PTTEP

35th ENERGY PARTNER OF CHOICE

MEMBER OF
Dow Jones Sustainability Indices
In Collaboration with RobecoSAM

# Analyst Meeting Q3 2020
# Financial Results and Strategy Update

29 October 2020

# Disclaimer

**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.

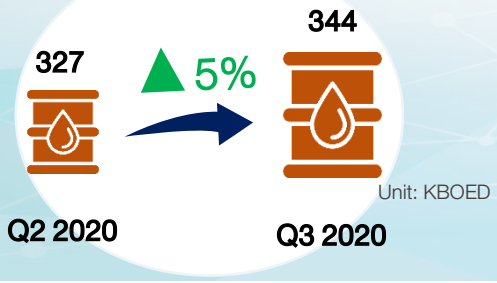
**Probable Reserves -** Probable reserves are defined as those unproved reserves which analysis of geological and engineering data suggests are more likely than not to be recoverable.

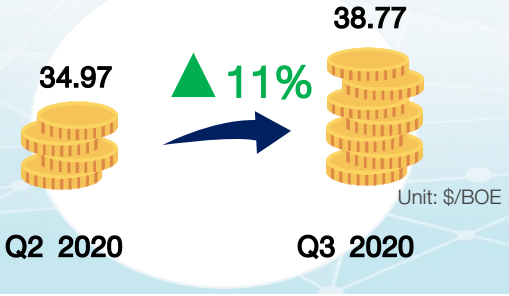
# Highlights in Q3 2020

Ensure smooth transition

## NET INCOME 230 M$ ▲72% Q.o.Q.

Driven by **improved volumes** and **price**



## LANG LEBAH

Drilling appraisal well started!

AI AND ROBOTICS VENTURES

## ARV NEXT MILESTONES ACHIEVED

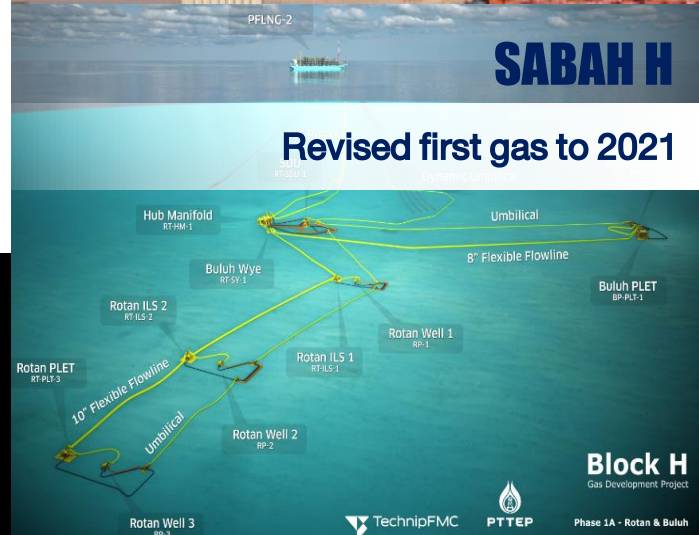
JV with **Thaicom (ATI)** and **Mermaid (Zeaquest)**

SMART OFFICE

NEW WAY OF WORKING

## HASSI BIR REKAIZ

Takeover additional 24.5% interest from CNOOC




## SABAH H

Revised first gas to 2021

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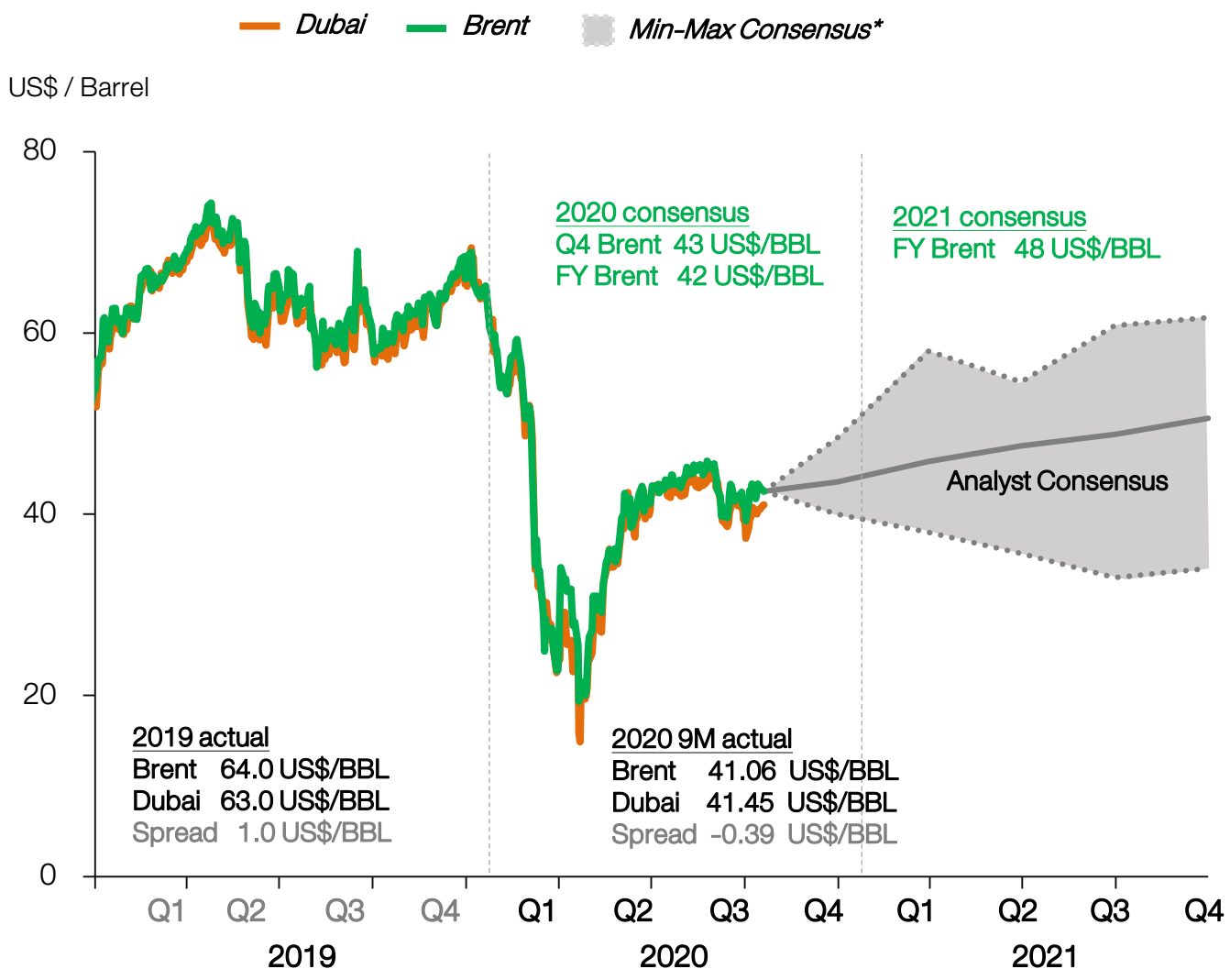
# Industry Outlook

# Operational Highlights & Strategy

# Financial Performance

# Oil Price Outlook

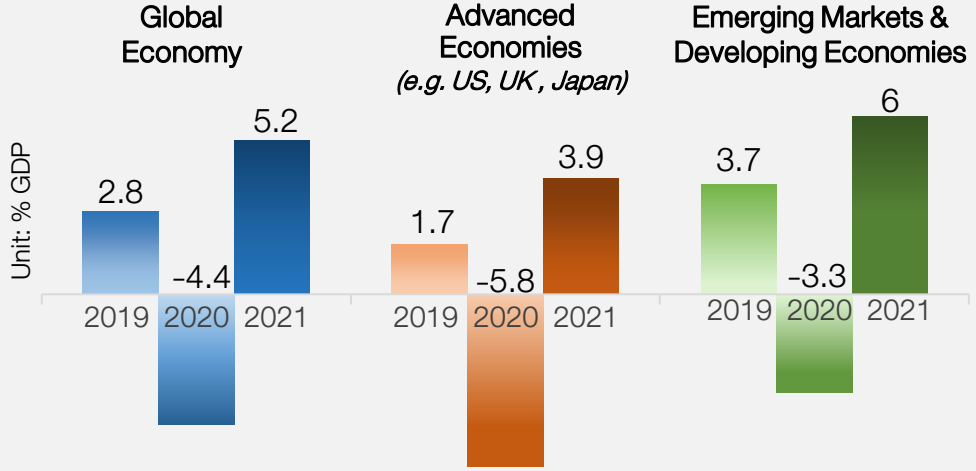
*Sideways movement in short-term. Expected avg. price 42US$/BBL in 2020 and 48US$/BBL in 2021*




Source: Bloomberg Analyst Consensus (CPFC) as of 20 October 2020

## Keys to watch

## GDP Growth Outlook

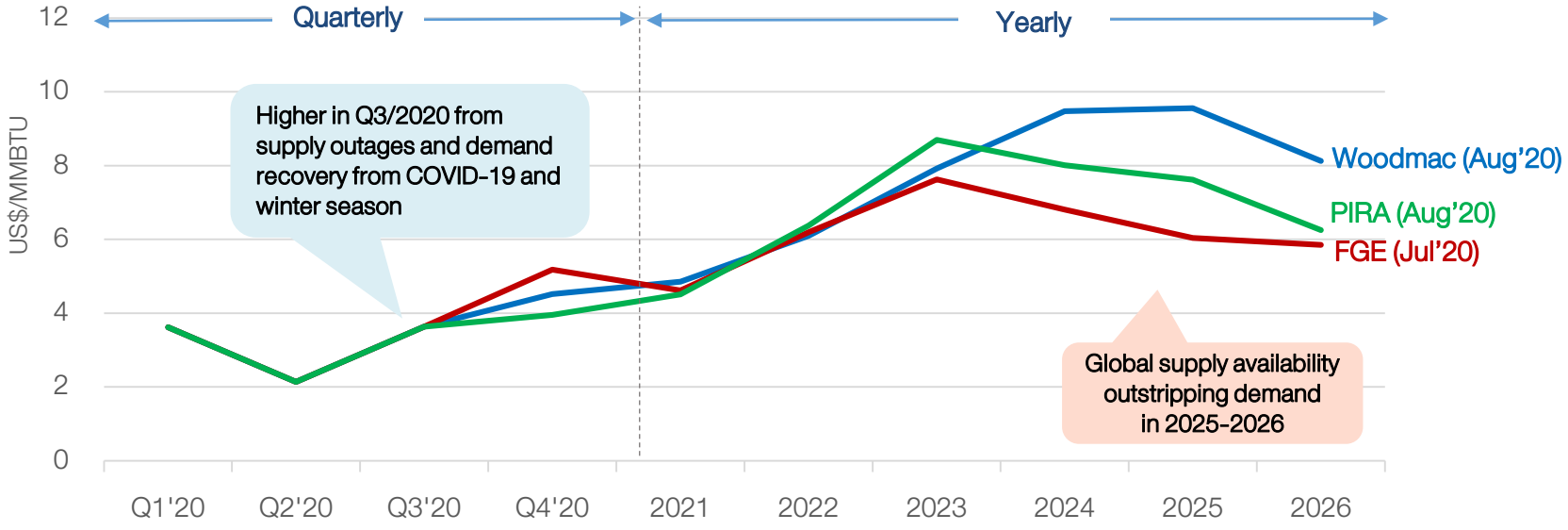



Source: IMF, World Economic Outlook, October 2020

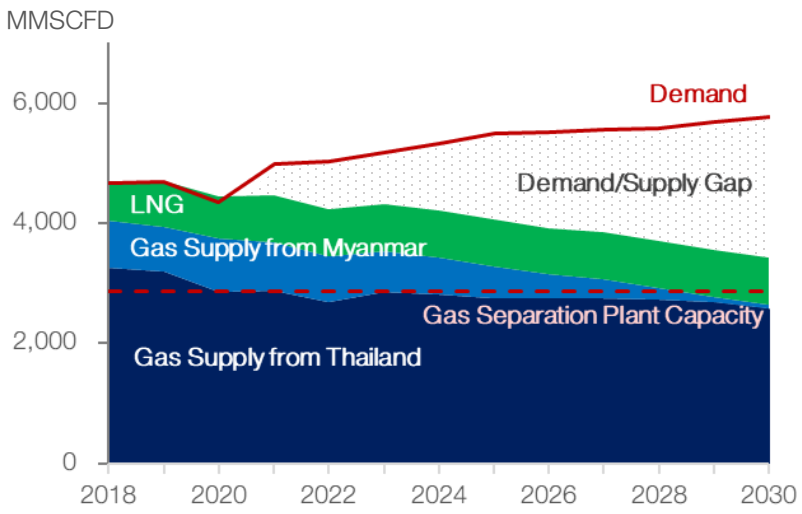
# Gas Price Outlook

*LNG Spot price gradually increase as demand starting to recover*

## LNG Spot price

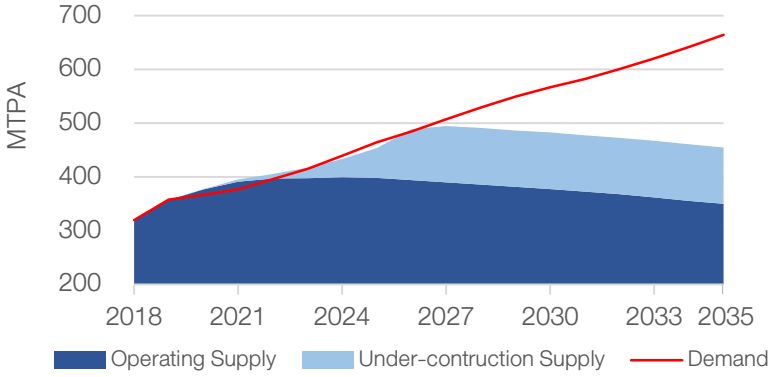



## Thailand Gas Demand/Supply




Source: PDP2018 and PTTEP

*Global LNG Demand/Supply Balance*




- LNG spot price in 2020 is expected to be around 3.3 – 3.6 $/MMBTU as demand starting to recover in 2H/2020 from its lowest level in Q2/2020
- The oversupply situation is likely to continue until 2022 and will quickly turn afterwards due to the lack of FIDs over 2016-2017, however, the demand-supply is expected to rebalance in 2024 - 2025

- Gas from Gulf of Thailand is mainly supplied to Gas Separation Plant (GSP)
- With G1/61 & G2/61 commencing production in 2022-23, gas supply would be maintained to meet GSP capacity till at least 2030
- Opportunistic investments in LNG value chain in upstream and liquefaction plants

