



PTTEP

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



2018 Financial Results and Strategy Update

Analyst Meeting
8 February 2019



Industry Highlights

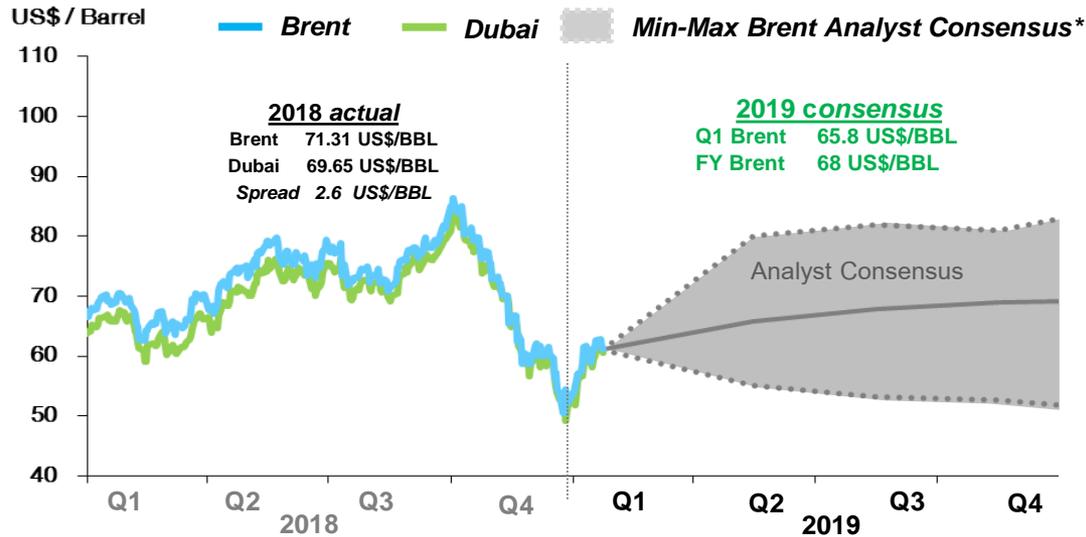


Strategy and Growth



Financial Performance

Oil Market Outlook



Keys to watch:

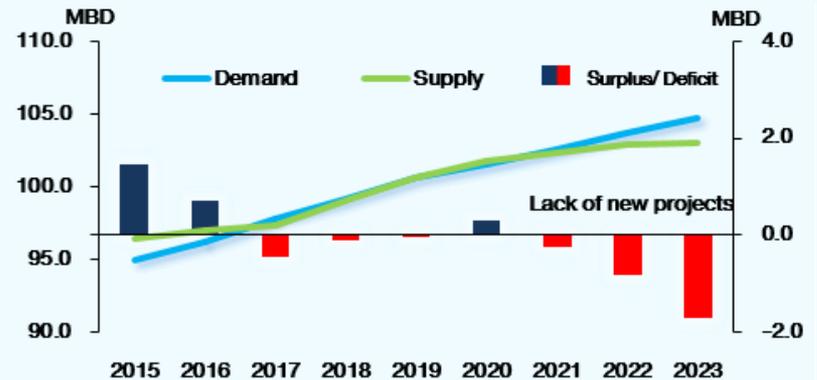


- OPEC & Non-OPEC supply cut
- US sanction on Iran and Venezuela



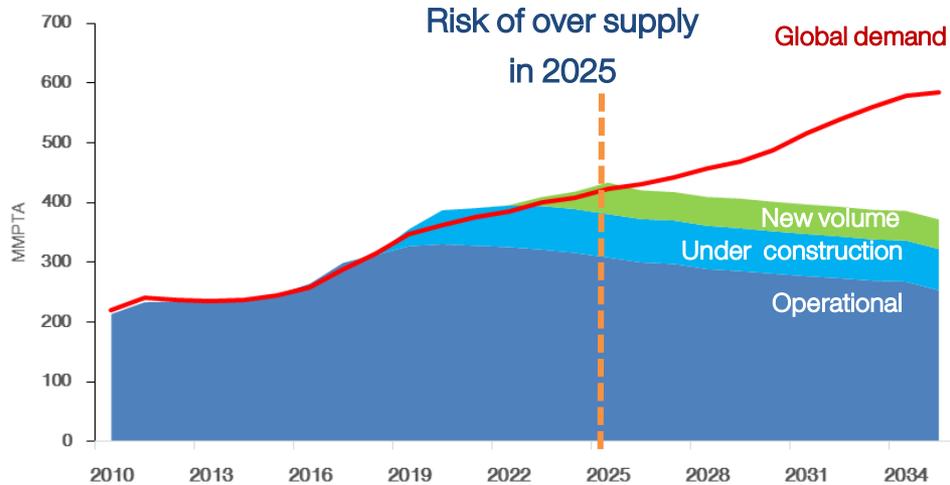
- Lower demand growth from weaker global economy
- US pipeline debottlenecking

Global Crude Demand - Supply



Remark: * Bloomberg Analyst Consensus (CPFC) as of 23 Jan 2019, Wood Mackenzie and IEA

LNG Market update



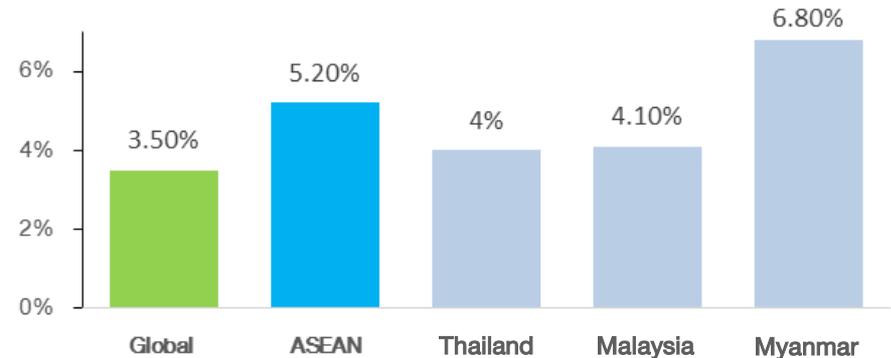
- Asian markets dominate demand growth supported by Chinese Clean Heating Plan
- Risk of oversupply on 2025 depending on new volume, FID on 2018-2022
- Thailand PDP 2018 will require higher gas demand than PDP 2015

World Economy

Key short term economic drivers;

	US-China trade tension
	Tightening of Fed rate hikes
	“No Deal” Brexit
	Chinese economy slowdown

IMF expects slowdown economic growth at 3.5% in 2019 and at 3.6% 2020, however ASEAN growth remains robust



Remark: Wood Mackenzie and IMF



Industry Highlights



Strategy and Growth



Financial Performance



Vision

Energy Partner of Choice

through Competitive Performance and Innovation for
Long-term Value Creation

Grow with 'Coming Home to
SEA' and 'Middle East JV'

Gas to Power in SEA

Expand

LNG capability with PTT

Develop energy related business

Strategic Partnership



Strategy

Create full value from
existing assets

Cost Competitiveness through
Transformation

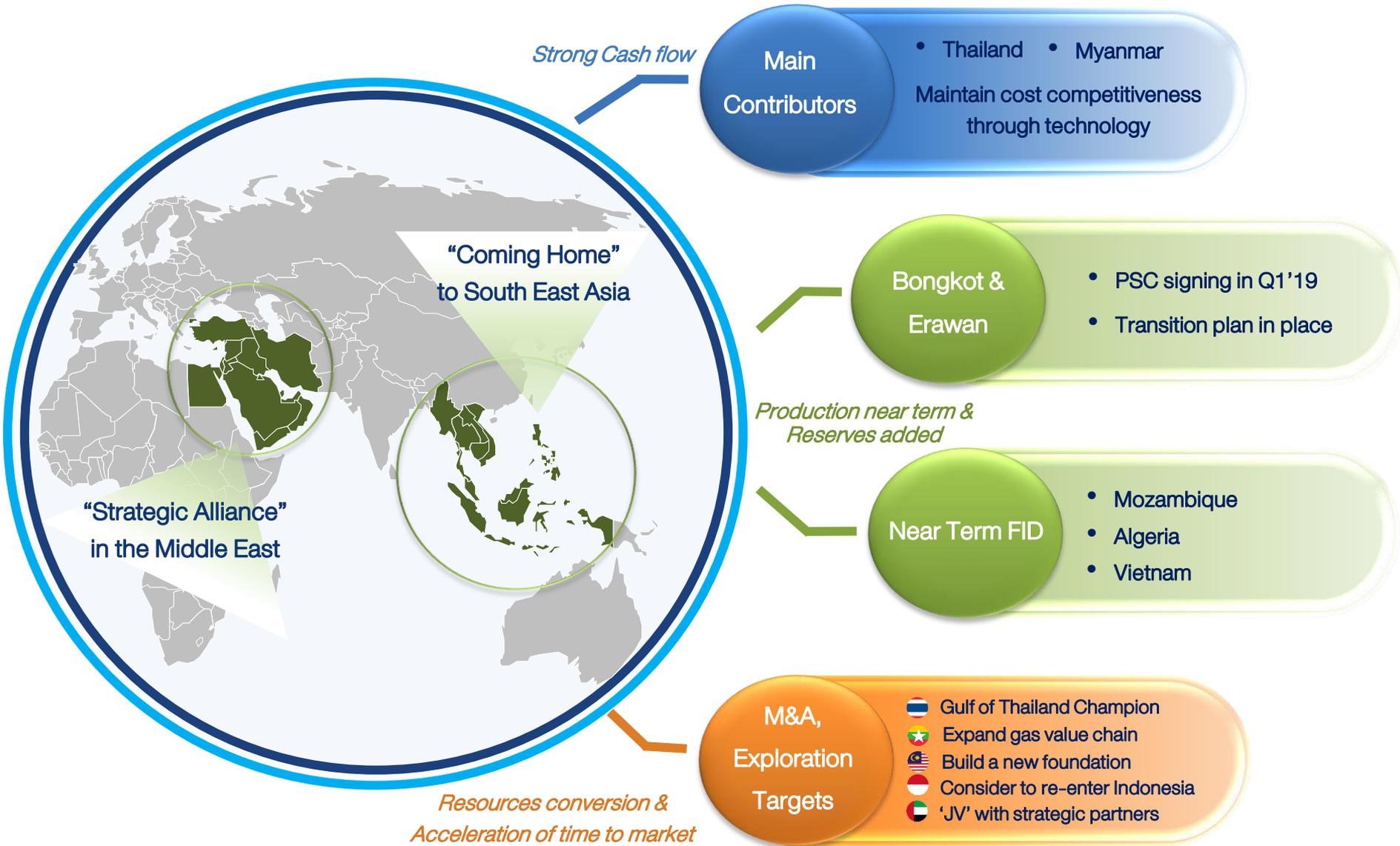
Execute

Execute Bongkot & Erawan transition

Good Thai corporate citizen

'Expand' and 'Execute'

For strong foundation and long-term profitable growth



“Coming Home” to South East Asia

Strengthen core areas with experiences



Thailand

Gulf of Thailand Champion

- Execute Bongkot and Erawan transition, with PSC signing by Q1 2019
- Create full value on legacy assets e.g. S1, MTJDA and Arthit
- 21st Thailand Bidding Round



