



Member of  
**Dow Jones  
Sustainability Indices**

Powered by the S&P Global CSA

# Investor Presentation

## JP Morgan ASEAN Commodities Forum

8 March 2022

# Cautionary Statement

## 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.

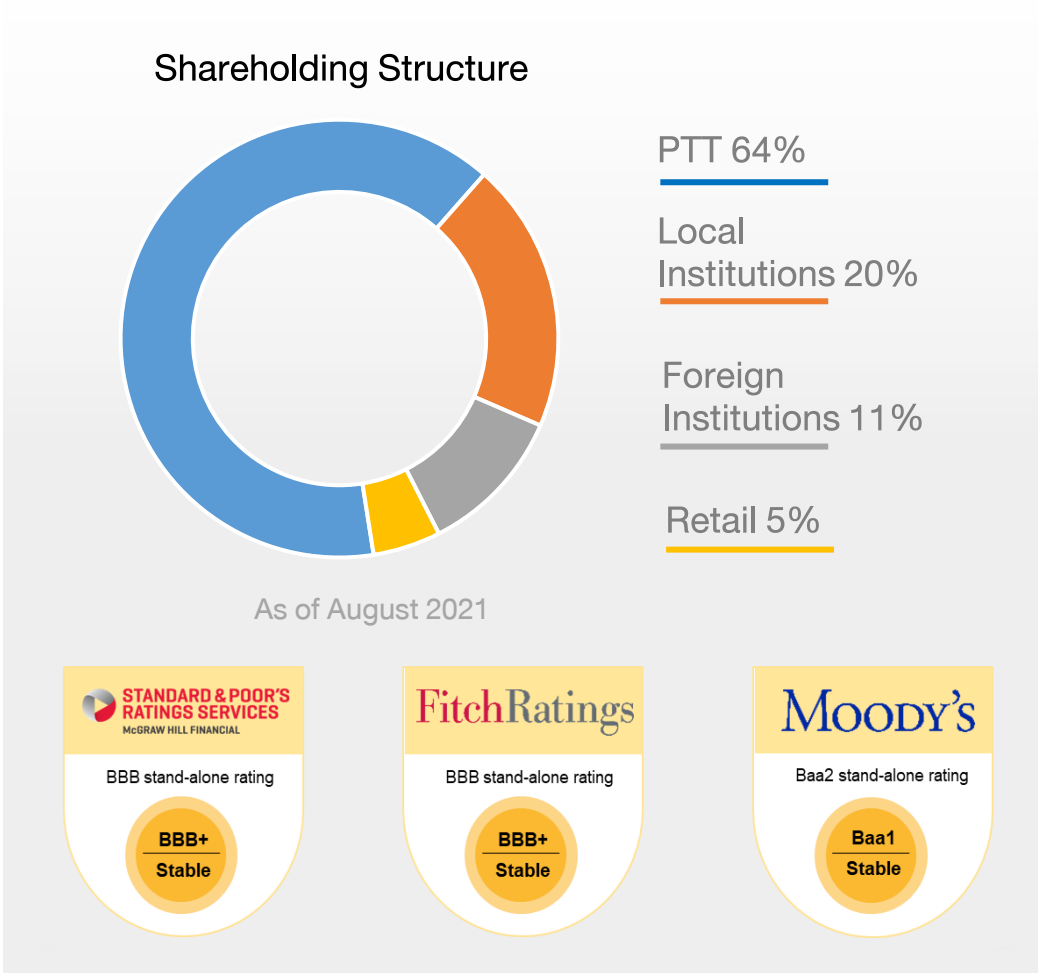
**Probable Reserves** - Probable reserves are defined as those unproved reserves which analysis of geological and engineering data suggests are more likely than not to be recoverable.



# Corporate Introduction



# PTTEP - The Largest E&P company in Thailand



**E&P arm of PTT Group**  
Established 1985

**> 14 Billion USD**  
Market Capitalization in SET

**> 90% from SEA & ME**  
Sales Revenue

**< 14 USD/BOE**  
Competitive Cash Cost

2014-2021

2016-2021

2016-2021



# Business update



# Operating Results 2021

**416** KBOED

+18% vs 2020, new  
volume from B61, SBH

**28.5** USD/BOE

-7% vs 2020, gradual  
decrease towards target

**4** new discoveries

From 3 MY Exploration projects  
SK417, SK405B, SK438

**Oman B61**

Biggest M&A in company  
history 2.3BN\$ (Mar 2021)

**Sabah H**

1<sup>st</sup> Gas (Feb 2021)

**7.5** years

of 1P R/P Ratio

**Beyond E&P**

Tech: ARV 4 Business lines  
Power: FEV, FST

**0.17** LTIF

Safety Records per IOGP  
Standard

**24.1%**

GHG intensity emission  
reduction

**6,000** M.THB

First fully Digital Bonds in  
Thailand via e-Wallet

**41** Awards

In Performance, SD, GRC,  
IR, CSR, Management



# Key Focus Areas 2022

A large offshore oil rig is illuminated at night, with its complex structure of pipes, platforms, and cranes glowing against a dark blue sky. The rig is situated in the middle of the ocean, with its reflection visible on the water's surface. The overall scene conveys a sense of industrial activity and energy production.

## G1 & G2

Safe transition & accelerate ramp-up activities

## Assets Monetization

LLB FEED for FID 2023  
Sarawak Clusters

## Exploration

21 exploration and appraisal wells in 4 countries

## GHG & CCS

Emission intensity reduction and CCS rollout

## Net Zero

Target declaration by Q2/2022

## Diversification

ARV, G2P, CCU, Renewables, H2 study



# Operations Update



## Thailand

G1/61

- Site access Jan 22 for Operatorship Transfer
- Starting ~425mmscfd, then drop to 250-300mmscfd
- 8 platforms and 100+ Dev. wells required for ramp-up
- 24 months timeframe to reach PSC 800mmscfd

G2/61

- Assets Transfer Agreement signed in Q4/21
- On track for 800+mmscfd (including BKT sales vol.)

Arthit

- GSA supplementary signed, to increase DCQ to 280mmscfd (60mmscfd additional)

## Malaysia

- MY 2021 Bid Round pending result in Q1/22
- LLB: Begin FEED in 2022 and prepare for FID in 2023

## Myanmar

- All three fields operates normally
- YDN : TOTAL withdrawing
- YTG : Declining production per field life
- M3 and G2P : Prep work for development on-going

## Mozambique

- Construction resume expected in 2022
- First cargo in late 2025, subject to local security situation

## UAE

- Area C farm-in expecting Govt. approval Q1/22
- Exploration campaigns on-going

## Algeria

- HBR Phase 1, expected First oil in 1<sup>st</sup> half of 2022





# **Sustainability & ESG Update**

# ESG Targets & Progress FY2021

## GHG Management



**25%** reduction target  
of GHG intensity by 2030  
(2012 base year)

### ◆ PROGRESS ◆

#### Reduction of GHG Emission Intensity

**24.1% Reduction** (2.35 million tonne CO<sub>2</sub> equivalent)

**Flare Gas Recovery**  
Recover excess gas to  
production process

**Fugitive & Vent**  
Leak monitoring  
and preventing

**Energy Efficiency**  
Operation efficiency  
and energy saving



**Smart Logistics**  
Logistics operation  
efficiency improvement

**Carbon Capture Storage**  
Trap from flare and inject it  
into suitable storage site

## CCUS Study

**CCU :** Study CNT and completed  
prototype test unit at S1.

**CCS :**

- **GOT [ART]** - Pre-Project study phase
- **LLB** - Completed subsurface study for reservoir modeling



Carbon Nanotube

## Circular Model



**Zero** waste to landfill by 2030  
**≥50%** of main structures reuse by 2030

### ◆ PROGRESS ◆

#### Waste to Landfill



#### Topside Reuse Project

Completed the 1<sup>st</sup> topside relocation at Arthit.



#### Upcycling High Volume Waste

**Pilot Recycle Drill Cuttings Road:** Completed  
experimental road at Rapid  
Scaled-Up Center (RASC) in  
Rayong.



**Sand to Zeolite:** Successfully synthesized prototype zeolite  
from nano-silica.

## Ocean for Life



### Net Positive Impact

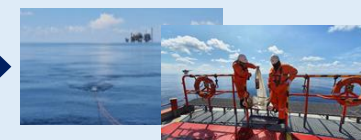
of Biodiversity & Ecosystem Services in  
Offshore Operations vs baseline by 2030

**≥50%** Increase in Local community  
income vs baseline by 2030

### ◆ PROGRESS ◆

#### Ocean Health & Biodiversity Monitoring

Completed microplastic  
baseline survey in offshore  
operations including Koh Tao,  
Koh Losin and Chumphon



Completed baseline of coral  
bleaching at Koh Mannai, Rayong  
by multi-spectral drone

Completed aquatic animal motion  
detection software applied in ART  
offshore operation



#### Net Positive Impact of BES

Progress on Ocean BES value at **29.5%**  
in domestic offshore operations to achieved Net  
Positive Impact.

#### Local Community Income

**20.5%** Increase in Community Income for  
local community that participated  
in our program.



# ESG Disclosure & Ratings



ESG Standards

GRI

Global Reporting Initiative Reporting Standards (GRI Standards)

Oil and Gas Sector Disclosures (OGSD)

ESG Ratings	<div><div><div><div>👍</div><div>S&amp;P Global Ratings</div><div>ESG Rating</div></div><div><div>100</div><div>80</div><div>60</div><div>40</div><div>20</div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div></div></div>
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	<div><div><div><div>SUSTAINALYTICS</div><div>a Morningstar company</div><div>ESG Risk Rating</div></div><div><div>0-10</div><div>10-20</div><div>20-30</div><div>30-40</div><div>40+</div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div></div></div>
Source: S&P Global, MSCI, Moody's, CDP, SUSTAINALYTICS' websites	



