

2019 Financial Results and Strategy Update

Analyst Meeting

11 February 2020



Forward-looking Information

The information, statements, forecasts and projections contained herein reflect the Company's current views with respect to future events and financial performance. These views are based on assumptions subject to various risks. No assurance is given that these future events will occur, or that the Company's assumptions are correct. Actual results may differ materially from those projected.

Petroleum Reserves Information

In this presentation, the Company discloses petroleum reserves that are not included in the Securities Exchange and Commission of Thailand (SEC) Annual Registration Statement Form 56-1 under "Supplemental Information on Petroleum Exploration and Production Activities". The reserves data contained in this presentation reflects the Company's best estimates of its reserves. While the Company periodically obtains an independent audit of a portion of its proved reserves, no independent qualified reserves evaluator or auditor was involved in the preparation of reserves data disclosed in this presentation. Unless stated otherwise, reserves are stated at the Company's gross basis.

This presentation may contain the terms "proved reserves" and "probable reserves". Unless stated otherwise, the Company adopts similar description as defined by the Society of Petroleum Engineers.

Proved Reserves - Proved reserves are defined as those quantities of petroleum which, by analysis of geological and engineering data, can be estimated with reasonable certainty to be commercially recoverable, from a given date forward, from known reservoirs and under current economic conditions, operating methods, and government regulations.

Probable Reserves - Probable reserves are defined as those unproved reserves which analysis of geological and engineering data suggests are more likely than not to be recoverable.

2019 Highlights and Beyond



Strategy and Growth



Financial Performance

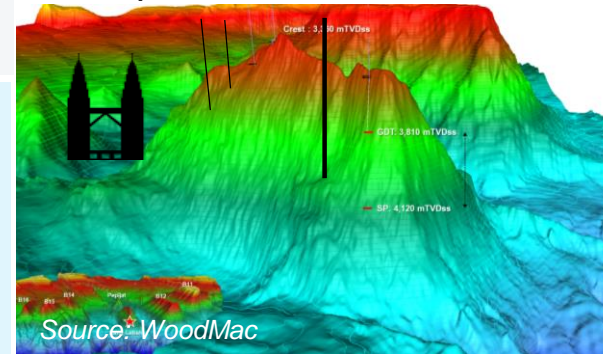


2019 KEY ACHIEVEMENTS

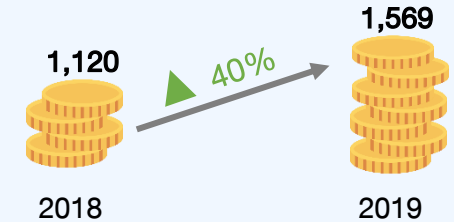


351 KBOED
“PTTEP records the highest sales volume of all time at 351 KBOED in 2019”

WORLD'S 7th
Largest gas discovery in 2019 from Lang Lebah well, Project SK410B offshore Sarawak, Malaysia

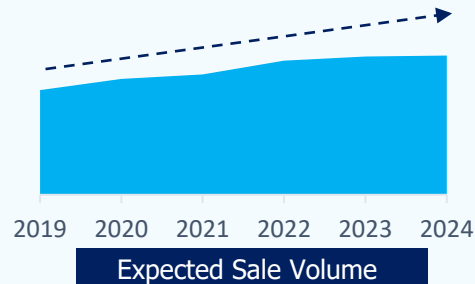


1,569 MM\$
71% EBITDA Margin

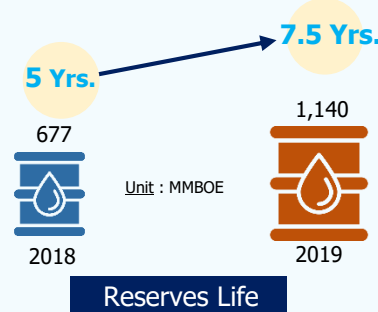


PTTEP reported net income of 1,569 MMUSD, an increase of 40% compared to the previous year, with healthy EBITDA margin of 71%.

6% CAGR



7.5 R/P



3 Awards

- Bongkot & Erawan
- Offshore exploration blocks in the United Arab Emirates
- Exploration blocks in offshore Peninsular Malaysia

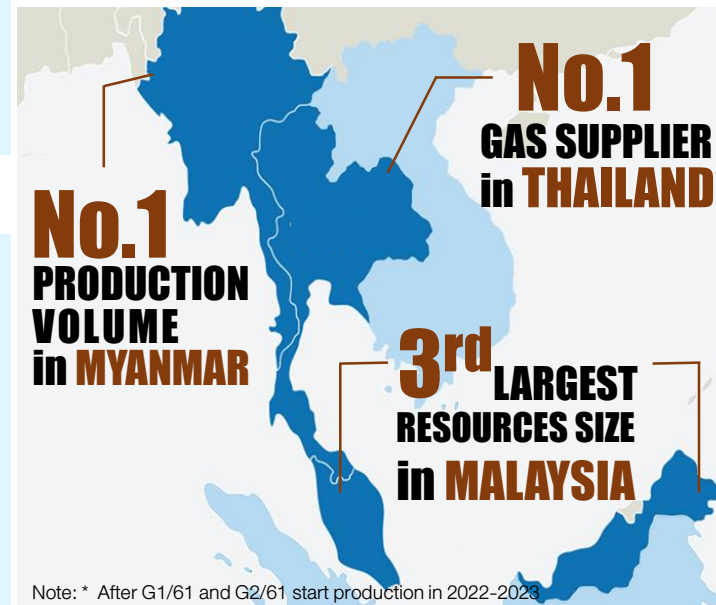
3 M&As

- Murphy assets in Malaysia
- Partex with major investment in Middle East
- Additional interests in Sinphuhorm Project

2 FIDs

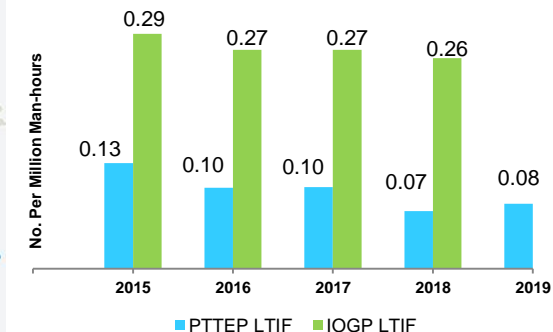
- Mozambique Area 1 Project
- Algeria Hassi Bir Rekaiz Project

Note: FID : Final Investment Decision
R/P : Proved Reserves / Production

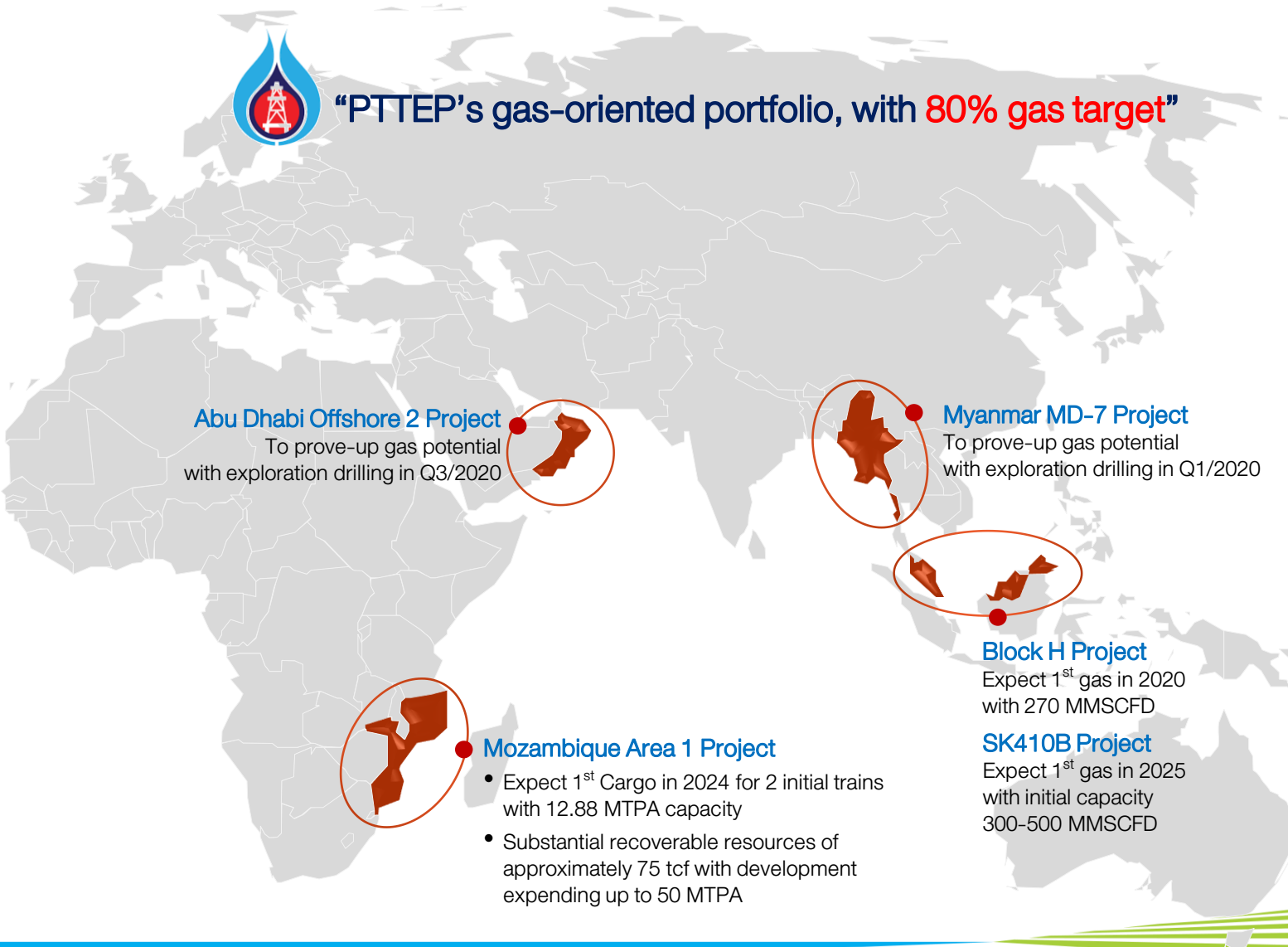
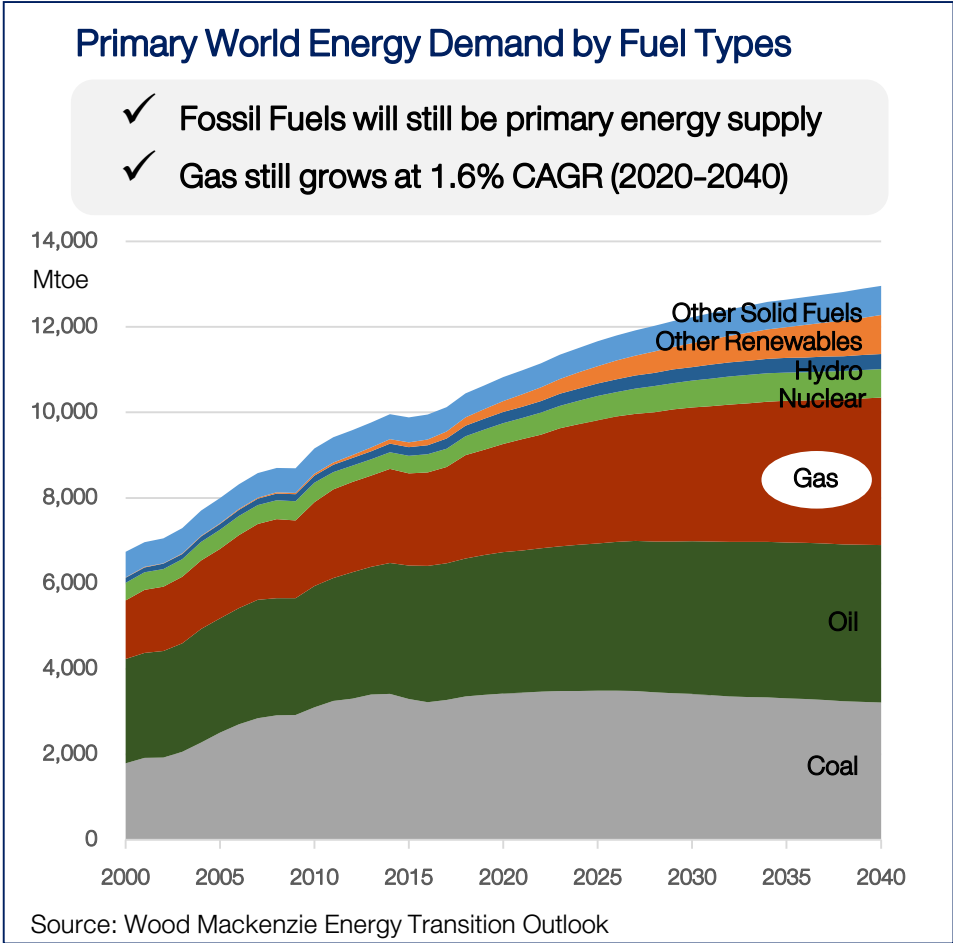


Safety Target ZERO

Below Industry Standard



LTIF : Lost Time Injury Frequency
IOGP : International Association of Oil & Gas Producers



2019 Highlights and Beyond



Strategy and Growth



Financial Performance



“Energy Partner of Choice”

through competitive performance and innovation
for long-term value creation



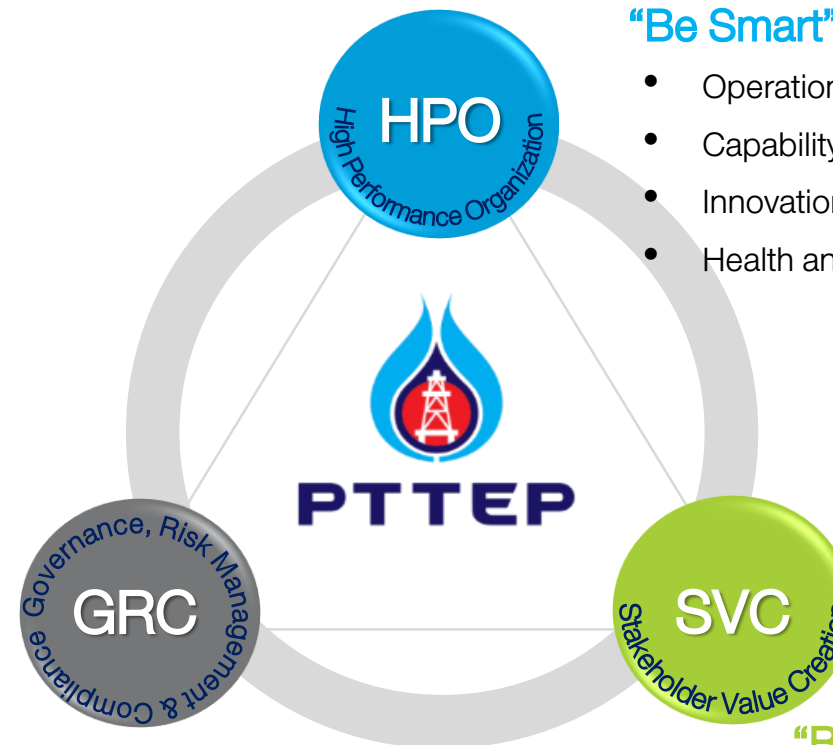
“Be Good”

- Conducting business with accuracy, transparency, fairness
- Strict compliance with laws and regulations
- Good governance and appropriate risk management

Note: *Greenhouse Gas

“Be Smart”

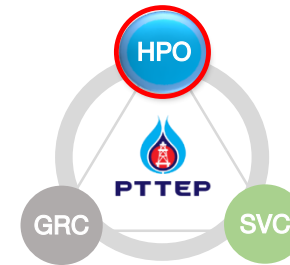
- Operational Excellence
- Capability Development
- Innovation and Technology
- Health and Safety



“Be responsible”

- GHG* Reduction
- Contribution to Society
- Environmental Management

HPO: Together Driving the Organization with “Execute” and “Expand”



Smooth Business Transition & Production Continuity

G1/61 and G2/61 :

Deliver production volume
as committed, 2022-2023 onwards

Newly Acquired Assets in Malaysia :

Maximize sales volume and ensure 1st gas
for Block H in 2020

Newly Acquired Assets from Partex:

Maintain sales volume



Sustain plateau on legacy assets

Applying advanced technology
e.g. new Enhanced Oil Recovery (EOR)
technique in S1

Monetize development projects

Mozambique Area 1 and Algeria HBR

Acceleration of Exploration Activities

Malaysia

Develop clusters with operational
synergy and accelerate time to market
for SK410B

Myanmar

Prove up gas potential in MD-7

‘Coming Home Strategy’

Focus in South East Asia

‘Strategic Alliance in Middle East’

Partner with experienced operators

Full Value Creation on Existing Assets

Expand in Strategic Areas

Achievement Targets:

- 5% Average Production Growth
- ≥7 Years of Proved Reserves Life
- Competitive Unit Cost
- 80% gas oriented portfolio
- Safety Target Zero