Myanmar

Strong foothold with Expansion

- Create full value on legacy assets, Zawtika and M3
- Gas to Power for existing market, Myanmar Electrify by 2030
- Unlock sizable Deep Water gas



Malaysia

New Foundation, “Malaysian Cluster”

- Tap in marginal fields, Exploration underway
- NOC Cooperation, Petronas & PTTEP
- Gas to established market of LNG Complex



Indonesia

Consider to re-enter the area



Vietnam

Potential Gas to Power

“Strategic Alliance” in the Middle East

Implementation of collaboration strategy



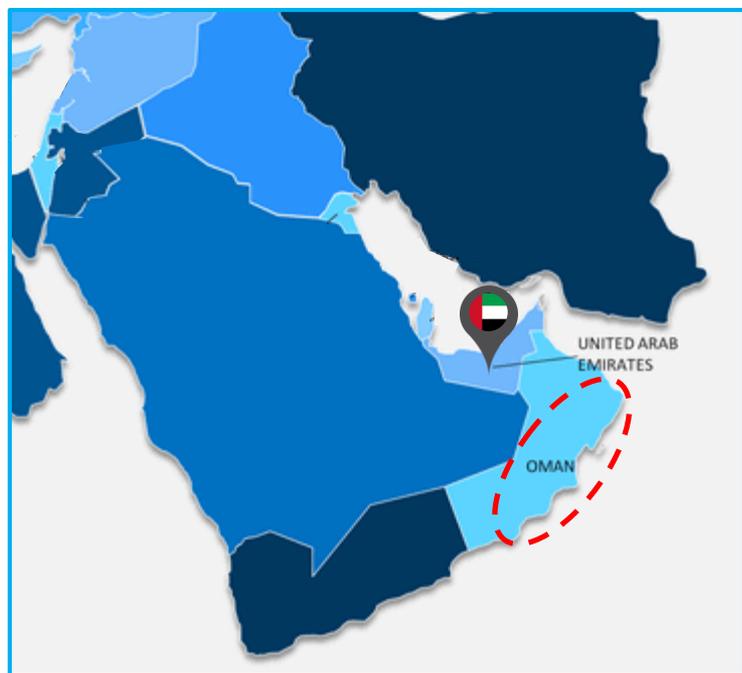
“Partnering” to JV with prudent operators in prolific low cost area



UAE

Prolific areas with strategic partnerships

- Pursue more blocks in the region
- Broaden Strategic alliance partnership with well-experienced operators



 Prolific Area



The award of Abu Dhabi Offshore Exploration Blocks 1 & 2 on 12th January 2019

New Business Opportunities

Expand value chain, create innovation and step towards long-term sustainability

“Integrated Energy Solution”



Gas to Power



E&P



Pipeline



Power Plant

- Enhance value of existing assets in Myanmar e.g. Zawtika, M3
- Support Myanmar pipeline infrastructure development
- Partner with Independent Power Producer (IPP)

“Cutting Edge Technology for E&P and more”



AI AND
ROBOTICS
VENTURES

UAV



Aerial inspection service:

- Flare Tower
- Telecommunication Tower
- Tank inspection

AUV



Subsea Inspection & Surveillance:

- Pipeline and structural inspection
- Geophysical survey
- Gas leak survey

Non E&P



Focused Sectors:

- Agriculture
- Environmental
- Security

Remark: UAV is Unmanned Aerial Vehicle. AUV is Autonomous Underwater Vehicle.



Industry Highlights



Strategy and Growth

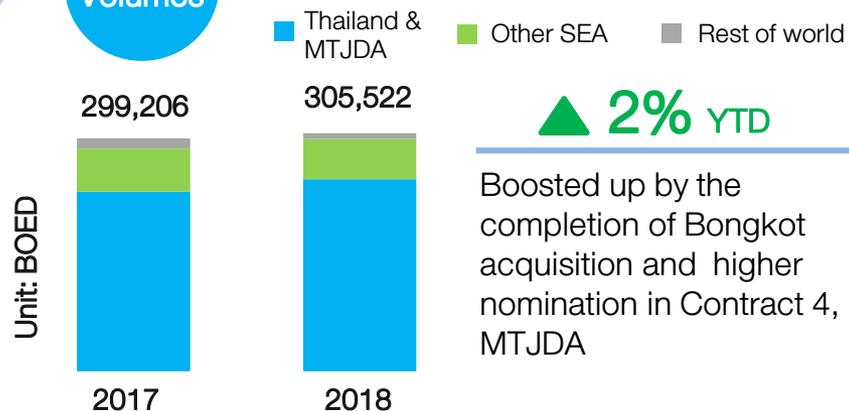


Financial Performance

2018 Key Financial Performance

Robust all round

Sale Volumes



Average Selling Price

	2017	2018
Gas (\$/MMBTU)	5.59	6.42
Liquid (\$/BBL)	52.26	67.40
Weighted Avg. (\$/BOE)	39.20	46.66
Avg. Dubai (\$/BBL)	53.14	69.65
Avg. HSFO (\$/BBL) (High Sulphur Fuel Oil)	49.64	67.01
Volume Mix (Gas : Liquid)	70:30	72:28

▲ 19% YTD

Higher oil price led to improved ASP

Unit Cost

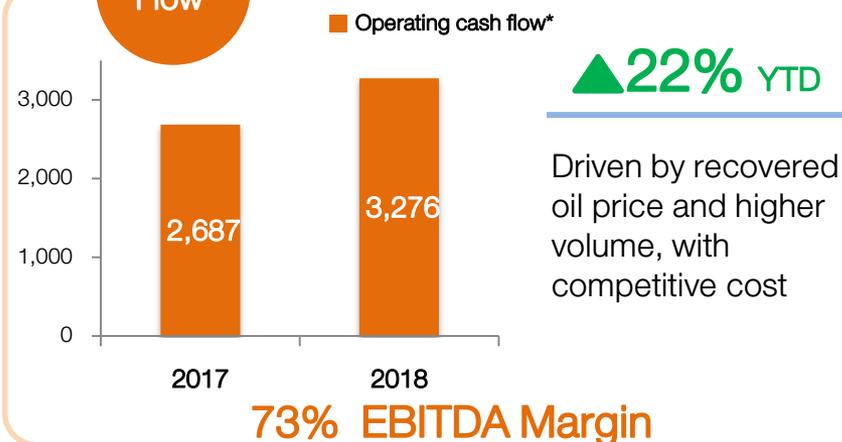
First Quartile among Asian peers

	2017	2018
Unit : \$/BOE		
Cash cost	13.94	15.11
Non-Cash cost	15.11	16.58
Unit cost	29.05	31.69*

▲ 9% YTD

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

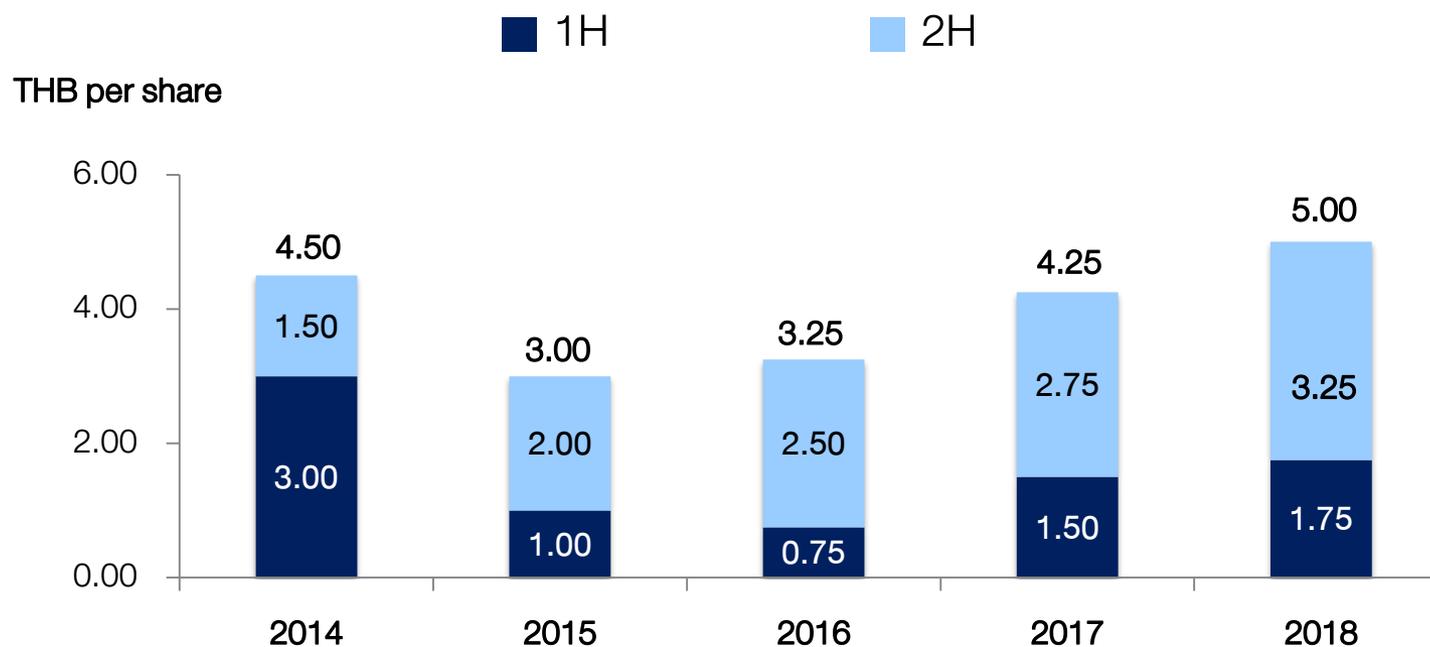
Cash Flow



Note: * Exclude costs related to new business, if include, unit cost for 2018 will be 31.72\$/BOE

Remark: * Net of adjustment for the effect of exchange rate

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



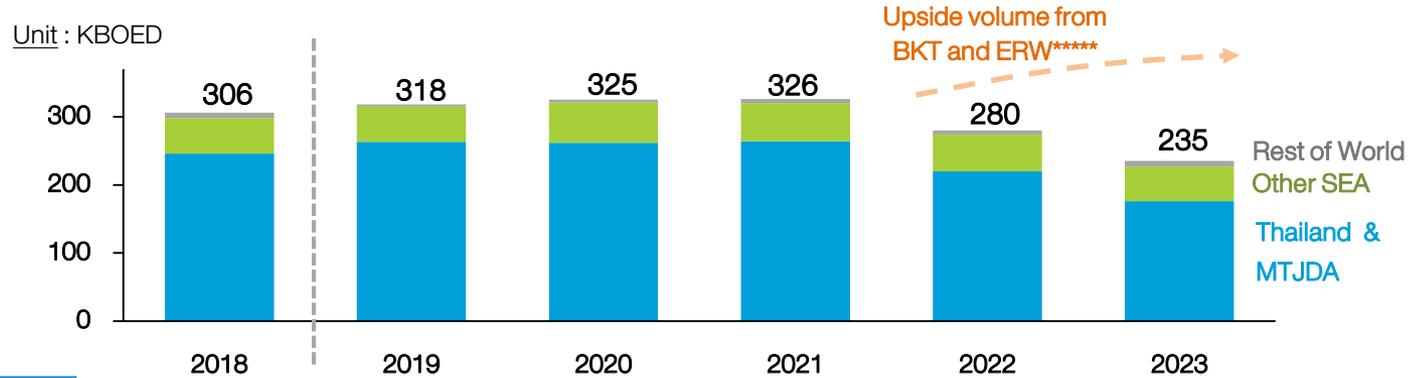
Payout Ratio (% of net income)	82	N/A	98	90	55
Payout Ratio (% of recurring net income)	36	47	79	64	51