Source: FGE, 22 October 2020

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# Industry Outlook

# Operational Highlights & Strategy

# Financial Performance

# Operational Highlights

*Good progress in all areas. Revised target date for Sabah H first gas.*

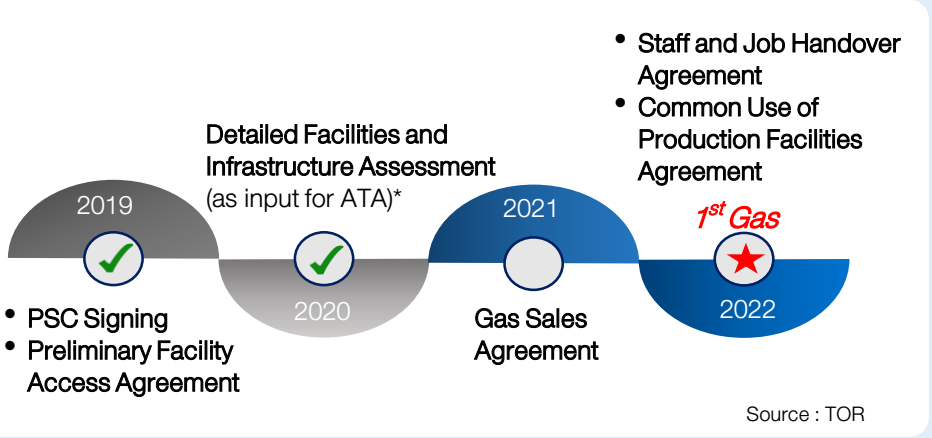
## Thailand : G1/61 and G2/61

### G1/61 Project

- Ready to access the site for installation of petroleum facilities as planned

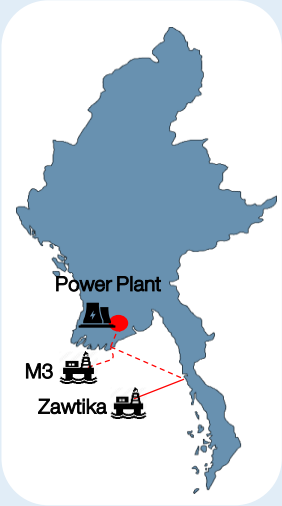
### G2/61 Project

- On track with transition plan for first production in 2022/2023




Source : TOR

## Myanmar : Gas to Power




*"Integrated Energy Solutions"*

- Enhance value from Zawtika and M3 Projects
- Support pipelines development
- Partner with Independent Power Producer (IPP) for 600 MW Gas-Fired Power Plant

| Completed | In-Progress |
|---|---|
| Feasibility study & Business Proposal submitted to NECC | Notice to Proceed Approval from Myanmar Government |

## Malaysia : Sabah H & SK410B

### Sabah H Project

- Experienced a subsea component failure during the final stage of commissioning, no hydrocarbon leakage
- In-progress with remediation plan, with Petronas support, to achieve first gas at the earliest opportunity in 2021
- Lowering 2020 sales volume forecast by ~ 7 KBOED

### SK410B Project

- Started drilling an appraisal well with results expecting within this year
- On track for FID in 2022

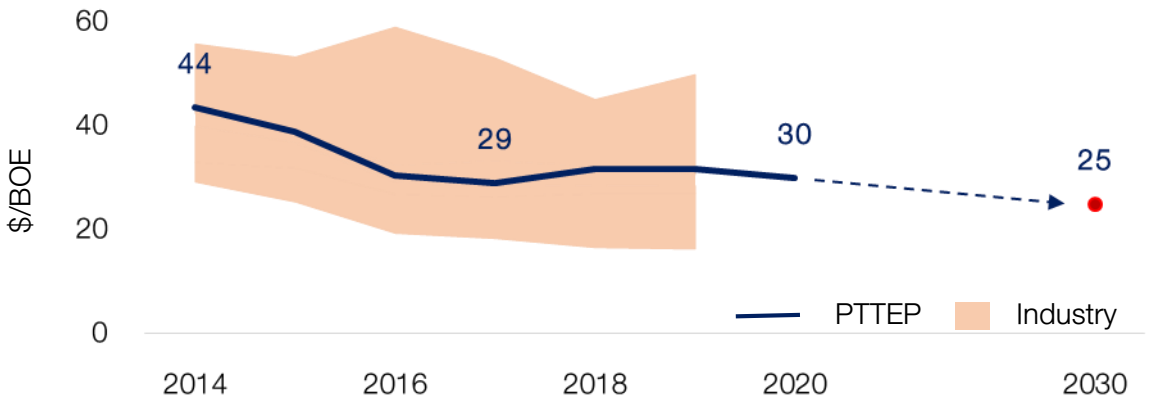
## Algeria : HBR

- Takeover additional stake of 24.5% in Q3/2020, with closing subjected to regulatory approvals
- After completion, PTTEP will have 49% participating interest in the project
- On track for first production in 2H/2021
  - Phase 1: 10,000 -13,000 BPD in 2021
  - Phase 2: 50,000 - 60,000 BPD in 2025

# Strengthen Core Business

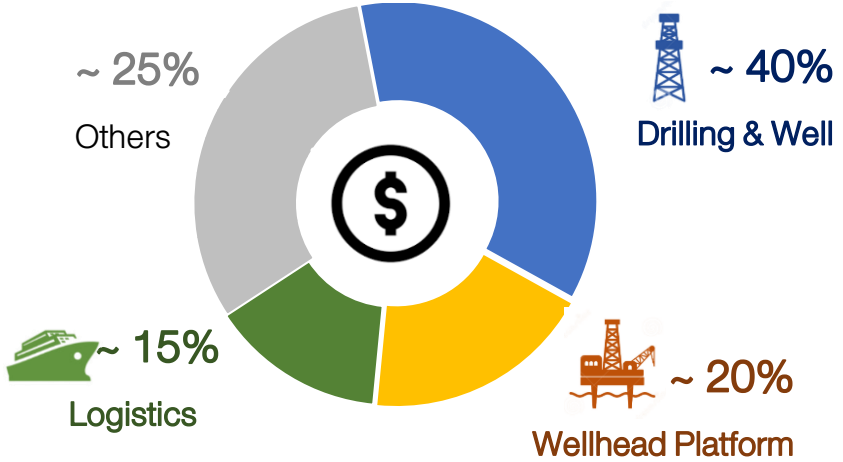
*Cost reduction well underway to achieve top quartile unit cost in 2030*

## Unit Cost Pathway




Source: Company Annual Report

## Major Cost Elements




## PSC Benefits

### G1/61 and G2/61

~20%

- Reduced CAPEX and DD&A as no major investment on main processing facilities
- Lower royalty rate under PSC (10%) vs Concession (12.5%)

Remark: % cost reduction is from current cost

## Cost Optimization

### Drilling & Well

~8%

- Factory Drilling Implementation
- Optimize drilling rig & service contracts

### Wellhead Platform

~3%

- Standardized design
- Contracting Strategy e.g. volume bundling
- Facility & Equipment Reuse e.g. topside reuse

### Logistics

~12%

- Synergize & optimize marine and aviation fleets across GoT
- Free Zone Pool Inventory among GoT assets for storage space & stock inventory reduction

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# Industry Outlook

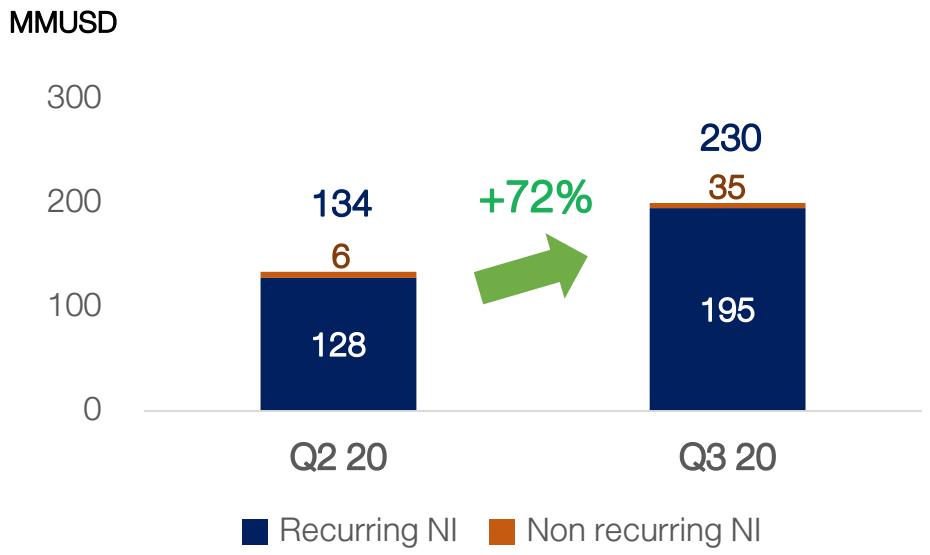
# Operational Highlights & Strategy

# Financial Performance

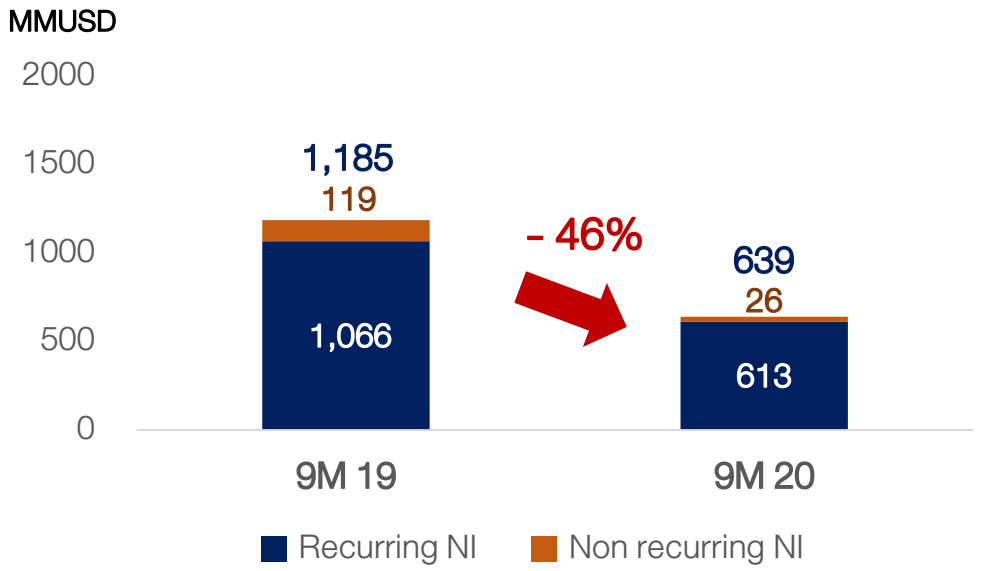
# Net income

*Recovery both volume and price led to better performance*

## 3rd Quarter




## YTD 2020




### Recurring (+52% QoQ)

**Sales Volume** — **+5%** From higher nomination in Bongkot and Contrat4

**Average Selling Price** — **+11%** Recovery in oil price

### Non-Recurring (>100% QoQ)

Mainly from gain on financial instruments and FX

### Recurring (-42% YTD)

**Sales Volume** — **+3%** Mainly from Murphy and Partex acquisition offset by low nomination

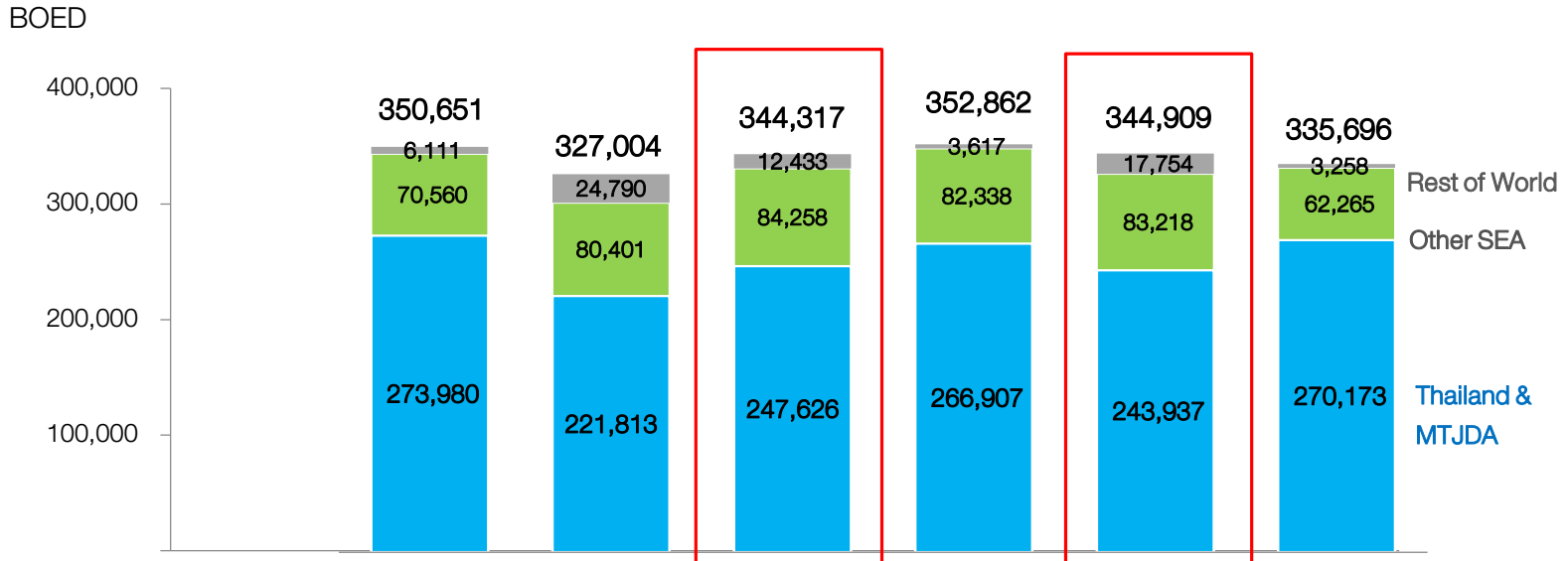
**Average Selling Price** — **-15%** Low oil price situation

### Non-Recurring (-78% YTD)

Mainly from tax impact from FX offset by gain from financial instruments

# Sales Volume & Average Selling Price

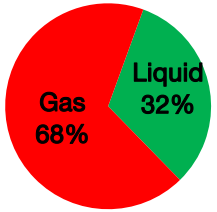
*Higher sales volumes from higher demand mainly in Gulf of Thailand*