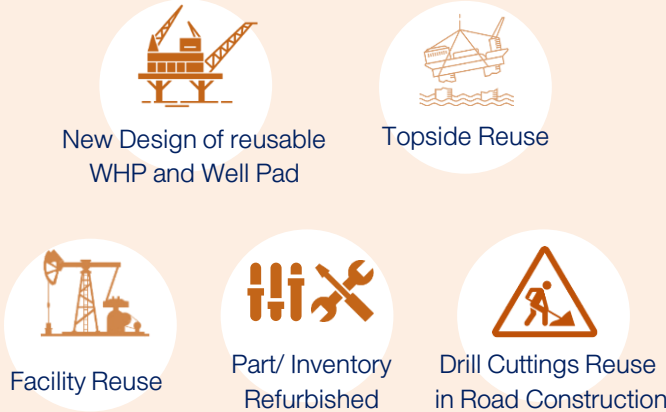
GHG* Reduction

Growing business,
while decreasing GHGs emission



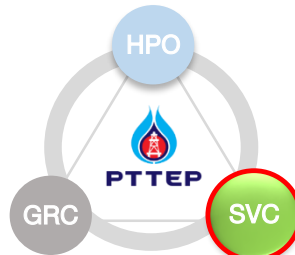
Circular Model for E&P

Maximize resource efficiency and
zero waste to landfill

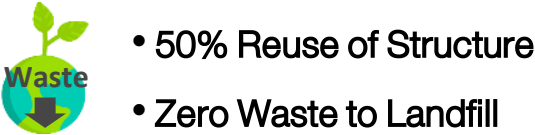


Ocean for Life

Improve biodiversity and
local wealth

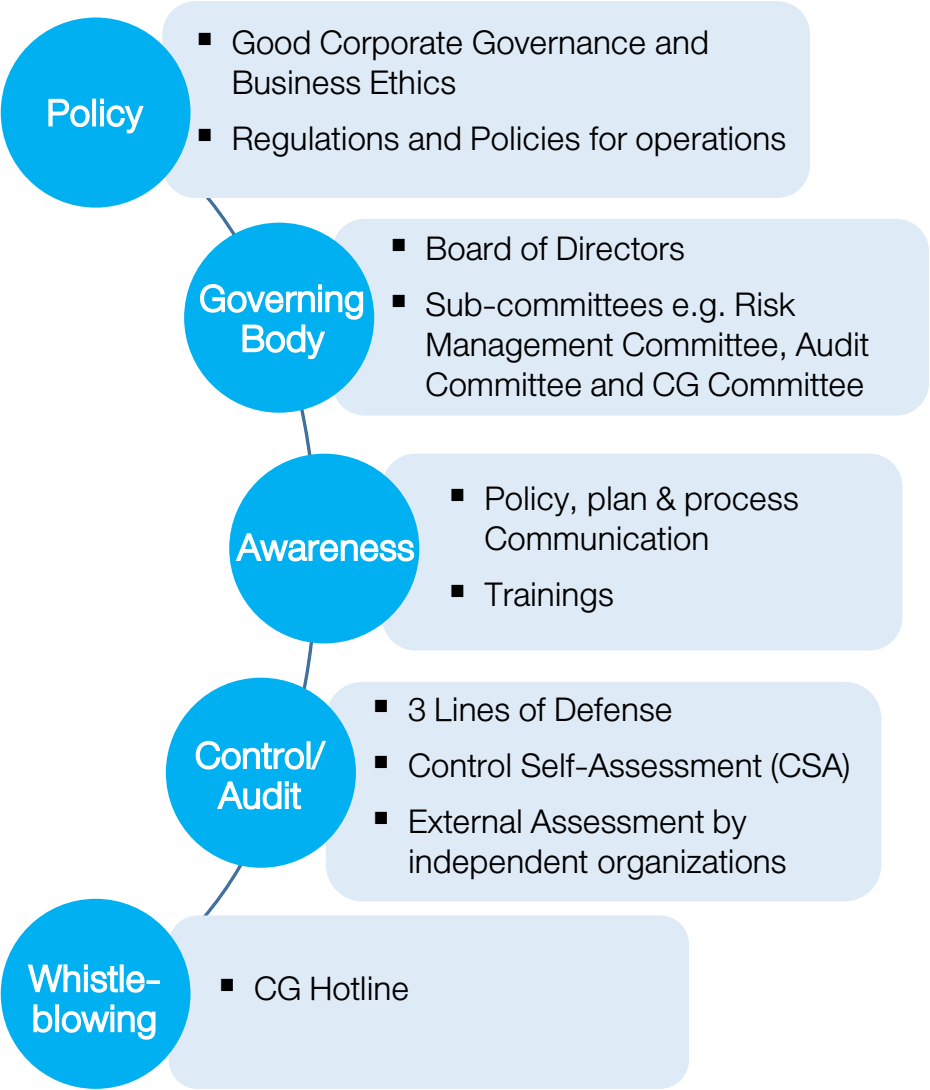


Achievement Targets in 2030:



Note: GHG = Greenhouse Gas

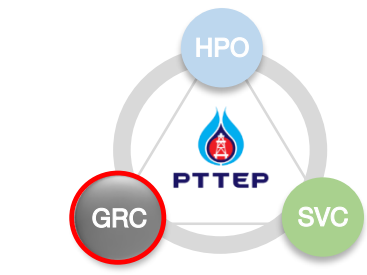
How do we ensure GRC?



GRC Baseline Application to:



The NACC Integrity Award
from National Anti-Corruption Commission (NACC)



The 2019 Role Model Organization Award
on Human Rights from Ministry of Justices



2019 Highlights and Beyond



Strategy and Growth



Financial Performance

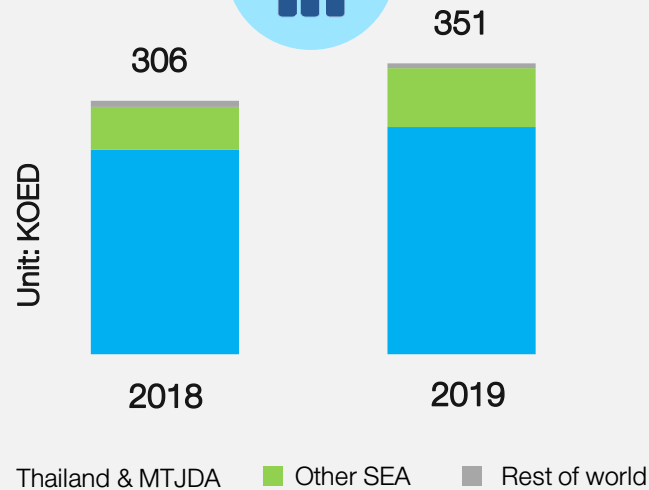


2019 Key Financial Performance

Strong core performance supported by higher volume and gas price

Net Income 1,569 MMUSD ▲ 40% YTD

Sale Volumes



15% YTD

The acquisition of 22% interest in Bongkot Project, Malaysia Asset and Partex

Average Selling Price



	2018	2019
Gas (\$/MMBTU)	6.42	6.92
Liquid (\$/BBL)	67.40	61.18
Weighted Avg. (\$/BOE)	46.66	47.24
Avg. Dubai (\$/BBL)	69.65	63.51
Volume Mix (Gas : Liquid)	72:28	71:29

▲ 1% YTD

Strong gas price leading to higher average selling price

Unit Cost



Unit : \$/BOE	2018	2019
Cash cost	15.11	15.88
Non-Cash cost	16.58	15.83
Unit cost	31.69	31.71

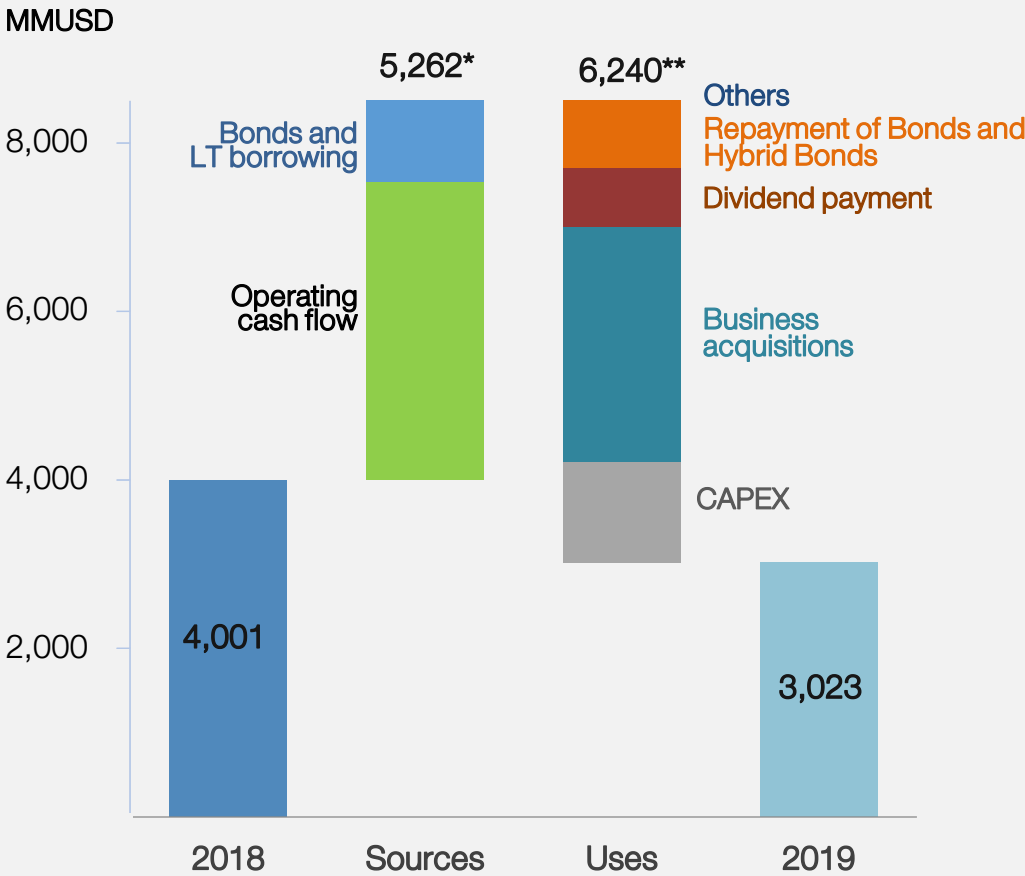
Note: Unit Cost : Exclude costs related to new business

Unchanged

Remain competitive unit cost

2019 Source and Use of Funds

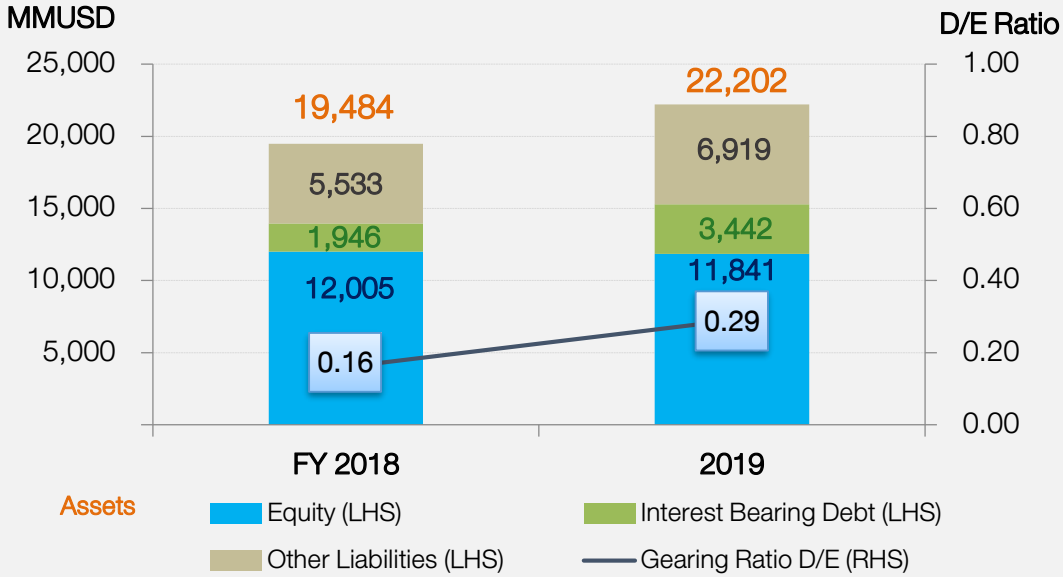
Healthy operating cash flow



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)

Capital Structure

Healthy balance sheet at competitive leverage level



Debt Profile

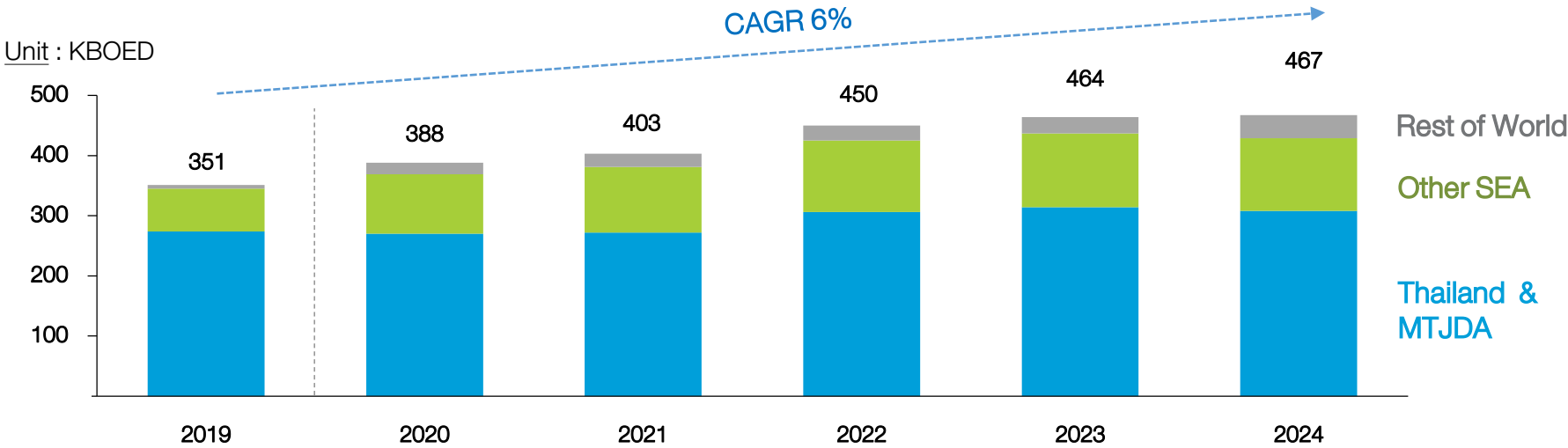
Weighted Average Cost of Debt (%)	5.32	4.41
[Fixed : Floating]	[100 : 0]	[82 : 18]
Average Loan Life (Years)	8.67	13.84

Remark: Debt profile excludes Hybrid bonds

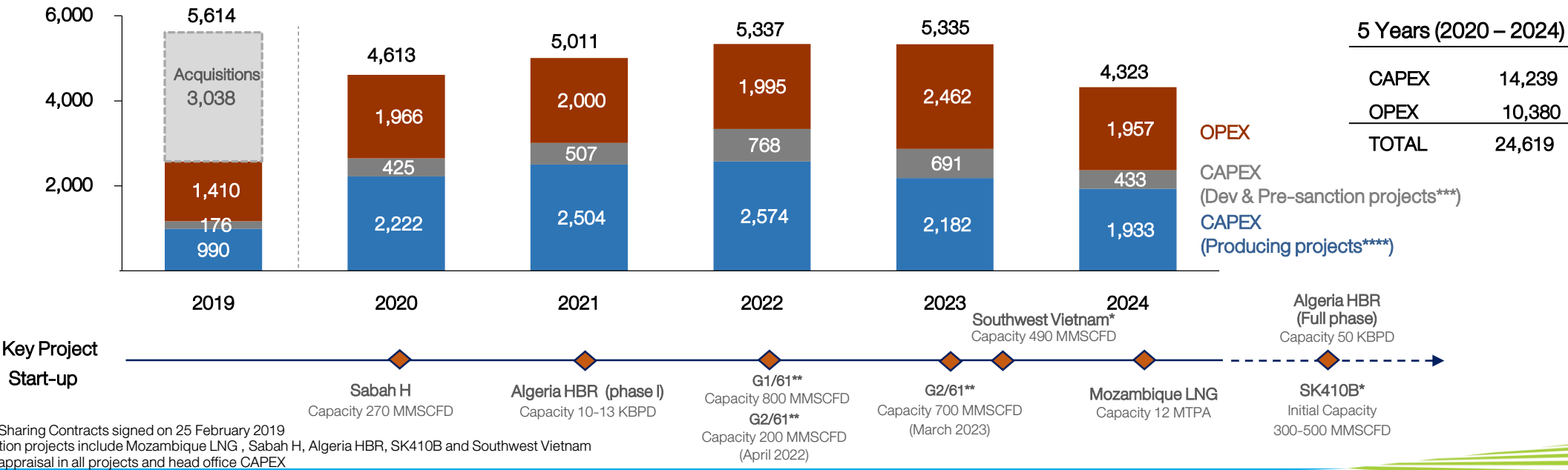
Five –Year Plan

Support current operations, business transitions and drive development projects for near term volume additions