# **Financial results 2021 & Outlook 2022**



# Key items impacting 2021 Net Income

## Core Net Income

+89%



increased significantly  
vs 2020



Sales volume +18%

- Oman Block 61 +35KBOED
- Sabah-H +19KBOED



Average Selling price +12%

- Liquid +61%
- Gas -9%



Bongkot Decommissioning  
Liabilities reduction

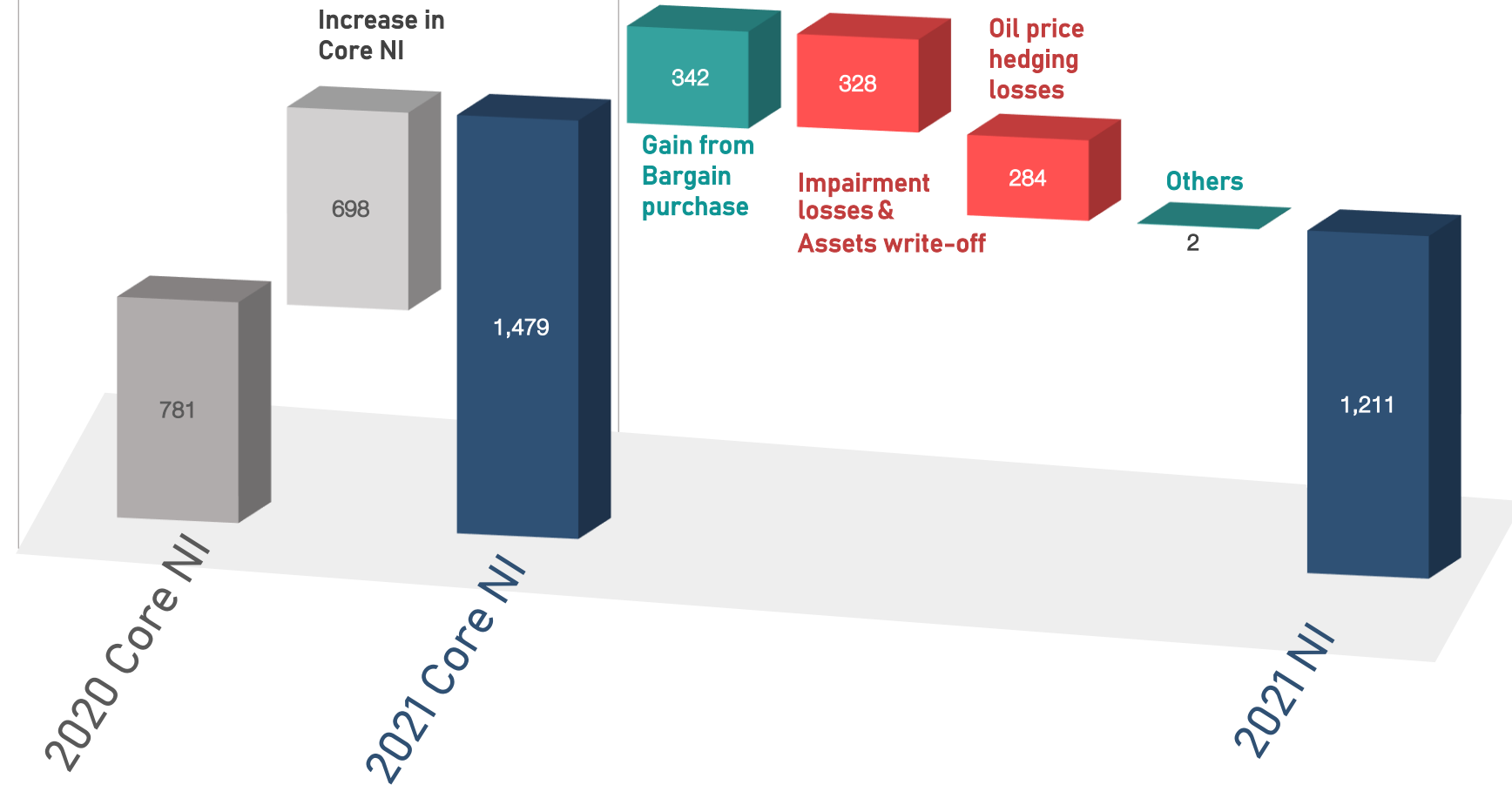


Malaysia Block K  
redetermination

## Recurring net income

## Non-recurring income / loss

Unit : million USD

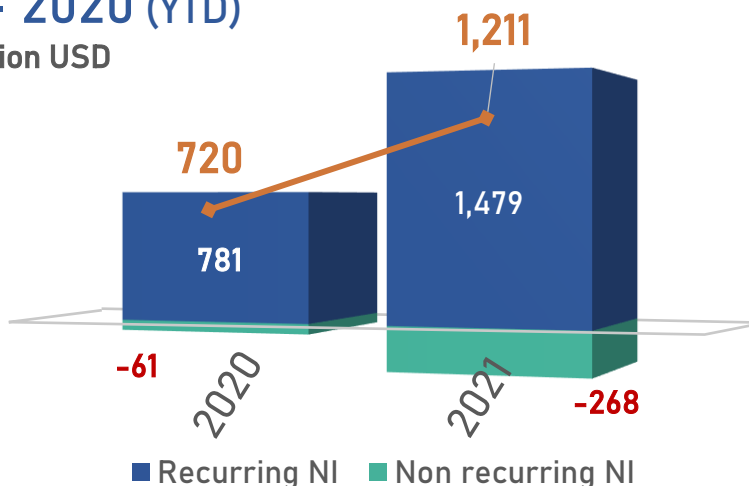


# Results – Net Income

Soaring net income from sales volume growth, higher selling price, and effective cost management

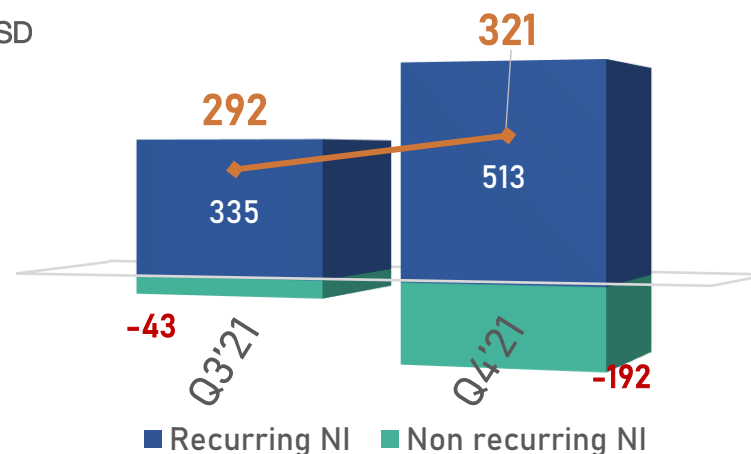
## 2021 - 2020 (YTD)

Unit: million USD



## Q4/21 - Q3/21 (QoQ)

Unit: million USD



### Recurring (+698 MMUSD or +89%)



**+18%**

From Oman Block 61, Sabah H, and Gulf of Thailand



**+12%**

Higher liquid price offset with lower gas price



**-7%**

Lower unit costs

### Recurring (+178 MMUSD or +53%)



**+1%**

Higher Malaysia crude loads offset with gas loss from Zawtika shutdown



**+6%**

Higher gas and liquid price



**+0.4%**

Lower DD&A offset with higher OPEX & G&A

### Non-recurring (-207 MMUSD or ->100%)



Higher oil price hedging and impairment losses offset with a gain from bargain purchase

### Non-recurring (-149 MMUSD or ->100%)

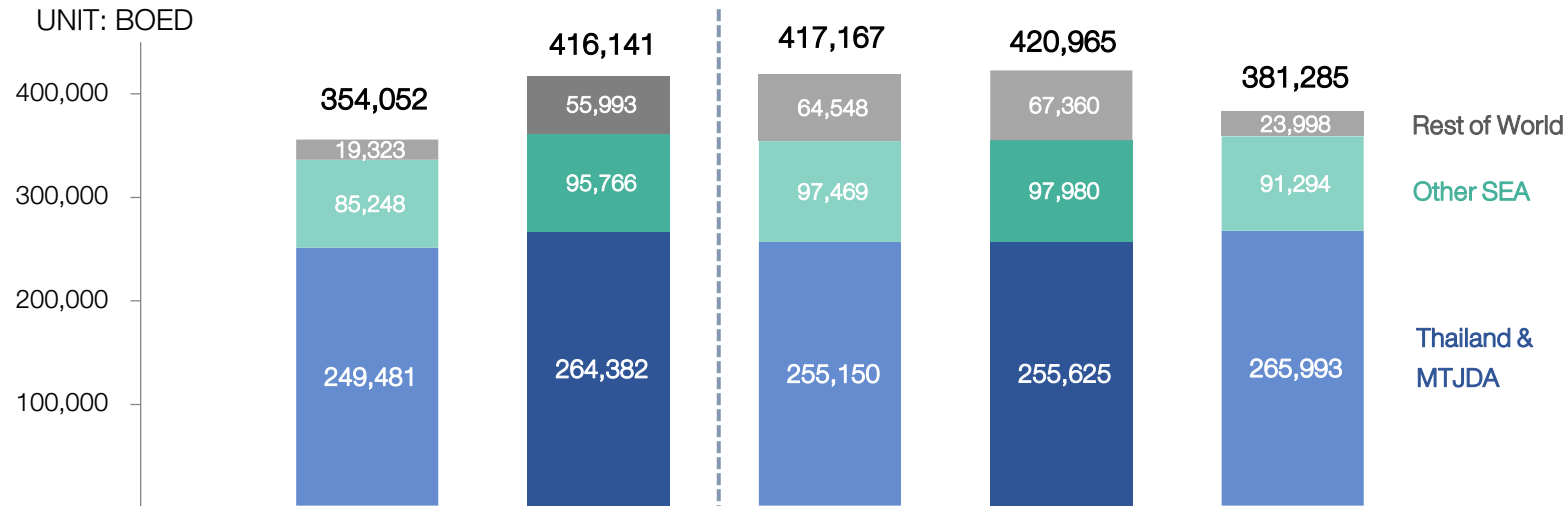


Impairment losses recognized on Mozambique and Myanmar Project



# Results – Sales Volume & Average Selling Price

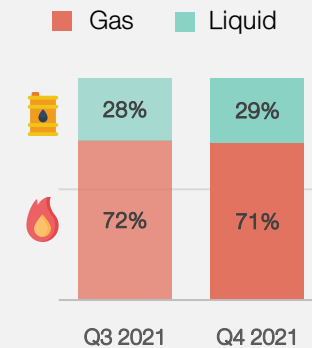
Solid volume growth from Oman Block 61 and Malaysia Sabah-H. Improved ASP thanks to global crude price.



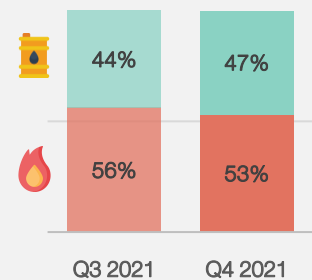
Product Price	2020	2021	Q3 21	Q4 21	Q4 20
Gas (\$/MMBTU)	6.27	5.69	5.76	5.81	5.63
Liquid (\$/BBL)	41.55	66.70	69.16	76.17	42.61
<b>Weighted Avg. (\$/BOE)</b>	<b>38.92</b>	<b>43.49</b>	<b>44.25</b>	<b>46.87</b>	<b>36.85</b>
Avg. Dubai (\$/BBL)	42.27	69.39	71.68	78.27	44.64
Avg. HSFO (\$/BBL) (High Sulphur Fuel Oil)	39.30	64.42	68.35	71.38	44.07

**Note:** Include sales volume from ADNOC Gas Processing (AGP)  
Exclude Oman Block 61 deemed sales volume from tax payment by government