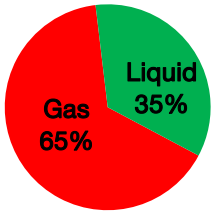

| Sales Price | 2019 | Q2 20 | Q3 20 | Q3 19 | 9M 20 | 9M 19 |
|---|---|---|---|---|---|---|
| Gas ($/MMBTU) | 6.92 | 6.37 | 6.22 | 6.78 | 6.50 | 6.91 |
| Liquid ($/BBL) | 61.18 | 28.92 | 41.82 | 58.77 | 41.14 | 60.82 |
| **Weighted Avg. ($/BOE)** | **47.24** | **34.97** | **38.77** | **46.03** | **39.69** | **46.83** |
| Avg. Dubai ($/BBL) | 63.51 | 30.72 | 42.88 | 61.26 | 41.45 | 64.02 |
| Avg. HSFO ($/BBL) (High Sulphur Fuel Oil) | 58.60 | 29.18 | 40.35 | 62.36 | 37.64 | 63.81 |

## Q3 2020 Sales Volume & Revenue By Product

**Volume Mix**



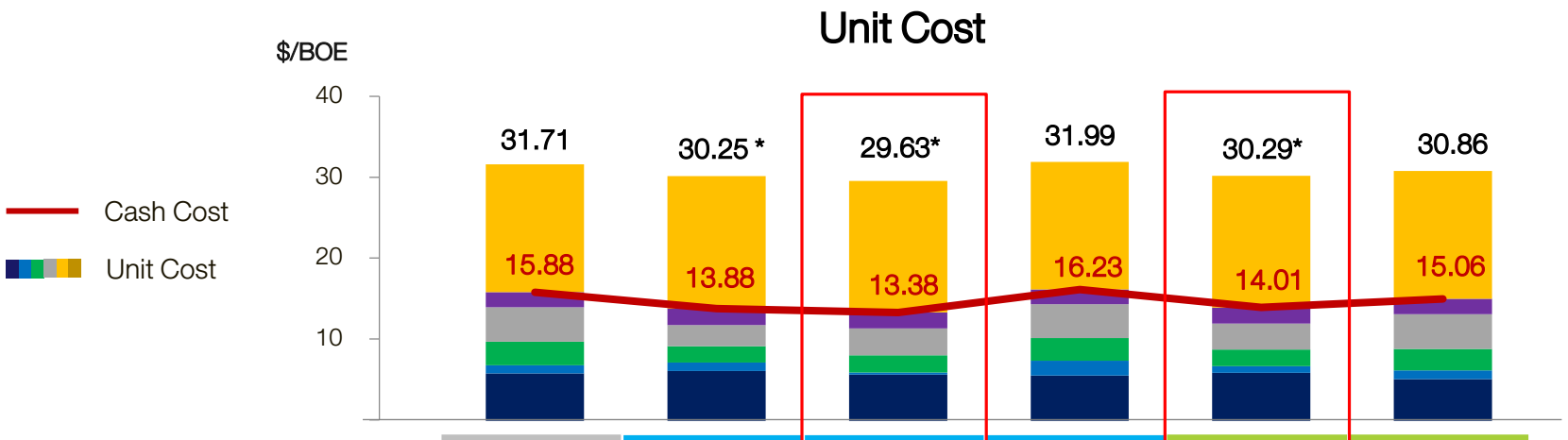

**Revenue Mix**




Note: Include sales volume from ADNOC Gas Processing (AGP)

# Unit Cost

*Maintain competitive unit cost. On track to our aspirational target.*




| | 2019 | Q2 20 | Q3 20 | Q3 19 | 9M 20 | 9M 19 |
|---|---|---|---|---|---|---|
| DD&A | 15.83 | 16.37 | 16.25 | 15.76 | 16.28 | 15.80 |
| Finance Cost | 1.84 | 2.04 | 1.95 | 1.84 | 1.98 | 1.88 |
| Royalties | 4.27 | 2.63 | 3.32 | 4.18 | 3.24 | 4.31 |
| G&A | 2.91 | 2.02 | 2.13 | 2.80 | 2.03 | 2.64 |
| Exploration Expenses | 1.00 | 1.03 | 0.26 | 1.82 | 0.82 | 1.10 |
| Operating Expenses | 5.86 | 6.16 | 5.72 | 5.59 | 5.94 | 5.13 |
| Lifting Cost | 4.31 | 4.52 | 4.29 | 4.40 | 4.44 | 3.88 |

Note: * Unit Cost per Financial Statements which applied Thai Financial Reporting Standard No. 16 (TFRS 16: Lease), effective 1 Jan 2020

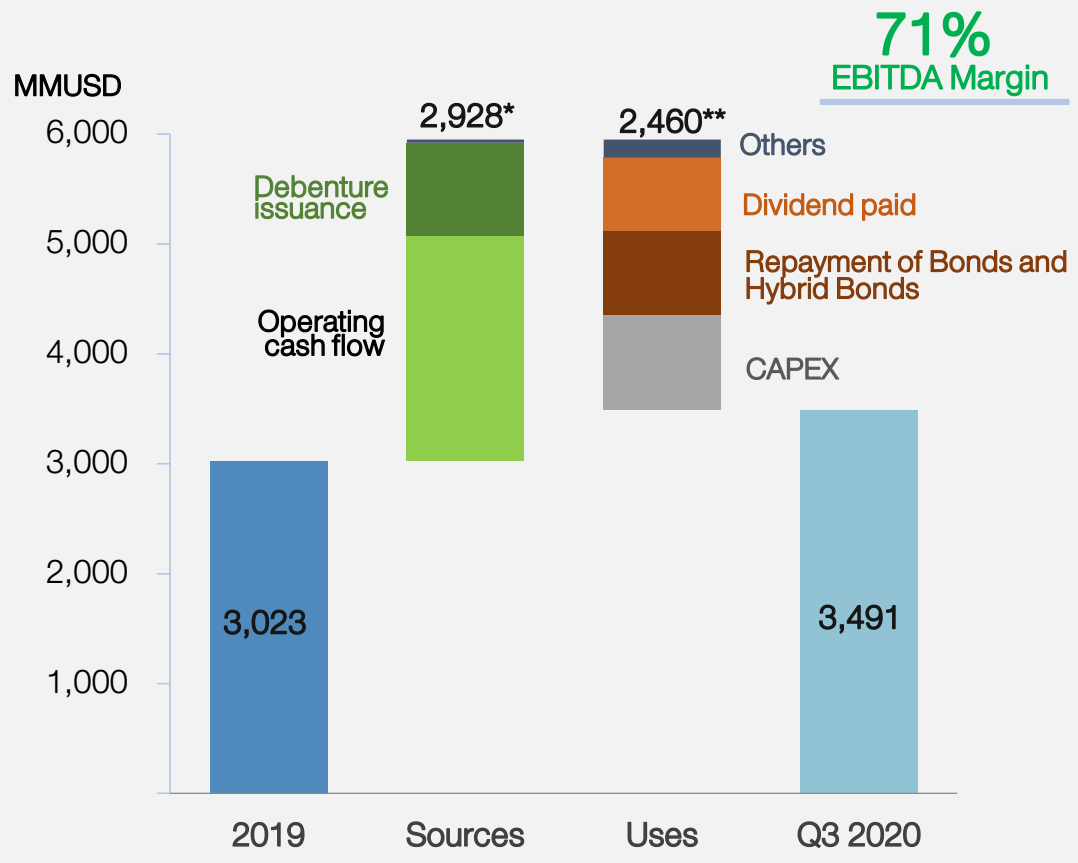
All Unit Cost shown above exclude costs related to new business

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

# Cash flows and Financial Position

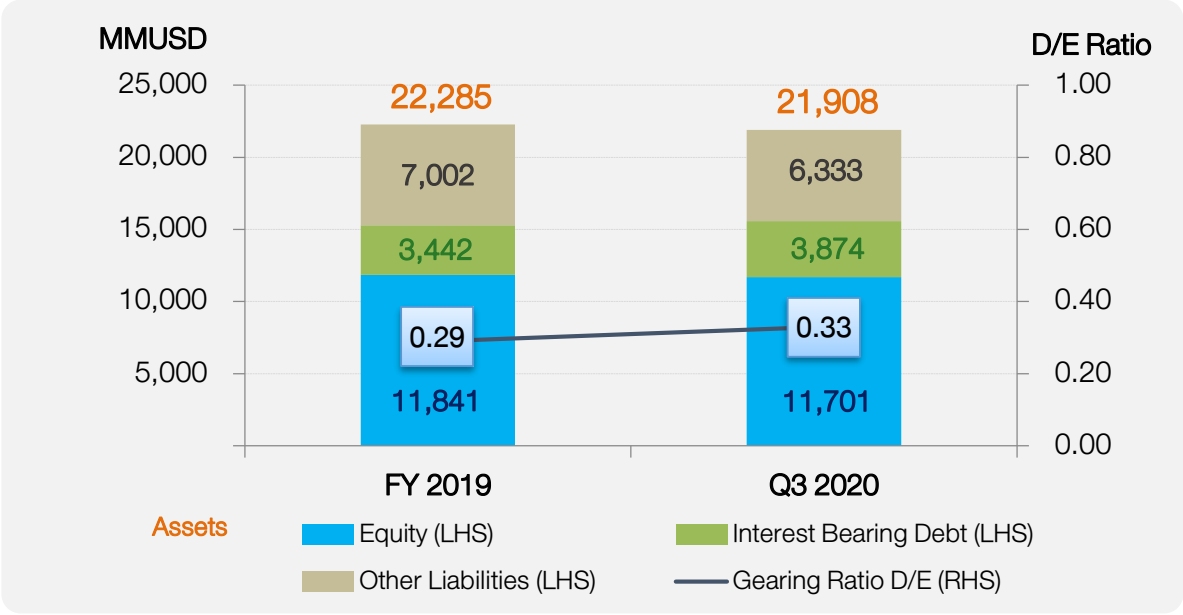
*Healthy cashflows, Healthy balance sheet. Strong EBITDA Margin.*

## 9M 2020 : Source and Use of Funds

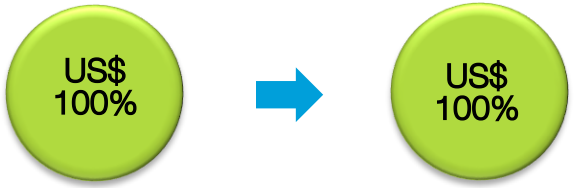



Remark: * Net of adjustment for the effect of exchange rate changes on cash and cash equivalents
** Excludes cash flows for investing in short-term investments (Fixed deposit > 3 months)

## Capital Structure




**Debt Profile**




| | | |
|---|---|---|
| Weighted Average Cost of Debt (%) | 4.41 | **3.58** |
| Fixed : Floating | 82 : 18 | **82 : 18** |
| Weighted Average Loan Life (Years) | 13.84 | **14.34** |

Remark: Debt profile excludes Hybrid bonds

# Financial Outlook

*Continue delivering growth and maintain profitability*

## Guidance 2020

| | |
|---|---|
| Average Sales Volume* KBOED | ~ 350 |
| Average Gas Price USD/MMBTU | ~ 6.3 |
| Unit Cost USD/BOE | ~ 30 |
| EBITDA Margin % of sales revenues | 65-70 % |

Note:
Include sales volume from ADNOC Gas Processing (AGP)
Based on average Dubai oil price in 2020 at 41 $/BBL

## Glimpse to 2021

- Higher sales volume with competitive cost
- Ensuring Smooth Business Transition
- Diversify to new business

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# Thank you and Q&A

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

+66 2 537 4000

Please scan here to take the survey

http://www.pttep.com

IR@pttep.com

# Supplementary information


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# Summary of Q3 2020 Financial Results

*Improved net income QoQ driven by from higher price and sales volume*

Unit : MMUSD

| Statement of Income | Q2 20 | Q3 20 | % QoQ | Q3 19 | % YoY | 9M 20 | 9M 19 | % YTD |
|---|---|---|---|---|---|---|---|---|
| **Total Revenues** | **1,095** | **1,305** | **19%** | **1,593** | **(18%)** | **4,082** | **4,572** | **(11%)** |
| Sales | 1,041 | 1,228 | 18% | 1,494 | (18%) | 3,751 | 4,291 | (13%) |
| Others | 54 | 77 | 43% | 99 | (22%) | 331 | 281 | 18% |
| Sales Volume (BOED) | 327,004 | 344,317 | 5% | 352,862 | (2%) | 344,909 | 335,696 | 3% |
| Sales Price (USD/BOE) | 34.97 | 38.77 | 11% | 46.03 | (16%) | 39.69 | 46.83 | (15%) |
| **Total Expenses** | **961** | **1,075** | **12%** | **1,235** | **(13%)** | **3,443** | **3,387** | **2%** |
| **Major Expenses:** | | | | | | | | |
| Operating Expenses | 183 | 181 | (1%) | 181 | - | 561 | 470 | 19% |
| DD&A | 488 | 515 | 6% | 512 | 1% | 1,538 | 1,448 | 6% |
| Exploration Expenses | 30 | 8 | (73%) | 59 | (86%) | 78 | 100 | (22%) |
| G&A | 62 | 69 | 11% | 94 | (27%) | 197 | 251 | (22%) |
| Income Tax Expense | (68) | 140 | >100% | 194 | (28%) | 524 | 488 | 7% |
| **Net Income** | **134** | **230** | **72%** | **358** | **(36%)** | **639** | **1,185** | **(46%)** |
| Recurring Net Income | 128 | 195 | 52% | 303 | (36%) | 613 | 1,066 | (42%) |
| Non-Recurring * | 6 | 35 | >100% | 55 | (36%) | 26 | 119 | (78%) |
| **Non-Recurring** | | | | | | | | |
| Gain (Loss) on FX | 9 | 10 | 11% | 20 | (50%) | 7 | 79 | (91%) |
| Gain (Loss) on FI | (78) | 27 | >100% | 22 | 23% | 171 | (68) | >100% |
| Oil Price Hedging | (26) | 10 | >100% | 18 | (44%) | 150 | (20) | >100% |
| Forwards Contract and Others | (52) | 17 | >100% | 4 | >100% | 21 | (48) | >100% |
| Tax Impact from FX | 122 | (2) | (>100%) | 13 | (>100%) | (105) | 108 | (>100%) |
| Impairment Loss on Assets | (47) | - | >100% | - | - | (47) | - | (>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.