Sales Volume



Investment

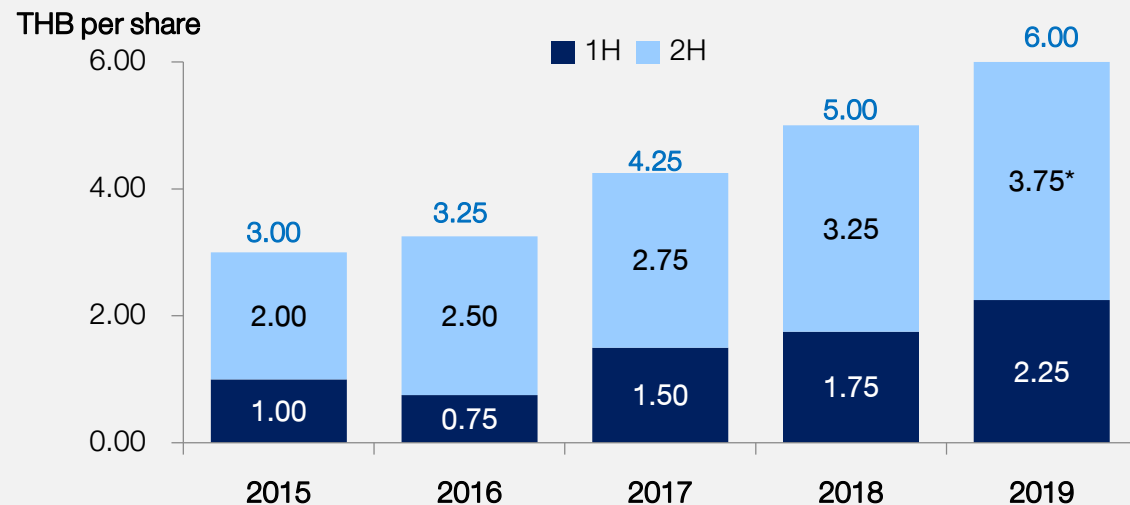


Note:

- * Subject to FID timing
- ** According to Production Sharing Contracts signed on 25 February 2019
- *** Development & Pre-sanction projects include Mozambique LNG , Sabah H, Algeria HBR, SK410B and Southwest Vietnam
- **** Includes exploration and appraisal in all projects and head office CAPEX

Dividend Payment History

Policy : No Less Than 30% of Net Income



Payout Ratio (% of net income)	N/A	98	90	55	49
Payout Ratio (% of recurring net income)	47	79	64	51	53





Schedule for 2H2019 Dividend Payment*

<i>XD Date</i>	13 February 2020
<i>Record date</i>	14 February 2020
<i>Payment Date</i>	10 April 2020

*Subject to approval from 2020 Annual General Shareholders' Meeting

2020 Guidance

Continue volume growth with operational efficiency

	Q1 2020	FY 2020
 Average Sales Volume* KBOED	~ 394	~ 391
 Average Gas Price USD/MMBTU	~ 6.8	~ 6.4
 Unit Cost USD/BOE	~ 32	~ 32
 EBITDA Margin % of sales revenues	70-75 %	

Note:

* Include sales volume from ADNOC Gas Processing (AGP); a part of the acquisition of Partex which was completed in November 2019

Based on average Dubai oil price in 2020 at 60 \$/BBL and HSFO-Dubai spread in 2020 around 13 \$/BBL



Thank you and Q&A

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



IR@pttep.com



Supplementary information

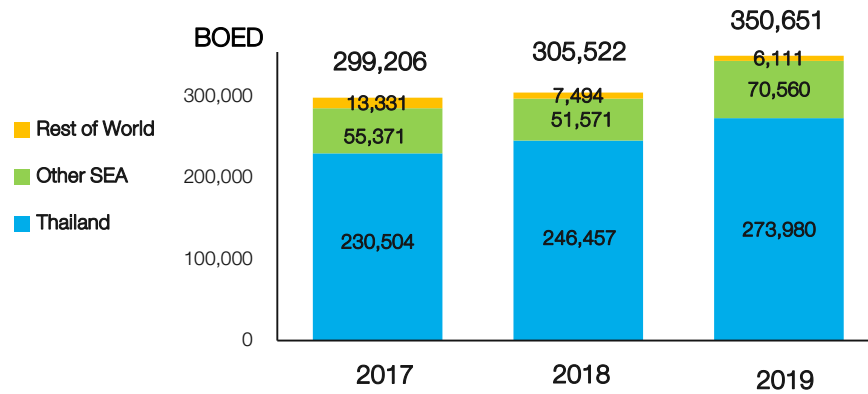
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Sales Volume & Unit Cost

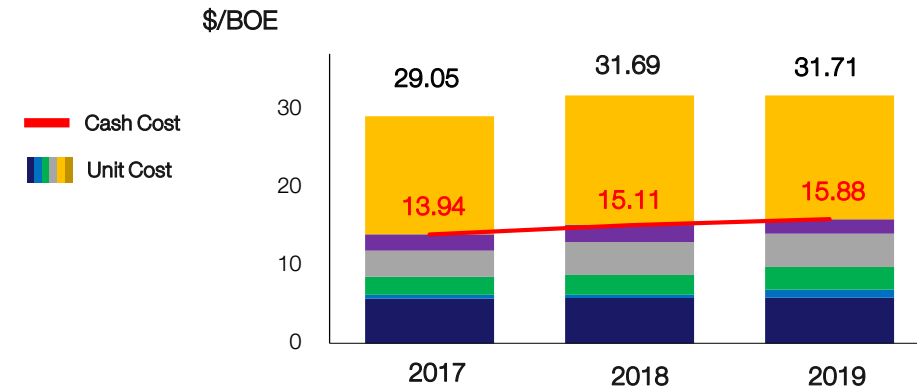
Upward sales volume after completion of acquisitions with competitive cost

Sales Volume and Price



Gas (\$/MMBTU)	5.59	6.42	6.92
Liquid (\$/BBL)	52.26	67.40	61.18
Weighted Avg. (\$/BOE)	39.20	46.66	47.24
Avg. Dubai (\$/BBL)	53.14	69.65	63.51
Avg. HSFO (\$/BBL) (High Sulphur Fuel Oil)	49.64	67.01	58.60
Volume Mix (Gas : Liquid)	70 : 30	72 : 28	71 : 29
Revenue Mix (Gas : Liquid)	60 : 40	59 : 41	62 : 38

Unit Cost



DD&A	15.11	16.58	15.83
Finance Cost	2.07	2.14	1.84
Royalties	3.37	4.21	4.27
G&A	2.30	2.57	2.91
Exploration Expenses	0.48	0.41	1.00
Operating Expenses	5.72	5.78	5.86
Lifting Cost	4.19	4.33	4.31

Note: * Exclude costs related to new business

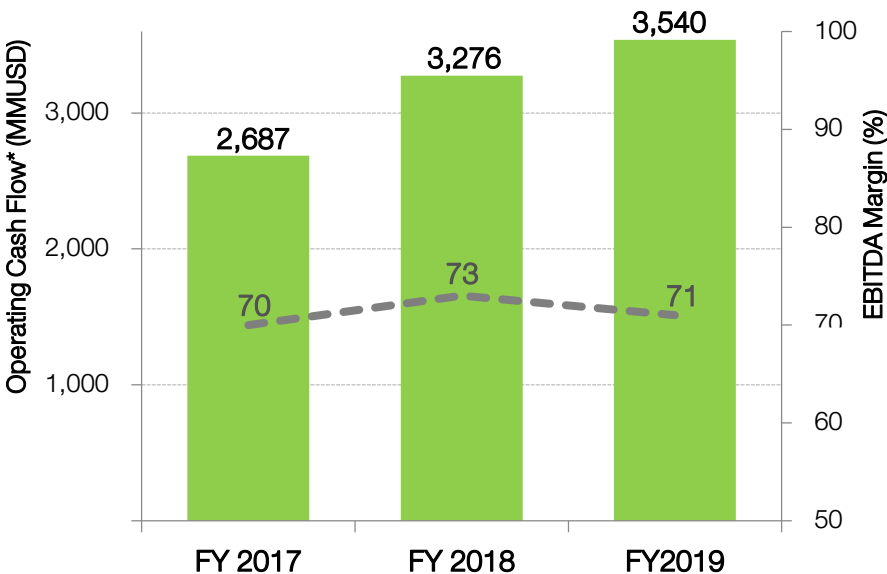
The formulas for calculating ratios are provided in the supplementary section for your reference

Cash Flow Performance

Robust operating cash flow

Cash Flow Performance

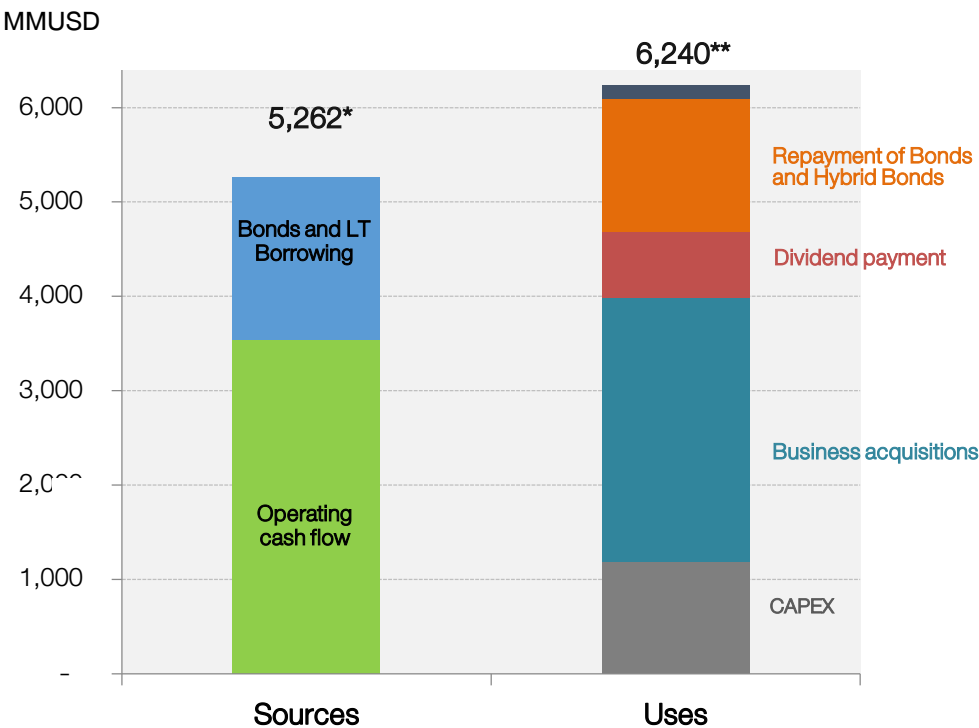
Operating Cashflows (LHS) EBITDA Margin (RHS)



Net Income	594	1,120	1,569
Recurring Net Income***	836	1,215	1,445

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.

Source & Use of Funds in 2019



Financial Performance : Income Statement

Sustained solid EBITDA

	2019	2018	Q3 19	Q4 19	Q4 18
Sales and Revenue from Pipeline Transportation (MMUSD)	6,163	5,310	1,524	1,780	1,440
EBITDA (MMUSD)	4,354	3,860	1,054	1,188	1,024
Net Income (MMUSD)	1,569	1,120	358	384	269
Recurring Net Income (MMUSD)	1,445	1,215	303	379	283
Earning Per Share (USD)	0.38	0.27	0.09	0.09	0.07
Key Financial Ratios					
EBITDA Margin (%)	71	73	69	67	71
Return on Equity (%) (LTM)	13	10	12	13	10
Return on Capital Employed (%) (LTM)	11	9	11	11	9
Return on Equity (%) (LTM, Recurring Net Income)	12	10	11	12	10
Return on Capital Employed (%) (LTM, Recurring Net Income)	11	9	10	11	9

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

Financial Performance : Balance Sheet

Healthy balance sheet at competitive leverage level

	2019	2018
Total Assets (MMUSD)	22,202	19,484
- Cash & cash equivalents * (MMUSD)	3,023	4,001
Total Liabilities (MMUSD)	10,361	7,479
- Interest bearing debt (MMUSD)	3,442	1,946
Equity (MMUSD)	11,841	12,005
Key Financial Ratios		
Total Debt to Equity (X)	0.29	0.16
Net Debt** to Equity (X)	0.04	(0.17)
Total Debt to Capitalization (X)	0.23	0.14
Total Debt to EBITDA (X)	0.62	0.63
EBITDA Interest Coverage (X)	39	32

Credit Ratings :

BBB+ (S&P), Baa1 (Moody's), AAA (TRIS), BBB+ (FITCH)

Weighted Average Cost of Debt ** :

4.41%

Average Loan Life ** :