## Volume Mix

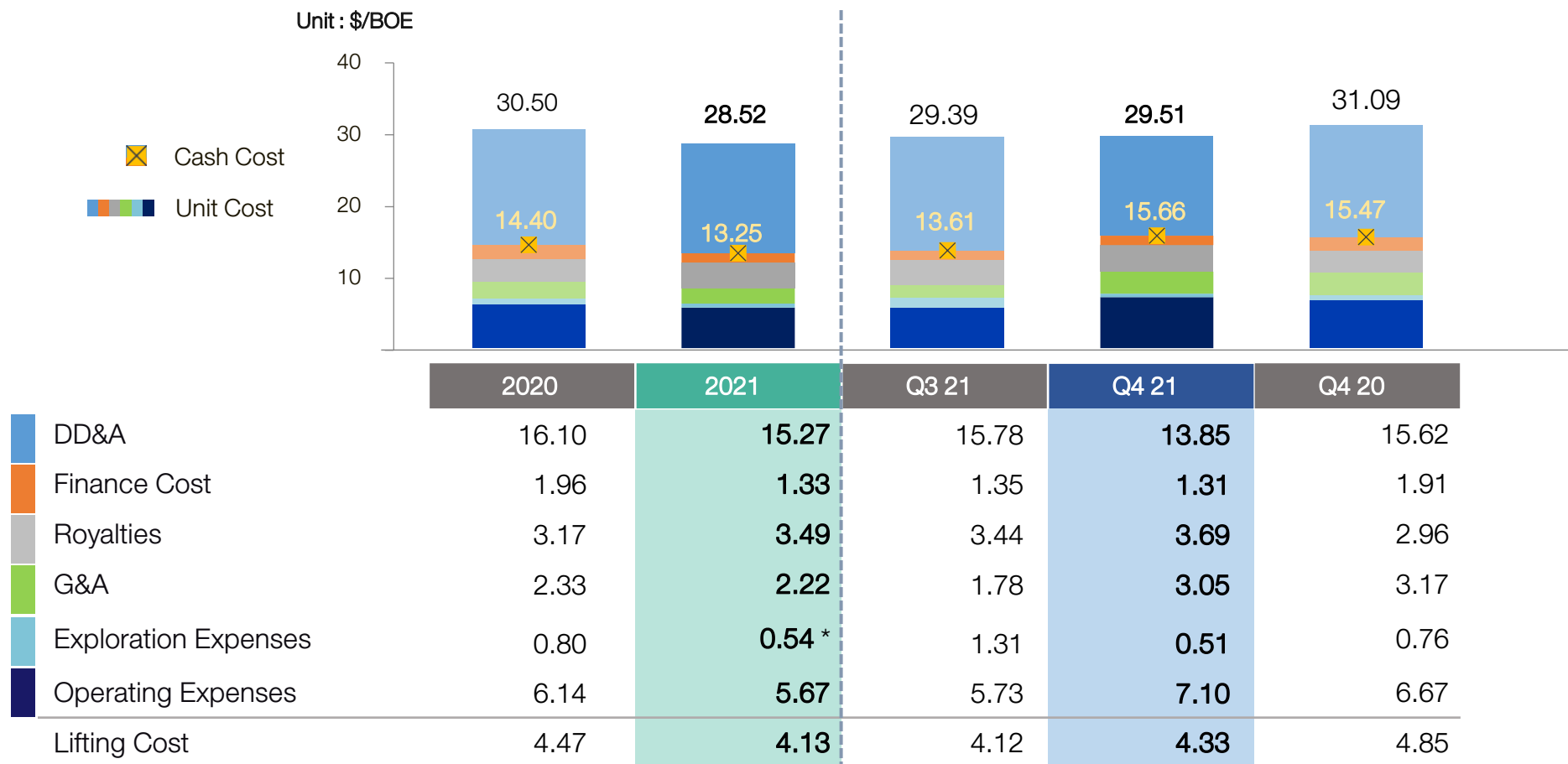


## Revenue Mix



# Results – Unit Cost

Competitive cost from new projects and effective cost management



**Note:** \* Exclude Exploration assets write-off in Brazil for Q1 21

All Unit Cost shown above exclude costs related to new business

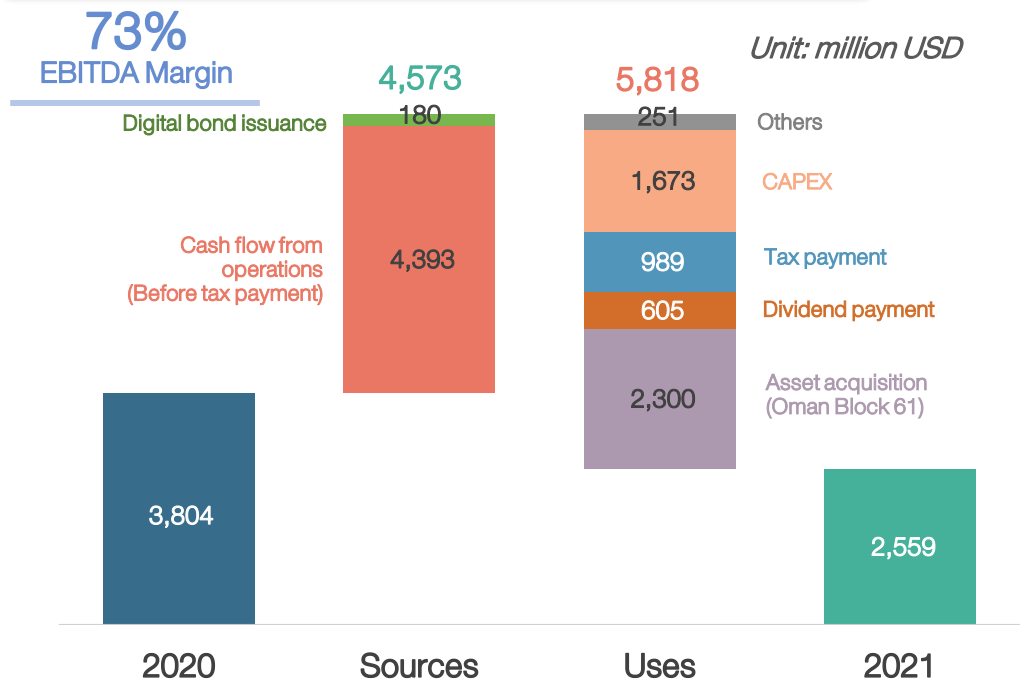
The formulas for calculating ratios are provided in the supplementary section for your reference



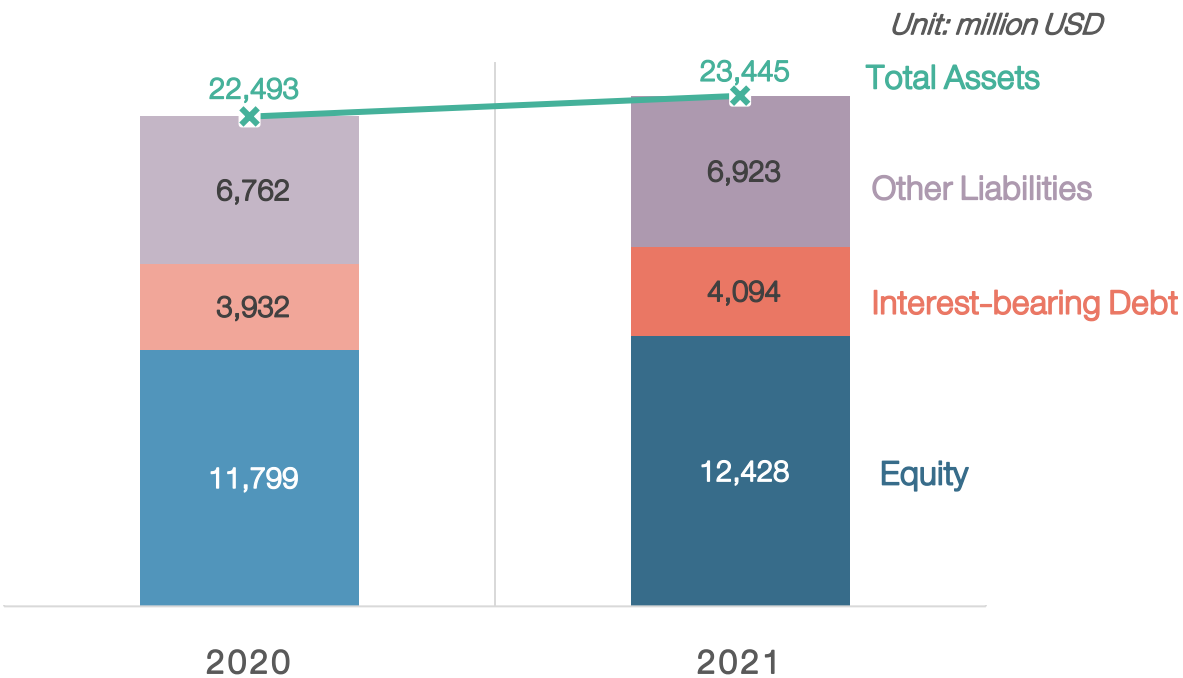
# Results – Cashflows and Financial Position

Robust operating cashflow and financial position despite M&A payments

## 2021: Source and Use of Funds\*



## Financial Position



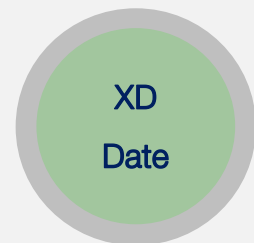
Note: \* Include Short-term investment  
Net of adjustment for the effect of exchange rate changes on cash and cash equivalents

Debt Profile					
D/E ratio	0.33x	0.33x	Weighted Average Loan Life (Years)	14.08	12.67
Weighted Average Cost of Debt (%)	3.44	3.38	Fixed : Floating	82:18	83:17

Note: Debt profile excludes Hybrid bonds

# Shareholders' Return – Dividend

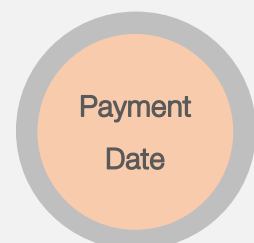
## Schedule for 2H2021 Dividend Payment



10 February 2022

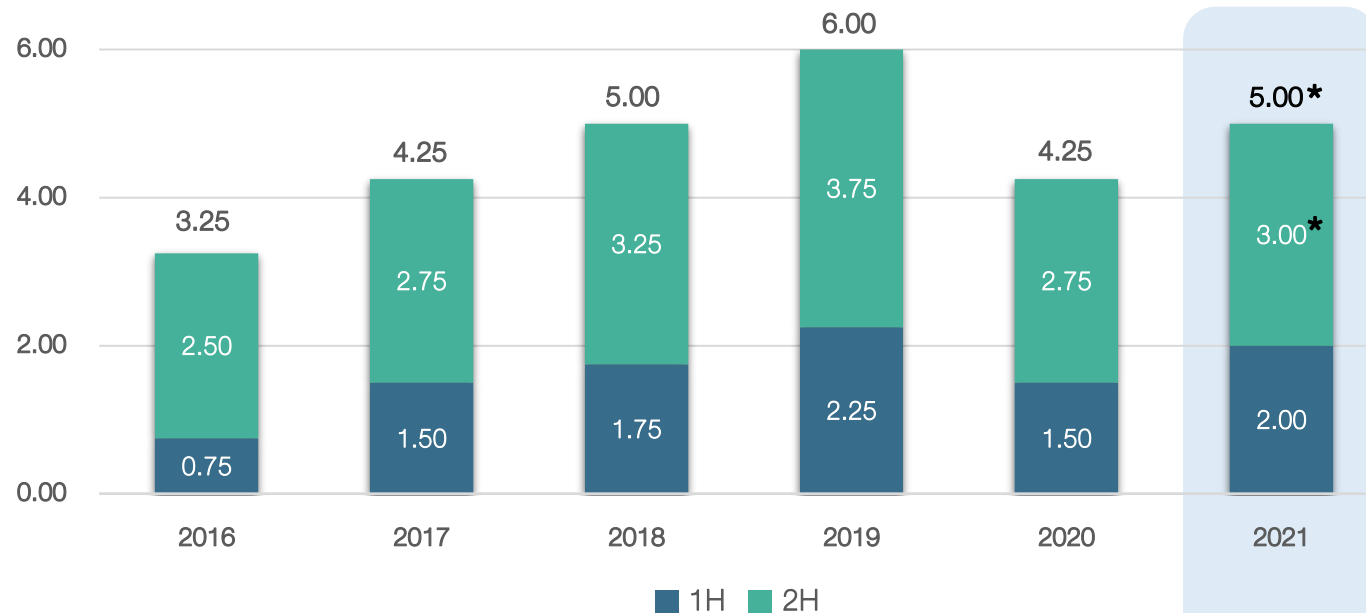


11 February 2022



18 April 2022

THB per share



Payout Ratio  
(% of net income)

98      88      55      49      77      50

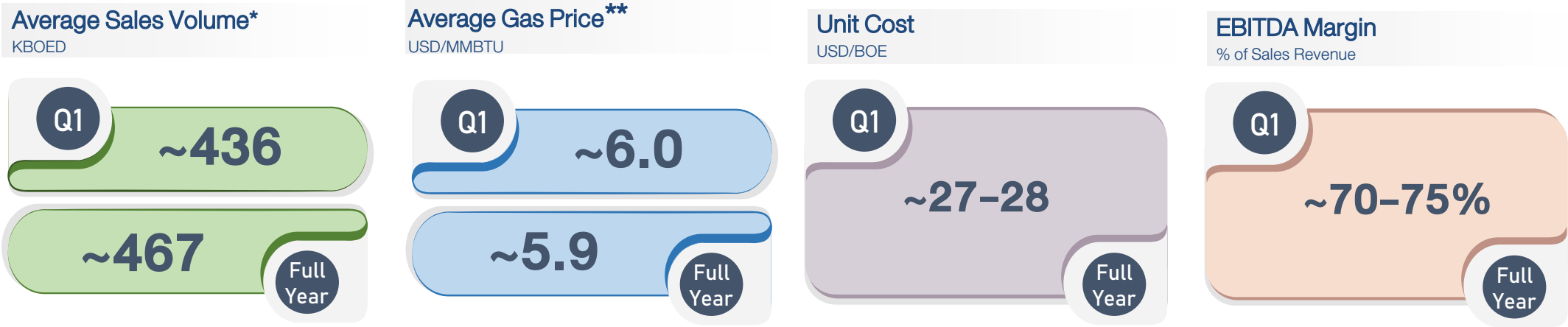
Payout Ratio  
(% of recurring  
net income)

79      63      51      53      71      41

\* Subject to approval from 2022 Annual General Shareholders' Meeting. Implied ~4% dividend yield for FY2021.