# Financial Performance : Income Statement

*Solid EBITDA margin*

| | Q2 20 | Q3 20 | Q3 19 | 9M 20 | 9M 19 |
|---|---|---|---|---|---|
| Sales and Revenue from Pipeline Transportation (MMUSD) | 1,066 | 1,253 | 1,524 | 3,824 | 4,383 |
| EBITDA (MMUSD) | 711 | 890 | 1,054 | 2,682 | 3,166 |
| Net Income (MMUSD) | 134 | 230 | 358 | 639 | 1,185 |
| Recurring Net Income (MMUSD) | 128 | 195 | 303 | 613 | 1,066 |
| Earning Per Share (USD) | 0.03 | 0.06 | 0.09 | 0.16 | 0.29 |
| **Key Financial Ratios** | | | | | |
| EBITDA Margin (%) | 67 | 71 | 69 | 70 | 72 |
| Return on Equity (%) (LTM) | 10 | 9 | 12 | 9 | 12 |
| Return on Capital Employed (%) (LTM) | 8 | 7 | 11 | 7 | 11 |
| Return on Equity (%) (LTM, Recurring Net Income) | 9 | 8 | 11 | 8 | 11 |
| Return on Capital Employed (%) (LTM, Recurring Net Income) | 8 | 7 | 10 | 7 | 10 |

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*

| | YE 19 | Q3 20 |
|---|---|---|
| Total Assets (MMUSD) | 22,285 | 21,908 |
| - Cash & cash equivalents * (MMUSD) | 3,023 | 3,491 |
| Total Liabilities (MMUSD) | 10,444 | 10,207 |
| - Interest bearing debt (MMUSD) | 3,442 | 3,874 |
| Equity (MMUSD) | 11,841 | 11,701 |
| **Key Financial Ratios** | | |
| Total Debt to Equity (X) | 0.29 | 0.33 |
| Net Debt** to Equity (X) | 0.04 | 0.03 |
| Total Debt to Capitalization (X) | 0.23 | 0.25 |
| Total Debt to EBITDA (X) | 0.62 | 0.78 |
| EBITDA Interest Coverage (X) | 39 | 36 |

| | |
|---|---|
| **Credit Ratings :** | BBB+ (S&P), Baa1 (Moody's), AAA (TRIS), BBB+ (FITCH) |
| **Weighted Average Cost of Debt ** :** | 3.58% |
| **Average Loan Life ** :** | 14.34 years |

Note: * Cash & Cash Equivalents (Cash on hand) include Short-term Investments > 3 months ***but*** < 12 months
Net Debt = Total Debt less Cash & Cash Equivalents
** Excludes hybrid bonds
The formulas for calculating ratios are provided in the supplementary section for your reference

# Cash Flows : January – September 2020

*Healthy operating cash flow*

Unit : MMUSD

| Operating | 2,055 |
|---|---|
| ▪ Income before tax & non-cash adjustment | 2,933 |
| ▪ Tax payment | (1,028) |
| ▪ Changes in assets/liabilities* | 150 |

*EBITDA 2,682MMUSD*

+

| CAPEX & Investment | (835) |
|---|---|
| ▪ CAPEX (PP&E, Intangible asset) | (864) |
| ▪ Dividend received from related parties | 29 |

| Free Cash Flow |
|---|
| 1,220 |

+

| Finance | (752) |
|---|---|
| ▪ Debentures & subordinated debenture repayment | (761) |
| ▪ Debentures issuance | 844 |
| ▪ Dividend paid | (671) |
| ▪ Net interest paid | (95) |
| ▪ Others | (69) |

| Cash In (Out) |
|---|
| 468 |

+

| Beginning Cash & Cash Equivalent*** |
|---|
| 3,023 |

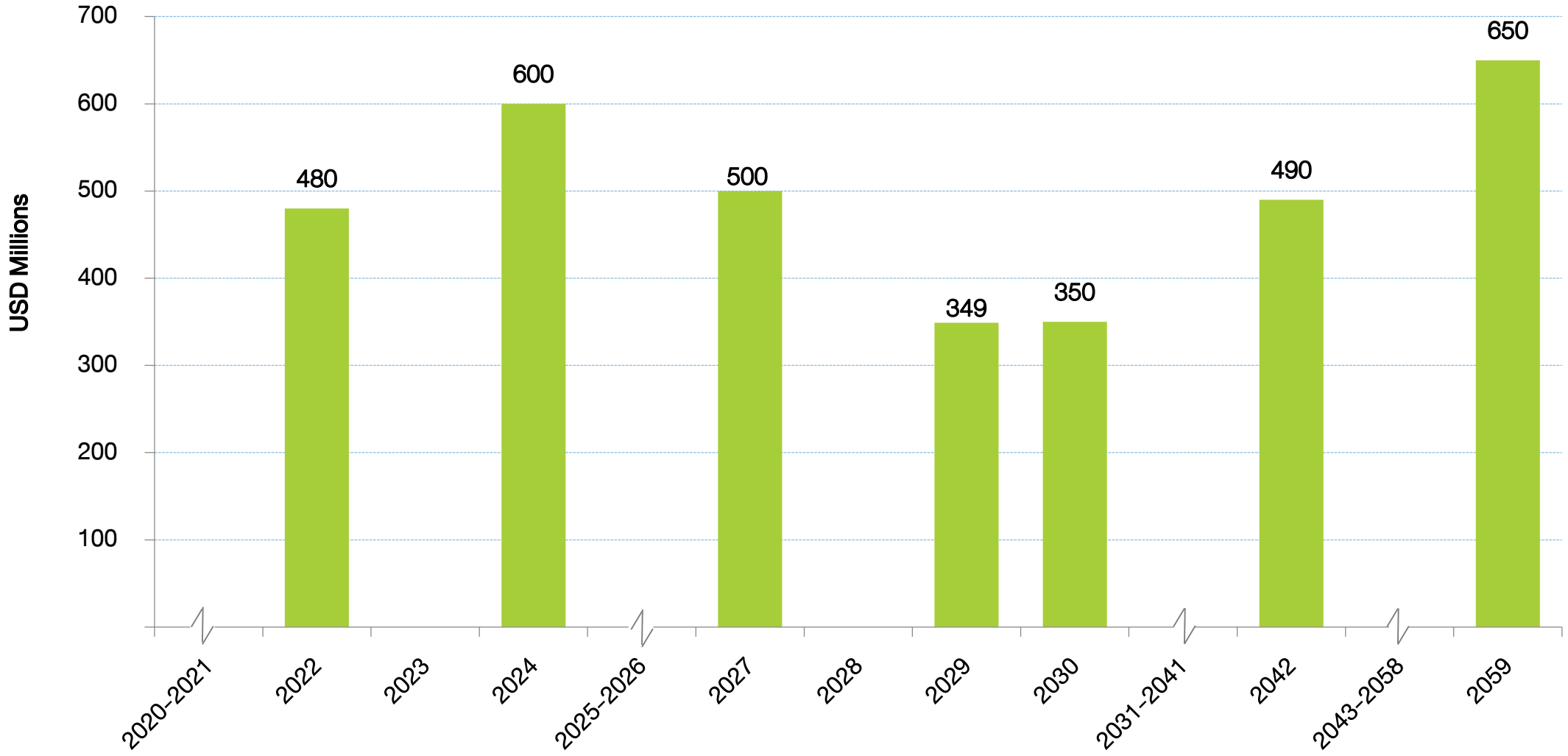
=

| Ending Balance*** |
|---|
| 3,491 |

Note: * Net of foreign exchange rate effect
** Net of interest received
*** Include Short-term Investment (Fixed deposit > 3 months)

# Debt Maturity Profile

*As of September 2020*




Note: Excludes Hybrid bonds

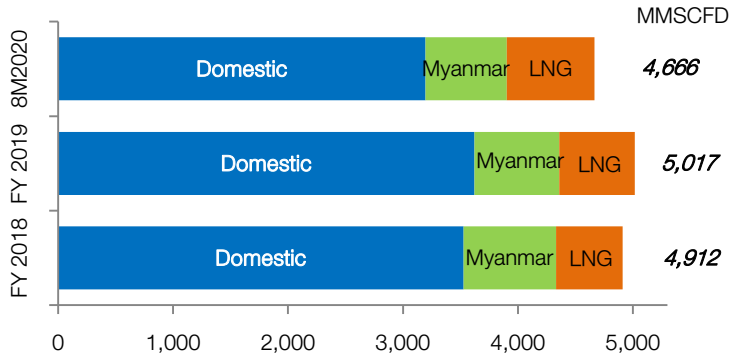
Unit: USD Millions or equivalent after cross currency swap

# Thailand Updates

*Domestic gas volume suppressed by LNG import; THB fluctuation continues*

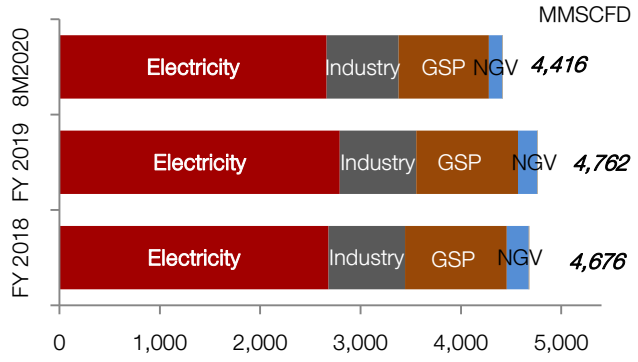
## Thailand Energy Overview

### Natural Gas Supply



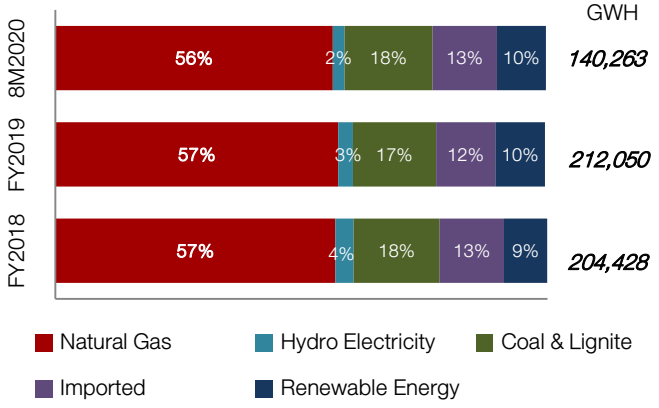

- Lower energy demand from COVID-19 outbreak
- More LNG imports from low LNG spot prices
- Slight decline from Myanmar piped gas imports due to natural decline

### Natural Gas Consumption

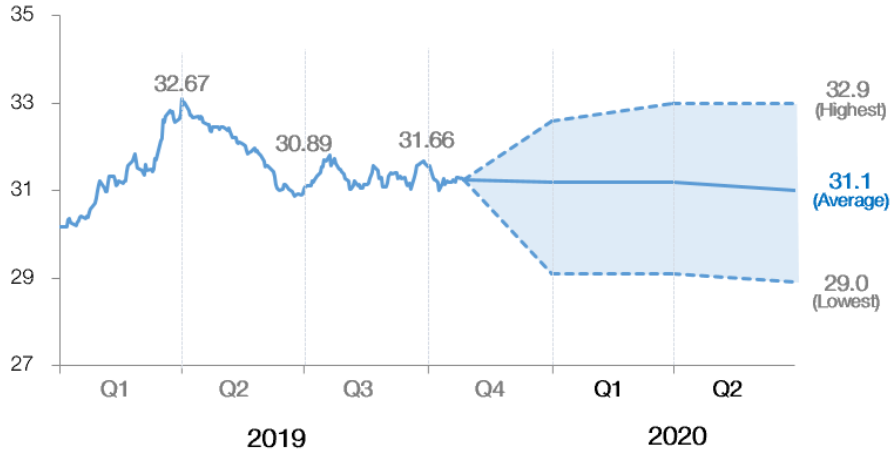



Source: EPPO

### Electricity Generation




## Exchange Rate Movement (THB/USD)




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

- The concern on the second wave of COVID-19 outbreak
- The uncontained COVID situation in US and the Federal Reserve's easing monetary policy guidance weighted down on US
- The rising local political uncertainty including the sudden resignation of the newly appointed Finance Minister in September
- Profit repatriation and dividend payment of foreign companies also supported USD upside

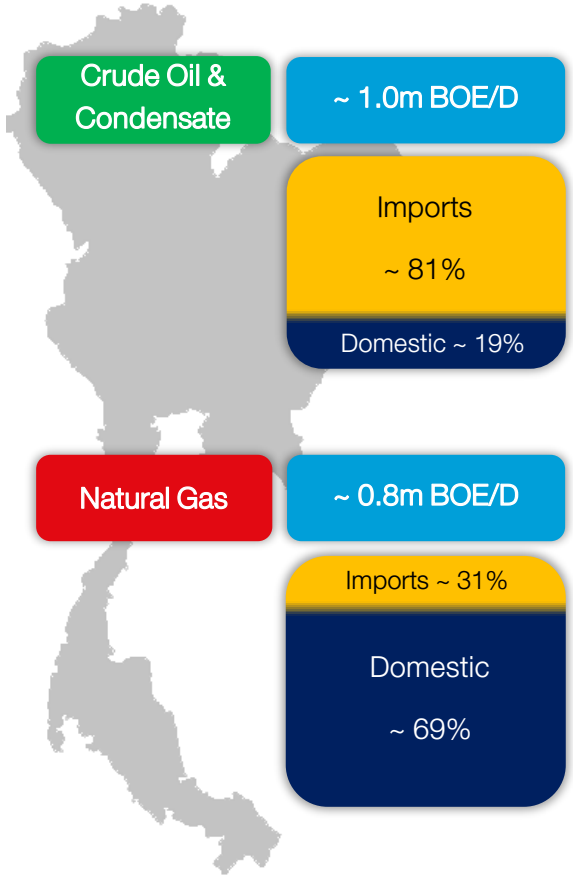
Source: Bank of Thailand, Bloomberg

Forecast based on Bloomberg Consensus as of 27 October 2020

# Thailand's Energy Value Chain

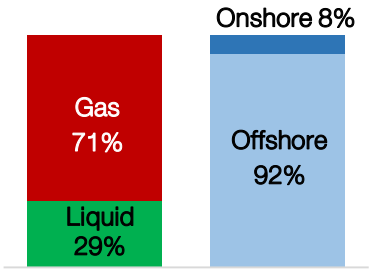
*PTTEP contributes almost 1/3 of Thailand's petroleum production*