Five –Year Plan

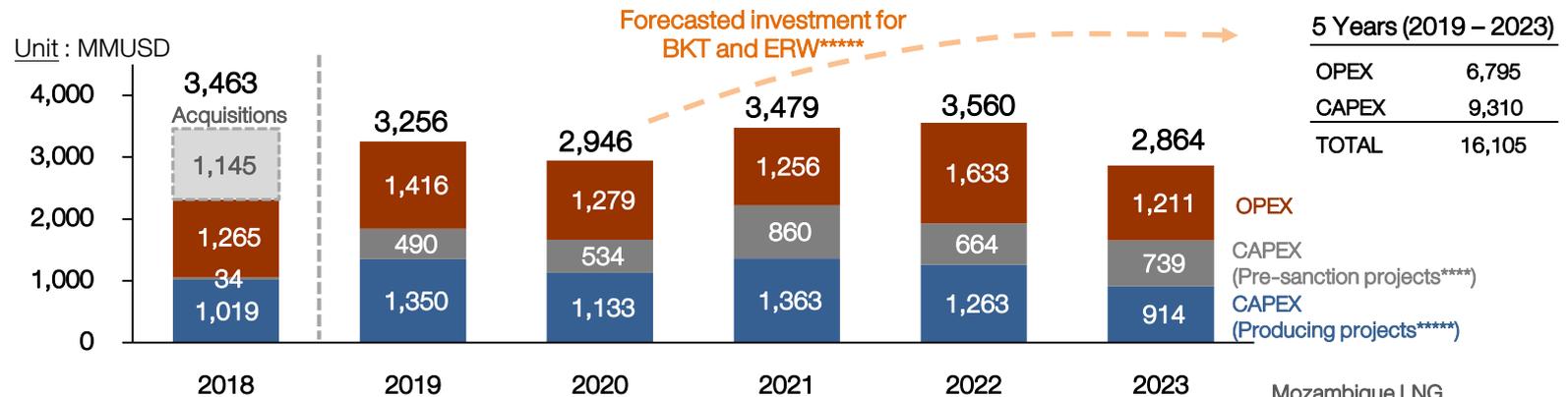
CAPEX to support current volumes and new projects start-up



Sales Volume*



Investment*



Key Project Start-up**

Algeria HBR (phase I)
Capacity 10-13 KBPD

Southwest Vietnam
Capacity 490 MMSCFD
(~80 KBOED)

Contract 4 (Ubon)
Capacity 25-30 KBPD

Mozambique LNG
Capacity 12 MTPA
(~300KBOED)

Algeria HBR (Full phase)
Capacity 50 KBPD

- Note:
- * Numbers shown exclude the result of bidding in GoT
 - ** Subject to FID timing
 - *** Pre-sanction projects include Mozambique LNG, Contract 4 (Ubon), Algeria HBR and Southwest Vietnam
 - **** Includes exploration and appraisal in all projects and head office CAPEX
 - ***** Subject to PSC signing

Outlook & Takeaways

Expect strong core performance and execution under new directions

2019 Guidance

	Q1 2019	FY 2019
 Average Sales Volume ~ 309 ~ 318		
 Average Gas Price* ~ 6.8 ~ 6.8		
 Unit Cost* ~ 32 ~ 32		
 EBITDA Margin* FY 2019 70-75 %		

Note: * Based on FY2019 Dubai oil price at 60 \$/BBL

Key Takeaways

Industry

- Range-bound price volatility

Vision

- ‘Energy Partner of Choice’,
Collaboration for sustainable growth

Strategy

- ‘Expand’ and ‘Execute’ for value creation

Financial

- Strong and ready for new opportunities

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



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Summary of Key Terms from Bidding Results	18
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Summary of Terms from Bidding Result of Bongkot and Erawan and PSC Model

Price Formula

$$\text{Pricing Formula: } Pr_{(y)} = Pc \times M_{(y)} \times \left(a \frac{PPI_{(y)}}{PPI} + \frac{I_{(y)}}{I} \left\{ b \frac{OM_{(y)}}{OM} + c \frac{DB_{(y)}}{DB} + d \right\} \right)$$

$DB_{(y)} < 52$	$M = 0.91 + 0.11 \frac{DB_{(y)}}{52}$
$52 \leq DB_{(y)} < 100$	$M = 1.02 - 0.15 \frac{DB_{(y)} - 52}{48}$
$DB_{(y)} > 100$	$M = 0.22 + 6.44 \times \frac{1}{\sqrt{DB_{(y)}}}$

Whereas:
 Pr: Gas Price
 Pc: Price Constant
 I: Exchange rate
 PPI: Producer Price Index
 OM: PPI for Oil Machinery and Tools
 DB: Dubai oil price

Base year numbers (2016): PPI = 101.4167 I = 35.3 THB/USD OM = 214.88 DB = 41.27\$/BBL

$$Pr_{(y)} = 116 \times M_{(y)} \times \left(0.25 \frac{PPI_{(y)}}{101.4167} + \frac{I_{(y)}}{35.3} \left\{ 0.3 \frac{OM_{(y)}}{214.88} + 0.4 \frac{DB_{(y)}}{41.27} + 0.05 \right\} \right)$$

Terms

	G2/61 (Bongkot)	G1/61 (Erawan)
Price Constant	116 THB per MMBTU	116 THB per MMBTU
Contractor's Profit Split	30%	32%
Bonuses	Signature Bonus* 1,050 MMTHB Production Bonus** 1,575 MMTHB Supporting Contribution 7 MMTHB Other benefits 685 MMTHB	Signature Bonus* 1,050 MMTHB Production Bonus** 1,575 MMTHB Supporting Contribution 7 MMTHB Other benefits 35 MMTHB
Thai Employee Ratio	99%	98%
Facility Bonus***	175 MMTHB	350 MMTHB

Remark of payment terms:

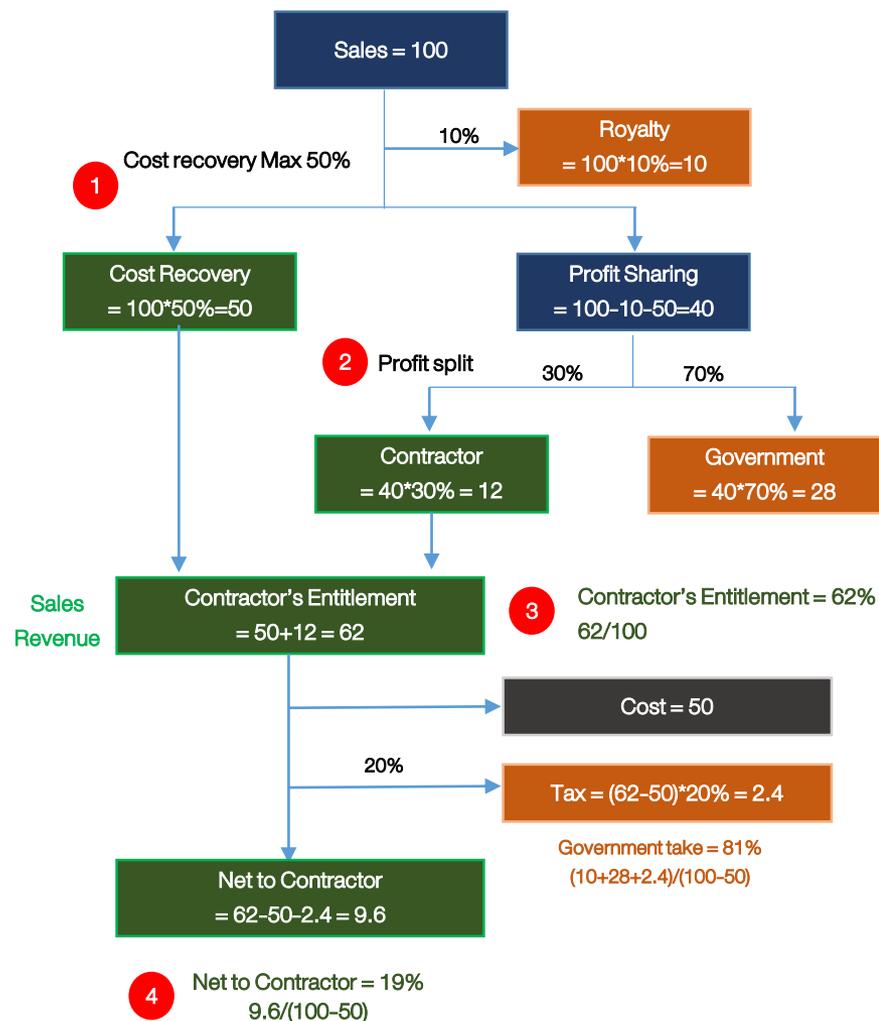
* No later than 10 working days prior to the PSC signing date

** Each time the cumulative production/sales reaches 100, 200 and 300 MMBOE

*** Equally separate into 3 payments by 24th April of every year from 2022

Source: Press release from Department of Mineral Fuels (13 December 2018) and TOR

PSC Model



*Assumption bases on field life, cost can be fully recovered

Summary of 2018 Financial Results

Solid earnings support by higher selling price and volume



Unit : MMUSD

Statement of Income	2018	2017	% YTD	Q3 18	Q4 18	% QoQ	Q4 17	% YoY
Total Revenues	5,459	4,523	21%	1,398	1,557	11%	1,271	23%
Sales	5,203	4,281	22%	1,338	1,411	5%	1,202	17%
Others	256	242	6%	60	146	>100%	69	>100%
Sales Volume (BOED)	305,522	299,206	2%	304,940	320,905	5%	313,054	3%
Sales Price (USD/BOE)	46.66	39.20	19%	47.67	47.79	0.3%	41.74	15%
Total Expenses	4,339	3,929	10%	1,083	1,288	19%	982	31%
Major Expenses:								
Operating Expenses	645	625	3%	166	169	2%	168	1%
Exploration Expenses	46	52	(12%)	19	9	(53%)	23	(61%)
DD&A	1,848	1,650	12%	496	484	(2%)	436	11%
Impairment Loss on Assets	-	558	(100%)	-	-	-	-	-
Loss on Divestment	58	-	100%	37	21	(43%)	-	100%
Income Tax Expense	733	180	>100%	105	294	>100%	64	>100%
(Gain)/Loss on FX	19	(51)	>100%	6	8	33%	(14)	>100%
Net Income	1,120	594	89%	315	269	(15%)	289	(7%)
Recurring Net Income	1,215	836	45%	292	283	(3%)	240	18%
Non-Recurring*	(95)	(242)	61%	23	(14)	(>100%)	49	(>100%)