13.84 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

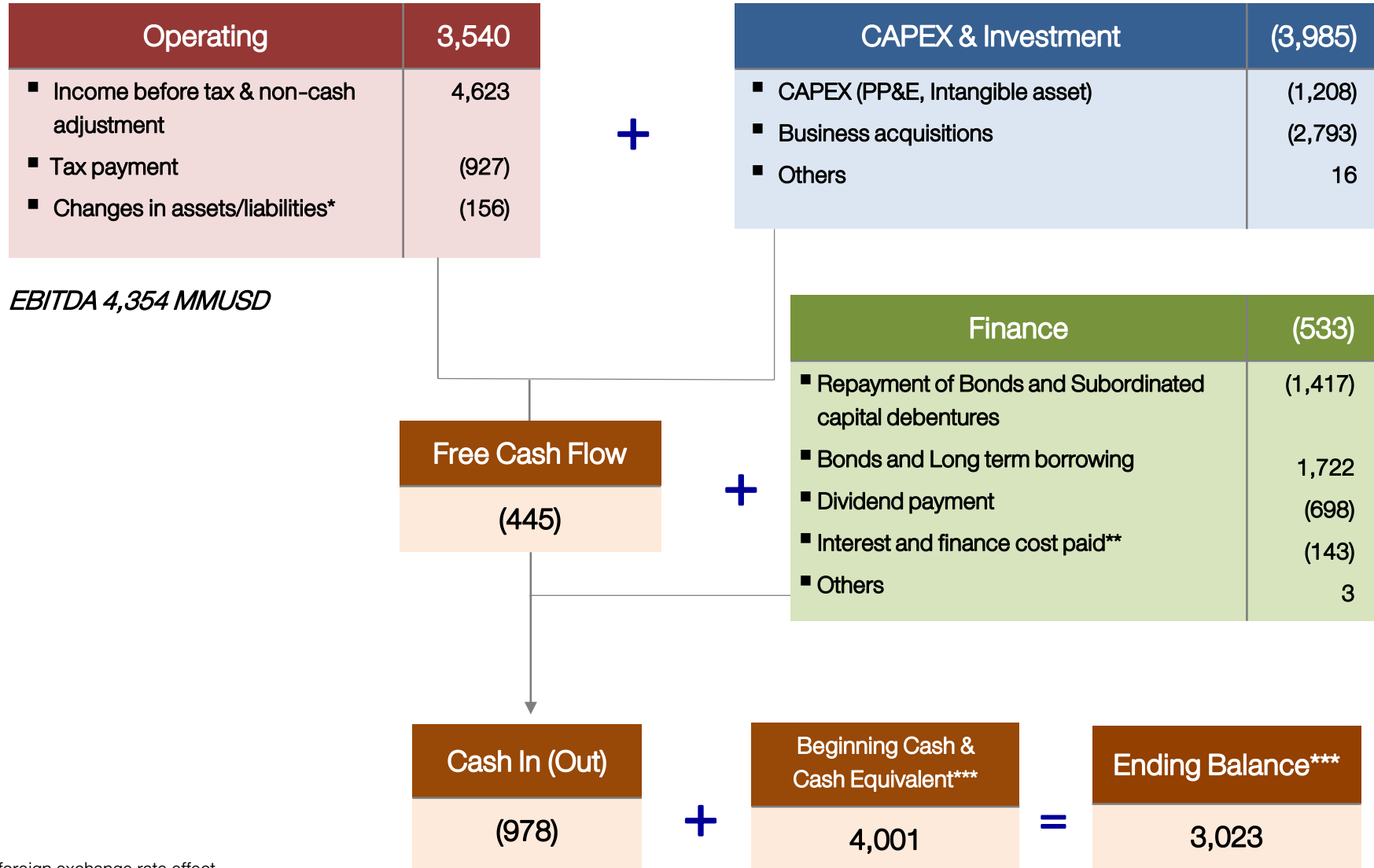
** Excludes hybrid bonds

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

Cash Flows : January – December 2019

Healthy operating cash flow

Unit : MMUSD



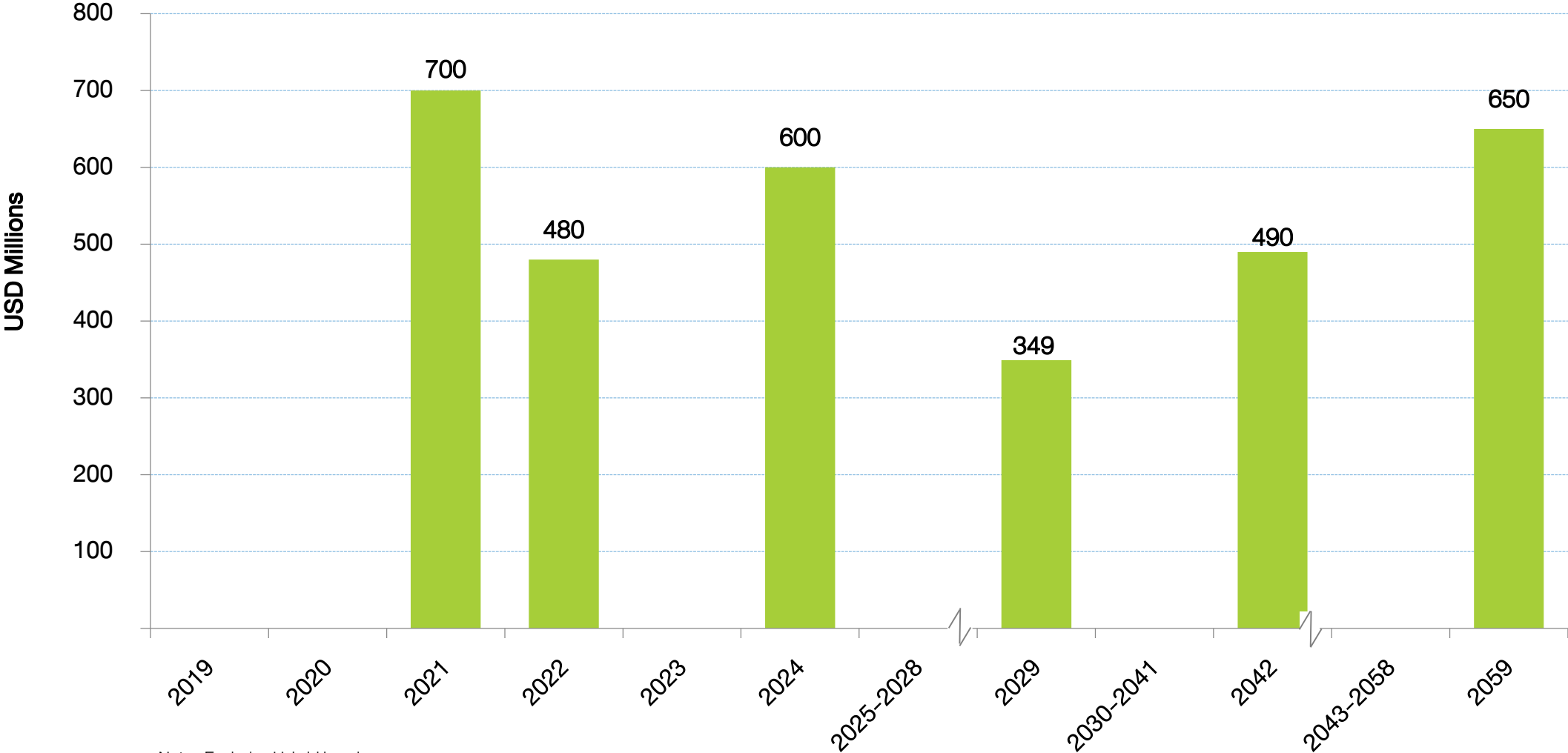
Note: * Net of foreign exchange rate effect

** Net of interest received

*** Include Short-term Investment (Fixed deposit > 3 months)

Debt Maturity Profile

As of December 2019

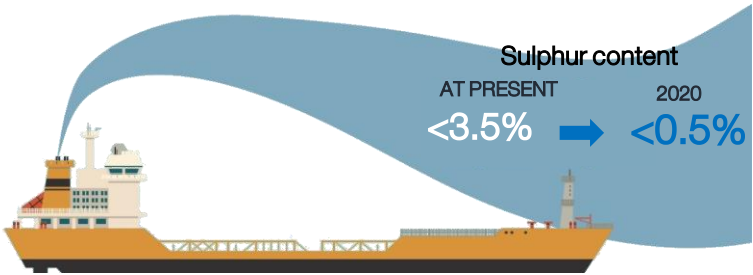


Note: Excludes Hybrid bonds

Unit: USD Millions or equivalent after cross currency swap

IMO 2020 Regulations

From January 1st, 2020, New Sulphur regulations will limit Sulphur emission in all marine fuels



Impact on HSFO Prices



Demand

(HSFO : High Sulphur Fuel oil)



Lower Price



Industry Rebalancing, expected within 1-2 years



Ships Installing Scrubbers leading to the continued use of HSFO



Less HSFO supply from the Upgraders in Refinery Industry



Less heavy oil supply from Iran Sanction

Demand

HSFO Prices expected to rebound:

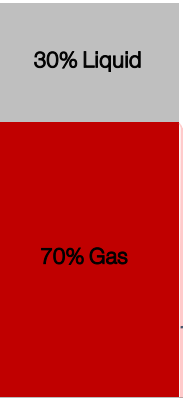
Supply

Scrubbers: Marine exhaust gas cleaning systems; it cleans the exhaust from particulates before the exhaust is emitted to the air.

Source: FGE, Wood MacKenzie

Impact and Mitigations

Product Mix



Sensitivity to gas price :

HSFO/ Dubai spread	Gas price in 2020
+/- Every 10\$/BBL (from normal average spread @-6\$/BBL)	+/- 0.2\$/MMBTU Or 3% of current gas price

1/3 linked to HSFO Price

23%

Time lagging Effect

8%

Exposure Volume
4%*

Hedging on spread ~ 50%

Gas Price Formula
Economic Indices + Exchange Rate + HSFO Price

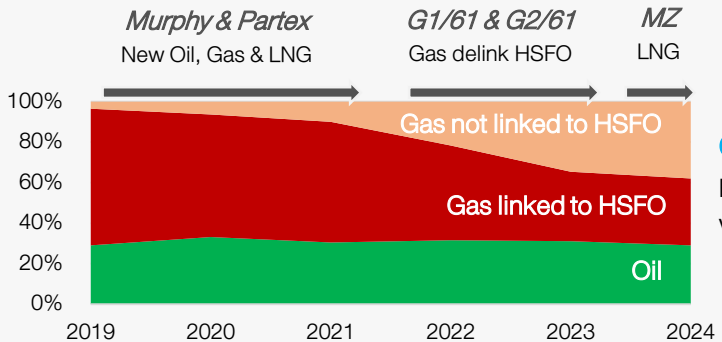
Different timing in gas price reset
(Effect in Year 1 = 35%)

Net of tax and Royalty

Note: *Exposure Volume in 2020 Only

Long term effect :

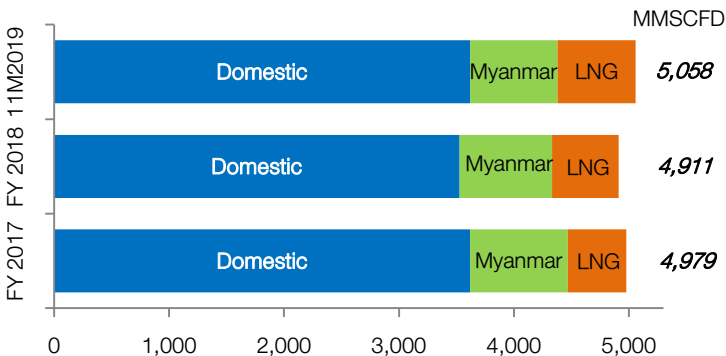
PTTEP's Gas/Liquid Sales Proportion Forecast



Gas Sales Delink from HSFO
From 70% to 30% of Total Sales Volume in 2024

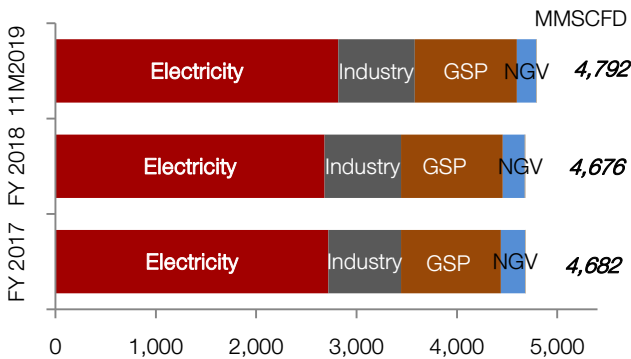
Thailand Energy Overview

Natural Gas Supply



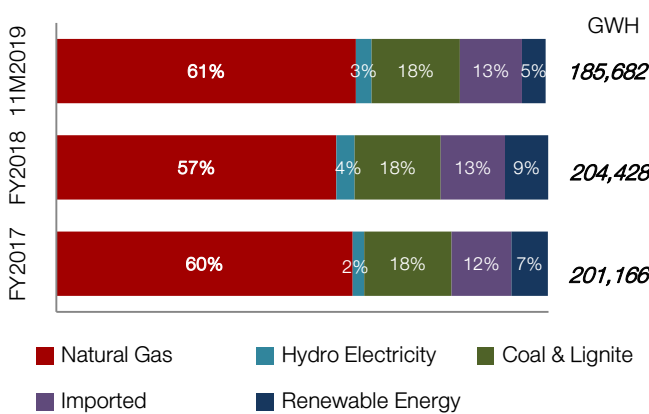
Slight decline from Myanmar piped gas imports due to natural decline and significant growth in LNG import

Natural Gas Consumption

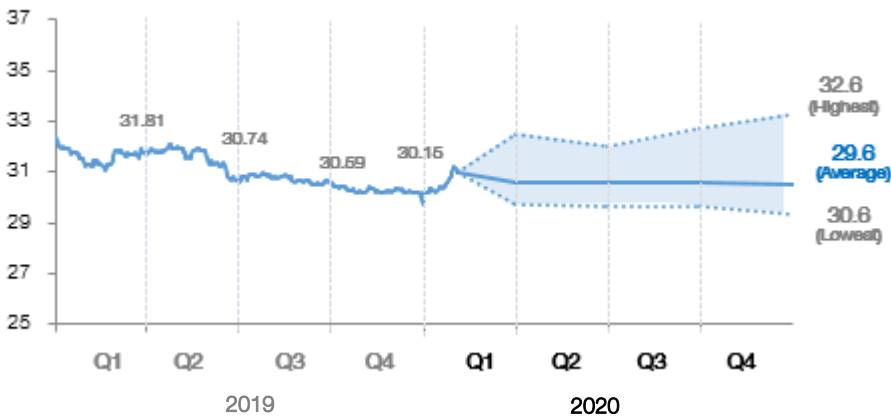


Source: EPPO

Electricity Generation



Exchange Rate Movement (THB/USD)



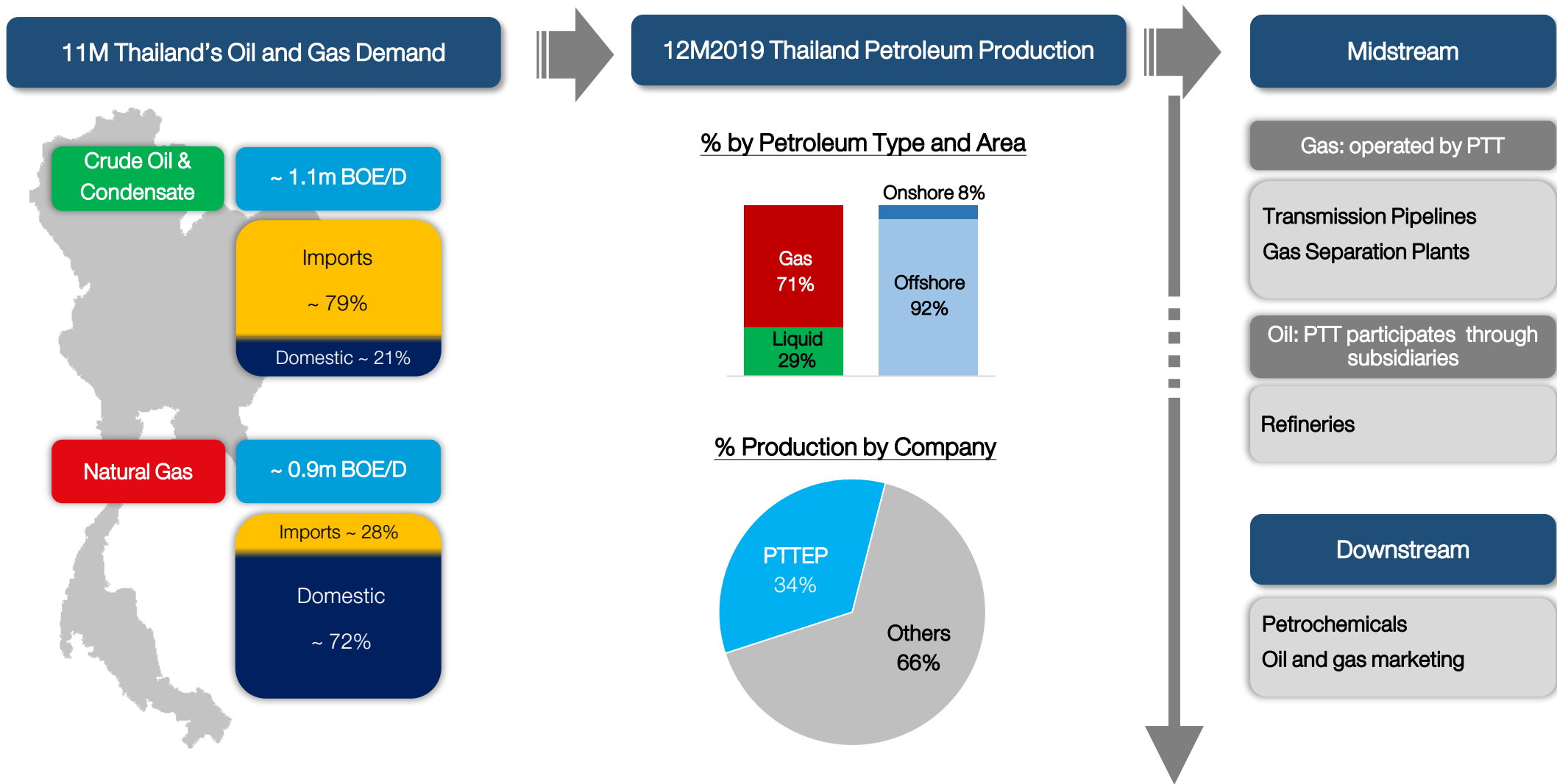
Consensus on the exchange rate mostly depends on

- BOT's direction on monetary policy
- Slow recovery in public spending and private investment
- US Federal Reserve monetary policy and election result
- Geopolitical tension; between US and the Middle East
- Trade war between the US and China

Source: Bank of Thailand, Bloomberg
Forecast based on Bloomberg Consensus as of 3 February 2020

Thailand's Energy Value Chain

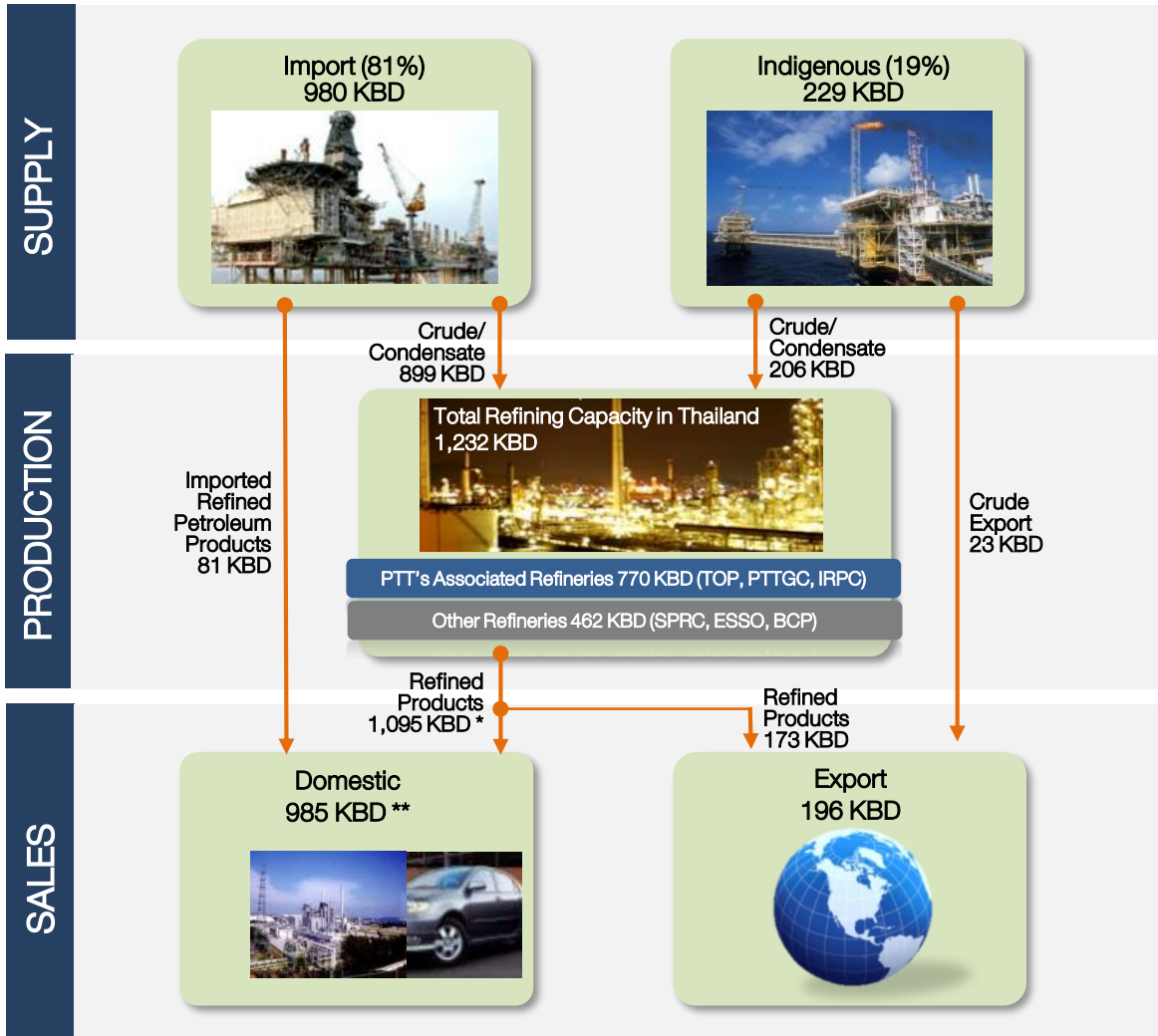
PTTEP contributes almost 1/3 of Thailand's petroleum production



