	OP	100%			-	Crude: 141 BPD	Drill development wells		

\* 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	Partne	rs	2017 Avera	ge Sales Volume **	2018 Key Activities	
			Share	(as of 20	)17)	Gas	Oil and Other		
Pro	Production Phase								
Ove	erseas								
16	Vietnam 9-2	JOC	25%	PetroVietnam SOCO	50% 25%	12 MMSCFD	Crude: 4.2 k BPD	Maintain production operation     Perform reservoir management	
17	Yadana		25.5%	TOTAL Chevron MOGE	31.24% 28.26% 15%	741 MMSCFD	-	Ensure gas deliverability level at DCQ***	
18	Yetagun		19.3178%	Petronas-Carigali MOGE Nippon Oil PC Myanmar (Hong Kong)	30.00140% 20.4541% 19.3178% 10.90878%	215 MMSCFD	Condensate: 5.5 k BPD	<ul> <li>Drill appraisal / development wells</li> <li>Perform reservoir Management</li> </ul>	
19	Vietnam 16-1	JOC	28.5%	PetroVietnam SOCO OPECO	41% 28.5% 2%	2.0 MMSCFD	Crude: 21 k BPD	<ul><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	Maintain production operation	
21	Natuna Sea A		11.5%	Premier Oil KUFPEC Petronas Pertamina	28.67% 33.33% 15% 11.5%	221 MMSCFD	Crude: 1.5 k BPD	Maintain production operation	
22	Zawtika (M9 & a part of M11)	OP	80%	Myanma Oil and Gas Enterprise (MOGE)	20%	301 MMSCFD	-	<ul> <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 Sonatrach	40% 25%	-	Crude: 2.8 k BPD (net entitlement)	Maintain production operation	

\* 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
_	oloration Phase				
Tha	ailand and JDA				
24	G9/43	OP	100%		
Ov	erseas			•	
25	Myanmar M3	OP	80%	MOECO 20%	Negotiate the commercial framework with the Myanmar government
26	Mozambique Rovuma Offshore Area 1		8.5%	Anadarko, Mitsui,         26.5%,20%           ENH, ONGC         15%, 10%           Beas Rovuma, Bharat         10%, 10%	<ul> <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%	Conduct pre-development study and prepare project development plan
28	Myanmar M11	OP	100%		Acquire 3D seismic
29	Vietnam B & 48/95		8.5%	PVN         65.88%           MOECO         25.62%	Negotiate a GSA with the Vietnamese government
30	Vietnam 52/97		7%	PVN         73.4%           MOECO         19.6%	Negotiate a GSA with the Vietnamese government
31	Myanmar MD-7	OP	50%	TOTAL 50%	Assess resource potential and prepare exploration drilling
32	Mariana Oil Sands	OP	100%		Assess appropriated development approach
33	Barreirinhas AP1		25%	Shell Brasil65%Mitsui E&P Brasil10%	Assess petroleum potential
34	Myanmar MOGE 3	OP	75%	Palang Sophon10%MOECO10%WinPreciousResources5%	Assess petroleum potential and prepare exploration drilling plan
35	Brazil BM-ES-23		20%	Petrobras 65% INPEX 15%	Assess petroleum potential
36	Sarawak SK410B	OP	42.5%	KUFPEC         42.5%           PSCB         15%	Assess petroleum potential and prepare exploration drilling plan

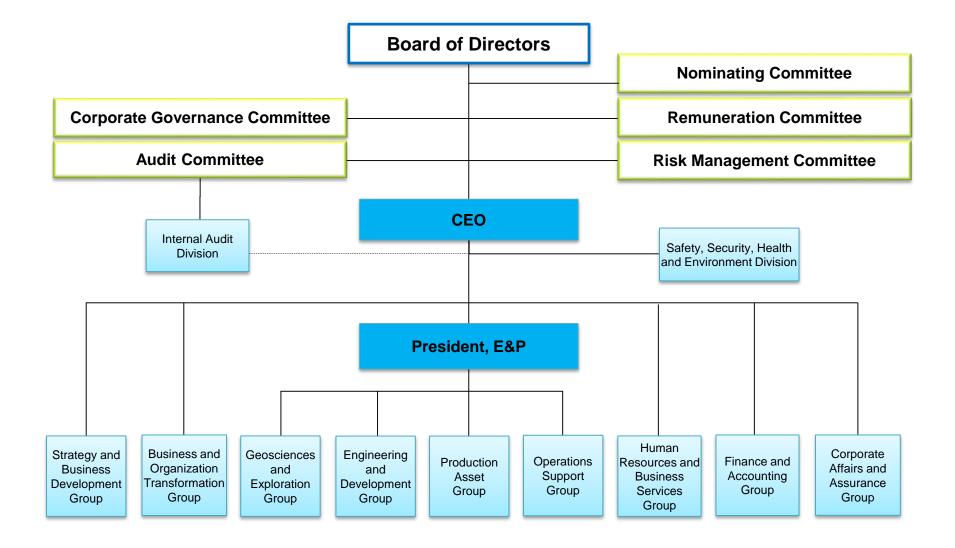
Remarks: 36 projects exclude 2 projects that are pending official withdrawal approval

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

# Organization structure

Ensuring transparency, integrity and good corporate governance





# Supplementary Index : Ratio & Formula



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