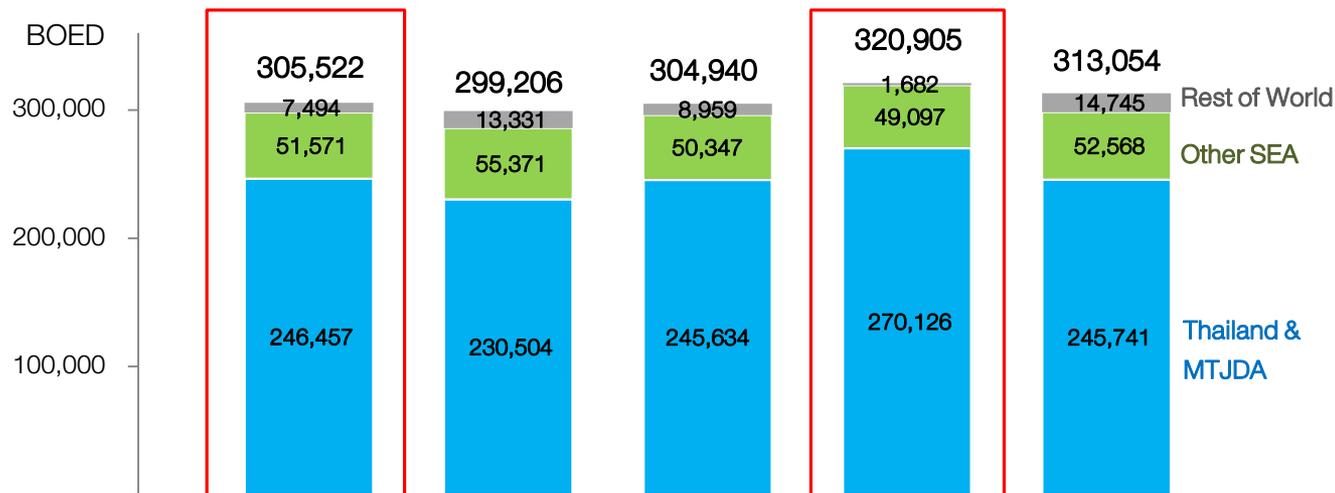
Note: * Includes Gain/(Loss) on FX, Deferred tax from Functional currency, Current Tax from FX Revaluation, Gain/(Loss) from Financial Instruments, Impairment loss on assets and etc.

PTTEP Sales Volume & Average Selling Price

Delivering strong sales volume with higher ASP



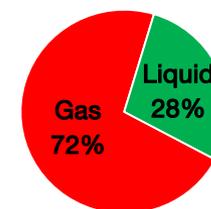
Sales Volume



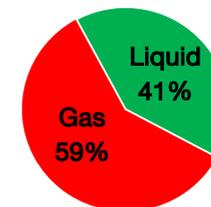
Sales Price	2018	2017	Q3 18	Q4 18	Q4 17
Gas (\$/MMBTU)	6.42	5.59	6.44	6.90	5.75
Liquid (\$/BBL)	67.40	52.26	69.92	66.01	59.20
Weighted Avg. (\$/BOE)	46.66	39.20	47.67	47.79	41.74
Avg. Dubai (\$/BBL)	69.65	53.14	74.22	68.30	59.31
Avg. HSFO (\$/BBL) (High Sulphur Fuel Oil)	67.01	49.64	71.74	69.63	54.98

2018 Sales Volume & Revenue By Product

Volume Mix

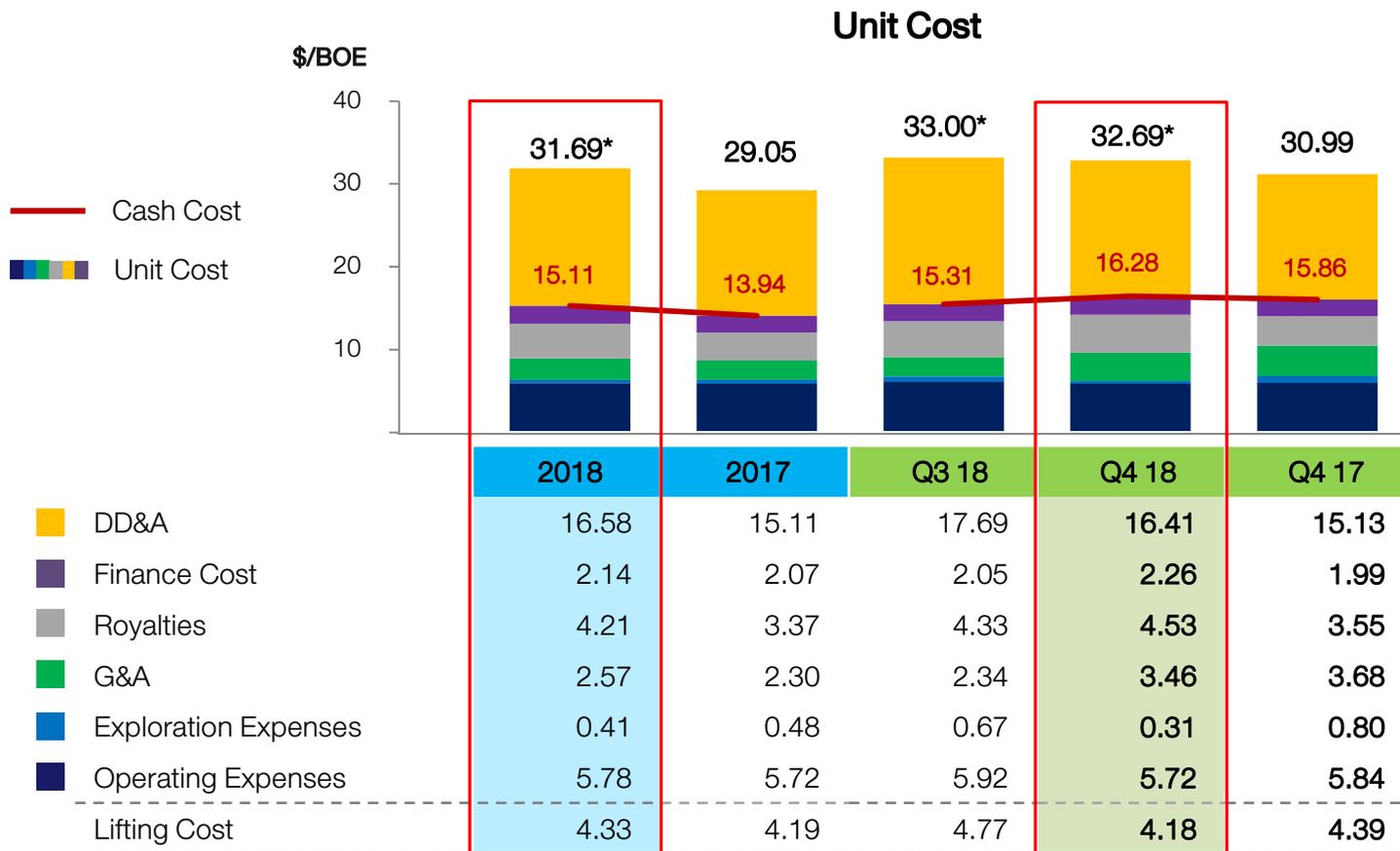


Revenue Mix



Operating Performance

Increased unit cost YTD driven by depreciation and royalties



Note: * Exclude costs related to new business, If include unit cost for Q3/18, Q4/18 and 2018 will be 33.14 \$/BOE, 32.77 \$/BOE and 31.72 \$/BOE respectively
 The formulas for calculating ratios are provided in the supplementary section for your reference

Financial Performance : Income Statement

Maintained healthy EBITDA margin and core profits



	2018	2017	Q3 18	Q4 18	Q4 17
Sales and Revenue from Pipeline Transportation (MMUSD)	5,310	4,359	1,367	1,440	1,224
EBITDA (MMUSD)	3,860	3,063	992	1,024	825
Net Income (MMUSD)	1,120	594	315	269	289
Recurring Net Income (MMUSD)	1,215	836	292	283	240
Earning Per Share (USD)	0.27	0.13	0.07	0.07	0.07
Key Financial Ratios					
EBITDA Margin (%)	73	70	73	71	67
Return on Equity (%) (LTM)	10	5	10	10	5
Return on Capital Employed (%) (LTM)	9	5	9	9	5
Return on Equity (%) (LTM, Recurring Net Income)	10	7	10	10	7
Return on Capital Employed (%) (LTM, Recurring Net Income)	9	7	9	9	7

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

Financial Performance : Balance Sheet

Strengthened balance sheet with low leverage ratio



	2018	2017
Total Assets (MMUSD)	19,571	19,220
- Cash & cash equivalents* (MMUSD)	4,001	4,468
Total Liabilities (MMUSD)	7,551	7,703
- Interest bearing debt (MMUSD)	1,946	2,907
Equity (MMUSD)	12,020	11,517
Key Financial Ratios		
Total Debt to Equity (X)	0.16	0.25
Net Debt to Equity (X)	(0.17)	(0.14)
Total Debt to Capital (X)	0.14	0.20
Total Debt to EBITDA (X)	0.63	0.95
EBITDA Interest Coverage (X)	32	23

Credit Ratings : BBB+ (S&P), Baa1 (Moody's), AAA (TRIS)

Weighted Average Cost of Debt :** 5.32%

Average Loan Life :** 8.67 years

Note: * Cash & Cash Equivalents (Cash on hand) include Short-term Investments (Fixed deposit > 3 months)

** Excludes hybrid bonds

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

Sustainable development

Pursue long-term growth with social and environmental wellness



MEMBER OF

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In Collaboration with RobecoSAM

2018 DJSI Listed Company

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



Proven business integrity

SET Sustainability Award 2018 – Outstanding Category

The Stock Exchange of Thailand (SET)

ASEAN Corporate Governance (CG) Awards

ASEAN CG Scorecard

Thailand's Strongest Adherence to Corporate Governance (ranked second)

Alpha Southeast Asia Magazine 2018



Exemplary social contributor

Top Corporate Social Responsibility Advocates winner

The Asia Corporate Excellence & Sustainability Awards 2018

Health Promotion Category for PTTEP LKC Free Health Service Program (Free Clinic Project)

The Asia Responsible Enterprise Awards 2018

Thailand's Best Strategic Corporate Social Responsibility (ranked first)

Alpha Southeast Asia Magazine 2018



FTSE4Good

FTSE4Good Emerging Index 2018

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



Green driver to environment

Green Leadership Category for T.M.S. Underwater Learning Site Project

The Asia Responsible Enterprise Awards 2018

The Excellent Level (G-Gold) of the Green Office Award 2017

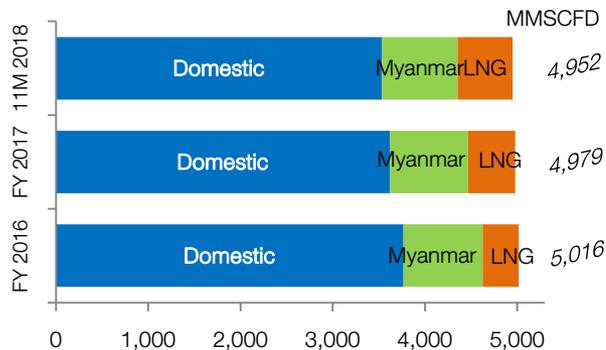
The Ministry of Natural Resources and Environment