## 2022 Guidance



Note:  
\* Include sales volume from ADNOC Gas Processing (AGP)  
\*\* Based on average Dubai oil price in 2022 at 67 \$/BBL

## Credit Ratings





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# Thank you and Q&A

You can reach the Investor Relations team  
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the following channels



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## Supplementary information

● Financial Results Q4/2021 & FY2021	22-24
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● Ratio and Formula	41



# Results – Net Income

Unit: million USD

Statements of Income	2021	2020	%YTD	Q4 21	Q3 21	%QoQ	Q4 20	%YoY
<b>Total Revenues</b>	<b>7,314</b>	<b>5,357</b>	<b>37%</b>	<b>1,989</b>	<b>1,784</b>	<b>11%</b>	<b>1,348</b>	<b>48%</b>
Sales <sup>(1)</sup>	6,731	5,043	33%	1,867	1,744	7%	1,292	45%
Sales Volume (BOED) <sup>(2)</sup>	416,141	354,052	18%	420,965	417,167	1%	381,285	10%
Sales Price (US\$/BOE)	43.49	38.92	12%	46.87	44.25	6%	36.85	27%
Gain from a bargain purchase	342	-	>100%	-	-	-	-	-
Others <sup>(3)</sup>	241	314	(23%)	122	40	>100%	56	>100%
<b>Total Expenses</b>	<b>6,118</b>	<b>4,679</b>	<b>31%</b>	<b>1,671</b>	<b>1,499</b>	<b>11%</b>	<b>1,292</b>	<b>29%</b>
<b>Major Expenses:</b>								
Operating Expenses	861	795	8%	275	220	25%	234	18%
Exploration Expenses	226	104	>100%	20	50	(60%)	27	(26%)
G&A	355	314	13%	125	72	74%	117	7%
DD&A	2,202	2,086	6%	420	606	(31%)	548	(23%)
Loss on Financial Instruments	234	-	100%	7	5	40%	72	(90%)
Impairment Loss on Assets	183	91	>100%	183	-	100%	44	>100%
Income Tax Expenses	1,287	603	>100%	448	326	37%	79	>100%
<b>Share of profit (loss) from associates and JV</b>	<b>15</b>	<b>42</b>	<b>(64%)</b>	<b>3</b>	<b>7</b>	<b>(57%)</b>	<b>25</b>	<b>(88%)</b>
<b>Net income</b>	<b>1,211</b>	<b>720</b>	<b>68%</b>	<b>321</b>	<b>292</b>	<b>10%</b>	<b>81</b>	<b>&gt;100%</b>
Recurring Net Income	1,479	781	89%	513	335	53%	168	>100%
Non-recurring Net Income	(268)	(61)	(>100%)	(192)	(43)	(>100%)	(87)	(>100%)
<b>Non-recurring Net income breakdown:</b>								
Oil Price Hedging	(284)	112	(>100%)	5	(41)	>100%	(38)	>100%
Tax from Effect of FX	(10)	(95)	+89%	1	(2)	>100%	10	(90%)
Effect from FX and others	12	13	(8%)	(15)	-	(100%)	(15)	-
Impairment Loss on Assets	(183)	(91)	(>100%)	(183)	-	(100%)	(44)	(>100%)
Exploration assets write-off	(145)	-	(100%)	-	-	-	-	-
Gain from a bargain purchase	342	-	100%	-	-	-	-	-

Note:

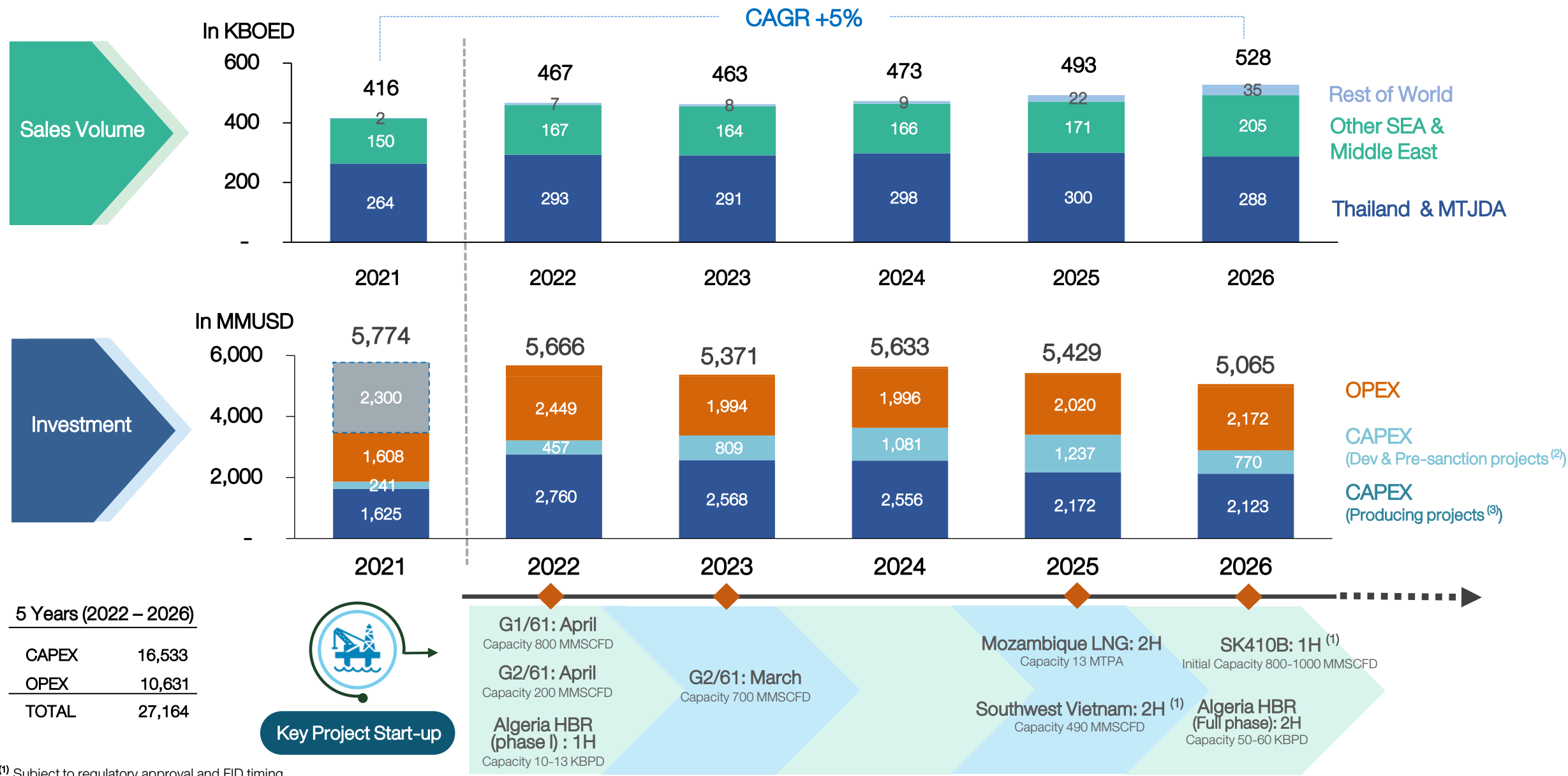
(1) Include Oman Block 61 deemed sales revenues from tax payment by government

(2) Exclude Oman Block 61 deemed sales volume from tax payment by government

(3) Consisted of Revenue from Pipeline, Gain from FX, Forward Contract, and Gain from Oil price Hedging, and Malaysia Block K redetermination of participating interest in Q4'21

# Five –Year Plan : Sales Volume

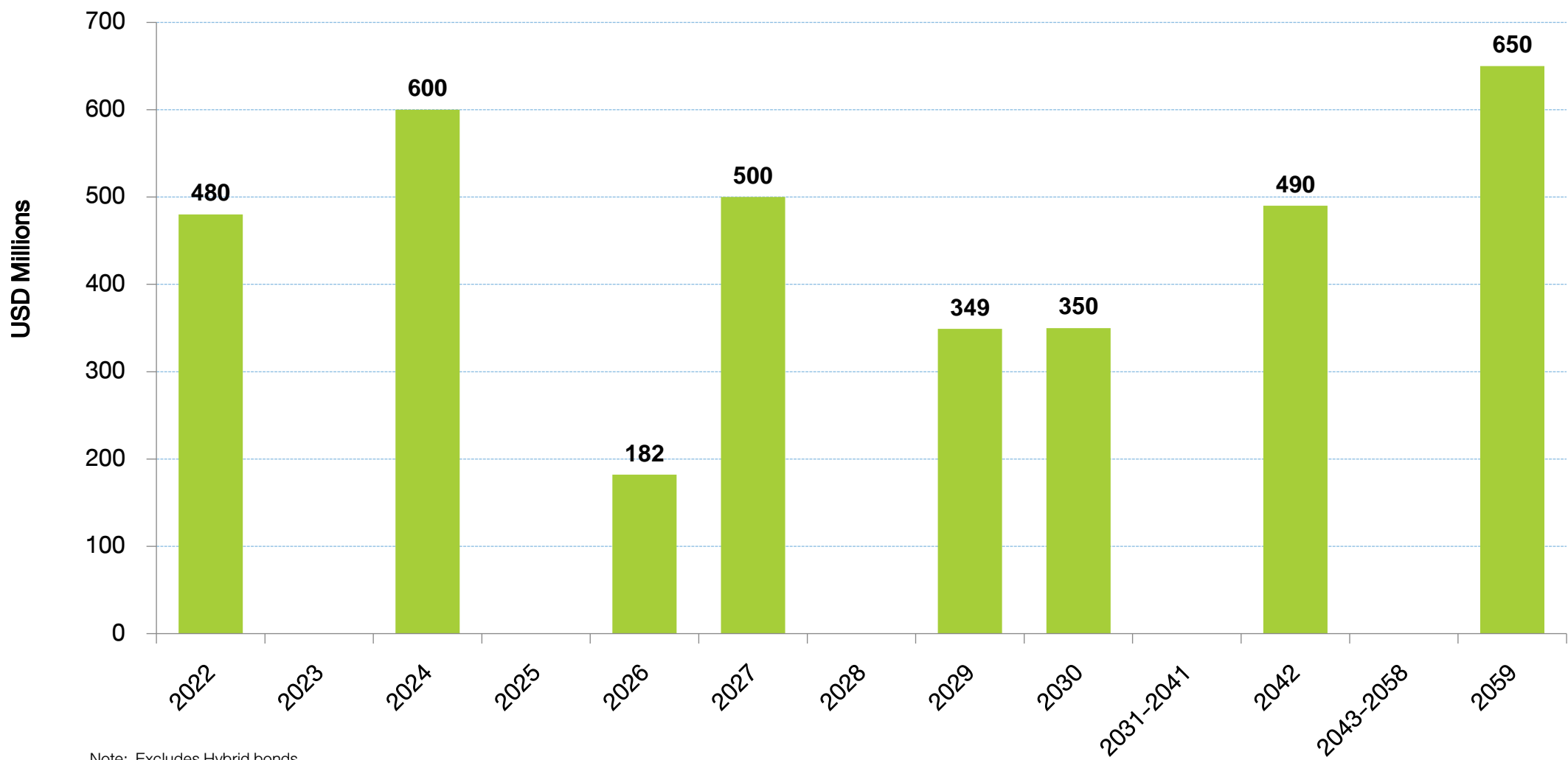
Investing for a Sustainable Growth Towards Energy Transition



Note: <sup>(1)</sup> Subject to regulatory approval and FID timing  
<sup>(2)</sup> Development & Pre-sanction projects include Mozambique LNG , Algeria HBR, SK410B and Southwest Vietnam  
<sup>(3)</sup> Including exploration and appraisal in all projects and head office CAPEX, and new businesses