## 8M2020 Thailand's Oil and Gas Demand

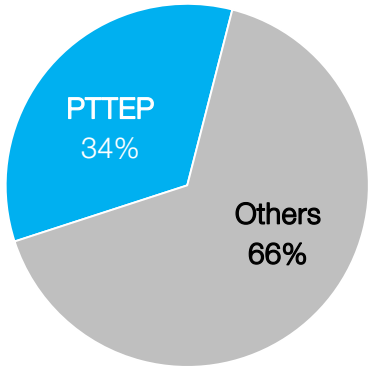



## 8M2020 Thailand Petroleum Production

### % 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

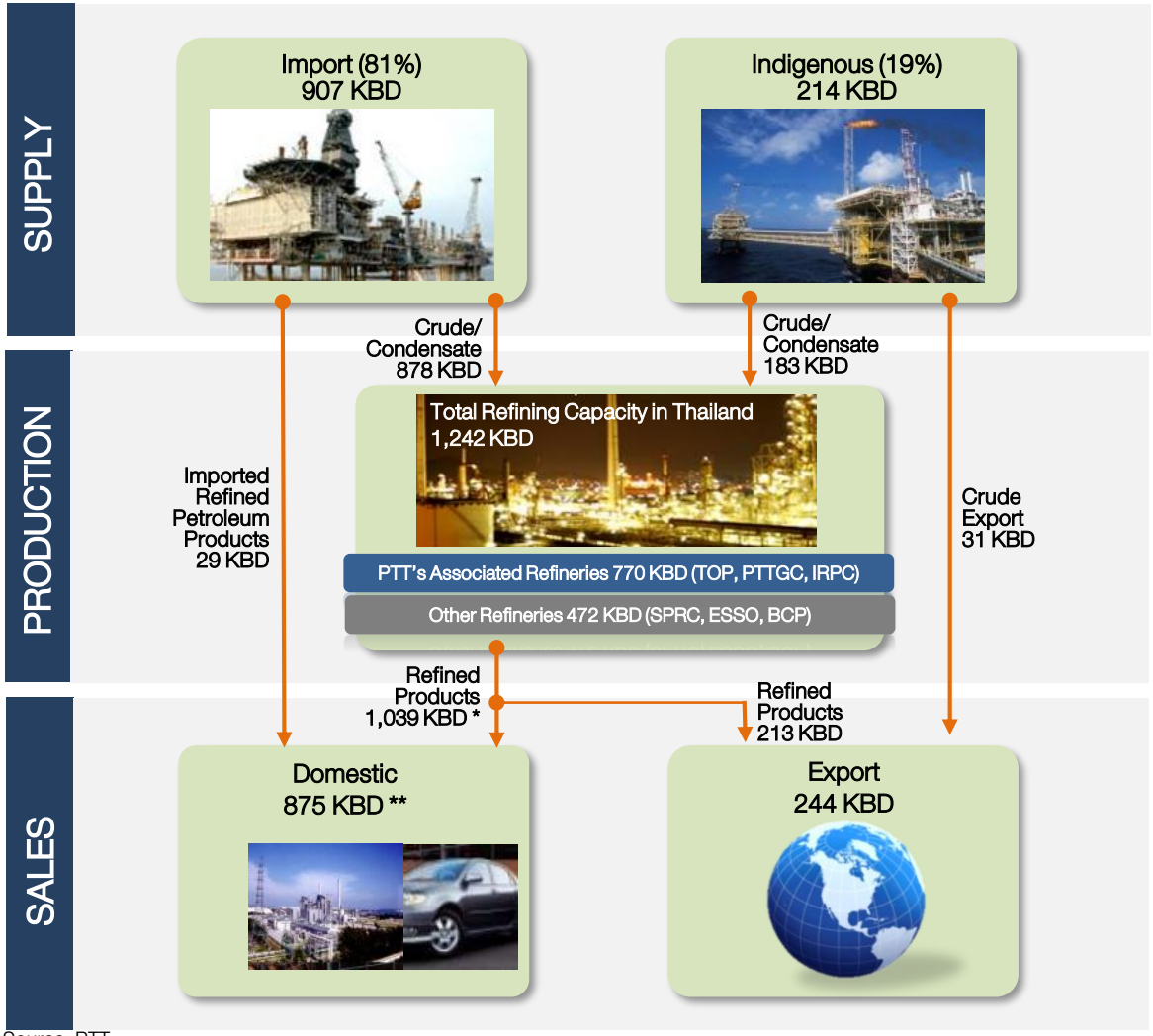
- Petrochemicals
- Oil and gas marketing

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

# Thailand's Oil and Gas Balance

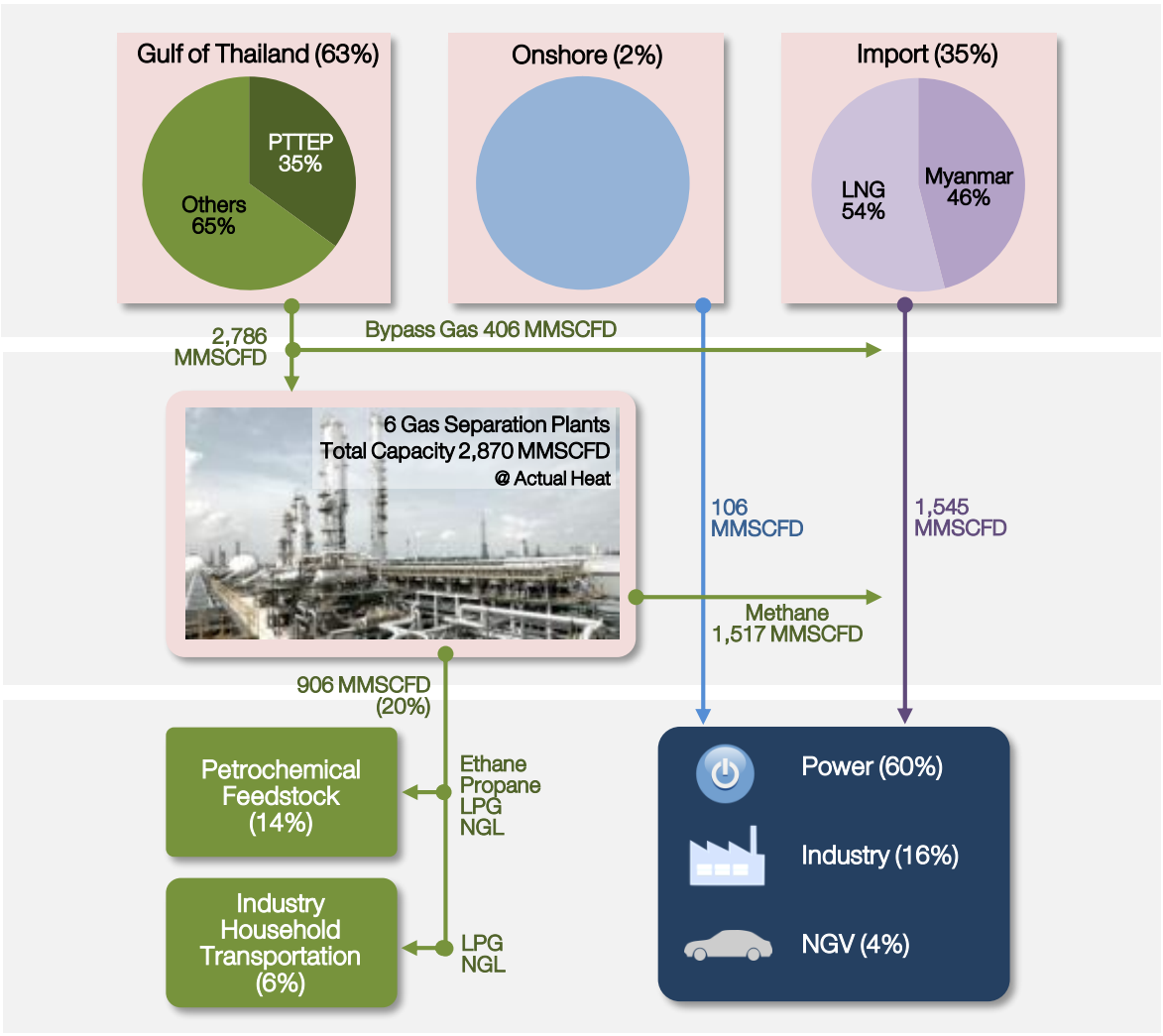
## Oil Balance***

*Maintains stability supply through adequate refining capacity*




## Natural Gas Balance****

*Main driver of the Thailand economy*




Source: PTT

Remark: * Refined product from refineries = 944 KBD, including domestic supply of LPG from GSPs and Petrochemical Plants = 95 KBD

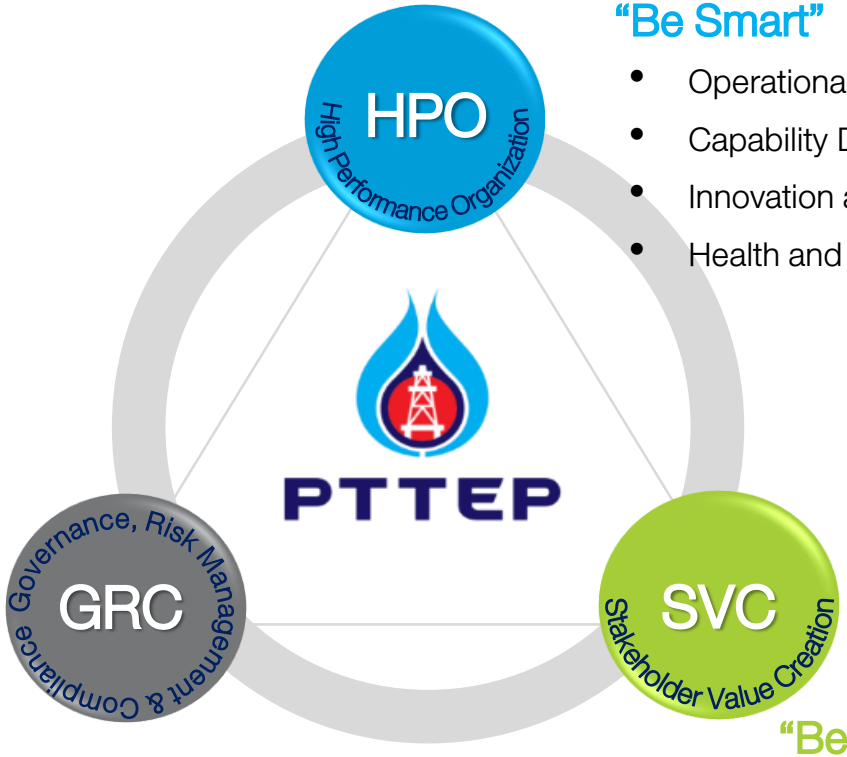
** Not included Inventory

*** Information as of 5M20

**** Information as of 9M20

MMSCFD @ Heating Value 1,000 Btu/ft$^3$

# Driving towards Sustainability




## "Be Smart"

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

## "Be Good"

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

## "Be responsible"

- GHG* Reduction
- Contribution to Society
- Environmental Management

Note: *Greenhouse Gas

# HPO: Strategies for sustainable long term

*Continue to focus on "Execute" while monitoring M&A Opportunity*

## Value Creation from Existing Assets

### Development

**Mozambique Area 1**

*On track to deliver first LNG*

### Pre-Development

**SK410B : Lang-Lebah**

*Strong path towards FID*

**Legacy Assets**

- Sustain sales volume as committed
- Cost Management
- Operation Continuous
- Streamline Cost Structure for efficiency
- Explore full potential in Malaysia and Myanmar
- Exploration

## Transition of New Assets

- ▶ Operatorship transfer for G1/61
- ▶ Gulf of Thailand capital & operational efficiencies and synergy
- ▶ Increase efficiency and annexation to create more value in Malaysia

## EXPAND: M&A and New Businesses

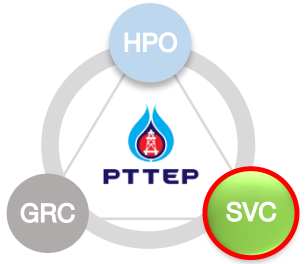
Opportunistic M&A in Strategic Areas

**AI AND ROBOTICS VENTURES**

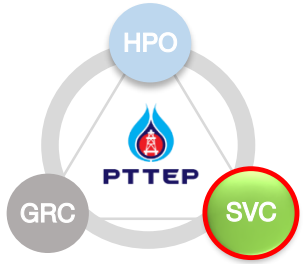
Transitioning technology and product builder to Business Builder

**Gas to Power**

Integrated energy solution and enhancing value of existing assets



# Stakeholder Value Creation




## GHG* Reduction

Growing business,
while decreasing GHGs emission

- Flare Gas Utilization
- Energy Efficiency
- Smart Logistics
- Leakage Prevention
- Reforestation

## Circular Model for E&P

Maximize resource efficiency and
zero waste to landfill

- New Design of reusable WHP and Well Pad
- Topside Reuse
- Facility Reuse
- Part/ Inventory Refurbished
- Drill Cuttings Reuse in Road Construction

## Ocean for Life

Improve biodiversity and
local wealth

- Zero Spill
- Conservation & Restoration
- Rig to Reef
- Baseline : Micro-plastic

## Achievement Targets in 2030:

**25% GHG Intensity Reduction**

from 2012 base year)

- 50% Reuse of Structure
- Zero Waste to Landfill

- Improve Positive Value to Biodiversity
- Improve Community Income

Note: GHG = Greenhouse Gas

# Governance, Risk Management & Compliance

GRC Baseline Application to:

- Global Operations & Newly acquired assets
- Suppliers & Contractors

## How do we ensure GRC?

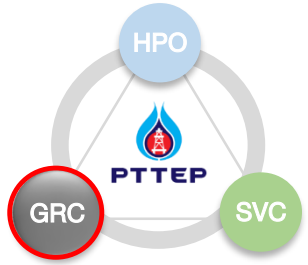
**Policy**
- Good Corporate Governance and Business Ethics
- Regulations and Policies for operations

**Governing Body**
- Board of Directors
- Sub-committees e.g. Risk Management Committee, Audit Committee and CG Committee

**Awareness**
- Policy, plan & process Communication
- Trainings

**Control/ Audit**
- 3 Lines of Defense
- Control Self-Assessment (CSA)
- External Assessment by independent organizations

**Whistle-blowing**
- CG Hotline




## Anti corruption

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

NO GIFT POLICY

EITI Extractive Industries Transparency Initiative

UN GLOBAL COMPACT

CAC PRIVATE SECTOR COLLECTIVE ACTION AGAINST CORRUPTION

## Human rights

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

UN GLOBAL COMPACT

IPIECA

# Awards on Sustainable development

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

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

PTTEP

FTSE4Good

## FTSE4Good Emerging Index 2019

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

## Proven business integrity

Role Model Organization on Human Rights Award 2020
*The Department of Rights and Liberties Protection, Ministry of Justice*