Water A List Award

Carbon Disclosure Project (CDP)

Thailand Energy Overview

Natural Gas Supply

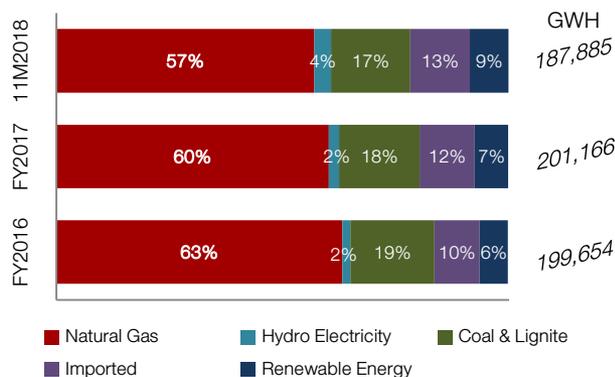


Slight decline in domestic production and Myanmar piped gas imports as a result of lower demands and growth in LNG import

Natural Gas Consumption



Electricity Generation



Source: EPPO

Exchange Rate Movement (THB/USD)



Consensus on the exchange rate mostly depends on

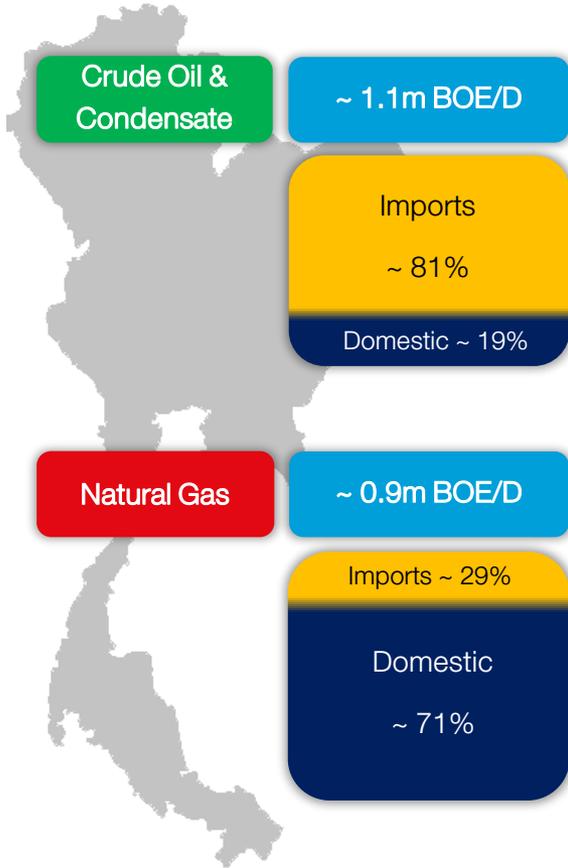
- Tendency on FED interest rate hike
- Trade war between the US and China
- Domestic export and tourism growth as well as the upcoming election

Source: Bank of Thailand, Bloomberg
 Forecast based on Bloomberg Consensus as of 7 February 2019

Thailand's Energy Value Chain

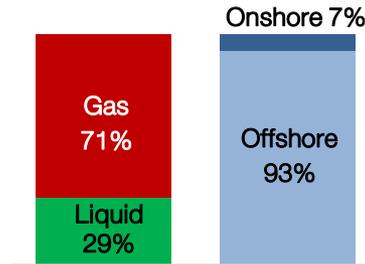
PTTEP contributes almost 1/3 of Thailand's petroleum production

Thailand's Oil and Gas Demand

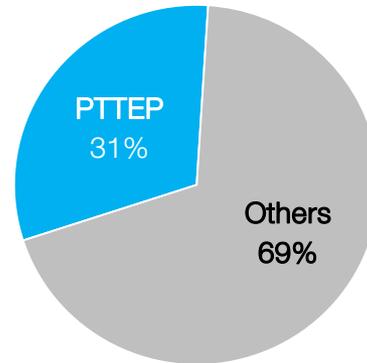


Thailand Petroleum Production 11M2018

% by Petroleum Type and Area



% Production by Company



Midstream

- Gas: operated by PTT
- Transmission Pipelines
Gas Separation Plants
- Oil: PTT participates through subsidiaries
- Refineries

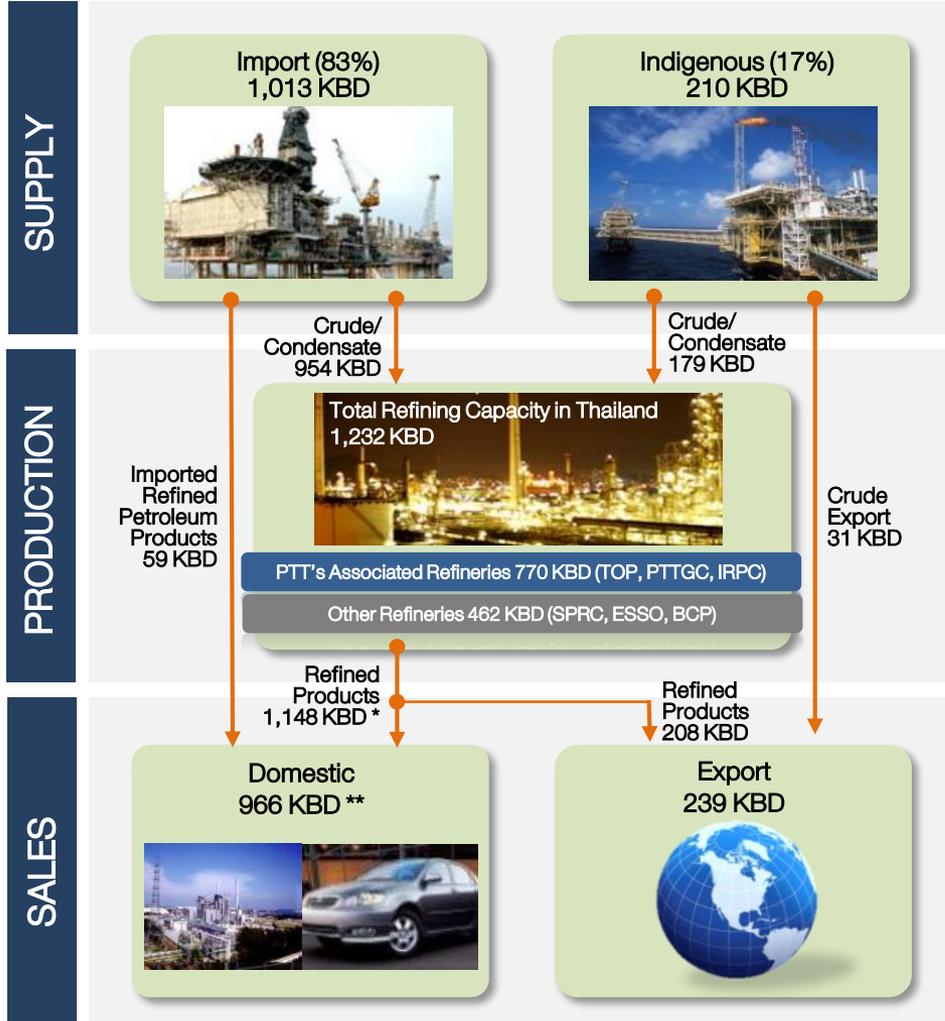
Downstream

- Petrochemicals
- Oil and gas marketing

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

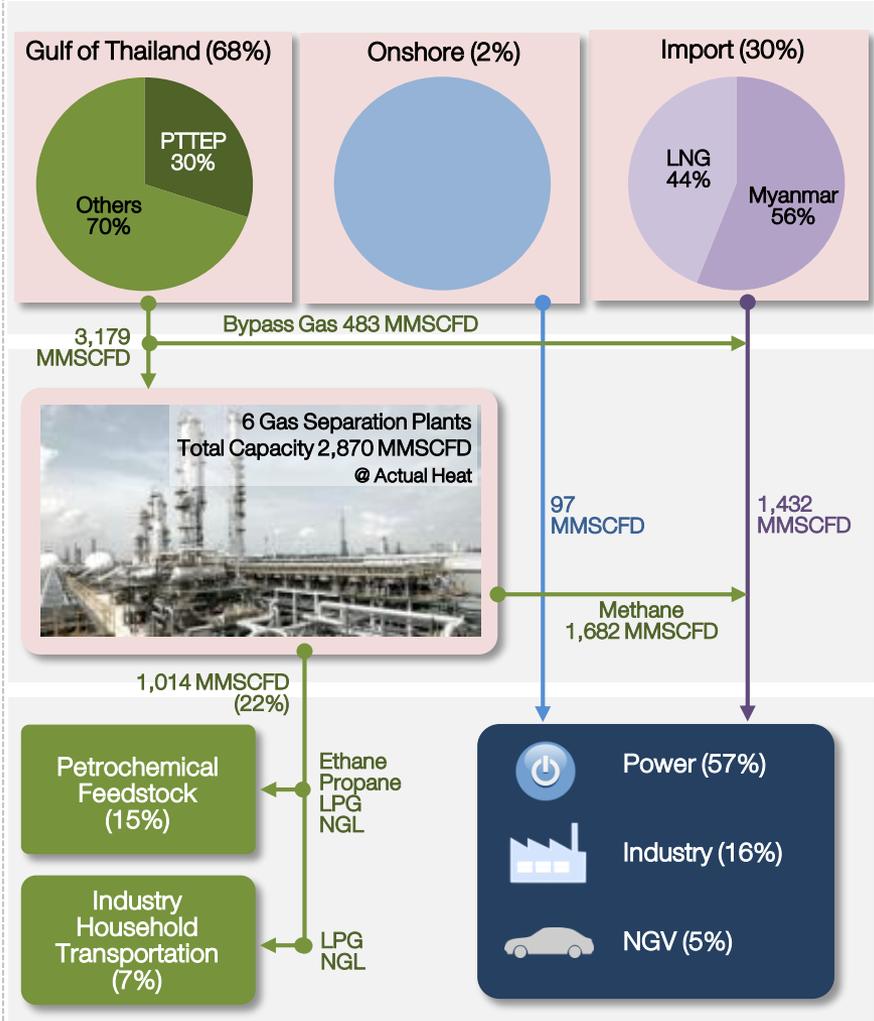
Oil Balance***

Maintains stability supply through adequate refining capacity



Natural Gas Balance****

Main driver of the Thailand economy



Source: PTIT

Remark: * Refined product from refineries = 1,034 KBD, including domestic supply of LPG from GSPs and Petrochemical Plants = 111 KBD