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

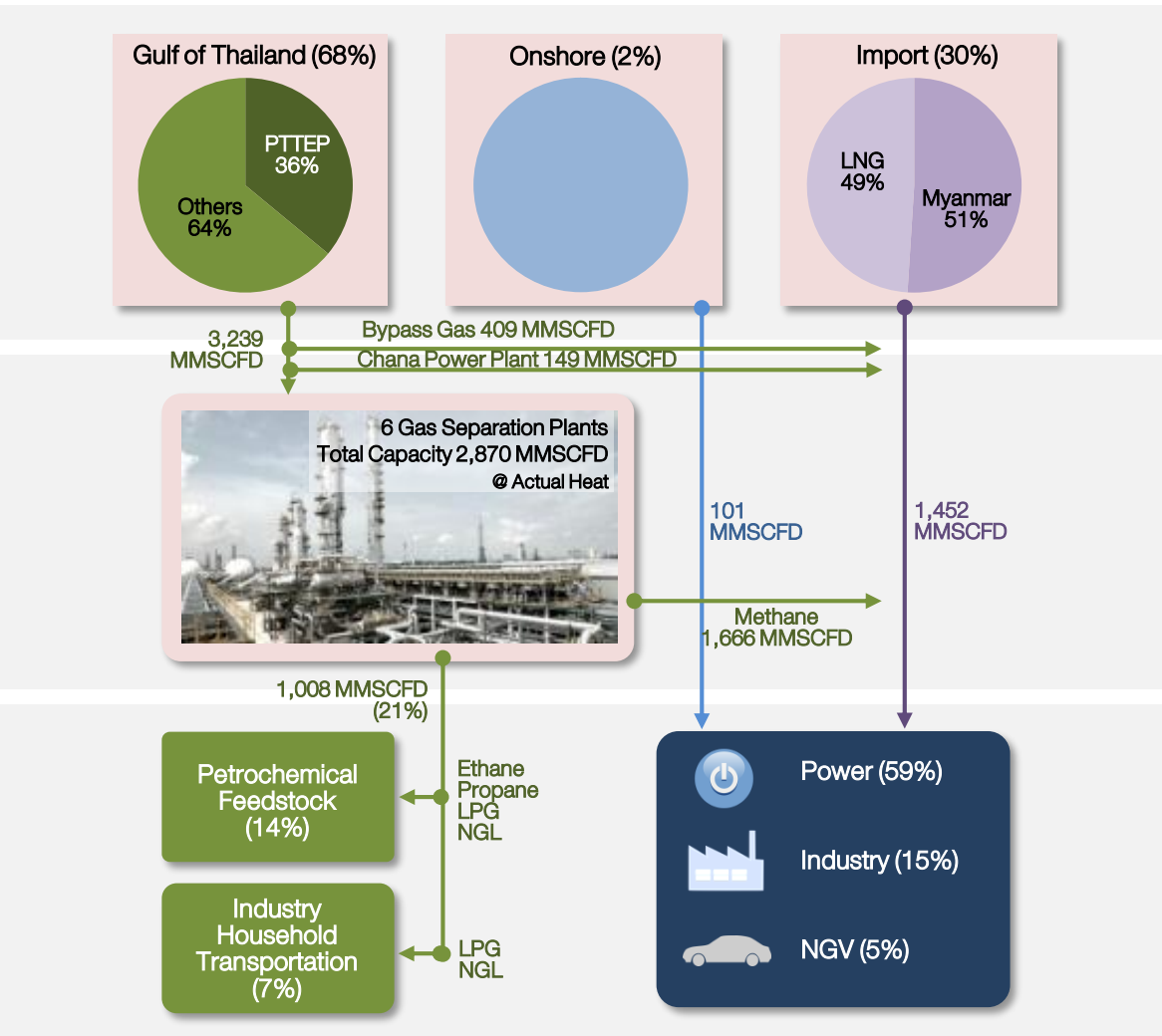
Oil Balance***

Maintains stability supply through adequate refining capacity



Natural Gas Balance****

Main driver of the Thailand economy



Source: PTT
Remark: * Refined product from refineries = 1,102 KBD, including domestic supply of LPG from GSPs and Petrochemical Plants = 106 KBD
** Not included Inventory
*** Information as of 9M19
**** Information as of 12M19
MMSCFD @ Heating Value 1,000 Btu/ft³

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

2019 DJSI Listed Company

PTTEP has been selected as a member of the 2019 Dow Jones Sustainability Indices (DJSI) for the 6th consecutive year and the 2nd time as industry leader in the DJSI World Oil and Gas Upstream & Integrated Industry



Proven business integrity

Asia's Icon on Corporate Governance 2019 Award
Corporate Governance Asia magazine

SET Sustainability Award 2018 – Outstanding Category
The Stock Exchange of Thailand (SET)

Board of the Year Award 2018 (Silver)
The Thai Institute of Directors Association (IOD)



Exemplary social contributor

Best CSR Organizer 2019
*BAZNAS of Indonesia
(The National Zakat Board)*

Thailand's Best Strategic Corporate Social Responsibility (ranked first)
Alpha Southeast Asia Magazine 2018

Role Model Organization on Human Rights
*Department of Rights and Liberties Protection,
Ministry of Justice*



FTSE4Good FTSE4Good Emerging Index 2019

PTTEP becomes a constituent of the FTSE4Good Emerging Index 2019 for the fourth consecutive year



Green driver to environment

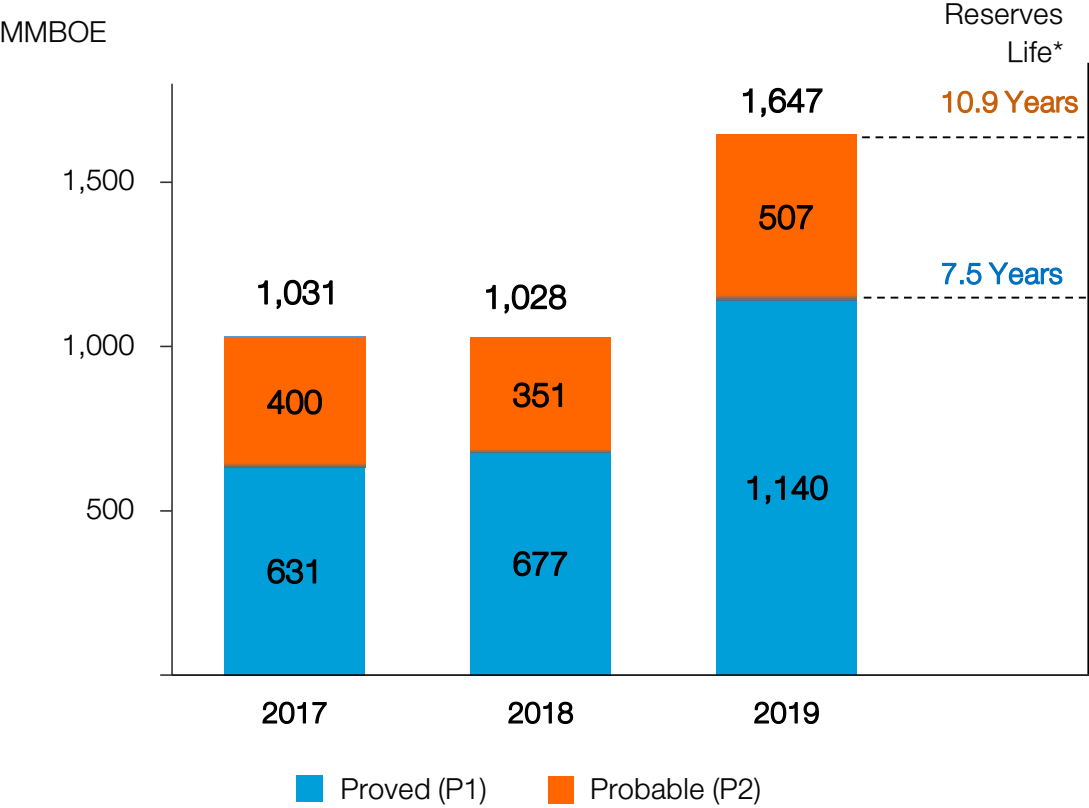
The Excellent Level (G-Gold) of the Green Office Award 2018
The Ministry of Natural Resources and Environment

Green Leadership Category for T.M.S. Underwater Learning Site Project
The Asia Responsible Enterprise Awards 2018

Water A List Award
Carbon Disclosure Project (CDP)

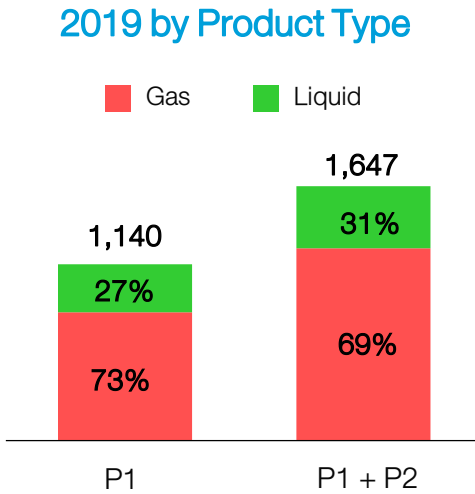
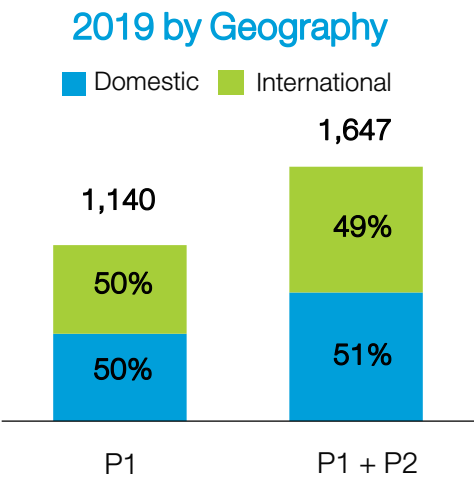
Reserves at the Year-end 2019

Significantly improved reserve life to over 7 years



5-Year Average Proved Reserves Replacement Ratio (RRR)

2017	2018	2019
0.58x	0.74x	1.53X



- Based on total production of natural gas, condensate, and crude oil (including LPG) of 414 KBOED for the year ended December 31, 2019
- Figures include reserves from equity method

Central Asia

First presence in Kazakhstan:

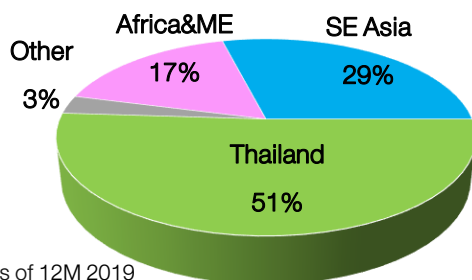
- Production: Dunga onshore oil field from the acquisition of Partex in 2019

North & South America

Opportunities in an early phase:

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

Book Value of Assets (by region)



as of 12M 2019

Total Assets USD 22.2 billion

Africa

An area for growth, key projects include:

- Production: Algeria's Bir Seba oil field with current flow rate of approximately 18 KBPD
- Development : Algeria's Hassi Bir Rakaiz with target 1st phase production in 2021
- Mozambique Area 1 with target first cargo in 2024

Middle East

Presence in UAE and Oman:

- 2 offshore exploration blocks partnered with experienced operator, ENI in Jan 2019
- 2 onshore producing blocks including PDO (Block 6), the largest producing oil asset in Oman

Thailand

PTTEP's core production base

- 78% of total sales volume
- Key producing assets include Bongkot, Arthit, Contract 4 and S1
- Bongkot (G2/61) and Erawan (G1/61) are in transition process to ensure production continuity

Southeast Asia

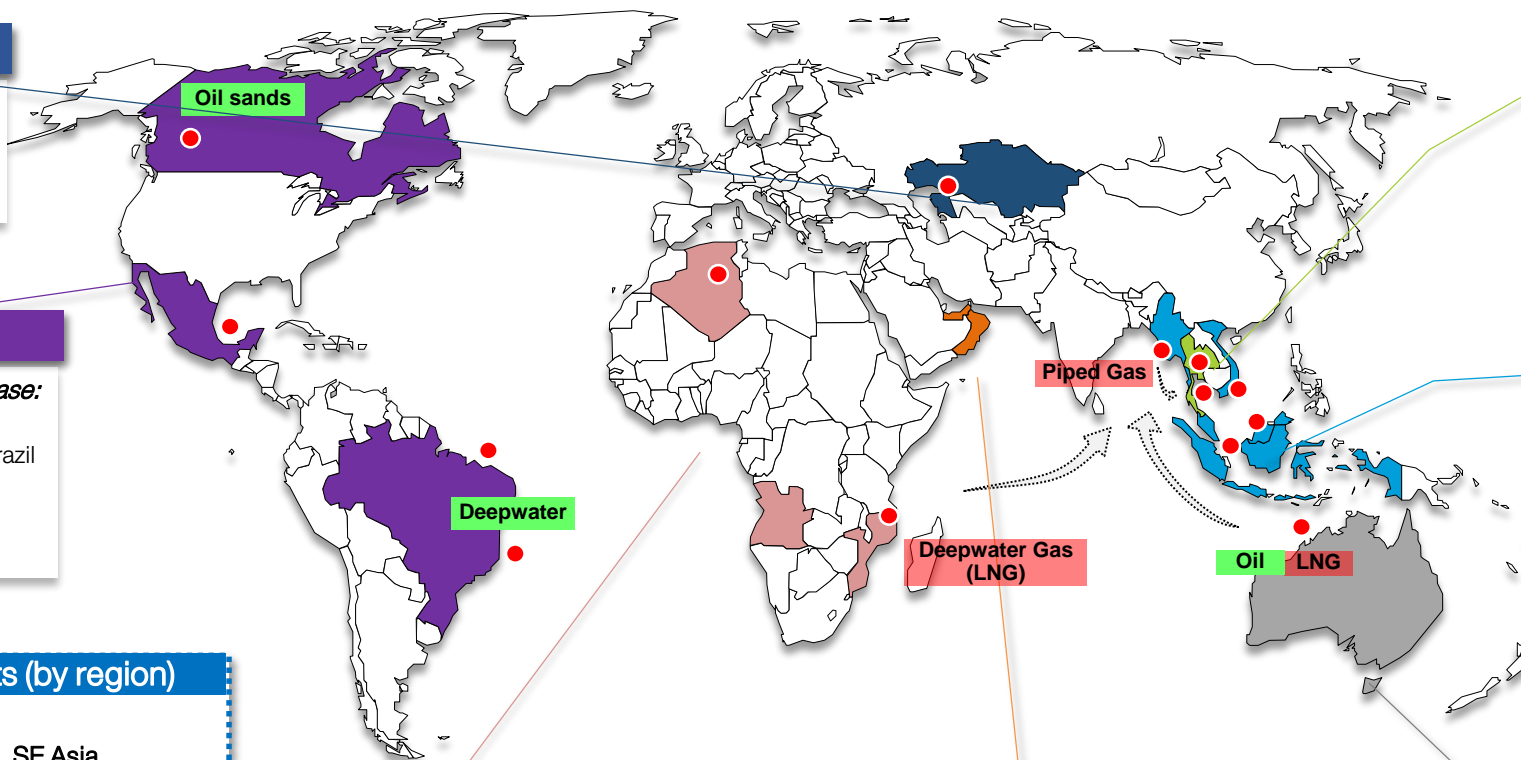
Second heartland to PTTEP

- 20% of total sales volume mainly from Malaysia and Myanmar
- 3rd Largest by resources size in Malaysia with significant gas discovery in Sarawak SK 410B Project
- Gas production in Myanmar mostly supplied into Thailand
- Other producing assets in Vietnam (oil) and Indonesia (gas)