NACC Integrity Award 2019
*The National Anti-Corruption Commission (NACC)*

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

## Exemplary social contributor

3G Best Social Empowerment Award 2020
*Global Good Governance Awards IF Analytica*

Global CSR Award 2020 (Platinum Winner)
*The Energy and Environment Foundation Global CSR Awards*

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

## Green driver to environment

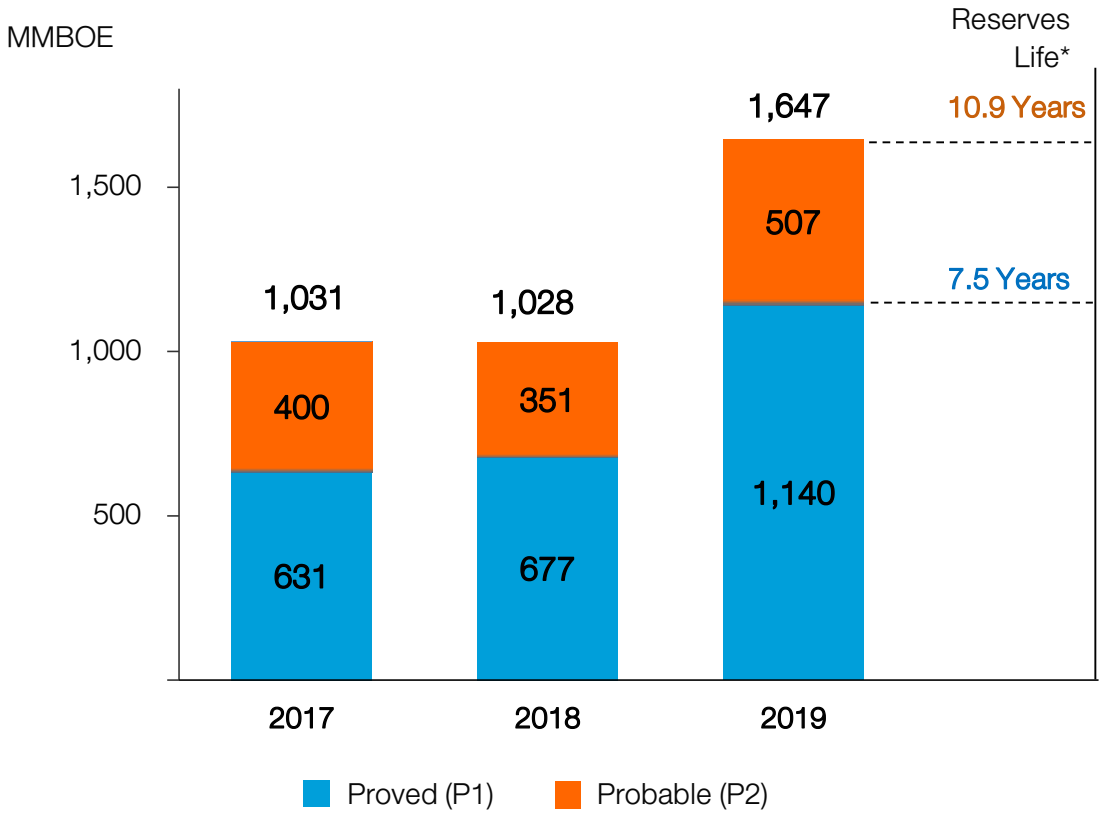
The Excellent Level (G-Gold) of the Green Office Award 2018
*The Ministry of Natural Resources and Environment*

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

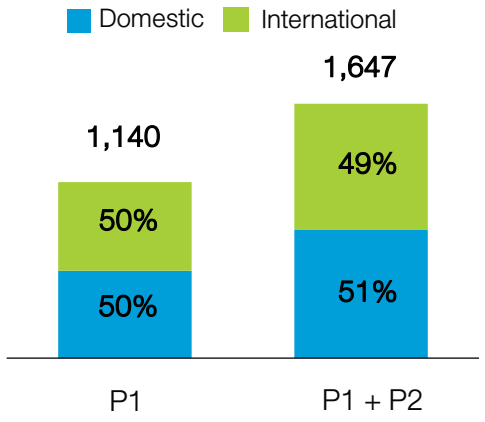
*Significantly improved reserve life to over 7 years*



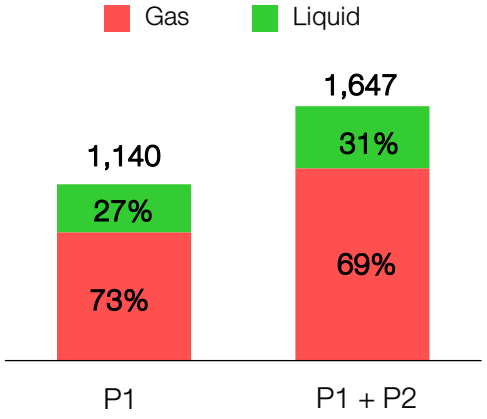

5-Year Average Proved Reserves Replacement Ratio (RRR)

| 2017 | 2018 | 2019 |
|---|---|---|
| 0.58x | 0.74x | 1.53X |

## 2019 by Geography




## 2019 by Product Type




- 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

# Diversified international portfolio

## Central Asia

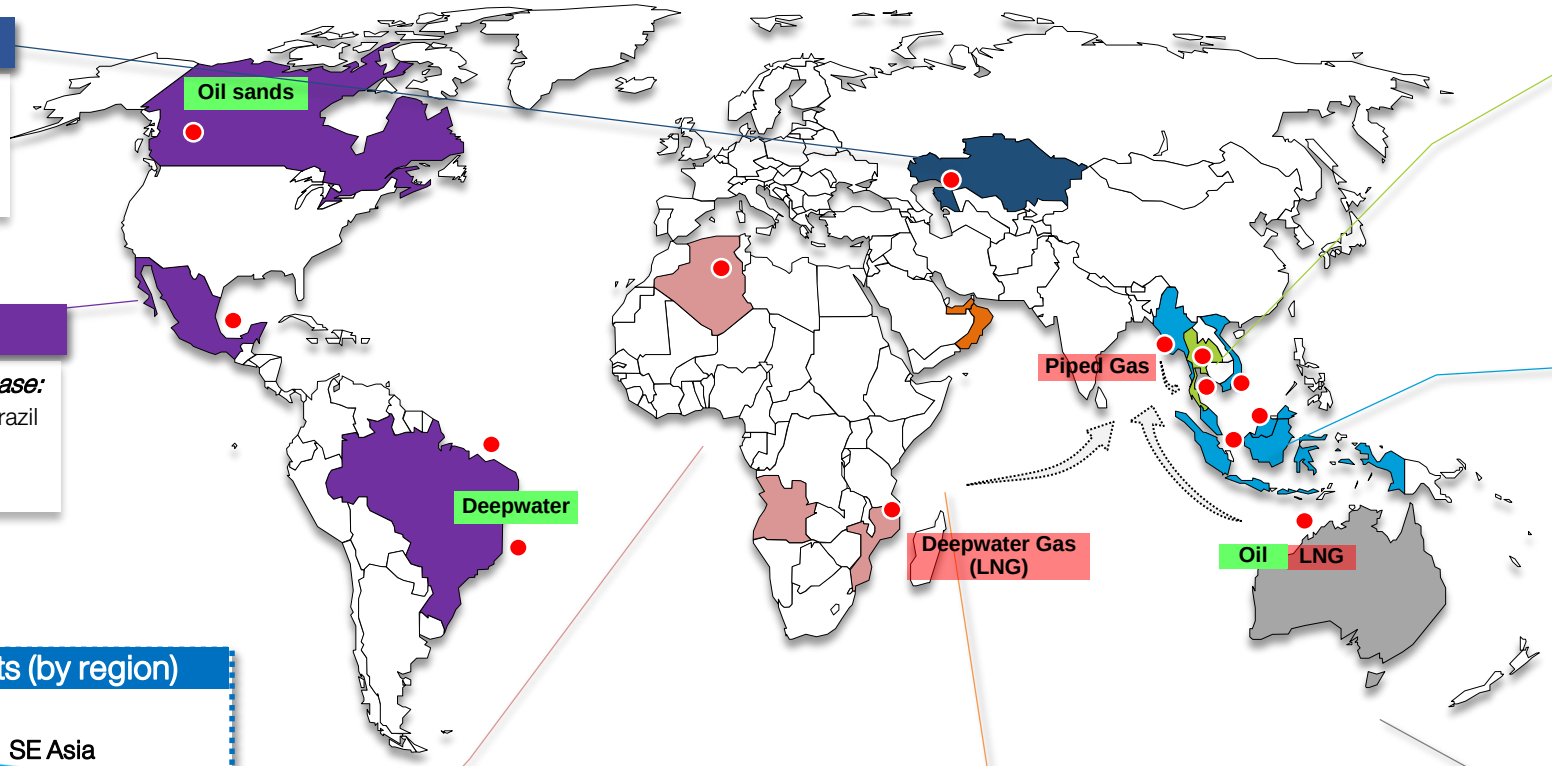
*First presence in Kazakhstan:*

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

## North & South America

*Opportunities in an early phase:*

- Deepwater exploration in Brazil and Mexico with prominent and prudent operators




## Thailand

*PTTEP's core production base*

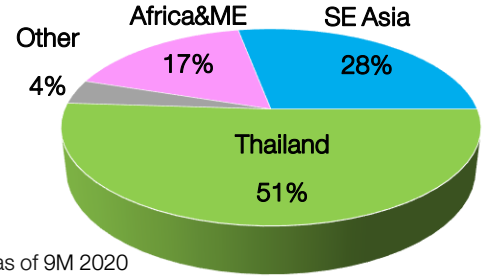
- 70% of total sales volume
- Key producing assets include Bongkot, Arthit, Contract 4 and S1
- Bongkot (G2/61) and Erawan (G1/61) are in transition process to ensure production continuity

## Southeast Asia

*Second heartland to PTTEP*

- 24% 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)

## Book Value of Assets (by region)




as of 9M 2020

**Total Assets USD 21.9 billion**

## Africa

*An area for growth, key projects include:*

- Production: Algeria's Bir Seba oil field with current flow rate of approximately 17 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
- 3 onshore blocks including PDO (Block 6), the largest producing oil asset in Oman

## Australasia

*Potential gas development*

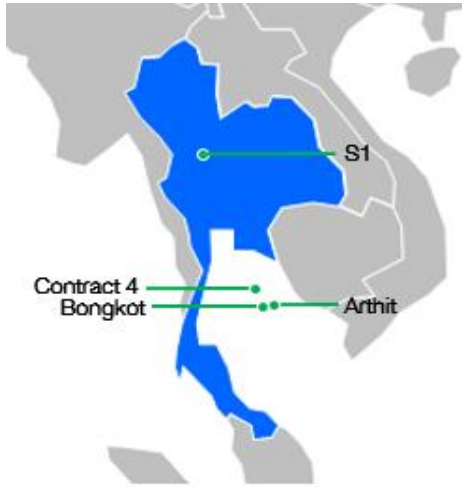
- Sizable undeveloped gas resources in Timor Sea

Information as of 30 September 2020

# Thailand, Myanmar and Malaysia

*"Coming Home" to maintain strong foundation with full expertise*

## Thailand




● Production / Ramp-up Projects

### Bongkot *(66.6667% WI)*

- Average natural gas and condensate sales volume of 749 MMSCFD and 22 KBPD in 9M2020

### S1 *(100% WI)*

- The largest onshore crude oil production field in Thailand with 9M2020 average crude oil sales volume of 30 KBPD

### Arthit *(80% WI)*

- Average sales volume in 9M2020 was 219 MMSCFD of natural gas and 10 KBPD of condensates

### Contract 4 *(60% WI)*

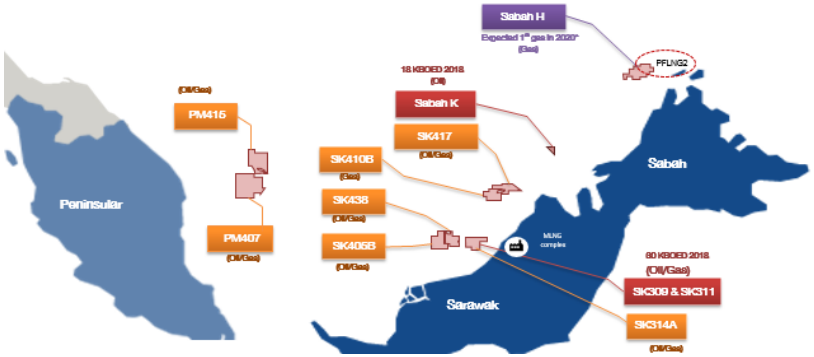
- Average sales rate of 308 MMSCFD for natural gas and 12 KBPD for condensate in 9M2020

## 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 323 MMSCFD in 9M2020

| Project Status | |
|---|---|
| Production | • Zawtika *(80% WI)*<br>• Yadana *(25.5% WI)*<br>• Yetagun *(19.3% WI)* |
| Appraisal | • M3 *(80% WI)* |
| Exploration | • 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 9M2020 was 28* KBPD of crude oil and 24* MMSCFD of natural gas

**SK309 and SK311 Project** *(59.5% WI)*

For East Patricia field *(42% WI)*

- Average production volume in 9M2020 was 201* MMSCFD of natural gas and 21* KBPD of condensates and crude.