** Not included Inventory

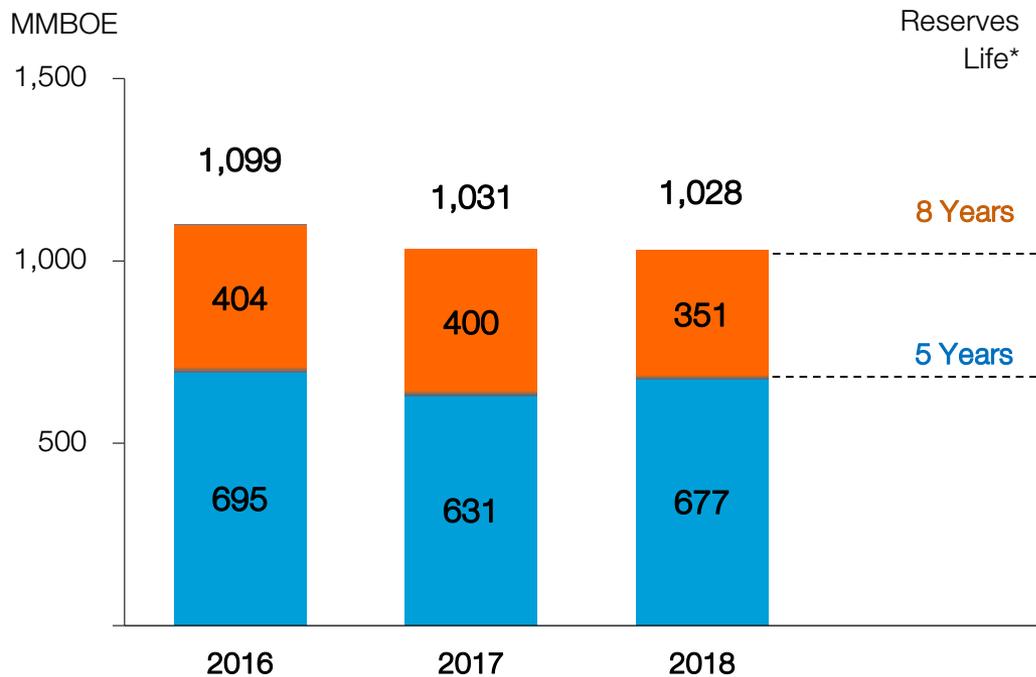
*** Information as of 11M18

**** Information as of 12M18

MMSCFD @ Heating Value 1,000 Btu/ft³

Reserves at the Year-end 2018

Maintained reserves life with majority of reserves base in SEA



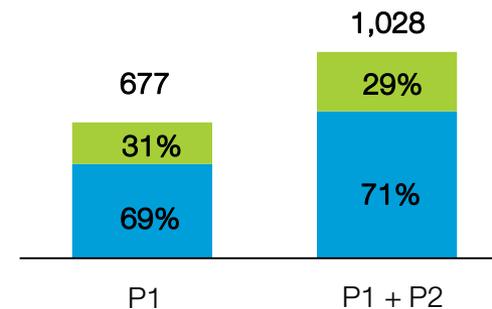
■ Proved (P1) ■ Probable (P2)

5-Year Average Proved Reserves Replacement Ratio (RRR)

2016	2017	2018
0.57x	0.58x	0.74x

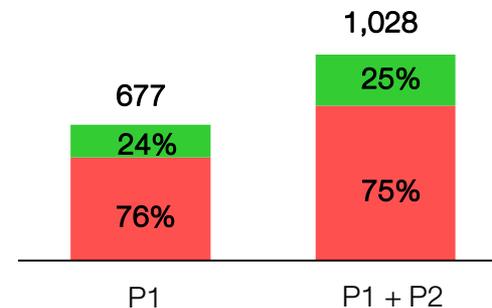
2018 by Geography

■ Domestic ■ International



2018 by Product Type

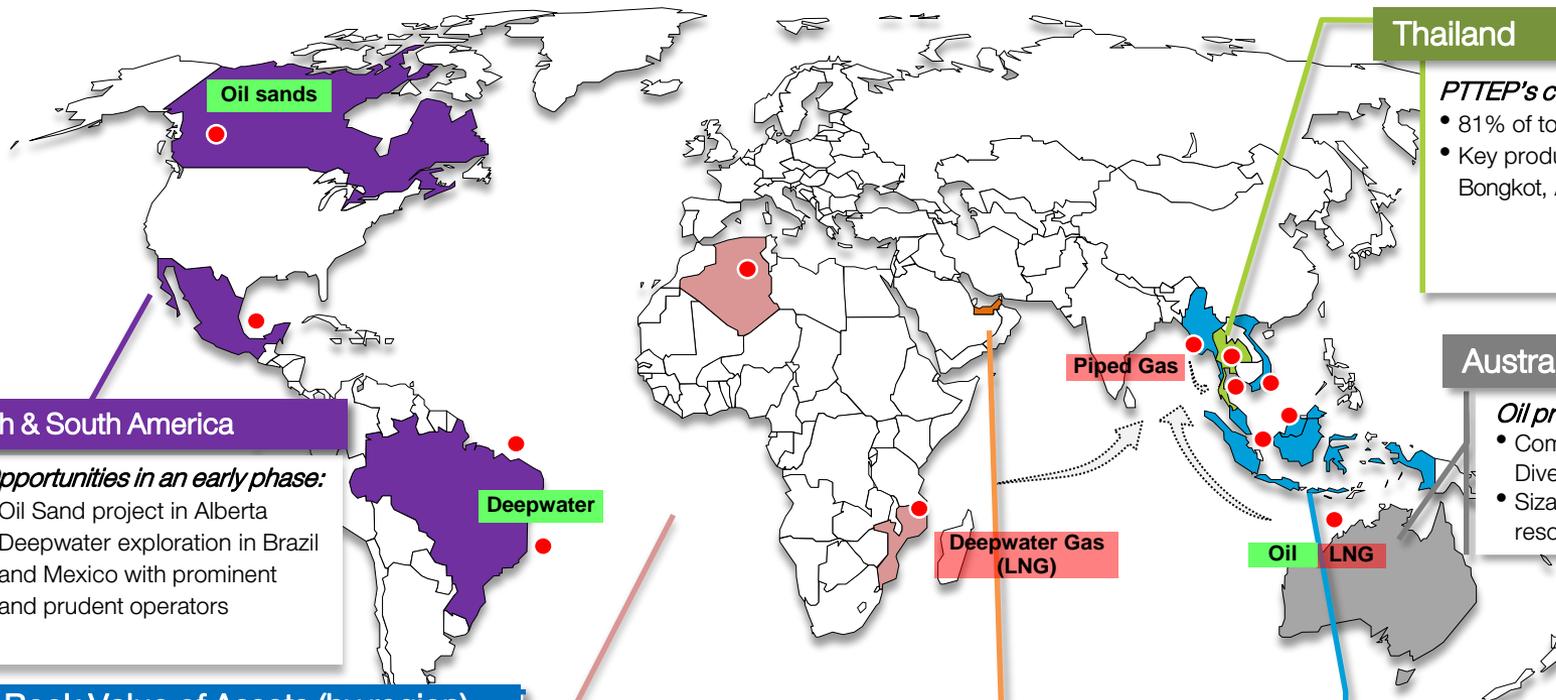
■ Gas ■ Liquid



* Based on total production of natural gas, condensate, and crude oil (including LPG) of 359 KBOED for the year ended December 31, 2018

Diversified international portfolio

Worldwide operations: 42 projects in 12 countries



Thailand

PTTEP's core production base

- 81% of total sales volume
- Key producing assets include Bongkot, Arthit, Contract 4 and S1

Australasia

Oil producing project

- Completion of Montara Divestment
- Sizable undeveloped gas resource in Timor Sea

North & South America

Opportunities in an early phase:

- Oil Sand project in Alberta
- Deepwater exploration in Brazil and Mexico with prominent and prudent operators

Africa

An area for growth, key projects include:

- Producing: Algeria's Bir Seba oil field has started up with current flow rate of approximately 17 KBPD
- Pre-development and Appraisal: Mozambique LNG and Algeria's Hassi Bir Rakaiz

Middle East

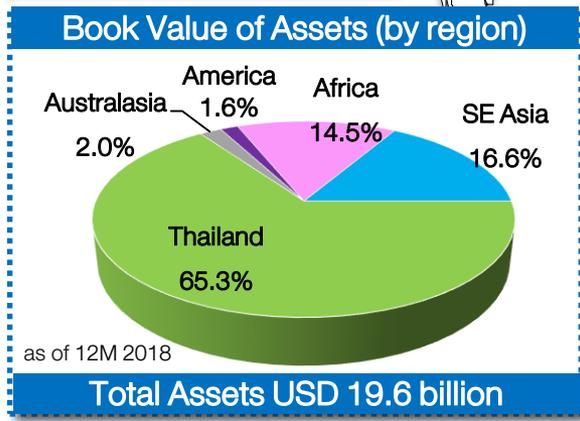
First presence in UAE:

- Awarded 2 new offshore exploration blocks in Jan 2019
- Partnered with experienced operator, ENI

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)
- Established "Sarawak Cluster" in Malaysia; SK410B, SK417 and SK438



Thailand and other Southeast Asia

Coming home to maintain strong foundation with full expertise

Thailand

Bongkot (66.6667% WI)

- Average natural gas and condensate sales volume of 752 MMSCFD and 25 KBPD in 12M2018

S1 (100% WI)

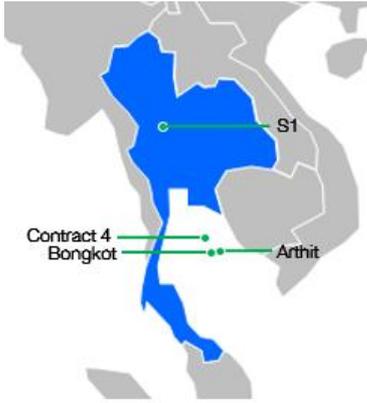
- The largest onshore crude oil production field in Thailand with 12M2018 average crude oil sales volume of 27 KBPD

Arthit (80% WI)

- Average sales volume in 12M2018 was 215 MMSCFD of natural gas and 10 KBPD of condensates

Contract 4 (60% WI)

- Average sales rate of 407 MMSCFD for natural gas and 17 KBPD for condensate in 12M2018



● Production / Ramp-up Projects

Myanmar



- 3 producing gas fields supplying gas to both Thailand and Myanmar: Yadana, Yetagun, and Zawtika
- Operate Zawtika project, brought online in March 2014 with current gas supply of 298 MMSCFD in 12M2018
- Significant exploration acreage both onshore and offshore in the Moattama Basin

Project Status

Producing

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

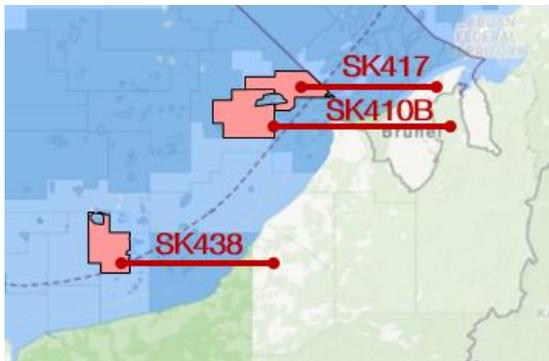
Appraisal

- M3 (80% WI)