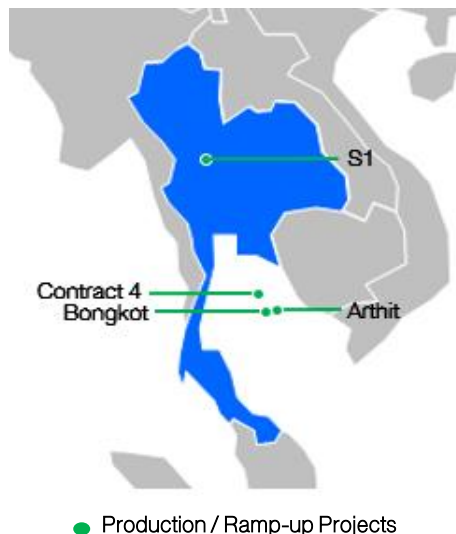
Australasia

Potential gas development

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



Thailand



Bongkot (66.6667% WI)

- Average natural gas and condensate sales volume of 810 MMSCFD and 23 KBPD in 12M2019

S1 (100% WI)

- The largest onshore crude oil production field in Thailand with 12M2019 average crude oil sales volume of 31 KBPD

Arthit (80% WI)

- Average sales volume in 12M2019 was 226 MMSCFD of natural gas and 11 KBPD of condensates

Contract 4 (60% WI)

- Average sales rate of 409 MMSCFD for natural gas and 18 KBPD for condensate in 12M2019

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 297 MMSCFD in 12M2019

Project Status

Production

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

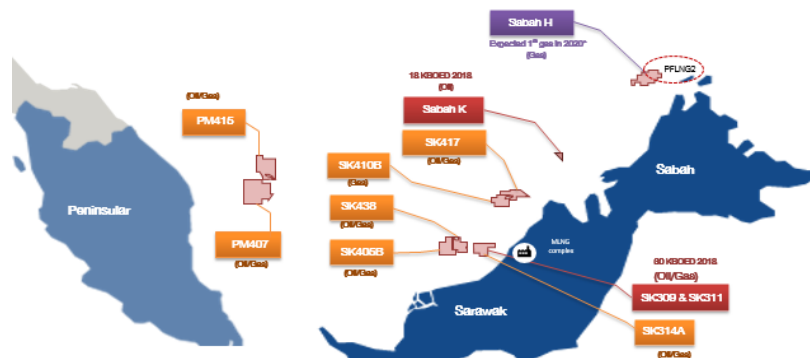
Appraisal

- M3 (80% WI)

Exploration

- MOGE 3 (77.5% WI)
- M11 (100% WI)
- MD-7 (50% WI)

Malaysia



Production

Block K Project* :

Kikeh (56% WI), Siakap North-Petai (SNP) (22.4% WI) and Gumusut-Kakap (GK) (6.4% WI)

- Average production volume in 12M2019 was 27** KBPD of crude oil

SK309 and SK311 Project* (59.5% WI)

For East Patricia field (42% WI)

- Average production volume in 12M2019 was 270** MMSCFD of natural gas and 26** KBPD of condensates and crude.

Development

Block H Project* :

Rotan field (56% WI) Remaining Area (42% WI)

- First gas expected in Q3/2020
- Full capacity at 270 MMSCFD

Exploration

Sarawak SK410B Project (42.5% WI)

- Multi TCF significant discovery
- Preparing additional drilling of an appraisal well in 2020

Other projects

- Evaluating petroleum potentials
- Plan for exploration and appraisal drilling in 2020-2021

*This asset is a part of the acquisition of Murphy's business in Malaysia which was completed in July 2019

** The average production volumes per day are calculated from the completion date of acquisition transaction

Note: WI – working interest

Summary of Terms from Bidding Result of Bongkot and Erawan and PSC Model

Price Formula

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

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

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:

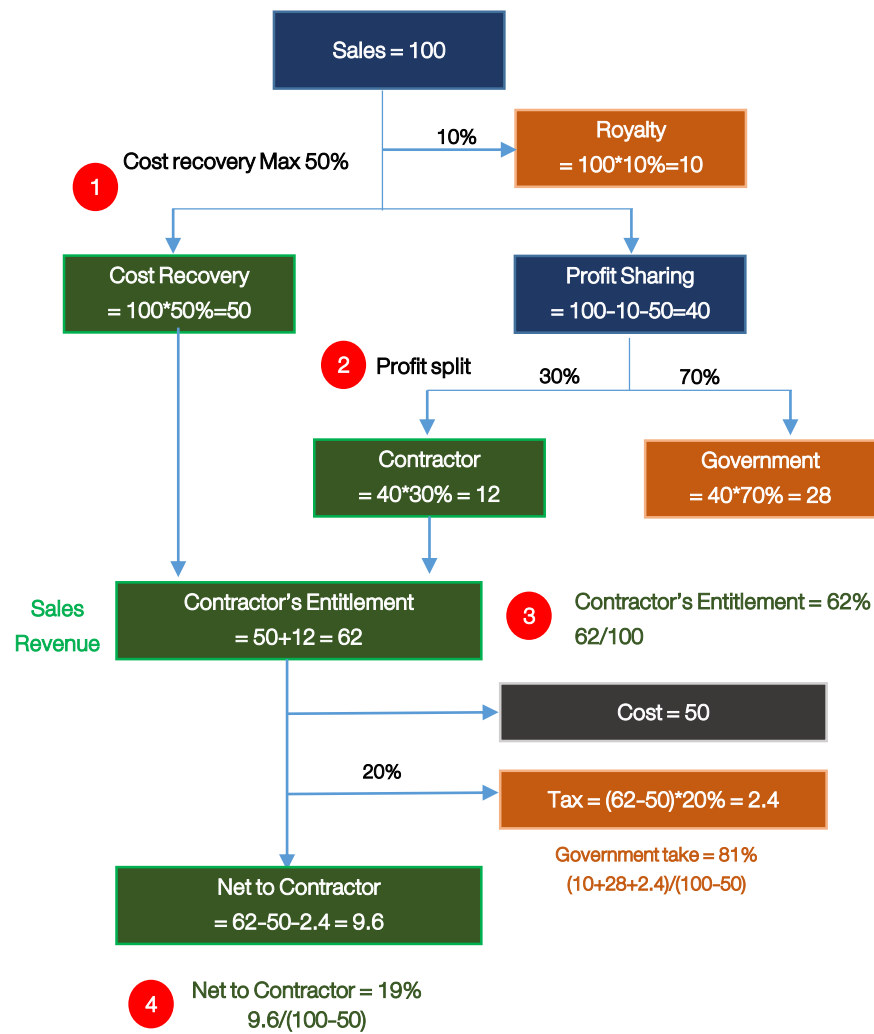
* No later than 10 working days prior to the PSC signing date

** 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

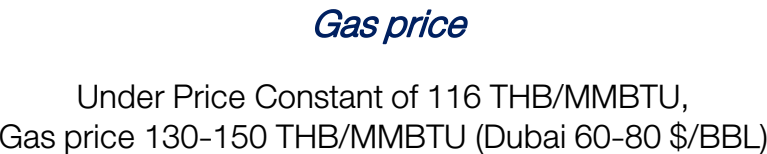


*Assumption bases on field life, cost can be fully recovered

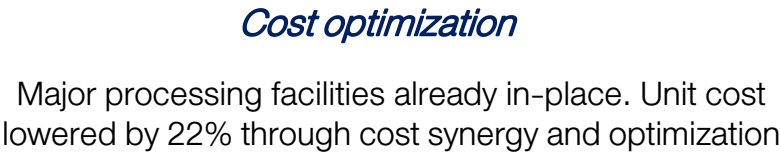
Bongkot and Erawan: Thailand Champion in Domestic Gas Supply

Achievable cost optimization to sustain target return

With new gas price, we can achieve target IRR



Unit: THB/MMBTU



Enablers of cost synergy and optimization through economy of scale and technology improvement



Wellhead Platform

- Lean design standardization
- Volume bundling & contracting strategy
- Platform topside and facility reuse



Drilling & Well

- Implement factory drilling
- Utilize drilling rig with GoT-fitted specifications
- Optimize drilling rig & service contracts across GoT



Logistics

- Synergy and optimize marine and aviation fleets across GoT
- Procurement strategy

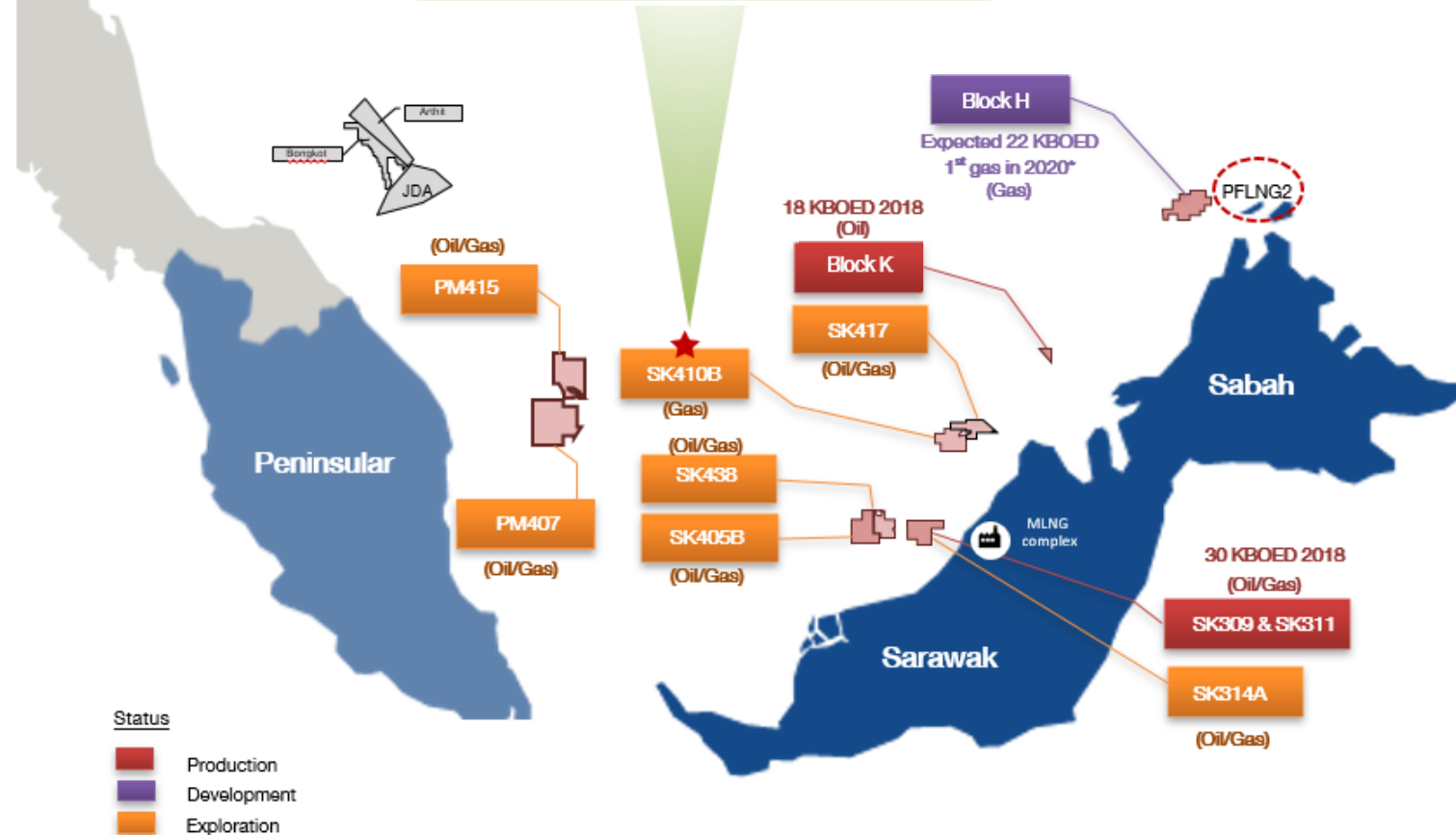


Decommissioning

- Innovative solutions / technologies
- Economy of Scales

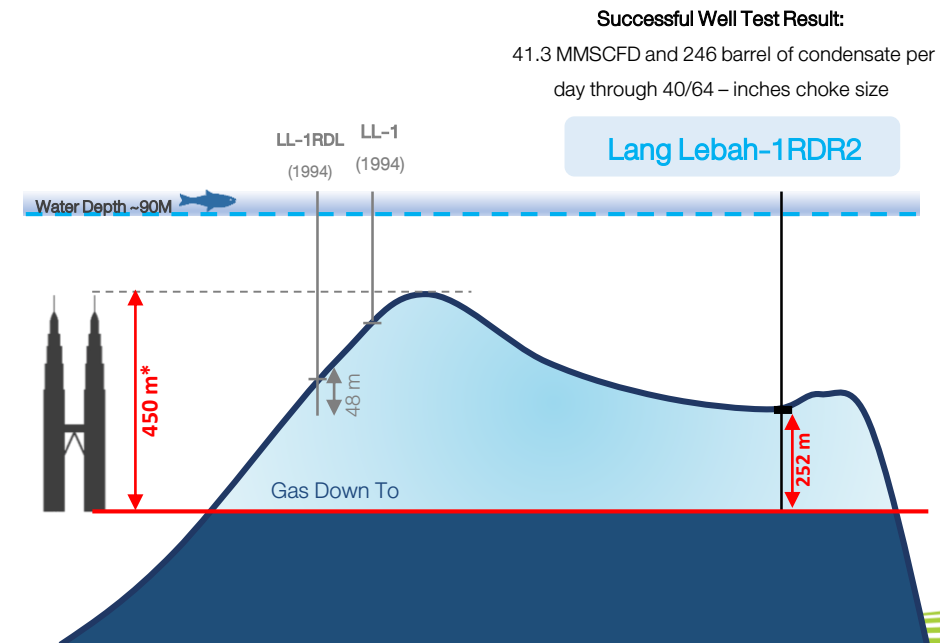
Exploration Success in SK410B

- Significant resources discovery in June 2019, estimated 2-4 TCF
- Plan to drill additional appraisal well in 2020



* Volume stated represents net sale volume

- With completion of Murphy's acquisition, PTTEP has become the 3rd Largest player by resources size in Malaysia
- Diversified portfolio, with expected contribution around 50 KBOED of sales volume in 2020
- Transition plans are in place to ensure operation synergy and best practice sharing



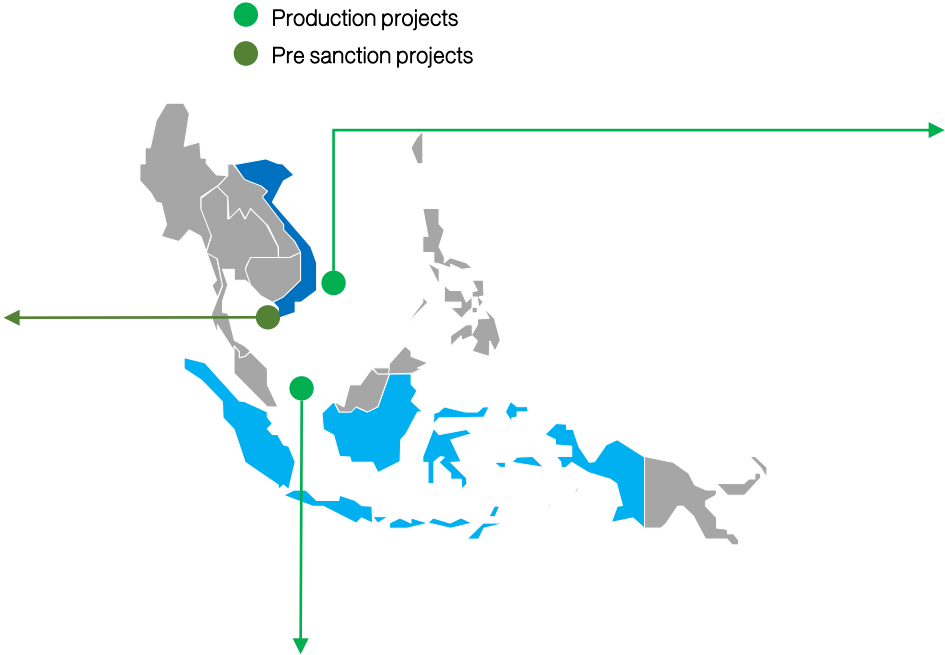
Vietnam and Indonesia



Southwest Vietnam

- Vietnam B & 48/95 (8.5% WI)
- Vietnam 52/97 (7% WI)

- Field Development Plan was approved by Government
- The project is currently in the negotiation process on commercial terms to put forward FID
- First production target by end of 2023, and ramp up to full capacity of 490 MMSCFD



Vietnam 16-1 (28.5% WI)

- Average sales volume of crude oil was 16 KBPD in 12M2019
- The project is currently drilling an additional production well to maintain production plateau.