# Debt Maturity Profile

As of December 2021

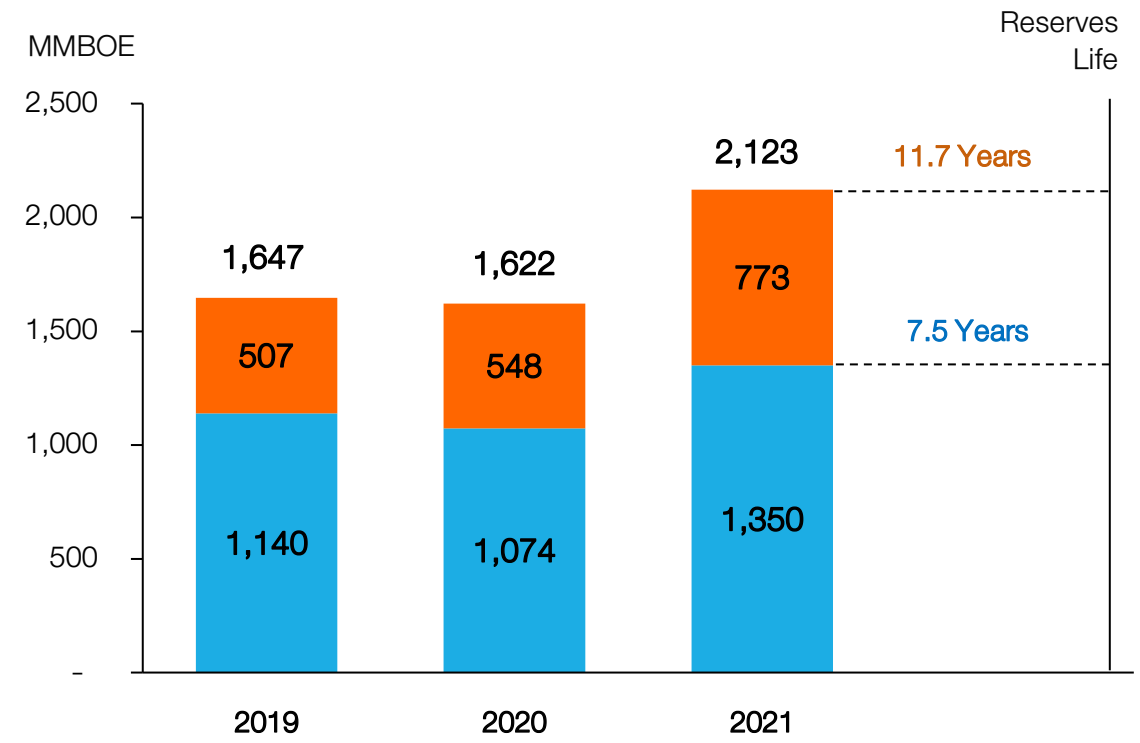


Note: Excludes Hybrid bonds  
Unit: USD Millions or equivalent after cross currency swap



# Reserves at the Year-end 2021

Sustained reserve life at over 5 years target



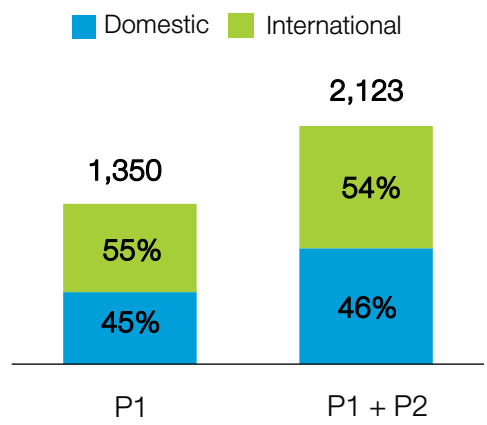
■ Proved (P1) ■ Probable (P2)

5-Year Average Proved Reserves Replacement Ratio (RRR)

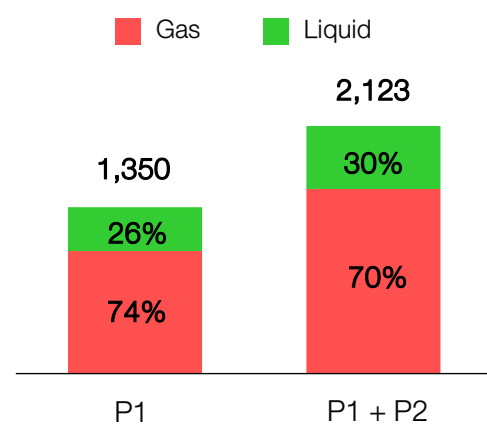
2019	2020	2021
1.5X	1.5X	1.9X

- Based on total production of natural gas, condensate, and crude oil (including LPG) of 495 KBOED for the year ended December 31, 2021
- Figures include reserves from equity method

## 2021 by Geography

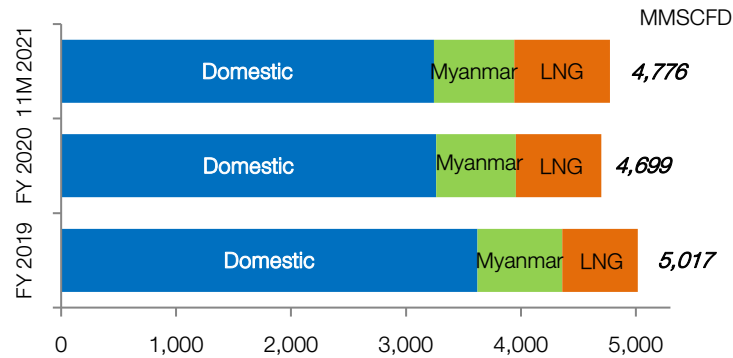


## 2021 by Product Type



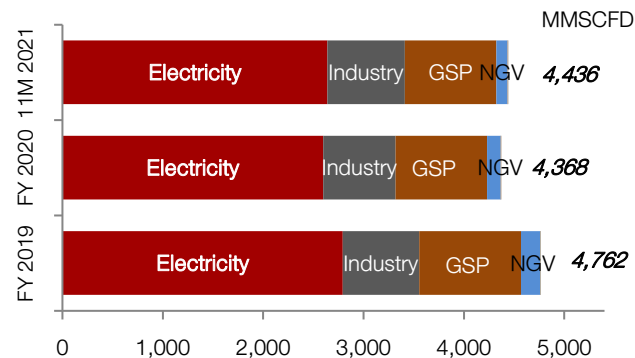
## Thailand Energy Overview

### Natural Gas Supply

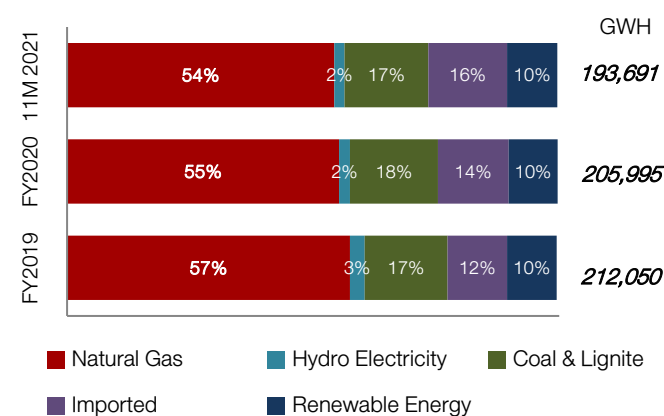


- Slight recovery in energy demand, COVID-19 pandemic still put pressure
- As of November 2021, compared with the same period of last year: Consistent domestic supply and slight increase in LNG imports.

### Natural Gas Consumption

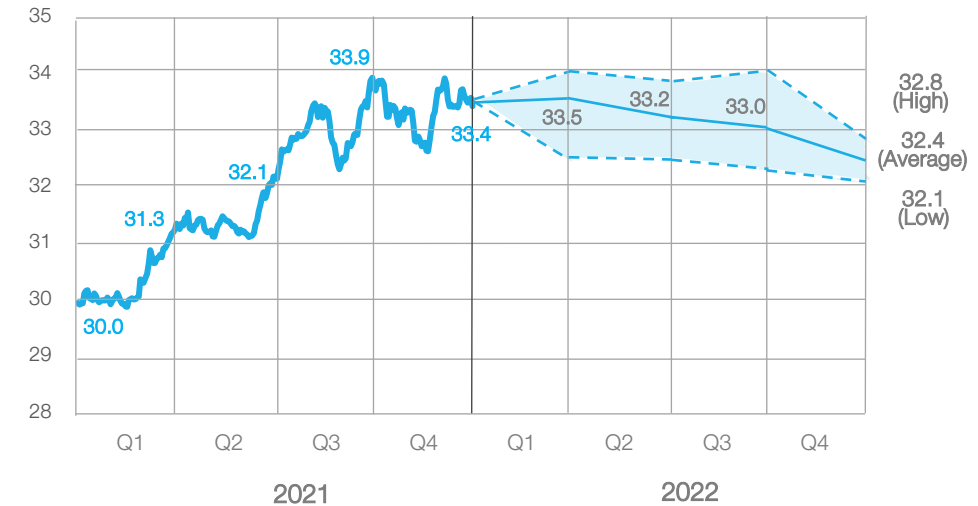


### Electricity Generation



Source: Energy Policy and Planning Office (EPPO)

## Exchange Rate Movement (USD/THB)

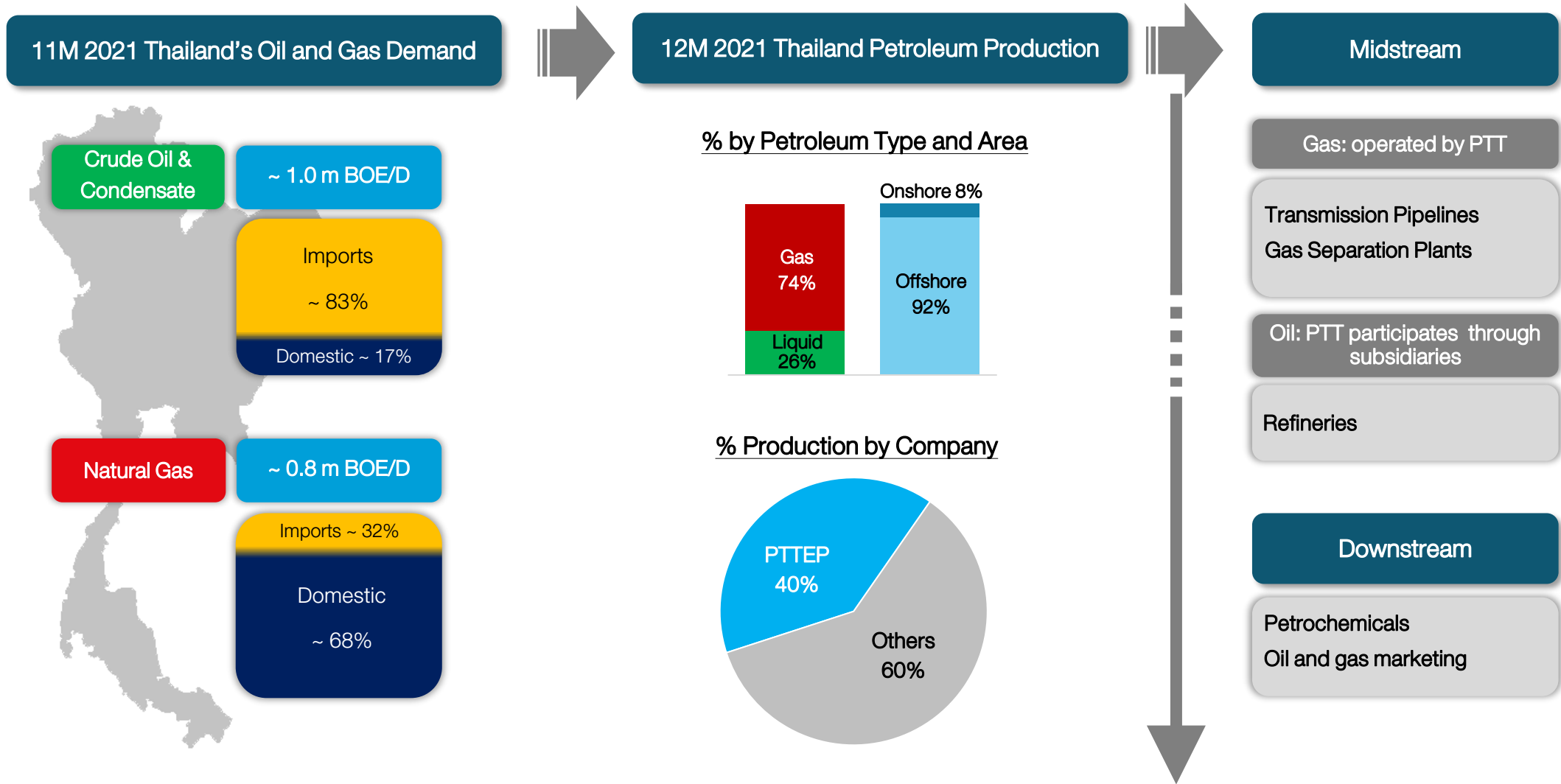


### Consensus on the exchange rate mostly depends on

- Efficacy of Covid-19 containment in particular for emerging variants within Thailand and globally
- Thailand economic recovery from country reopening and tourism flows
- Central bank monetary policy – interest rate adjustment schedule of Bank of Thailand the currently hawkish Federal Reserve