Exploration

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

Sarawak Basin, Malaysia



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

Location: Sarawak Basin, Malaysia

Characteristic: Shallow-water with low operational risk

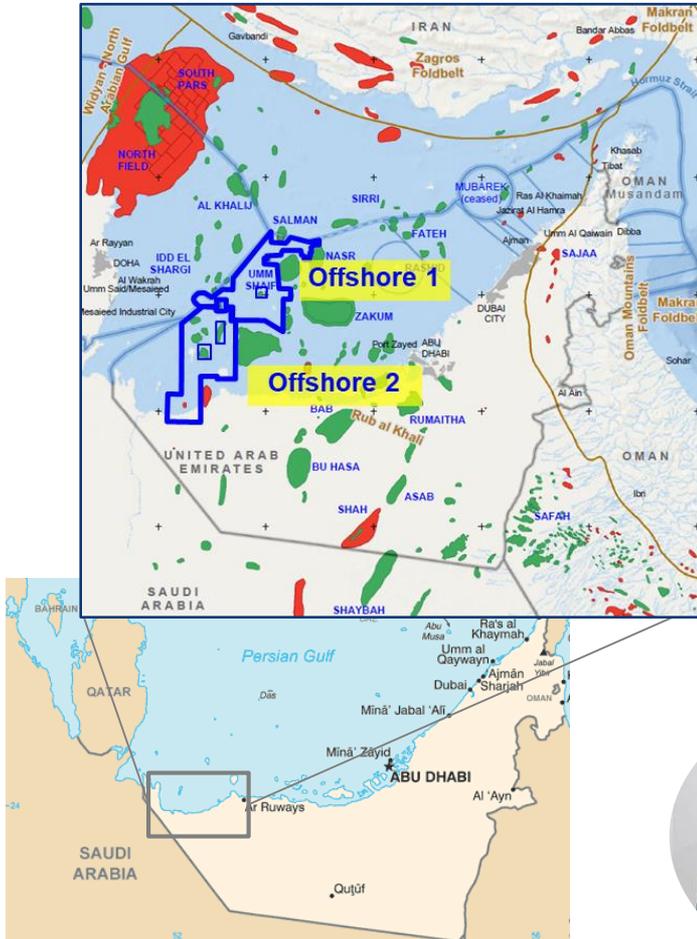
Exploration Strategy:

- Expect exploration drilling activities during 2019-2021
- "Cluster Model" synergy operations within basin to optimize costs
- In place production infrastructure in nearby area

Note. WI = working interest

The Middle East : United Arab Emirates

“Partnering” to JV with prudent operators in prolific low cost area



Project Overview		
PTTEP's Block	Abu Dhabi Offshore 1	Abu Dhabi Offshore 2
Location	North-west of Abu Dhabi Emirates, United Arab Emirates	
Characteristics	Shallow water	
Partners (exploration phase)	ENI 70% (Operator) PTTEP 30%	
Exploration Strategy	<ul style="list-style-type: none"> • Joined hand with prudent operators • UAE still has high potential prospective resources with significant sizeable discoveries 	



The award of Abu Dhabi Offshore Exploration Blocks 1 & 2 on 12th January 2019

Other Prolific Area

Expand portfolio in high prolific areas with prominent operators

Vietnam and Indonesia

“Reinforcing regional exposure through strategic partnerships”

Natuna Sea A (11.5% WI)

- Average sales volume of natural gas was 221 MMSCFD in 12M2018

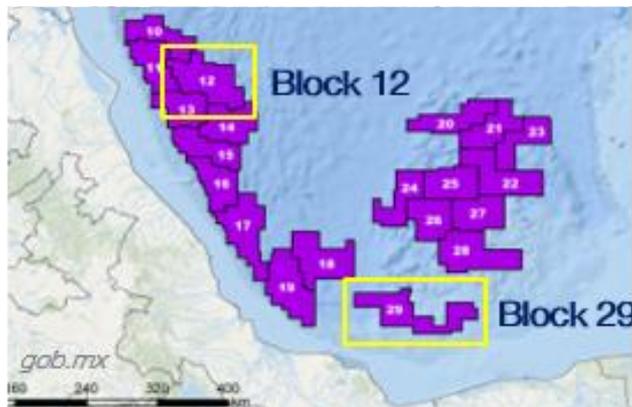


● Production / Ramp-up Projects

Vietnam 16-1 (28.5% WI)

- Average sales volume of crude oil was 17 KBPD in 12M2018
- The project is preparing further production drilling plan aiming to maintain production plateau.

Gulf of Mexico, Mexico



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

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

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

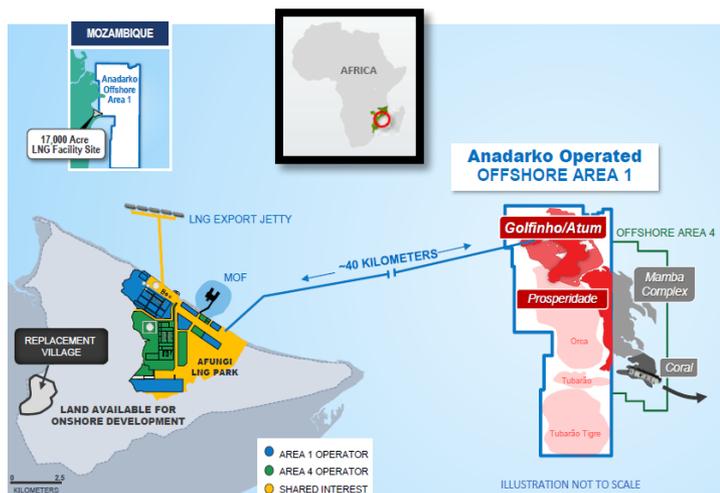
Exploration Strategy:

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

East Africa: Mozambique

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

Substantial recoverable resources of approximately **75 tcf** with scalable offshore development expending up to **50 MTPA**



Location and Cost Advantage

- Close proximity to shore
- High quality reservoirs
capable of flow up to 200 mmcf/d per well
- Access to Asian and European markets

Key Milestones to FID (initial phase of 12.88 MTPA) – Anticipated 1H2019

SPAs ~9.5 MTPA*

Executed

Tokyo Gas & Centrica	2.6
Shell	2.0
CNOOC	1.5
EDF	1.2
Tohoku	0.3

Finalized**

Two additional SPAs	2.0
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Completed

- Legal & Contractual Framework
- Development plan approved
- Onshore and Offshore Contractors Selected

In Progress

- Onshore Site Preparation
- Project Finance
(2/3 Project Financed)

* All volume numbers are approximate

** Subject to execution

Source: Anadarko

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



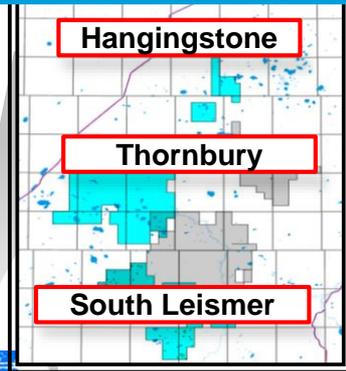
MLNG Train 9 – Overview										
Location	Bintulu, Sarawak, Malaysia									
Asset	Liquefaction Train 9 Tank 7									
Phase	Commercial: Jan 2017									
Capacity	3.6MTPA									
Contract Life	20 years									
Partners (subject to closing)	<table border="0"> <tr> <td>Petronas</td> <td>80%</td> <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"> • 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 <ul style="list-style-type: none"> - Highly experienced operator - Already commenced commercial production with immediate revenue stream • In vicinity of future upstream opportunities in focus area – offshore Sarawak 	

Canada Oil Sands

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

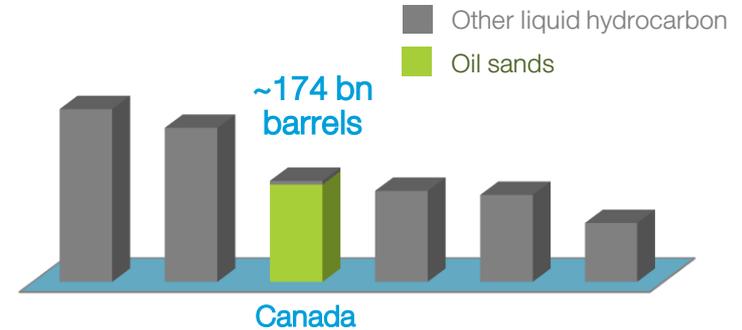
Mariana Oil Sands Project



Project Overview

- Operates 100% interest of the Thornbury, Hangingstone and South Leismer (THSL) areas (exploration and appraisal phase)
- Potential large resource base with over a billion barrel
- In Q3 2017, the Company revised the project's development plan which involves delaying the project's Final Investment Decision, to reflect results from the assessment of the industry and commercial feasibility studies

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

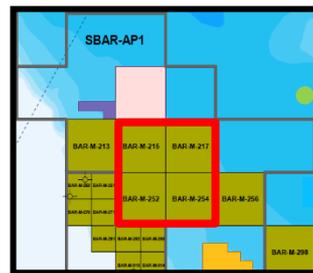


Brazil Deepwater

Entry into high potential petroleum province at exploration phase

Barreirinhas AP1

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



Barreirinhas Basin



Espirito Santo Basin



BM-ES-23

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

Project information 1/3

Production phase: Thailand and JDA



	Project	Status*	PTTEP's Share	Partners (as YE2018)	12M2018 Average Sales Volume **		2019 Key Activities	
					Gas	Oil and Other		
Production Phase								
Thailand and JDA								
1	Arthit	OP	80%	Chevron MOECO	16% 4%	215 MMSCFD	Condensate: 10 k BPD	<ul style="list-style-type: none"> Ensure gas deliverability level at DCQ*** Install wellhead platforms Drill development wells
2	B6/27	OP	100%			-	-	
3	B8/32 & 9A		25%	Chevron MOECO KrisEnergy Palang Sophon	51.66% 16.71% 4.63% 2%	71 MMSCFD	Crude: 19 k BPD	<ul style="list-style-type: none"> Drill development wells Perform waterflood activities
4	Bongkot	OP	66.6667%	TOTAL	33.3333%	752 MMSCFD	Condensate: 25 k BPD	<ul style="list-style-type: none"> Maintained production level as planned Drill development wells Awarded as a sole operator under PSC (after concession-end in 2022/2023)
5	Contract 3 (Formerly Unocal III)		5%	Chevron MOECO	71.25% 23.75%	612 MMSCFD	Crude: 20 k BPD Condensate: 23 k BPD	<ul style="list-style-type: none"> Drill development wells Prepare for decommissioning activities Awarded as a sole operator for Erawan field (Contract 1, 2 and 3) under PSC (after concession-end in 2022)
6	Contract 4 (Formerly Pailin)		60%	Chevron MOECO	35% 5%	407 MMSCFD	Condensate: 17 k BPD	<ul style="list-style-type: none"> Ensure gas deliverability level at DCQ*** Drill development wells In process of pre-development of Ubon field
7	E5		20%	ExxonMobil	80%	8 MMSCFD	-	<ul style="list-style-type: none"> Ensure gas deliverability level at DCQ***
8	G4/43		21.375%	Chevron MOECO Palang Sophon	51% 21.25% 6.375%	1.4 MMSCFD	Crude: 4 k BPD	<ul style="list-style-type: none"> Drill development wells Perform waterflood activities
9	G4/48		5%	Chevron MOECO	71.25% 23.75%	6 MMSCFD	Crude: 1.5 k BPD	<ul style="list-style-type: none"> Drill development wells
10	L53/43 & L54/43	OP	100%			-	Crude: 1.0 k BPD	<ul style="list-style-type: none"> Maintain production plateau Perform reservoir management and waterflood activities
11	PTTEP1	OP	100%			-	Crude: 252 BPD	<ul style="list-style-type: none"> Maintain production plateau Perform reservoir management and waterflood activities
12	S1	OP	100%			14 MMSCFD	Crude: 27 k BPD LPG: 0.2 k MT/D	<ul style="list-style-type: none"> Drill development wells Enhance oil recovery program includes waterflood, hydraulic fracturing and artificial lift