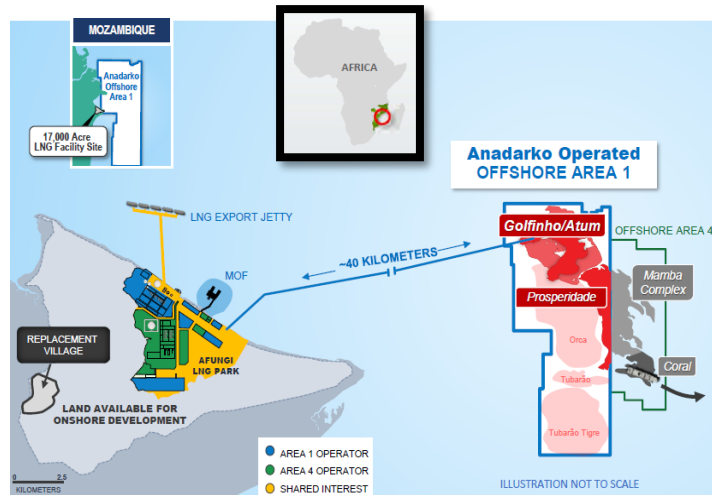


Natuna Sea A (11.5% WI)

- Average sales volume of natural gas was 195 MMSCFD in 12M2019

Mozambique Area 1

FID, on the path of unlocking value from world class LNG asset



*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

Achievements

- ✓ Legal & Contractual Framework
- ✓ Plan of Development Approved
- ✓ Onshore & Offshore Contractors Awarded
- ✓ First Mover for the Marine Facility
- ✓ LNG SPAs ~11.1 MTPA

**FID in June 2019
with initial 2 trains of
12.88 MTPA capacity**

Way Forward

- ✓ Project Finance
(2/3 Project Financed)
- ✓ Drilling & Completion
- ✓ Onshore Construction and Offshore Installation
- ✓ Operation Readiness
- ✓ LNG Shipping

**1st Cargo
expected
2024**

Acquisition of Partex

Partnering with experienced operators in the Middle East

- PTTEP acquired 100% shares in Partex, which completed on 4 November 2019
- The major assets are in Oman and UAE which include PDO (Block 6), the largest oil asset in Oman

“Gateway to Future Regional Investment”



Prolific Area



Strong Partnerships

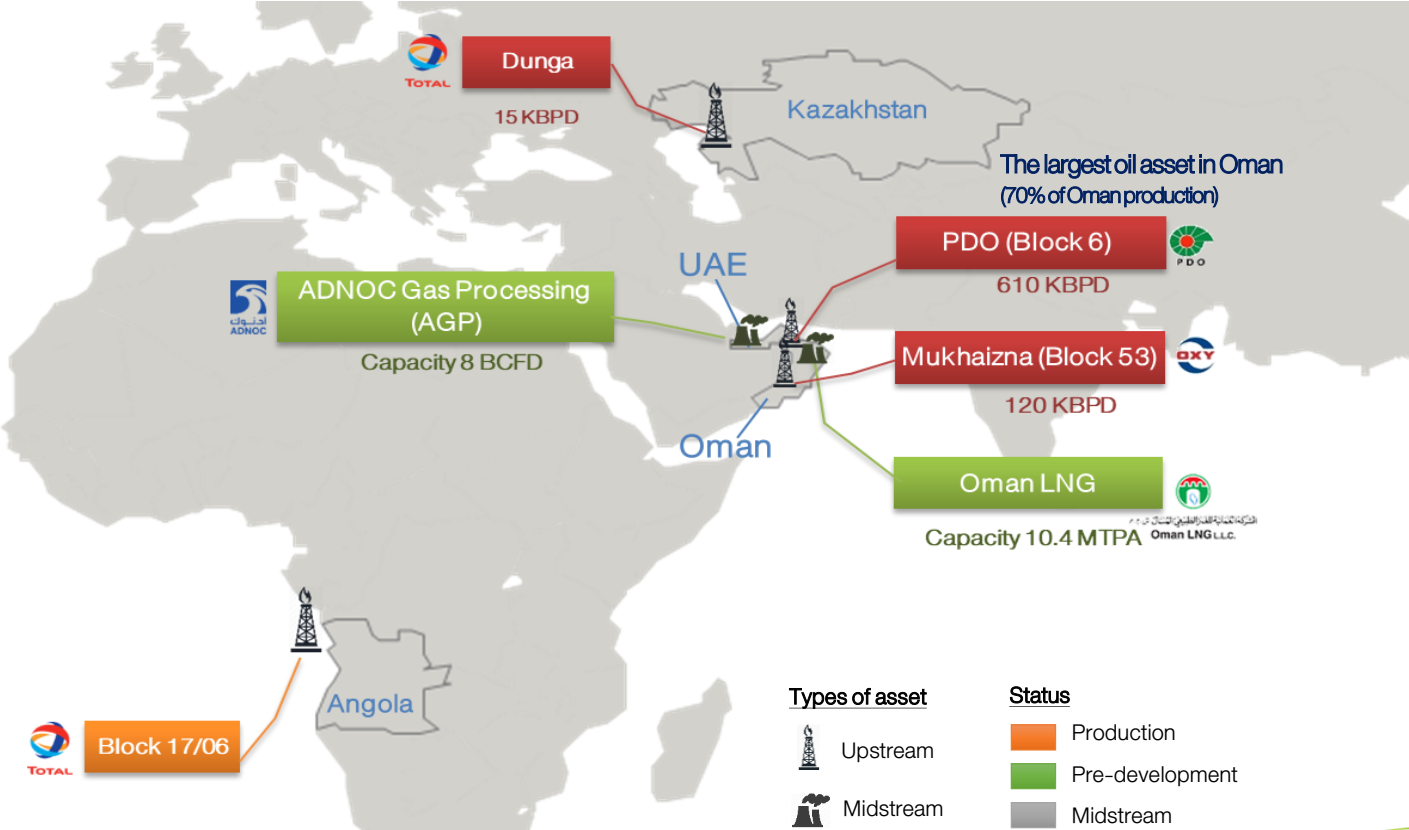


World-Class Assets








Self funded with existing production

- Sales volume +16,000 barrels/day
- 2P Add +65 million barrels

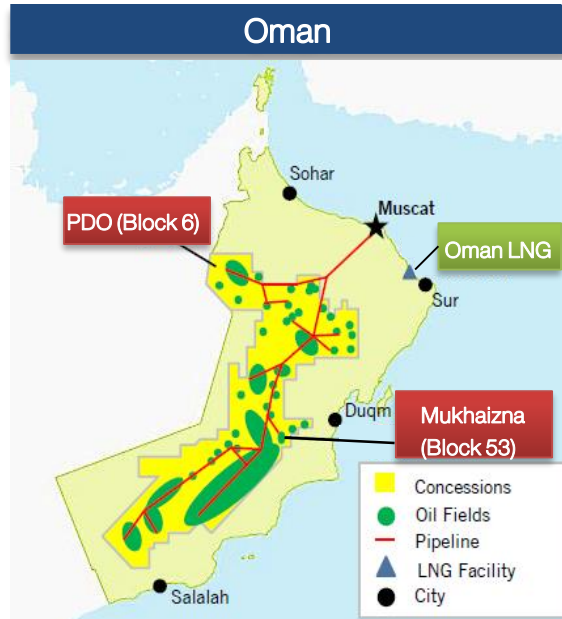


Note: Volumes stated represent gross volumes (100%)

Types of asset		Status	
	Upstream		Production
	Midstream		Pre-development
			Midstream

The Middle East : World Class Assets under Partex

Access to the largest oil asset in Oman and mega Midstream Complex



PDO (Block 6)

- Largest asset covering around 1/3 of the country
- Long-life asset, produced only 15% of reserves in-place
- Multi-field oil production: 610,000 BPD (70% of Oman production)
- Experienced and reputable partners



Mukhaizna (Block 53)

- Largest single onshore producing field in Oman
- Oil production: 120,000 BPD (13% of Oman production)
- Strong and experienced operator



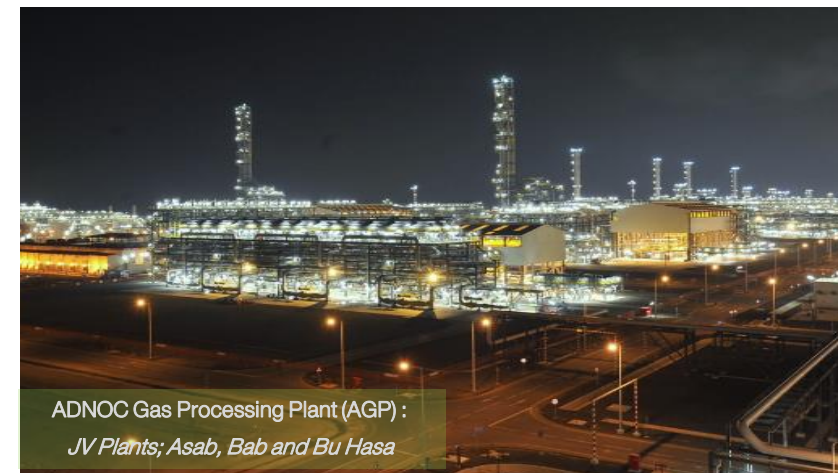
Oman LNG

- The only LNG facility in Oman
- Processing capacity 10.4 MTPA
- Contracted LNG sales to international buyers: Japan and South Korea

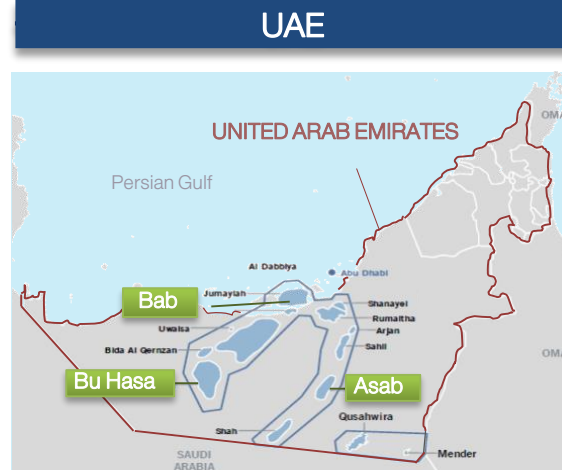


ADNOC Gas Processing (AGP)

- One of the largest gas processing complexes in the world (total capacity of 8 BCFD)
JV: 3 plants with capacity of 1.2 BCFD
Adnoc: 2 plants with capacity of 6.9 BCFD
- Essential to Abu Dhabi and UAE's economy
- Sizeable volumes of Propane, Butane and Naphtha offtake
- Strong and experienced partners

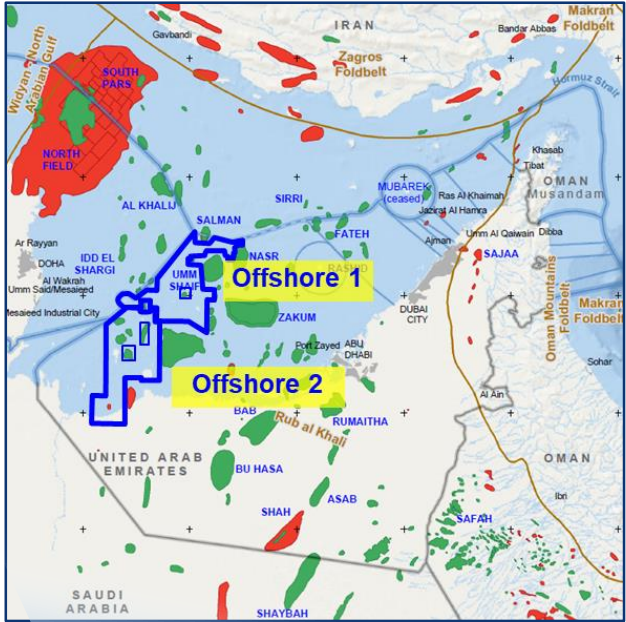


ADNOC Gas Processing Plant (AGP) :
JV Plants; Asab, Bab and Bu Hasa



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

-- Entry into high potential petroleum province at exploration phase --

Canada Oil Sands



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
- The project is currently under the evaluation for appropriate development plan

Deep Water Brazil



Barreirinhas AP1

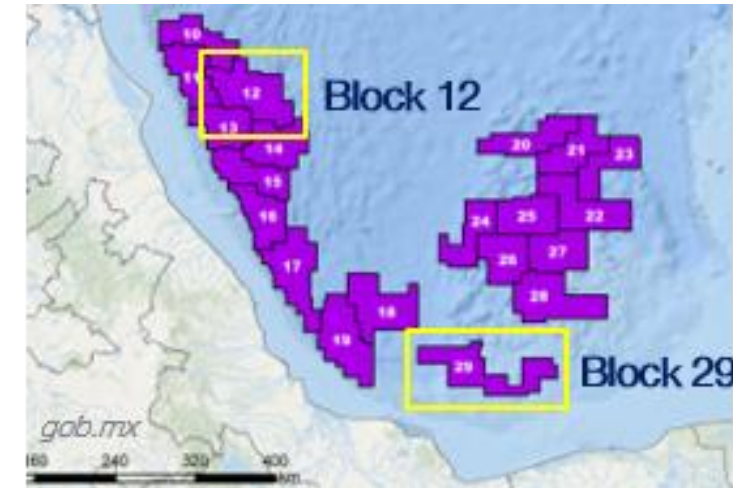
- Farm-in 25% from BG Group in 2014
- Operated by Shell Brasil (65% interest)
- Four offshore exploration blocks: BAR-M-215, BAR-M-217, BAR-M-252 and BAR-M-254

BM-ES-23

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

In 2019, Both projects are currently evaluating the petroleum potential

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

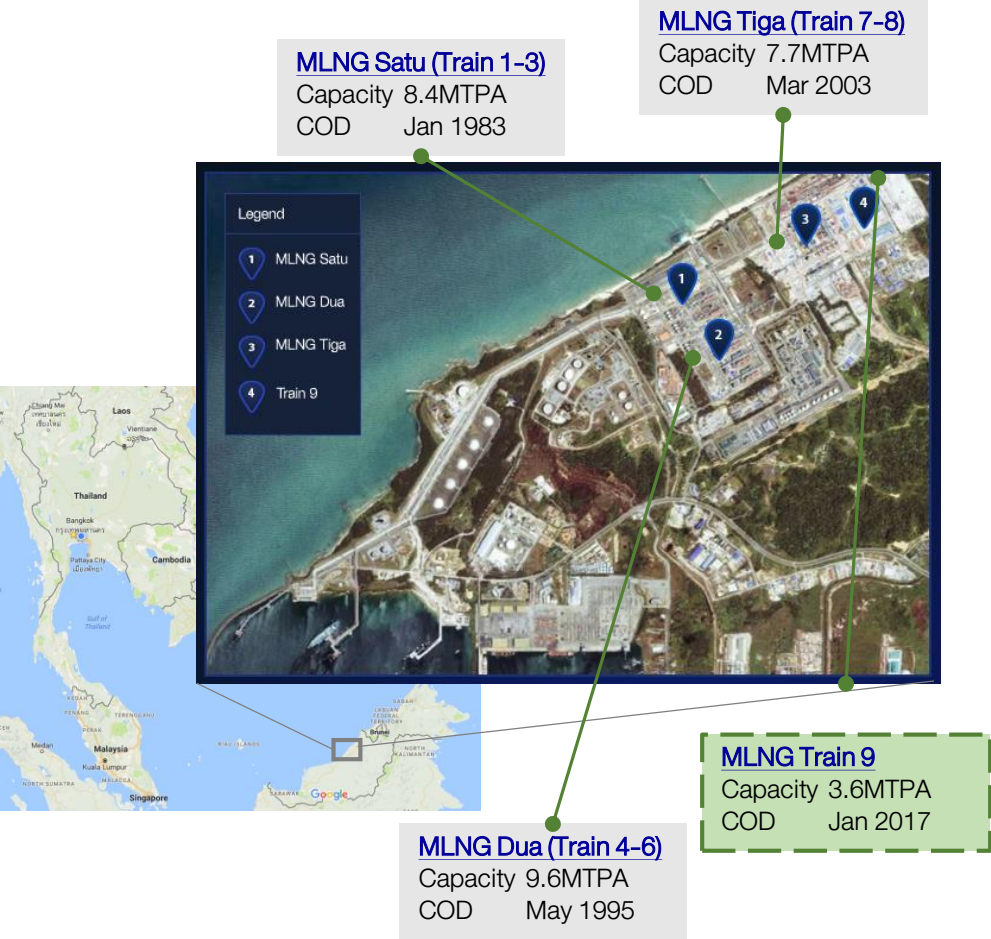
Characteristic: Deep-water with high petroleum potentials and attractive fiscal regime

In 2019, projects received the exploration plan approval from the National Hydrocarbons Commission in Mexico and are currently evaluating the petroleum potential for further process according to the approved plan. Mexico block 29 (2.4) Project is in process of preparation for 2 exploration wells to be drilled in 2020.