Source: Bank of Thailand, Bloomberg

Forecast based on Bloomberg Consensus as of 4 January 2022



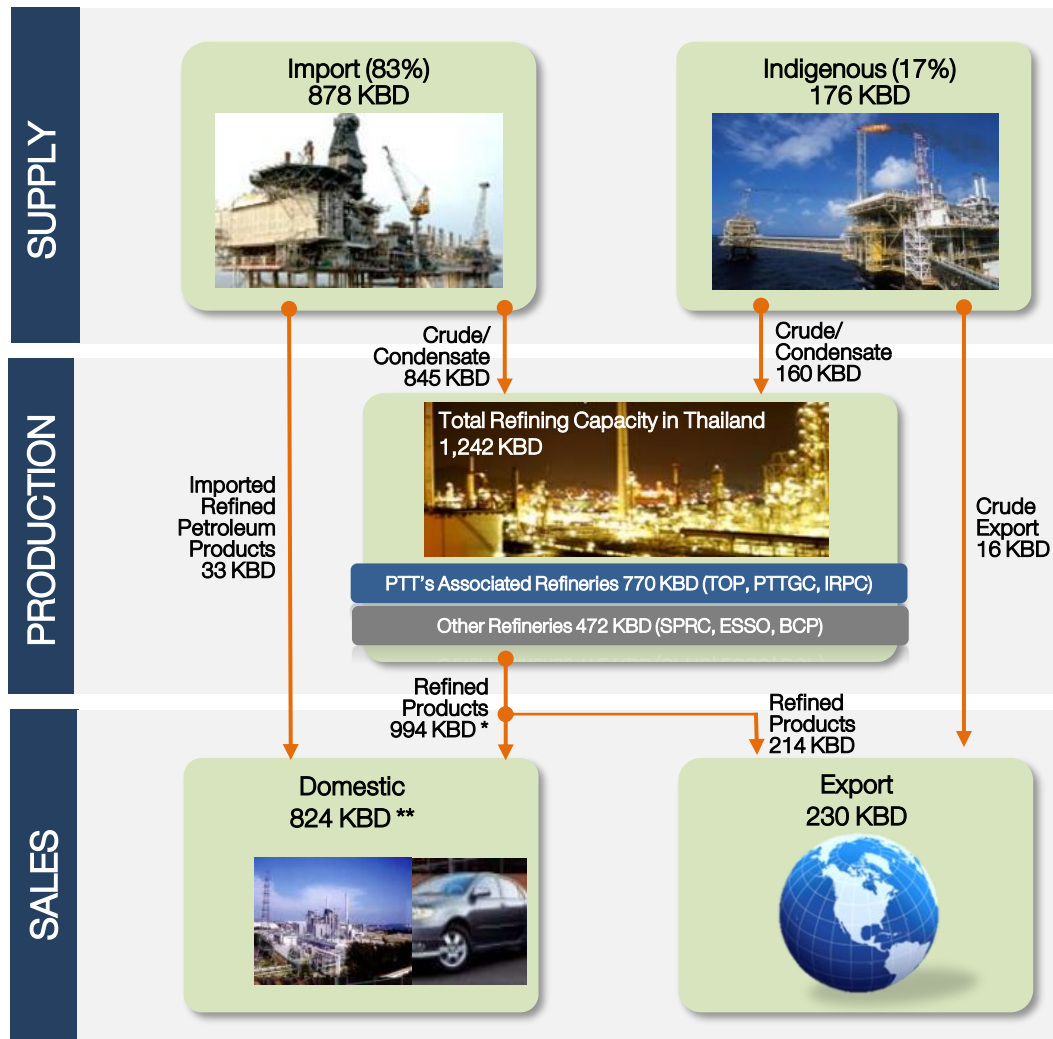
Source: Energy Policy and Planning Office (EPPO) and Department of Mineral Fuels (DMF)



# Thailand's Oil and Gas Balance

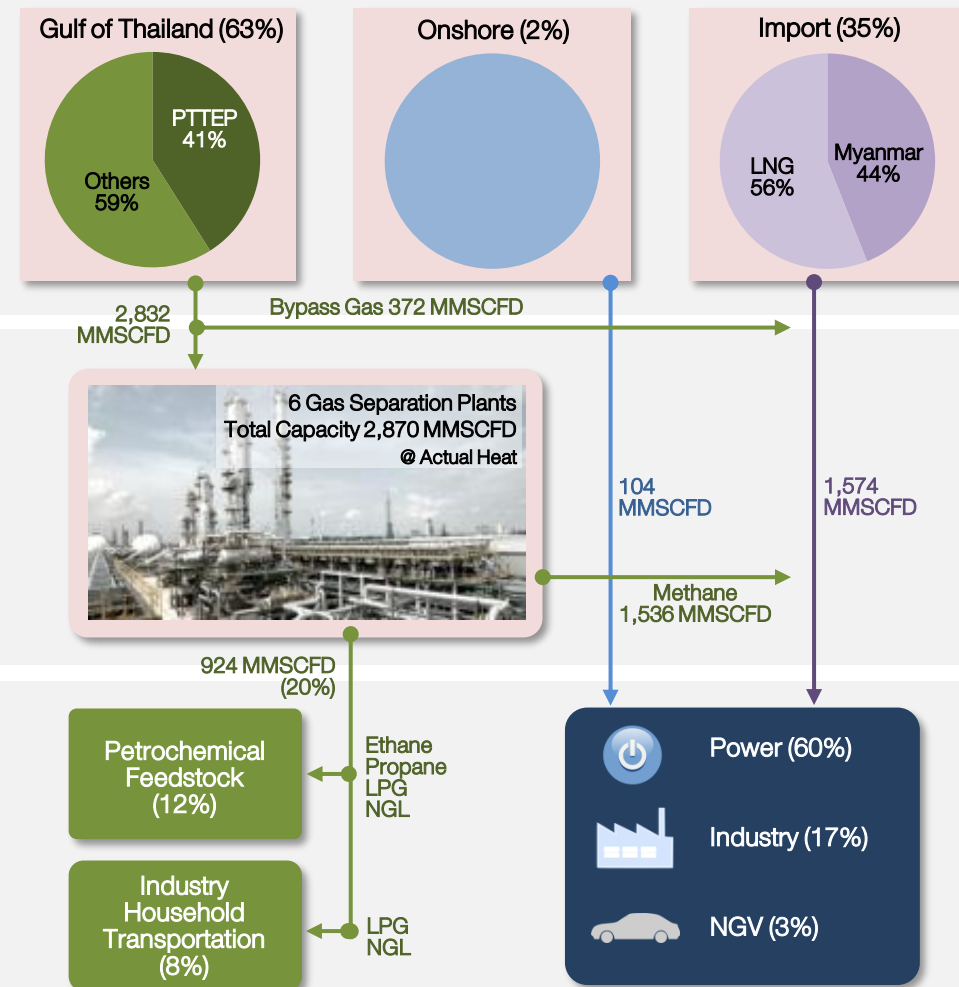
## Oil Balance\*\*\*

Maintains stability supply through adequate refining capacity



## Natural Gas Balance\*\*\*\*

Main driver of the Thailand economy



Source: PTT

Note: \* Refined product from refineries = 903 KBD, including domestic supply of LPG from GSPs and Petrochemical Plants = 91 KBD

\*\* Not included Inventory

\*\*\* Information as of 11M21

\*\*\*\* Information as of 9M21

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

# ESG Targets & Progress FY2021

## GHG Management



**25%** reduction target  
of GHG intensity by 2030  
(2012 base year)

### ◆ PROGRESS ◆

#### Reduction of GHG Emission Intensity

**24.1% Reduction** (2.35 million tonne CO<sub>2</sub> equivalent)

**Flare Gas Recovery**  
Recover excess gas to  
production process

**Fugitive & Vent**  
Leak monitoring  
and preventing

**Energy Efficiency**  
Operation efficiency  
and energy saving

**Smart Logistics**  
Logistics operation  
efficiency improvement

**Carbon Capture Storage**  
Trap from flare and inject it  
into suitable storage site

## CCUS Study

**CCU** : Study CNT and completed  
prototype test unit at S1.



Carbon Nanotube

**CCS** :

- **GOT [ART]** - Pre-Project study phase
- **LLB** - Completed subsurface study for reservoir modeling

## Circular Model



**Zero** waste to landfill by 2030  
**≥50%** of main structures reuse by 2030

### ◆ PROGRESS ◆

#### Waste to Landfill



#### Topside Reuse Project

Completed the 1<sup>st</sup> topside relocation at Arthit.



#### Upcycling High Volume Waste

**Pilot Recycle Drill Cuttings Road**: Completed  
experimental road at Rapid  
Scaled-Up Center (RASC) in  
Rayong.



**Sand to Zeolite**: Successfully synthesized prototype zeolite  
from nano-silica.

## Ocean for Life



### Net Positive Impact

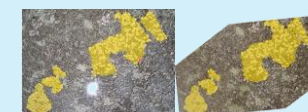
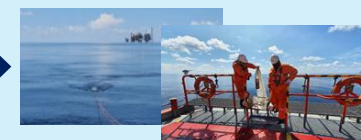
of Biodiversity & Ecosystem Services in  
Offshore Operations vs baseline by 2030

**≥50%** Increase in Local community  
income vs baseline by 2030

### ◆ PROGRESS ◆

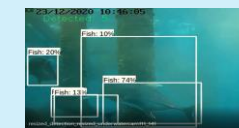
#### Ocean Health & Biodiversity Monitoring

Completed microplastic  
baseline survey in offshore  
operations including Koh Tao,  
Koh Losin and Chumphon



Completed baseline of coral  
bleaching at Koh Mannai, Rayong  
by multi-spectral drone

Completed aquatic animal motion  
detection software applied in ART  
offshore operation



#### Net Positive Impact of BES

Progress on Ocean BES value at **29.5%**  
in domestic offshore operations to achieved Net  
Positive Impact.