* 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 YE2018)		12M2018 Average Sales Volume **		2019 Key Activities
						Gas	Oil and Other	
Production Phase								
13	Sinphuhorm	OP	55%	Apico ExxonMobil	35% 10%	79 MMSCFD	Condensate: 246 BPD	<ul style="list-style-type: none"> Ensure gas deliverability Improve recovery from infill drilling
14	L22/43	OP	100%			-	Crude: 22 BPD	<ul style="list-style-type: none"> Maintain production operation
15	MTJDA	JOC	50%	Petronas-Carigali	50%	330 MMSCFD	Condensate: 7.6 k BPD	<ul style="list-style-type: none"> Drill exploration and development wells
Overseas								
16	Vietnam 9-2	JOC	25%	PetroVietnam SOCO	50% 25%	13 MMSCFD	Crude: 4.1 k BPD	<ul style="list-style-type: none"> Maintain production level Perform well intervention program
17	Vietnam 16-1	JOC	28.5%	PetroVietnam SOCO OPECO	41% 28.5% 2%	5.9 MMSCFD	Crude: 17 k BPD	<ul style="list-style-type: none"> Maintain production level Drill development wells and water injection well Upgrade gas lift system
18	Natuna Sea A		11.5%	Premier Oil KUFPEC Petronas Pertamina	28.67% 33.33% 15% 11.5%	222 MMSCFD	Crude: 1.3 k BPD	<ul style="list-style-type: none"> Well intervention program to secure Gas Deliverability Drill development wells
19	Yadana		25.5%	TOTAL Chevron MOGE	31.24% 28.26% 15%	779 MMSCFD	-	<ul style="list-style-type: none"> Drill infill wells Perform 3D seismic activities Ensure gas deliverability level at DCQ***
20	Yetagun		19.3178%	Petronas-Carigali MOGE Nippon Oil PC Myanmar (Hong Kong)	30.00140% 20.4541% 19.3178% 10.90878%	149 MMSCFD	Condensate: 2.8 k BPD	<ul style="list-style-type: none"> Maintain production level Drill exploration and development wells Perform 3D seismic activities
21	Zawtika (M9 & a part of M11)	OP	80%	Myanma Oil and Gas Enterprise (MOGE)	20%	298 MMSCFD	-	<ul style="list-style-type: none"> Drill 3 exploration wells Drill development wells Perform 3D seismic activities Prepare to Install wellhead platforms
22	Algeria 433a & 416b (Bir Seba)	JOC	35%	PetroVietnam Sonatrach	40% 25%	-	Crude: 2.1 k BPD (net entitlement)	<ul style="list-style-type: none"> Drill development wells Plan for BRS Phase 2 oil field development

* 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

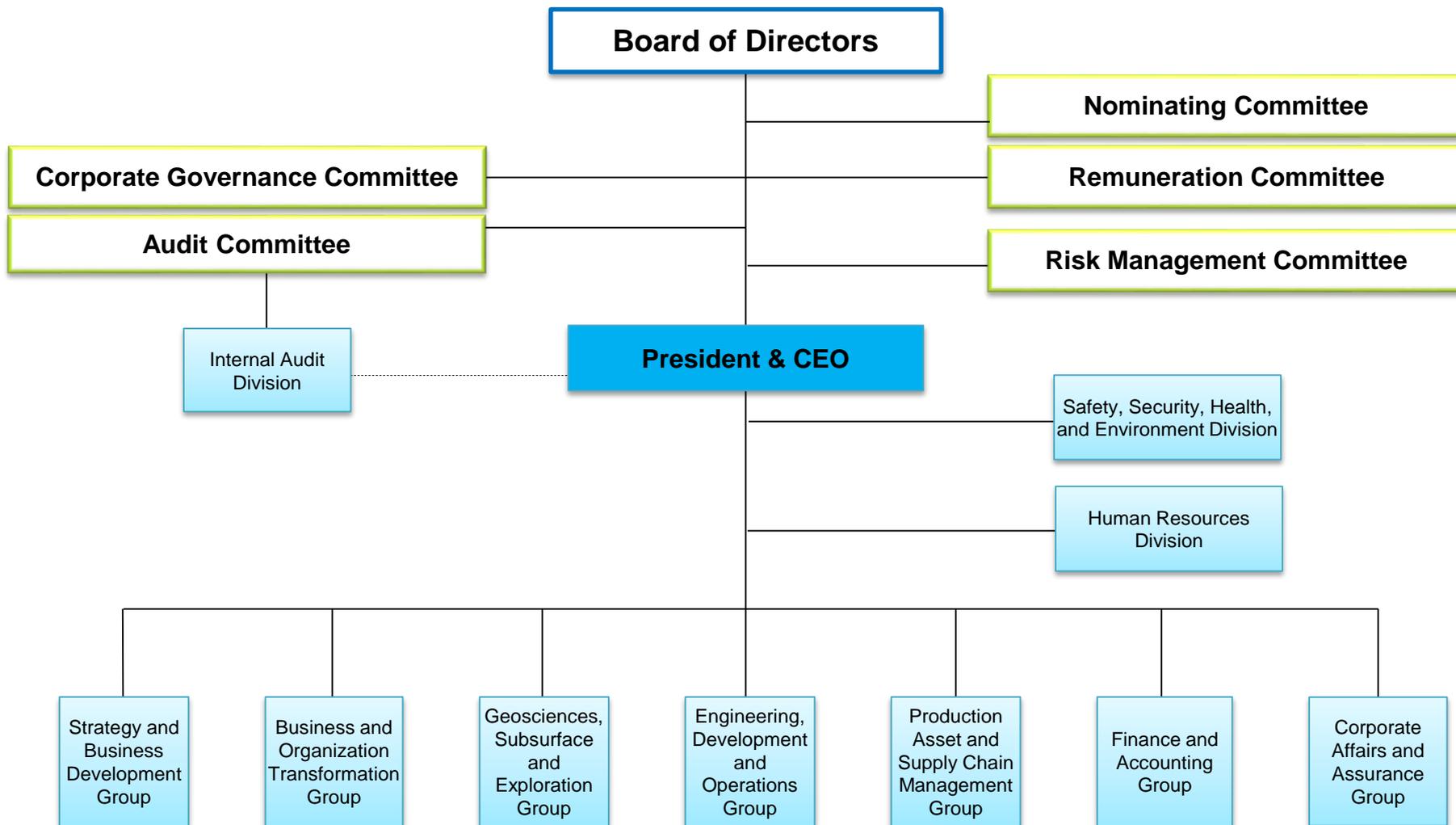
Exploration/Development phase

	Project	Status*	PTTEP's Share	Partners (as of YE2018)	2019 Key Activities
Exploration/Development Phase					
Thailand and JDA					
23	G9/43	OP	100%		-
Overseas					
24	Myanmar M3	OP	80%	MOECO 20%	<ul style="list-style-type: none"> Negotiate the commercial framework with the Myanmar government Perform Front End Engineering Design (FEED study)
25	Myanmar M11	OP	100%		<ul style="list-style-type: none"> Drill first exploration well to prove up recoverable resources
26	Myanmar MD-7	OP	50%	TOTAL 50%	<ul style="list-style-type: none"> Drill first exploration well to prove up recoverable resources
27	Myanmar MOGE 3	OP	75%	Palang Sophon 10% MOECO 10% WinPreciousResources 5%	<ul style="list-style-type: none"> Drill 3 exploration wells
28	Vietnam B & 48/95		8.5%	PVN 65.88% MOECO 25.62%	<ul style="list-style-type: none"> Finalize on Commercial agreements Finalize on Engineering Procurement Construction Installation (EPCI) bidding process
29	Vietnam 52/97		7%	PVN 73.4% MOECO 19.6%	<ul style="list-style-type: none"> Finalize on Commercial agreements Finalize on Engineering Procurement Construction Installation (EPCI) bidding process
30	Sarawak SK410B	OP	42.5%	KUFPEC 42.5% Petronas-Carigali 15%	<ul style="list-style-type: none"> Drill 1 appraisal well
31	Sarawak SK417	OP	80%	Petronas-Carigali 20%	<ul style="list-style-type: none"> Prepare to drill exploration and appraisal wells
32	Sarawak SK438	OP	80%	Petronas-Carigali 20%	<ul style="list-style-type: none"> Drill 1 exploration well and 1 appraisal well
33	PTTEP Australasia (PTTEP AA)	OP	90%-100% (varied by permits)		<ul style="list-style-type: none"> Completed Montara Field Divestment to Jadestone on 28 Sep 2018 Drill exploration well in AC/P54
34	Mozambique Rovuma Offshore Area 1		8.5%	Anadarko, Mitsui, 26.5%, 20% ENH, ONGC 15%, 10% Beas Rovuma, Bharat 10%, 10%	<ul style="list-style-type: none"> Prepare work to support Final Investment Decision (FID) targeted in 1H 2019 including LNG marketing and finalize remaining commercial contracts together with project finance
35	Algeria Hassi Bir Rekaiz	OP	24.5%	CNOOC 24.5% Sonatrach 51%	<ul style="list-style-type: none"> Finalize on Engineering Procurement and Construction (EPC) Drill development wells
36	Mariana Oil Sands	OP	100%		<ul style="list-style-type: none"> Assess appropriated development approach
37	Barreirinhas AP1		25%	Shell Brasil 65% Mitsui E&P Brasil 10%	<ul style="list-style-type: none"> Assess petroleum potential
38	Brazil BM-ES-23		20%	Petrobras 65% INPEX 15%	<ul style="list-style-type: none"> Assess petroleum potential
39	Mexico block 12 (2.4)		20%	PC Carigali Mexico 60% Ophir Mexico 20%	<ul style="list-style-type: none"> G&G study to access petroleum potential
40	Mexico block 29 (2.4)		16.67%	Repsol Mexico 30% PC Carigali Mexico 28.33% Sierra Nevada 25%	<ul style="list-style-type: none"> G&G study to access petroleum potential
41	Abu Dhabi Offshore 1		30%	Eni Abu Dhabi 70%	<ul style="list-style-type: none"> Conduct Seismic
42	Abu Dhabi Offshore 2		30%	Eni Abu Dhabi 70%	<ul style="list-style-type: none"> Conduct Seismic and drill exploration & appraisal wells

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