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><tr><td>Petronas</td><td>65%</td></tr><tr><td>JX Nippon</td><td>10%</td></tr><tr><td>PTT Global LNG</td><td>10%</td></tr><tr><td>Sarawak State</td><td>10%</td></tr><tr><td>Sabah State</td><td>5%</td></tr></table>	Petronas	65%	JX Nippon	10%	PTT Global LNG	10%	Sarawak State	10%	Sabah State	5%
Petronas	65%										
JX Nippon	10%										
PTT Global LNG	10%										
Sarawak State	10%										
Sabah State	5%										



- ### Investment Rationales
- 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

- ### Key activity in 2020
- Keep maximizing LNG production up to plant capacity
 - Continue to improve plant reliability & utility rejuvenation
 - Get ready for 2021 plant turnaround

New Business Opportunities

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



"Integrated Energy Solution"



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)



AI AND
ROBOTICS
VENTURES

"Cutting Edge Technology for E&P and more"

UAV



Aerial inspection service:

- Flare Tower
- Telecommunication Tower
- Tank inspection

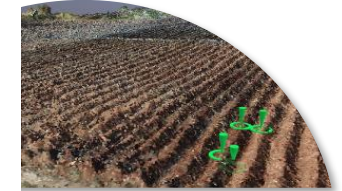
AUV



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.

	Project	Status*	Phase	PTTEP's Share	Partners (as Sep 2019)	12M2019 Average Sales Volume **		2020 Key Activities	
						Gas (MMSCFD)	Liquid (KBPD)		
Thailand and JDA									
1	Arthit	OP	Production	80%	Chevron MOECO	16% 4%	226	11	<ul style="list-style-type: none">• Ensure gas deliverability level at DCQ***• Drill development wells
2	B6/27	OP	Production	100%			-	-	<ul style="list-style-type: none">• Prepare for decommissioning activities
3	B8/32 & 9A	JV	Production	25%	Chevron MOECO KrisEnergy Palang Sophon	51.66% 16.71% 4.63% 2%	69	21	<ul style="list-style-type: none">• Drill development wells• Perform waterflood activities
4	Bongkot	OP	Production	66.6667%	TOTAL	33.3333%	810	23	<ul style="list-style-type: none">• Maintained production level as planned• Prepare for decommissioning activities
5	Contract 3 (Formerly Unocal III)	JV	Production	5%	Chevron MOECO	71.25% 23.75%	629	41	<ul style="list-style-type: none">• Drill development wells• Prepare for decommissioning activities
6	Contract 4 (Formerly Pailin)	JV	Production	60%	Chevron MOECO	35% 5%	409	18	<ul style="list-style-type: none">• Ensure gas deliverability level at DCQ***• Drill development wells
7	E5	JV	Production	20%	ExxonMobil	80%	8	-	<ul style="list-style-type: none">• Ensure gas deliverability level at DCQ***
8	G4/43	JV	Production	21.375%	Chevron MOECO Palang Sophon	51% 21.25% 6.375%	2	3	<ul style="list-style-type: none">• Drill development wells
9	G4/48	JV	Production	5%	Chevron MOECO	71.25% 23.75%	3	0.7	<ul style="list-style-type: none">• Drill development wells
10	L53/43 & L54/43	OP	Production	100%			-	1.7	<ul style="list-style-type: none">• Maintain production plateau• Drill development wells
11	PTTEP1	OP	Production	100%			-	0.228	<ul style="list-style-type: none">• Drill a development well• Maintain production plateau
12	S1	OP	Production	100%			10	Crude: 31 KBPD LPG: 0.2 KMT/D	<ul style="list-style-type: none">• Drill development wells• Enhance oil recovery program includes hydraulic fracturing and artificial lift
13	Sinphuhorm	OP	Production	55%	Apico**** ExxonMobil	35% 10%	84	0.273	<ul style="list-style-type: none">• Ensure gas deliverability• Drill an exploration well and development wells

* Status: OP = PTTEP operatorship / JOC = PTTEP joint operatorship / JV = PTTEP Joint Venture Partner

** Sales volume stated at 100% basis.

*** DCQ = Daily Contractual Quantity

**** PTTEP holds indirectly and directly 80.48% participating interest in Sinphuhorm Project. APICO also holds 100% participating interest in Block L15/43 and Block L27/43.

	Project	Status*	Phase	PTTEP's Share	Partners (as of Sep 2019)	12M2019 Average Sales Volume **		2020 Key Activities
						Gas (MMSCFD)	Liquid (KBPD)	
Thailand and JDA								
14	L22/43	OP	Production	100%		-	-	<ul style="list-style-type: none">Maintain production operation
15	MTJDA	JOC	Production	50%	Petronas-Carigali 50%	334	9.4	<ul style="list-style-type: none">Drill development wellsEnsure gas deliverability level at DCQ***
16	G9/43	OP	Exploration	100%				
17	G1/61 (Erawan)	OP	Exploration	60%	MP G2 (Thailand) Limited 40%			<ul style="list-style-type: none">Awarded as an operator for Erawan field (Contract 1, 2 and 3) under PSC (after concession-end in 2022)E&A study (seismic interpretation)Installation new head platform
18	G2/61 (Bongkot)	OP	Exploration	100%				<ul style="list-style-type: none">Awarded as a sole operator under PSC (after concession-end in 2022/2023)Drill appraisal and exploration wellsInstallation new head platform
Others SEA								
1	Malaysia	OP (except Gumusut- Kakap (GK) in Sabah K)	Production/ Exploration/ Development	6.4-80% (varied by permits)		SK309 and SK311 270	SK309 and SK311 26 Block K 27	<ul style="list-style-type: none">Production projects(SK309 and SK311, Block K): Maintain production plateauBlock H: first gas expected in Q3/2020Sarawak SK410B: drill an appraisal wellOther exploration projects: drill exploration wells, G&G study and perform 3D seismic activities
2	Yadana	JV	Production	25.5%	TOTAL 31.24% Chevron 28.26% MOGE 15%	776	-	<ul style="list-style-type: none">Drill exploration and development wellsEnsure gas deliverability level at DCQ***
3	Yetagun	JV	Production	19.3178%	Petronas-Carigali 30.00140% MOGE 20.4541% Nippon Oil 19.3178% PC Myanmar 10.90878% (Hong Kong)	105	2.3	<ul style="list-style-type: none">Maintain production levelDrill exploration and development wells
4	Zawtika (M9 & a part of M11)	OP	Production	80%	Myanma Oil and Gas Enterprise (MOGE) 20%	297	-	<ul style="list-style-type: none">Ensure gas deliverability level at DCQ***Drill exploration and development wellsPerform 3D seismic activities
5	Myanmar M3	OP	Exploration	80%	MOECO 20%			<ul style="list-style-type: none">FEED/ Subsurface/ Surface studiesNegotiate and finalize GSA
6	Myanmar M11	OP	Exploration	100%				<ul style="list-style-type: none">Perform 3D seismic activitiesBlock relinquish
7	Myanmar MD-7	OP	Exploration	50%	TOTAL 50%			<ul style="list-style-type: none">Drill an exploration well3D Reprocessing seismic activitiesG&G studies

* Status: OP = PTTEP operatorship / JOC = PTTEP joint operatorship/ JV = PTTEP Joint Venture Partner

** Sales volume stated at 100% basis except Malaysia (Production volume 100% as of 12M/2019)/ For Block K, gross production is net off unitization

*** DCQ = Daily Contractual Quantity

	Project	Status*	Phase	PTTEP's Share	Partners <i>(as of Sep 2019)</i>		12M2019 Average Sales Volume		2020 Key Activities
							Gas (MMSCFD)	Liquid (KBPD)	
Others SEA									
8	Myanmar MOGE 3	OP	Exploration	77.5%	Palang Sophon MOECO WinPreciousResources	10% 10% 2.5%			<ul style="list-style-type: none">G&G studiesComplete site reinstatement
9	Vietnam 9-2	JOC	Production	25%	PetroVietnam SOCO	50% 25%	14	4.4	<ul style="list-style-type: none">Maintain production levelPerform well intervention programDevelopment drilling study support
10	Vietnam 16-1	JOC	Production	28.5%	PetroVietnam SOCO OPECO	41% 28.5% 2%	7	16	<ul style="list-style-type: none">Maintain production levelDrill development wells
11	Vietnam B & 48/95	JV	Exploration	8.5%	PVN MOECO	65.88% 25.62%			<ul style="list-style-type: none">FEED studyNegotiation process on commercial terms in order to push forward the Final Investment Decision (FID)the first production target at the end of 2023
12	Vietnam 52/97	JV	Exploration	7%	PVN MOECO	73.4% 19.6%			<ul style="list-style-type: none">FEED studyNegotiation process on commercial terms in order to push forward the Final Investment Decision (FID)the first production target at the end of 2023
13	Natuna Sea A	JV	Production	11.5%	Premier Oil KUFPEC Petronas Pertamina	28.67% 33.33% 15% 11.5%	195	1.3	<ul style="list-style-type: none">FEED study: Start Anoa & Gajah Baru compressor project
Middle East									
1	Abu Dhabi Offshore 1	JV	Exploration	30%	Eni Abu Dhabi	70%			<ul style="list-style-type: none">Reprocess SeismicG&G studies
2	Abu Dhabi Offshore 2	JV	Exploration	30%	Eni Abu Dhabi	70%			<ul style="list-style-type: none">Drill an exploration wellPerform 3D seismic activities
3	PDO (Block 6)	JOC	Production	2%	Government of Oman Shell Total	60% 34% 4%		618**	<ul style="list-style-type: none">A part of Partex acquisition which was completed on 4 November 2019Maintain production plateau
4	Mukhaizna	JOC	Production	1%	Occidental OOCEP Indian Oil Mubadala	47% 20% 17% 15%		109**	<ul style="list-style-type: none">A part of Partex acquisition which was completed on 4 November 2019Maintain production plateau

* Status: OP = PTTEP operatorship / JOC = PTTEP joint operatorship / JV = PTTEP Joint Venture Partner
 ** The average sales volumes per day are calculated from the completion date of acquisition transaction

	Project	Status*	Phase	PTTEP's Share	Partners (as of Sep 2019)	12M2019 Average Sales Volume **		2020 Key Activities	
						Gas (MMSCFD)	Liquid (KBPD)		
Other International									
1	PTTEP Australasia (PTTEP AA)	OP	Exploration	90%-100% (varied by permits)				<ul style="list-style-type: none">AC/RL7 (Cash Maple): under the evaluation of appropriated development plan and seeking partner to manage the project's riskOther exploration projects: G&G and P&A studiesAC/L3: total block relinquishment	
2	Mozambique Area 1	JV	Development	8.5%	Total, Mitsui, ENH, ONGC Beas Rovuma, Bharat	26.5%,20% 15%, 10% 10%, 10%		<ul style="list-style-type: none">First Cargo is expected by 2024Finalize project FinanceContinue Onshore and Offshore well constructionComplete Resettlement	
3	Algeria 433a & 416b (Bir Seba)	JOC	Production	35%	PetroVietnam Sonatrach	40% 25%	-	18 (net entitlement)	<ul style="list-style-type: none">Drill production wells
4	Algeria Hassi Bir Rekaiz	OP	Development	24.5%	CNOOC Sonatrach	24.5% 51%			<ul style="list-style-type: none">Drilling development wellsFEED studyContinue Improvement oil study (IOR)
5	Mariana Oil Sands	OP	Exploration	100%					<ul style="list-style-type: none">Assess appropriated development approach
6	Barreirinhas AP1	JV	Exploration	25%	Shell Brasil Mitsui E&P Brasil	65% 10%			<ul style="list-style-type: none">G&G studies
7	Brazil BM-ES-23	JV	Exploration	20%	Petrobras INPEX	65% 15%			<ul style="list-style-type: none">G&G studies
8	Mexico block 12 (2.4)	JV	Exploration	20%	PC Carigali Mexico Ophir Mexico	60% 20%			<ul style="list-style-type: none">EIA and G&G study to access petroleum potential
9	Mexico block 29 (2.4)	JV	Exploration	16.67%	Repsol Mexico PC Carigali Mexico Sierra Nevada	30% 28.33% 25%			<ul style="list-style-type: none">Drilling Exploration wellsG&G study to access petroleum potential

* Status: OP = PTTEP operatorship / JOC = PTTEP joint operatorship/ JV = PTTEP Joint Venture Partner

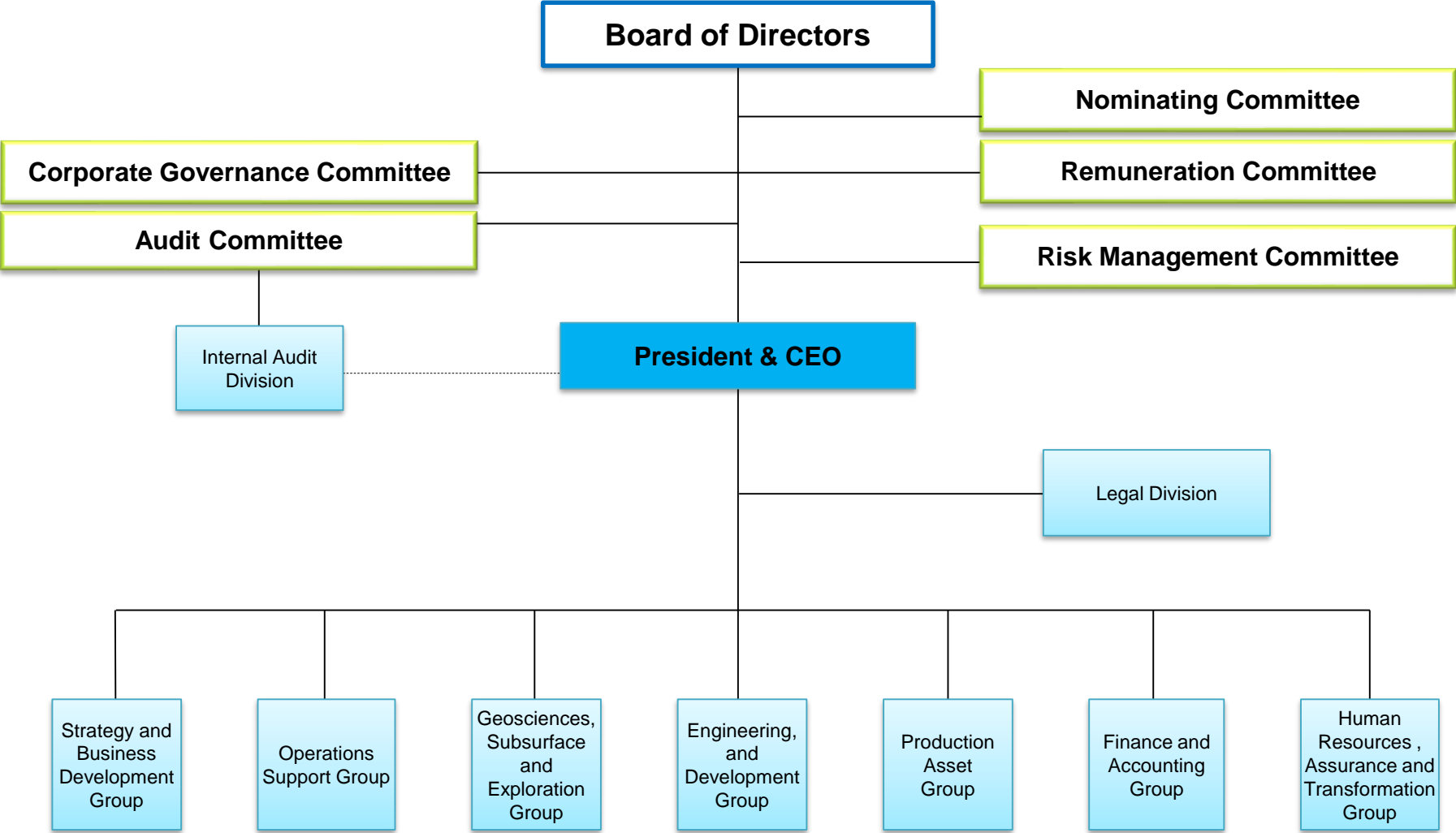
** Sales volume stated at 100% basis except for Algeria 433a & 416b (Net Entitlement)

	Project	Status*	Phase	PTTEP's Share	Partners (as of Sep 2019)		12M2019 Average Sales Volume **		2020 Key Activities
							Gas (MMSCFD)	Liquid (KBPD)	
Other International									
10	Block 17/06	JOC	Pre development	2.5%	Total Sonangol SSI Acrep Falcon Oil	30% 30% 27.5% 5% 5%			<ul style="list-style-type: none">A part of Partex acquisition which was completed on 4 November 2019Maintain production plateau
11	Potiguar	OP	Production	50%	Petrobras	50%		0.2	<ul style="list-style-type: none">A part of Partex acquisition which was completed on 4 November 2019Maintain production plateau
12	Dunga	JOC	Production	20%	Total* OOCEP	60% 20%	2	11	<ul style="list-style-type: none">A part of Partex acquisition which was completed on 4 November 2019Maintain production plateau
Midstream Project									
1	Oman LNG	Shareholder	On line	2%	Government of Oman Shell Total Korea LNG Mitsubishi Mitsui Itochu	51% 30% 5.54% 5% 2.77% 2.77% 0.92%			<ul style="list-style-type: none">A part of Partex acquisition which was completed on 4 November 2019
2	ADNOC Gas Processing (AGP)	JV	On line	2%	ADNOC Shell Total	68% 15% 15%			<ul style="list-style-type: none">A part of Partex acquisition which was completed on 4 November 2019

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 ** The average sales volumes per day are calculated from the completion date of acquisition transaction

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