#### Local Community Income

**20.5%** Increase in Community Income for  
local community that participated  
in our program.

# Diversified international portfolio

## Central Asia

First presence in Kazakhstan:

- Production: Dunga onshore oil field (acquired from Partex in 2019)

Oil sands

## North & South America

Opportunities in an early phase:

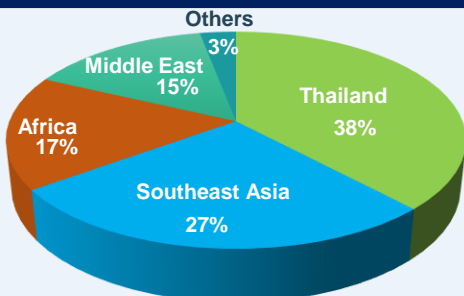
- Deepwater exploration in Brazil and Mexico

Oil

Oil

## Book Value of Assets by region

Total assets USD 23.45 billion



As of Dec 2021 (including Oman Block 61)

## Africa

An area for growth, key projects include:

- Production: Algeria's Bir Seba oil field with current flow rate of approximately 16 KBPD
- Development : Algeria's Hassi Bir Rakaiz with target 1st phase production in early 2022 and Mozambique Area 1 project with first cargo LNG target in late 2025\*

## Middle East

Strong presence in Oman and UAE:

- 13% of total sales volume
- 4 onshore blocks in Oman including PDO (Block 6), largest producing oil asset, and Block 61, largest tight gas development
- 3 offshore and 1 onshore exploration blocks in UAE, partnered with experienced operator

## Thailand

PTTEP's primary operational base

- 63% of total sales volume (Y2021)
- Key producing assets include Bongkot, Arthit, Contract 4 and S1
- Transition of operations for G1/61 (Erawan) and G2/61 (Bongkot) are in process to ensure production continuity under new PSCs

## Southeast Asia

Second heartland to PTTEP

- 23% of total sales volume, mainly from Malaysia and Myanmar (Y2021)
- Recent multiple petroleum discoveries in Malaysia formed fundamental for cluster development potential
- Other producing assets in Vietnam (oil) and Indonesia (gas)

## Australia

Potential gas development

- Sizable undeveloped gas resources in Timor Sea

Note: As of December 2021

\* Subject to local security situation



# Thailand, Myanmar and Malaysia

"Coming Home" strategy to maintain strong foundation and utilize expertise

## Myanmar

- 3 producing gas fields supplying gas to both Thailand and Myanmar: Yadana, Yetagun and Zawtika
- Operate Zawtika project, start up in March 2014 with current gas supply of 319 MMSCFD for 12M2021

### Project Status

Production	• Zawtika (80% WI)
	• Yadana (25.5% WI)
	• Yetagun* (19.3% WI)
FDP	• M3 (100% WI)

## Thailand

### Production / Ramp-up Projects

#### Bongkot (66.6667% WI)

Average natural gas and condensate sales volume of 867 MMSCFD and 23 KBPD in 12M2021

#### S1 (100% WI)

The largest onshore crude oil production field in Thailand with 12M2021 average crude oil sales volume of 26 KBPD

#### Arthit (80% WI)

Average sales volume in 12M2021 was 239 MMSCFD of natural gas and 12 KBPD of condensates

#### Contract 4 (60% WI)

Average sales rate of 403 MMSCFD for natural gas and 16 KBPD for condensate in 12M2021



● Production phase  
● Exploration phase

## Malaysia

### Production

#### Block K Project :

Kikeh (56% WI), Siakap North-Petai (SNP) (22.4% WI) and Gumusut-Kakap (GK) (7.2% WI)

- Average production volume in 12M2021 was 24\* KBPD of crude oil and 26\* MMSCFD of natural gas

#### SK309 and SK311 Project : (59.5% WI)

For East Patricia field (42% WI)

- Average production volume in 12M2021 was 165\* MMSCFD of natural gas and 15\* KBPD of condensates and crude

#### Block H Project :

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

- First gas delivered in early February 2021 with average production volume in 12M2021 at 203 MMSCFD of natural gas
- Full capacity at 270 MMSCFD

*For Block K, gross production is net off utilization*

### Exploration

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

- Multi TCF gas discovery in Lang Lebah Field
- Expected to reach Final Investment Decision (FID) in 2023

#### Sarawak SK417 and Sarawak SK405B projects

- New Petroleum discoveries with additional well drilling to assess upside potential

*Note: WI – working interest*

# Other Southeast Asia countries

Expanding foothold in the region



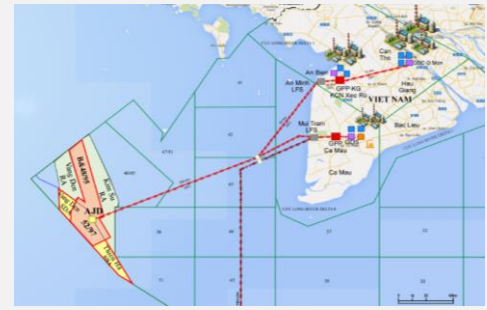
● Production projects  
● Pre sanction projects

## Vietnam



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

- Average sales volume of crude oil was 13 KBPD in 12M2021
- The project is preparing the drilling of additional development wells in order to maintain the production level in 2021



### 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, with production capacity approximately 490 MMSCFD

## Indonesia

### Natuna Sea A (11.5% WI)

- Average sales volume of natural gas was 203 MMSCFD in 12M2021
- The project has completed drilling 2 wells in 2021



## UAE

### Abu Dhabi Offshore 1,2 and 3

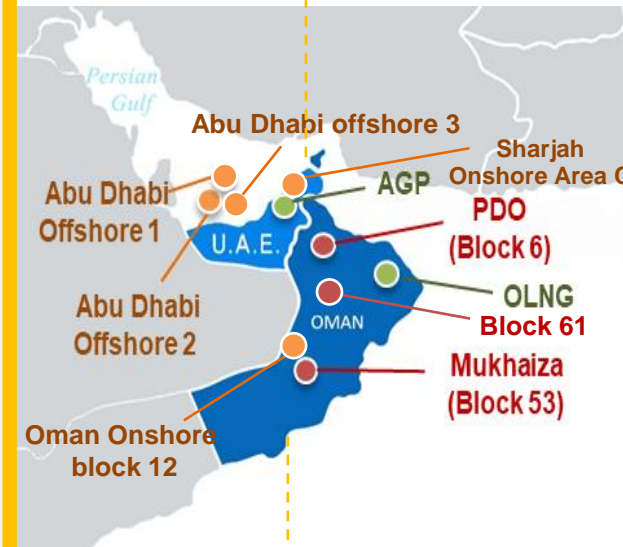
- High potential prospective resources with significant sizeable discoveries
- Located North-west of Abu Dhabi Emirates, United Arab Emirates
- Granted the award for exploration in January 2019 - 2020
- Operated by Eni Abu Dhabi B.V. (70% interest)

### Sharjah Onshore Area C

- High gas & condensate potential with the possibility of integrating with surrounding fields
- Located in the central part of Sharjah Emirate, United Arab Emirates
- Operated by Eni Abu Dhabi B.V. (50% 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
- Operated by ADNOC (68% interest)



\*Block awarded in 2019  
\*\*Block awarded in 2020

- Production phase
- Exploration phase
- Midstream

## Oman

### PDO (Block 6)

- Largest asset covering around 1/3 of the country
- Long-life asset, produced only 15% of reserves in-place
- Average oil production volume of 626 KBPD for 12M2021
- Operated by Petroleum Development of Oman (Joint Operating Company)

### Oman Onshore 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)

### Mukhaizna (Block 53)

- Largest single onshore producing field in Oman
- Average oil production volume of 96 KBPD for 9M2021
- Operated by Occidental Petroleum (47% interest)

### Oman Block 61

- Largest tight gas development in Middle East
- Gas and condensate production capacity of 1,500 MMSCFD and 69,000 BPD respectively
- Operated by BP Exploration (Epsilon) Limited (40% 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)



## Algeria

### Bir Sebah

- Block 433a & 416b
- PVEP 40% (operator), PTTP 35%

### Hassi Bir Rekaiz

- Blocks 443a, 424a, 414ext & 415ext for Crude Oil.
- Sonatrach 51% (operator), PTTP 49%

## Mozambique

### Rovuma Offshore Area One

- High quality reservoirs capable up to 200mmscfd per well
- LNG capacity 13.1 MTPA (2 trains)
- Total 26.5% (operator), PTTEP 8.5%
- Construction phase on-going

## Mexico

### Mexico block 12 (2.4)

- Non-operating partner with 20% participating interest
- Located in the Mexican Ridges, western Gulf of Mexico
- Currently evaluating petroleum potential and conduct exploring campaign

### Mexico block 29 (2.4)

- Non-operating partner with 16.67% participating interest
- Located in the Campeche, southern Gulf of Mexico
- 2 successful deep-water oil discoveries in May 2020
- Preparing for exploration well and appraisal drilling.

## Brazil

### Barreirinhas AP1

- Operated by Shell Brasil (65% interest)
- Four offshore exploration blocks: BAR-M-215, BAR-M-217, BAR-M-252 and BAR-M-254
- Currently waiting for exploration wells drilling permit from the government

### BM-ES-23

- Acquired 20% interest from Shell in Q3 2014
- Partnered with Petrobras (65%, operator) and INPEX (15%)
- Currently evaluating the petroleum potential for further development





# Project information 1/5



	Project	Status*	Phase	PTTEP's Share	Partners (as of December 2021)	12M2021 Average Sales Volume **		2021 Key Activities	
						Gas (MMSCFD)	Liquid (KBPD)		
Thailand and JDA									
1	Arthit	OP	Production	80%	Chevron MOECO	16% 4%	239	12	<ul style="list-style-type: none"><li>Higher gas deliverability level</li><li>Drill development and Infill wells</li></ul>
2	B6/27	OP	Production	100%			-	-	<ul style="list-style-type: none"><li>Prepare for decommissioning activities</li><li>Best Practical Environment Option (BPEO) report has been approved by DMF on 18 November 2021.</li></ul>
3	B8/32 & 9A	JV	Production	25.001%	Chevron MOECO KrisEnergy Palang Sophon	51.66% 16.71% 4.63% 2%	48	14	<ul style="list-style-type: none"><li>Ensure gas deliverability level at DCQ</li><li>Drill development wells</li><li>Preparation for topside reuse in 2022 and 2023</li></ul>
4	Bongkot	OP	Production	66.6667%	TOTAL	33.3333%	867	23	<ul style="list-style-type: none"><li>Infills drilling for both BKT JV and BKT Sole Risk</li><li>Maintain production level as planned</li><li>Carry out wells plug and abandonment, Pipeline cleaning and Hg decontamination</li><li>Wellhead platform &amp; sealine and FSO1 PLEM Decommissioning (Non-transferred asset)</li></ul>
5	Contract 3 (Formerly Unocal III)	JV	Production	5%	Chevron MOECO	71.25% 23.75%	413	23	<ul style="list-style-type: none"><li>Decommissioning activities</li></ul>
6	Contract 4 (Formerly Pailin)	JV	Production	60%	Chevron MOECO	35% 5%	403	16	<ul style="list-style-type: none"><li>Ensure gas deliverability level at DCQ***</li><li>Drill development wells</li><li>Topside reuse</li></ul>
7	E5	JV	Production	20%	ExxonMobil	80%	8	-	<ul style="list-style-type: none"><li>Ensure gas deliverability level at DCQ***</li></ul>
8	G4/43	JV	Production	21.375%	Chevron MOECO Palang Sophon	51% 21.25% 6.375%	1	3	<ul style="list-style-type: none"><li>Deliver production volumes as nominated from the buyer and oil production as planned</li></ul>
9	G4/48	JV	Production	5%	Chevron MOECO	71.25% 23.75%	1	0.1	<ul style="list-style-type: none"><li>Decommissioning activities</li></ul>
10	L53/43 & L54/43	OP	Production	100%	-		-	0.7	<ul style="list-style-type: none"><li>Maintain production plateau</li><li>Fully explore the new resource for additional field potential i.e. new drilling well and enhance oil recovery activities.</li></ul>
11	PTTEP1	OP	Production	100%	-		-	0.2	<ul style="list-style-type: none"><li>Maintain production plateau</li><li>Fully explore the new resource for additional field potential i.e. new drilling well and enhance oil recovery activities.</li></ul>
12	S1	OP	Production	100%	-		8	Crude: 26 KBPD LPG: 186 MTon/Day	<ul style="list-style-type: none"><li>Maximize crude production by fully implemented the business plan and work activities as planned.</li><li>10 years strategy roadmap and execution plan was approved by the management committee to ensure all focused strategic areas implemented all workplans and activities until end of concession in year 2031.</li></ul>
13	Sinphuhorm	OP	Production	55%	Apico**** ExxonMobil	35% 10%	90	0.3	<ul style="list-style-type: none"><li>Ensure gas deliverability</li><li>Drill development well as planned</li><li>New GSA has been effective since 1 Oct 2021.</li></ul>