### Development

**Block H Project* :**

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

- First gas expected in 2021
- Full capacity at 270 MMSCFD

### Exploration

**Sarawak SK410B Project** *(42.5% WI)*

- Multi TCF significant discovery
- Expected Final Investment Decision (FID) announcement in 2022

**Other projects**

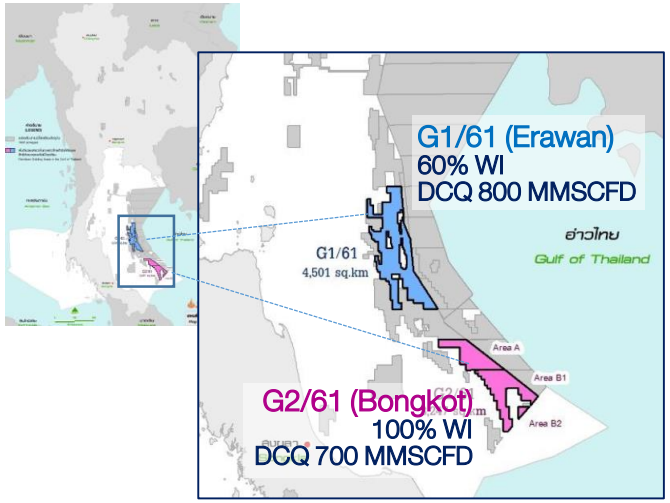
- Evaluating petroleum potentials
- Plan for exploration and appraisal drilling in 2020-2021

** The average production volumes per day, For Block K,gross production is net off utilization*

*Note: WI – working interest*

# Bongkot and Erawan: Thailand Champion in Domestic Gas Supply

*Execute Bongkot and Erawan transition plan to ensure production continuity*




## Growing production and reserves profile

- Substantial volume boost for 10 years and beyond
- Immediate remarkable reserves addition
- Minimal risk in production profile

## Generating strong cash flow

- No heavy upfront investment
- Self funding (positive net cash flow)
- Achieved target IRR with strong margin despite lower price

## G1/61 and G2/61: *Supply 80% of natural gas production in Thailand*

| | Production | Start-up |
|---|---|---|
| G1/61 | 800 MMSCFD | 2022 |
| G2/61 | 700 MMSCFD | 2022/2023 |

### Concrete transition plan:

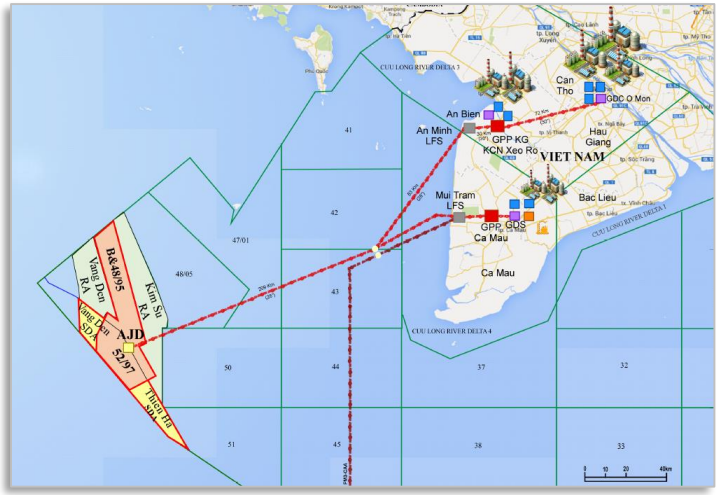
*Asset Transfer Agreement (ATA): To be agreed between current concessionaires and DMF by 2021 (1 year prior concession end)

Source : TOR

# Other South East Asia countries

*Expanding foothold in the region*

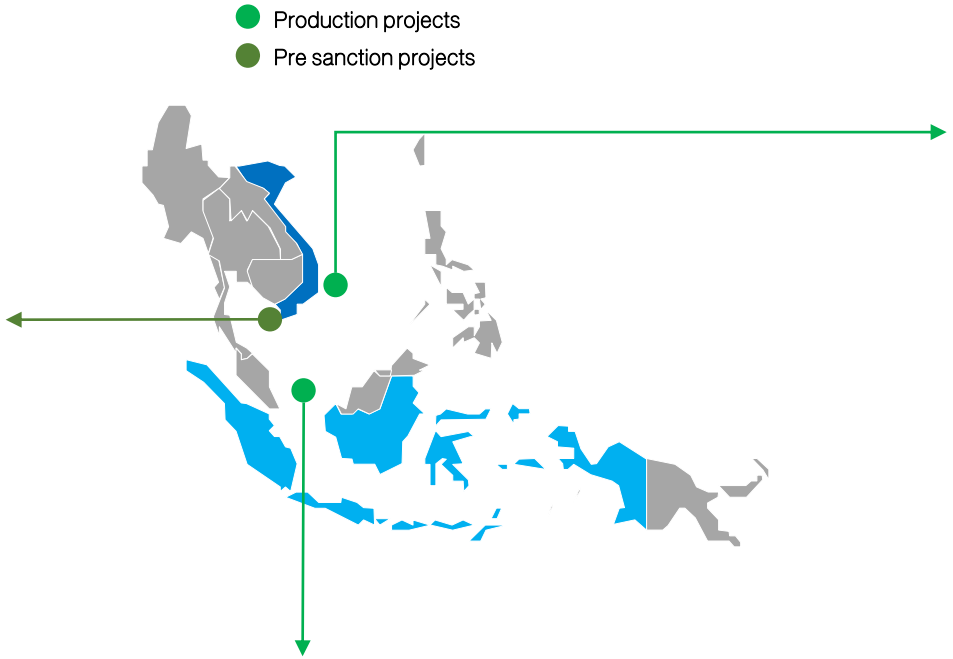
## Vietnam and Indonesia




### 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)*

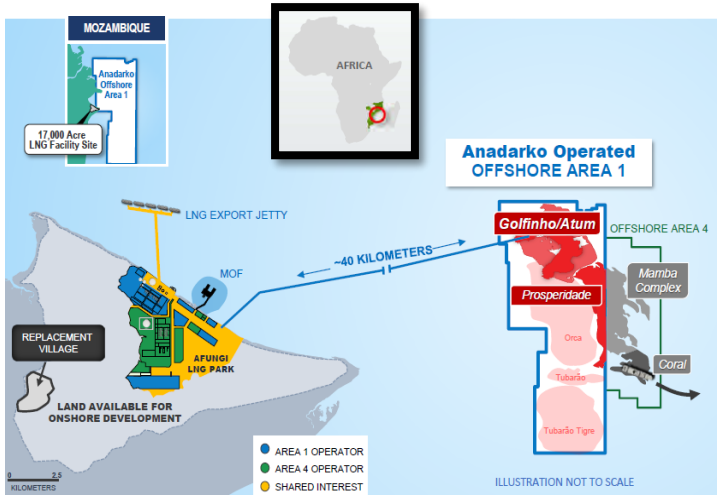
- Average sales volume of crude oil was 13 KBPD in 9M2020
- The project is currently drilling an additional production well to maintain production plateau.

### Natuna Sea A *(11.5% WI)*

- Average sales volume of natural gas was 208 MMSCFD in 9M2020

# 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 mmcfd 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 13.1 MTPA capacity**

## Way Forward

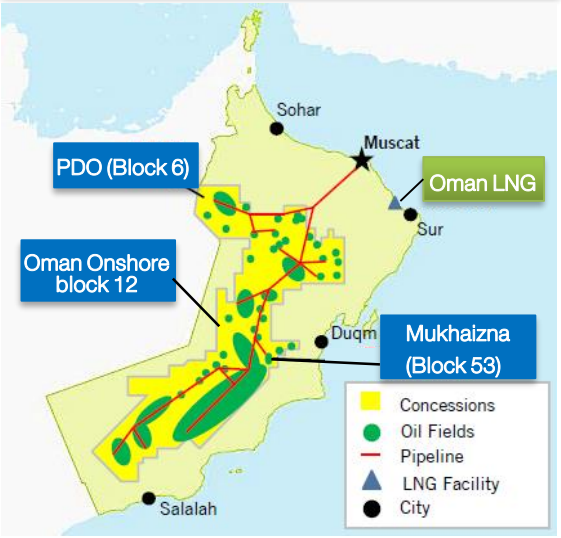
- Project Finance
  *(2/3 Project Financed)*
- Drilling & Completion
- Onshore Construction and Offshore Installation
- Operation Readiness
- LNG Shipping

1st Cargo *expected 2024*

# The Middle East

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

## Oman




### 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)
- Operated by Petroleum Development of Oman (Joint Operating Company)

### Mukhaizna (Block 53)

- Largest single onshore producing field in Oman
- Oil production: 120,000 BPD (13% of Oman production)
- Operated by Occidental Petroleum (47% interest)

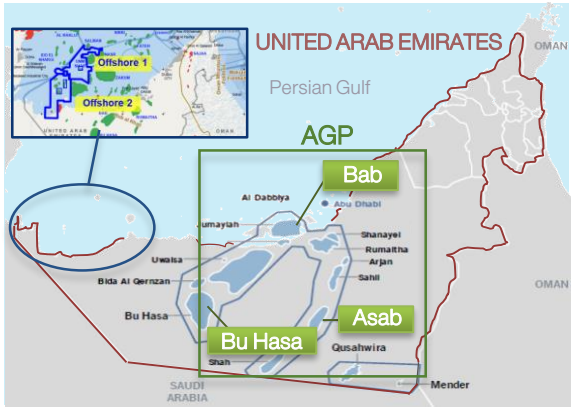
### Block 12

- Located onshore central part of the Sultanate of Oman
- Signed agreement with Oman's Ministry of Oil and Gas (MOG) for exploration and production rights in February 2020
- Operated by Total E&P Oman Block 12 B.V. (80% interest)

### Oman LNG

- The only LNG facility in Oman
- Processing capacity 10.4 MTPA
- Contracted LNG sales to international buyers: Japan and South Korea
- Government of Oman 51% (Operator)

## UAE

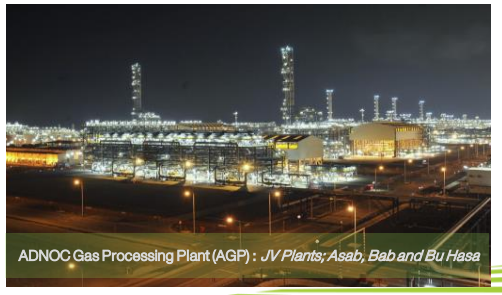



### Abu Dhabi Offshore 1 and 2

- High potential prospective resources with significant sizeable discoveries
- Located North-west of Abu Dhabi Emirates, United Arab Emirates
- Granted the award for exploration in January 2019
- Operated by Eni Abu Dhabi B.V. (70% interest)

### 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
- Opreated by ADNOC (68% interest)



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

# America: Mexico and Brazil

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

## Deep Water Brazil

### Barreirinhas AP1

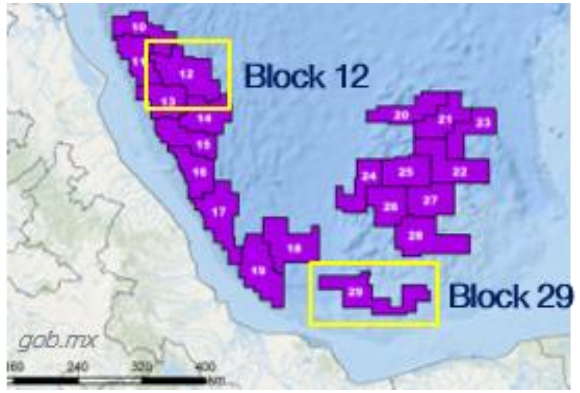
- Farm-in 25% from BG Group in 2014
- Operated by Shell Brasil (65% interest)
- Four offshore exploration blocks: BAR-M-215, BAR-M-217, BAR-M-252 and BAR-M-254

### BM-ES-23

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

In 2020, Both projects are currently evaluating the petroleum potential

## Gulf of Mexico, Mexico




*Deep-water with high petroleum potentials and attractive fiscal regime*

### Mexico block 12 (2.4)

- Non-operating partner with 20% participating interest
- Located in the Mexican Ridges, western Gulf of Mexico
- Currently being evaluated for petroleum potential to prepare for drilling of an exploration well in 2021

### Mexico block 29 (2.4)

- Non-operating partner with 16.67% participating interest
- Located in the Campeche, southern Gulf of Mexico
- Made two successful deep-water oil discoveries with good quality reservoirs in May 2020
- Currently preparing to evaluate for petroleum potential as well as future development plans for further regulatory approval

# 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 Satu (Train 1-3)**
Capacity 8.4MTPA
COD Jan 1983

**MLNG Tiga (Train 7-8)**
Capacity 7.7MTPA
COD Mar 2003

**MLNG Train 9**
Capacity 3.6MTPA
COD Jan 2017

**MLNG Dua (Train 4-6)**
Capacity 9.6MTPA
COD May 1995

## 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) | Petronas 65%<br>JX Nippon 10%<br>PTT Global LNG 10%<br>Sarawak State 10%<br>Sabah State 5% |

## 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*

## Gas to Power — *"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 — *Shifting Gear to Business Building*

### Subsea

- End-to-end AI-augmented Inspection Repair and Maintenance (IRM)

### DroneBiz

- Infrastructure Asset Inspection On-demand

### AgriTech

- Smart Farming Services Platform

### MedTech

- Fully autonomous model of UVC-Disinfection Robot

# Project information 1/5

| | Project | Status* | Phase | PTTEP's Share | Partners (as March 2020) | 9M2020 Average Sales Volume ** | | 2020 Key Activities |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Gas (MMSCFD) | Liquid (KBPD) | |
| **Thailand and JDA** | | | | | | | | |
| 1 | **Arthit** | OP | Production | 80% | Chevron 16%<br>MOECO 4% | 219 | 10 | • Ensure gas deliverability level at DCQ***<br>• Drill development wells |
| 2 | **B6/27** | OP | Production | 100% | | - | - | • Prepare for decommissioning activities |
| 3 | **B8/32 & 9A** | JV | Production | 25.001% | Chevron 51.66%<br>MOECO 16.71%<br>KrisEnergy 4.63%<br>Palang Sophon 2% | 51 | 18 | • Drill development wells<br>• Perform waterflood activities |
| 4 | **Bongkot** | OP | Production | 66.6667% | TOTAL 33.3333% | 749 | 22 | • Maintained production level as planned<br>• Prepare for decommissioning activities |
| 5 | **Contract 3** *(Formerly Unocal III)* | JV | Production | 5% | Chevron 71.25%<br>MOECO 23.75% | 587 | 35 | • Drill development wells<br>• Prepare for decommissioning activities |
| 6 | **Contract 4** *(Formerly Pailin)* | JV | Production | 60% | Chevron 35%<br>MOECO 5% | 308 | 12 | • Ensure gas deliverability level at DCQ***<br>• Drill development wells |
| 7 | **E5** | JV | Production | 20% | ExxonMobil 80% | 8 | - | • Ensure gas deliverability level at DCQ*** |
| 8 | **G4/43** | JV | Production | 21.375% | Chevron 51%<br>MOECO 21.25%<br>Palang Sophon 6.375% | 2 | 4 | • Drill development wells |
| 9 | **G4/48** | JV | Production | 5% | Chevron 71.25%<br>MOECO 23.75% | 7 | 0.4 | • Drill development wells |
| 10 | **L53/43 & L54/43** | OP | Production | 100% | | - | 1.1 | • Maintain production plateau<br>• Drill development wells |
| 11 | **PTTEP1** | OP | Production | 100% | | - | 0.122 | • Drill a development well<br>• Maintain production plateau |
| 12 | **S1** | OP | Production | 100% | | 7 | Crude:30 KBPD<br>LPG: 0.2 KMT/D | • Drill development wells<br>• Enhance oil recovery program includes hydraulic fracturing and artificial lift |
| 13 | **Sinphuhorm** | OP | Production | 55% | Apico**** 35%<br>ExxonMobil 10% | 94 | 0.284 | • Ensure gas deliverability<br>• 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 information 2/5

| | Project | Status* | Phase | PTTEP's Share | Partners (as March 2020) | 9M2020 Average Sales Volume ** | | 2020 Key Activities |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Gas (MMSCFD) | Liquid (KBPD) | |
| **Thailand and JDA** | | | | | | | | |
| 14 | **L22/43** | OP | Production | 100% | | - | - | • Maintain production operation |
| 15 | **MTJDA** | JOC | Production | 50% | Petronas-Carigali 50% | 266 | 7.7 | • Drill development wells<br>• Ensure gas deliverability level at DCQ*** |
| 16 | **G9/43** | OP | Exploration | 100% | | | | |
| 17 | **G1/61 (Erawan)** | OP | Exploration | 60% | MP G2 (Thailand) Limited 40% | | | • Awarded as an operator for Erawan field (Contract 1, 2 and 3) under PSC (after concession-end in 2022)<br>• E&A study (seismic interpretation)<br>• Installation new head platform |
| 18 | **G2/61 (Bongkot)** | OP | Exploration | 100% | | | | • Awarded as a sole operator under PSC (after concession-end in 2022/2023)<br>• Drill appraisal and exploration wells<br>• Installation new head platform |
| **Others SEA** | | | | | | | | |
| 1 | **Malaysia** | OP (except Gumusut-Kakap (GK) in Block K) | Production/ Exploration/ Development | 6.4-80% (varied by permits) | | **SK309 and SK311**<br>201<br>**Block K**<br>24 | **SK309 and SK311**<br>21<br>**Block K**<br>28 | • Production projects(SK309 and SK311, Block K): Maintain production plateau<br>• Block H: first gas expected in 2H/2020<br>• Sarawak SK410B: drill an appraisal well<br>• Other exploration projects: drill exploration wells, G&G study and perform 3D seismic activities |
| 2 | **Yadana** | JV | Production | 25.5% | TOTAL 31.24%<br>Chevron 28.26%<br>MOGE 15% | 775 | - | • Drill exploration and development wells<br>• Ensure gas deliverability level at DCQ*** |
| 3 | **Yetagun** | JV | Production | 19.3178% | Petronas-Carigali 30.00140%<br>MOGE 20.4541%<br>Nippon Oil 19.3178%<br>PC Myanmar (Hong Kong) 10.90878% | 59 | 1.5 | • Maintain production level<br>• Drill exploration and development wells |
| 4 | **Zawtika** (M9 & a part of M11) | OP | Production | 80% | Myanma Oil and Gas Enterprise (MOGE) 20% | 323 | - | • Ensure gas deliverability level at DCQ***<br>• Drill exploration and development wells<br>• Perform 3D seismic activities |
| 5 | **Myanmar M3** | OP | Exploration | 80% | MOECO 20% | | | • FEED/ Subsurface/ Surface studies<br>• Negotiate and finalize GSA |
| 6 | **Myanmar M11** | OP | Exploration | 100% | | | | • Perform 3D seismic activities<br>• Block relinquish |
| 7 | **Myanmar MD-7** | OP | Exploration | 50% | TOTAL 50% | | | • Drill an exploration well<br>• 3D Reprocessing seismic activities<br>• G&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 3M/2020)/ For Block K, gross production is net off unitization
*** DCQ = Daily Contractual Quantity

# Project information 3/5

| | Project | Status* | Phase | PTTEP's Share | Partners (as March 2020) | 9M2020 Average Sales Volume ** | | 2020 Key Activities |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Gas (MMSCFD) | Liquid (KBPD) | |
| **Others SEA** | | | | | | | | |
| 8 | **Myanmar MOGE 3** | OP | Exploration | 77.5% | Palang Sophon 10%<br>MOECO 10%<br>WinPreciousResources 2.5% | | | • G&G studies<br>• Complete site reinstatement |
| 9 | **Vietnam 9-2** | JOC | Production | 25% | PetroVietnam 50%<br>SOCO 25% | 14 | 4.0 | • Maintain production level<br>• Perform well intervention program<br>• Development drilling study support |
| 10 | **Vietnam 16-1** | JOC | Production | 28.5% | PetroVietnam 41%<br>SOCO 28.5%<br>OPECO 2% | 6 | 13 | • Maintain production level<br>• Drill development wells |
| 11 | **Vietnam B & 48/95** | JV | Exploration | 8.5% | PVN 65.88%<br>MOECO 25.62% | | | • FEED study<br>• Negotiation process on commercial terms in order to push forward the Final Investment Decision (FID)<br>• the first production target at the end of 2023 |
| 12 | **Vietnam 52/97** | JV | Exploration | 7% | PVN 73.4%<br>MOECO 19.6% | | | • FEED study<br>• Negotiation process on commercial terms in order to push forward the Final Investment Decision (FID)<br>• the first production target at the end of 2023 |
| 13 | **Natuna Sea A** | JV | Production | 11.5% | Premier Oil 28.67%<br>KUFPEC 33.33%<br>Petronas 15%<br>Pertamina 11.5% | 208 | 1.6 | • FEED study: Start Anoa & Gajah Baru compressor project |
| **Middle East** | | | | | | | | |
| 1 | **Abu Dhabi Offshore 1** | JV | Exploration | 30% | Eni Abu Dhabi 70% | | | • Reprocess Seismic<br>• G&G studies |
| 2 | **Abu Dhabi Offshore 2** | JV | Exploration | 30% | Eni Abu Dhabi 70% | | | • Drill an exploration well<br>• Perform 3D seismic activities |
| 3 | **PDO (Block 6)** | JOC | Production | 2% | Government of Oman 60%<br>Shell 34%<br>Total 4% | | 521 | • A part of Partex acquisition which was completed on 4 November 2019<br>• Maintain production plateau |
| 4 | **Mukhaizna** | JV | Production | 1% | Occidental 47%<br>OOCEP 20%<br>Indian Oil 17%<br>Mubadala 15% | | 79 | • A part of Partex acquisition which was completed on 4 November 2019<br>• Maintain production plateau |
| 5 | **Block 12** | JV | Exploration | 20% | Total E&P Oman Block 12 B.V. 80% | | | • Signed Exploration and Production Sharing Agreement (EPSA) with Oman's Ministry of Oil and Gas (MOG) for exploration and production rights on 19 Feb 2020 |

* Status: OP = PTTEP operatorship / JOC = PTTEP joint operatorship / / JV = PTTEP Joint Venture Partner
** Sales volume stated at 100% basis

# Project information 4/5

| | Project | Status* | Phase | PTTEP's Share | Partners (as March 2020) | 9M2020 Average Sales Volume ** | | 2020 Key Activities |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Gas (MMSCFD) | Liquid (KBPD) | |
| **Other International** | | | | | | | | |
| 1 | **PTTEP Australasia (PTTEP AA)** | OP | Exploration | 90%-100% (varied by permits) | | | | • AC/RL7 (Cash Maple): under the evaluation of appropriated development plan and seeking partner to manage the project's risk<br>• Other exploration projects: G&G and P&A studies<br>• AC/L3: total block relinquishment |
| 2 | **Mozambique Area 1** | JV | Development | 8.5% | Total, Mitsui, ENH, ONGC Beas Rovuma, Bharat<br>26.5%,20% 15%, 10% 10%, 10% | | | • First Cargo is expected by 2024<br>• Finalize project Finance<br>• Continue Onshore and Offshore well construction<br>• Complete Resettlement |
| 3 | **Algeria 433a & 416b (Bir Seba)** | JOC | Production | 35% | PetroVietnam 40%<br>Sonatrach 25% | - | 17 *(net entitlement)* | • Drill production wells |
| 4 | **Algeria Hassi Bir Rekaiz** | OP | Development | 24.5% | CNOOC 24.5%<br>Sonatrach 51% | | | • Drilling development wells<br>• FEED study<br>• Continue Improvement oil study (IOR) |
| 5 | **Mariana Oil Sands** | OP | Exploration | 100% | | | | • Assess appropriated development approach |
| 6 | **Barreirinhas AP1** | JV | Exploration | 25% | Shell Brasil 65%<br>Mitsui E&P Brasil 10% | | | • G&G studies |
| 7 | **Brazil BM-ES-23** | JV | Exploration | 20% | Petrobras 65%<br>INPEX 15% | | | • G&G studies |
| 8 | **Mexico block 12 (2.4)** | JV | Exploration | 20% | PC Carigali Mexico 60%<br>Ophir Mexico 20% | | | • EIA and G&G study to access petroleum potential |
| 9 | **Mexico block 29 (2.4)** | JV | Exploration | 16.67% | Repsol Mexico 30%<br>PC Carigali Mexico 28.33%<br>Wintershal DEA 25% | | | • Drilling Exploration wells<br>• G&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)

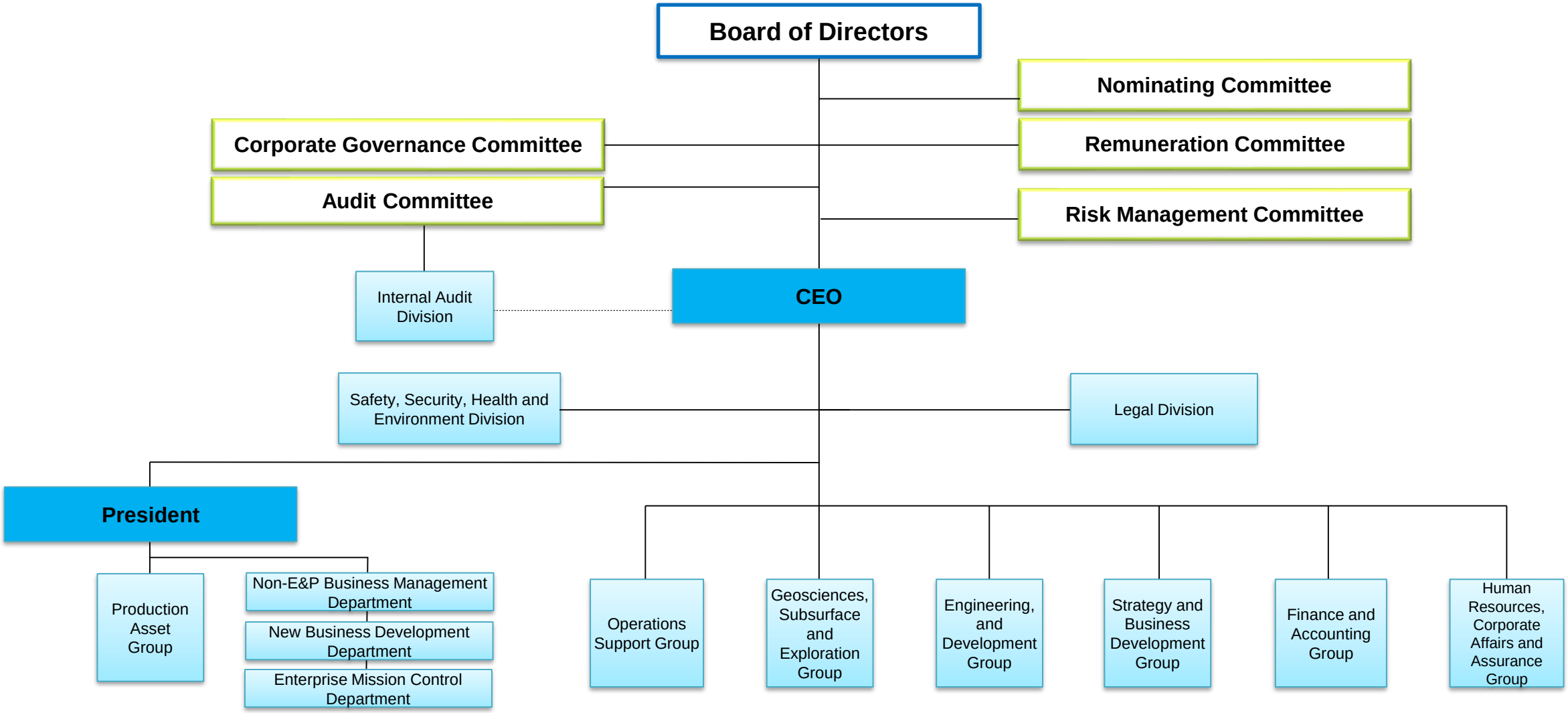
# Project information 5/5

| | Project | Status* | Phase | PTTEP's Share | Partners (as March 2020) | 9M2020 Average Sales Volume ** | | 2020 Key Activities |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Gas (MMSCFD) | Liquid (KBPD) | |
| **Other International** | | | | | | | | |
| 10 | **Block 17/06** | JV | Pre development | 2.5% | Total 30%<br>Sonangol 30%<br>SSI 27.5%<br>Acrep 5%<br>Falcon Oil 5% | | | • A part of Partex acquisition which was completed on 4 November 2019<br>• Maintain production plateau |
| 11 | **Potiguar** | OP | Production | 50% | Petro reconcavo 50% | | 0.182 | • A part of Partex acquisition which was completed on 4 November 2019<br>• Maintain production plateau |
| 12 | **Dunga** | JV | Production | 20% | Total* 60%<br>OOCEP 20% | 2 | 12 | • A part of Partex acquisition which was completed on 4 November 2019<br>• Maintain production plateau |
| **Midstream Project** | | | | | | | | |
| 1 | **Oman LNG** | Shareholder | On line | 2% | Government of Oman 51%<br>Shell 30%<br>Total 5.54%<br>Korea LNG 5%<br>Mitsubishi 2.77%<br>Mitsui 2.77%<br>Itochu 0.92% | | | • A part of Partex acquisition which was completed on 4 November 2019 |
| 2 | **ADNOC Gas Processing (AGP)** | JV | On line | 2% | ADNOC 68%<br>Shell 15%<br>Total 15% | | | • A part of Partex acquisition which was completed on 4 November 2019 |

- Status: OP = PTTEP operatorship / JOC = PTTEP joint operatorship/ / JV = PTTEP Joint Venture Partner
** Sales volume stated at 100% basis

# Organization structure

*Ensuring transparency, integrity and good corporate governance*




Information as of 1 October 2020

# Supplementary Index : Ratio & Formula

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