\* Status: OP = PTTEP operatorship / JOC = PTTEP joint operatorship / JV = PTTEP as 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 of December 2021)	12M 2021 Average Sales Volume **		2021 Key Activities
						Gas (MMSCFD)	Liquid (KBPD)	
Thailand and JDA								
14	L22/43	OP	Production	100%	-	-	-	<ul style="list-style-type: none"><li>Study to explore additional field potential</li><li>Prepare for the resume production or exist strategy in future</li></ul>
15	MTJDA	JOC	Production	50%	Petronas-Carigali 50%	250	8	<ul style="list-style-type: none"><li>Ensure gas deliverability level at DCQ***</li></ul>
16	G9/43	OP	Exploration	100%	-	-	-	<ul style="list-style-type: none"><li>Activity suspended</li></ul>
17	G1/61 (Erawan)	OP	Exploration	60%	MP G2 (Thailand) Limited 40%	-	-	<ul style="list-style-type: none"><li>Awarded as an operator for Erawan field (Contract 1, 2 and 3) under PSC (after concession-end in 2022)</li><li>Preparing all transitional works including several Agreements (including Site Assess Agreement) signing with the Existing Concessionaires, construction of facilities, staff recruitment, Gas Sales Agreement, and related procurement activities, aiming for successful transition and gas production as per commitment.</li></ul>
18	G2/61 (Bongkot)	OP	Exploration	100%	-	-	-	<ul style="list-style-type: none"><li>Awarded as a sole operator under PSC (after concession-end in 2022/2023)</li><li>Drill appraisal wells</li><li>Installation new wellhead platforms and drill production wells</li><li>Finalise Gas Sales Agreement and Prepare for seamless operation handover</li></ul>
Others SEA****								
1	Malaysia	OP (except Gumusut-Kakap (GK) in Block K)	Production/ Exploration	7.2-80% (varied by permits)	Varied by permits	SK309 and SK311** 165 Block K** 26 Block H** 203	SK309 and SK311** 16 Block K** 24	<ul style="list-style-type: none"><li>SK309 and SK311: Pemanis Gas Development Topside Installation and South Acis Satellite infill oil development drilling</li><li>Block K: SNP Development Drilling</li><li>Block H: Continue production at plateau 270MMSCFD</li></ul>
2	Yadana	JV	Production	25.5%	TOTAL 31.24% Chevron 28.26% MOGE 15%	769	-	<ul style="list-style-type: none"><li>Completed drilling 2 production wells</li><li>New DCQ*** proposal and negotiation with PTT</li></ul>
3	Yetagun	JV	Production	19.3178%	Petronas-Carigali 40.91018% MOGE 20.4541% Nippon Oil 19.3178%	17	0.6	<ul style="list-style-type: none"><li>Resumed its production in October 2021</li></ul>
4	Zawtika (M9 & a part of M11)	OP	Production	80%	Myanma Oil and Gas Enterprise (MOGE) 20%	319	-	<ul style="list-style-type: none"><li>Some activities are delayed and process under difficulty due to the COVID-19 and political situation in Myanmar.</li></ul>
5	Myanmar M3	OP	Exploration	100%		-	-	<ul style="list-style-type: none"><li>Waiting for approval of PSC Supplementary</li><li>FEED &amp; OE and survey activities</li><li>Gas Sales Agreement negotiation</li></ul>
6	Myanmar MD-7	OP	Exploration	50%	TOTAL 50%	-	-	<ul style="list-style-type: none"><li>Termination process in progress</li></ul>

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

\*\* Sales volume stated at 100% basis/ For Malaysia project, gross production is net off unitization

\*\*\* DCQ = Daily Contractual Quantity

\*\*\*\* PTTEP submitted a request to terminate and relinquish 100% of the exploration blocks of Myanmar M11 and 77.5% of the exploration blocks of Myanmar MOGE3.

The official approval from the Government of the Republic of the Union of Myanmar was already obtained for these projects in November 2021.

# Project information 3/5



	Project	Status*	Phase	PTTEP's Share	Partners <i>(as of December 2021)</i>		12M 2021 Average Sales Volume **		2021 Key Activities
							Gas (MMSCFD)	Liquid (KBPD)	
Others SEA									
9	Vietnam 9-2	JOC	Production	25%	PetroVietnam Pharos Energy	50% 25%	14	4	<ul style="list-style-type: none"><li>• Maintain production level</li></ul>
10	Vietnam 16-1	JOC	Production	28.5%	PetroVietnam Pharos Energy OPECO	41% 28.5% 2%	6	13	<ul style="list-style-type: none"><li>• Maintain production level</li><li>• Completed drilling campaign of 4 development wells</li></ul>
11	Vietnam B & 48/95	JV	Exploration	8.5%	PetroVietnam MOECO	65.88% 25.62%	-	-	<ul style="list-style-type: none"><li>• Monitoring Power Plants progress</li><li>• Negotiation process on commercial terms in order to push forward the Final Investment Decision (FID)</li><li>• The first production target at the end of 2025</li></ul>
12	Vietnam 52/97	JV	Exploration	7%	PetroVietnam MOECO	73.4% 19.6%	-	-	<ul style="list-style-type: none"><li>• Monitoring Power Plants progress</li><li>• Negotiation process on commercial terms in order to push forward the Final Investment Decision (FID)</li><li>• The first production target at the end of 2025</li></ul>
13	Natuna Sea A	JV	Production	11.5%	Premier Oil KUFPEC Petronas Pertamina	28.67% 33.33% 15% 11.5%	203	2	<ul style="list-style-type: none"><li>• Completed drilling 2 wells in Q4/2021.</li></ul>
Middle East									
1	Abu Dhabi Offshore 1	JV	Exploration	30%	Eni Abu Dhabi	70%	-	-	<ul style="list-style-type: none"><li>• Being evaluated for petroleum potential to support future exploration, including G&amp;G report</li></ul>
2	Abu Dhabi Offshore 2	JV	Exploration	30%	Eni Abu Dhabi	70%	-	-	<ul style="list-style-type: none"><li>• Continued drilling the first exploration well</li></ul>
3	Abu Dhabi Offshore 3	JV	Exploration	30%	Eni Abu Dhabi	70%	-	-	<ul style="list-style-type: none"><li>• G&amp;G study is on-going</li></ul>
4	Sharjah Onshore Area C	JV	Exploration	25%	Eni Abu Dhabi SNOC	50% 25%	-	-	<ul style="list-style-type: none"><li>• Completed the acquisition of 25% interest on 1 March 2022</li></ul>
5	PDO Block 6 (Oman)	JOC	Production	2%	Government of Oman Shell Total	60% 34% 4%	-	626**	<ul style="list-style-type: none"><li>• Normal operations with daily production around 600 KBD</li></ul>
6	Mukhaizna (Oman)	JV	Production	1%	Occidental OOCEP Indian Oil Mubadala	47% 20% 17% 15%	-	96**	<ul style="list-style-type: none"><li>• Normal operations with daily production around 95 KBD</li></ul>
7	Oman Onshore Block 12	JV	Exploration	20%	Total E&P Oman Block 12 B.V.	80%	-	-	<ul style="list-style-type: none"><li>• 3D seismic reprocessing (original 3D) in progress</li><li>• 3D seismic acquisition (new 3D) is in process for tendering</li></ul>
8	Oman Block 61	JV	Production	20%	BP Makarim Gas Development LLC PC Oman Ventures Limited (PETRONAS)	40% 30% 10%	1,069	47	<ul style="list-style-type: none"><li>• Full production capacity of natural gas and condensate in according to the Sales and Purchase Agreement</li></ul>

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

\*\* Sales volume stated at 100% basis / For PDO (Block 6) and Mukhaizna projects, gross production is net off unitization

	Project	Status*	Phase	PTTEP's Share	Partners <i>(as of December 2021)</i>		12M 2021 Average Sales Volume **		2021 Key Activities
							Gas (MMSCFD)	Liquid (KBPD)	
Other International									
1	PTTEP Australasia (PTTEP AA)	OP	Exploration	90%-100%	-		-	-	<ul style="list-style-type: none"><li>AC/RL7 (Cash Maple) and Oliver (AC/RL12) Field : under way to define proper direction in order to increase development opportunities</li><li>Tenacious and Oliver : On-going for well abandonment campaign</li><li>Other exploration projects: G&amp;G studies</li><li>Surrender AC/L3 in November 2021</li></ul>
2	Mozambique Area 1	JV	Development	8.5%	Total, Mitsui, ENH, OVL OVRL & Oil India , Bharat	26.5%,20% 15%, 10% 10%, 10%	-	-	<ul style="list-style-type: none"><li>First Cargo is expected by 2025, subject to local security situation</li><li>1<sup>st</sup> Debt drawdown in project Finance</li><li>Force Majeure was declared by the operator for safety reason due to the security incident in Palma.</li><li>Plan to resume construction activities after security and safety restored in Cabo Delgado province</li></ul>
3	Algeria 433a & 416b (Bir Seba)	JOC	Production	35%	PetroVietnam Sonatrach	40% 25%	-	16**	<ul style="list-style-type: none"><li>Drilling of 4 development wells completed in 2021</li><li>Existing wells intervention</li><li>Production respect OPEC+ policy</li></ul>
4	Algeria Hassi Bir Rekaiz	OP	Development	49%	Sonatrach	51%	-	-	<ul style="list-style-type: none"><li>Drilling development wells</li><li>Expected first oil production for the initial phase of around 10,000-13,000 barrels per day (BPD) in 2022</li></ul>
5	Mariana Oil Sands (Canada)	OP	Exploration	100%	-		-	-	-
6	Brazil Barreirinhas AP1	JV	Exploration	25%	Shell Brasil Mitsui E&P Brasil	65% 10%	-	-	<ul style="list-style-type: none"><li>Waiting for exploration wells drilling permit from the government</li></ul>
7	Brazil BM-ES-23	JV	Exploration	20%	Petrobras INPEX	65% 15%	-	-	<ul style="list-style-type: none"><li>Evaluating the petroleum potential for development concept</li></ul>
8	Mexico block 12 (2.4)	JV	Exploration	20%	PC Carigali Mexico Ophir Mexico	60% 20%	-	-	<ul style="list-style-type: none"><li>Completed the drilling operation of 1 exploration well</li></ul>
9	Mexico block 29 (2.4)	JV	Exploration	16.67%	Repsol Mexico PC Carigali Mexico Wintershal DEA	30% 28.33% 25%	-	-	<ul style="list-style-type: none"><li>Completed drilling 2 wells in Q3/2021</li><li>Field pre-development study is in progress.</li></ul>

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

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



	Project	Status*	Phase	PTTEP's Share	Partners <i>(as of September 2021)</i>	12M 2021 Average Sales Volume **		2021 Key Activities
						Gas (MMSCFD)	Liquid (KBPD)	
Other International****								
10	Block 17/06 (Angola)	JV	Pre-development	2.5%	Total Sonangol SSI Acrep Falcon Oil 30% 30% 27.5% 5% 5%	-	-	<ul style="list-style-type: none"><li>Completed Finalize Negotiation Head of Term Agreements for Begonia Oil Field Development Project</li><li>Completed Reservoir Model for Gardenia &amp; Forsythia Gas Fields Development Project</li></ul>
11	Dunga (Kazakhstan)	JV	Production	20%	Total OOCEP 60% 20%	2	13	<ul style="list-style-type: none"><li>Continue to curb production per OPEC+ agreement to support price</li><li>Procurement process Compression package and Gathering Lines</li><li>Engineering of Separation Upgrade, Flare package</li><li>Inspection of Sea water pipeline</li></ul>
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"><li>Normal operations</li></ul>
2	ADNOC Gas Processing (AGP)	JV	On line	2%	ADNOC Shell Total 68% 15% 15%	-	-	<ul style="list-style-type: none"><li>Perform midstream operation activities</li><li>Maintain production and plant integrity with maintenance work as planned</li></ul>

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

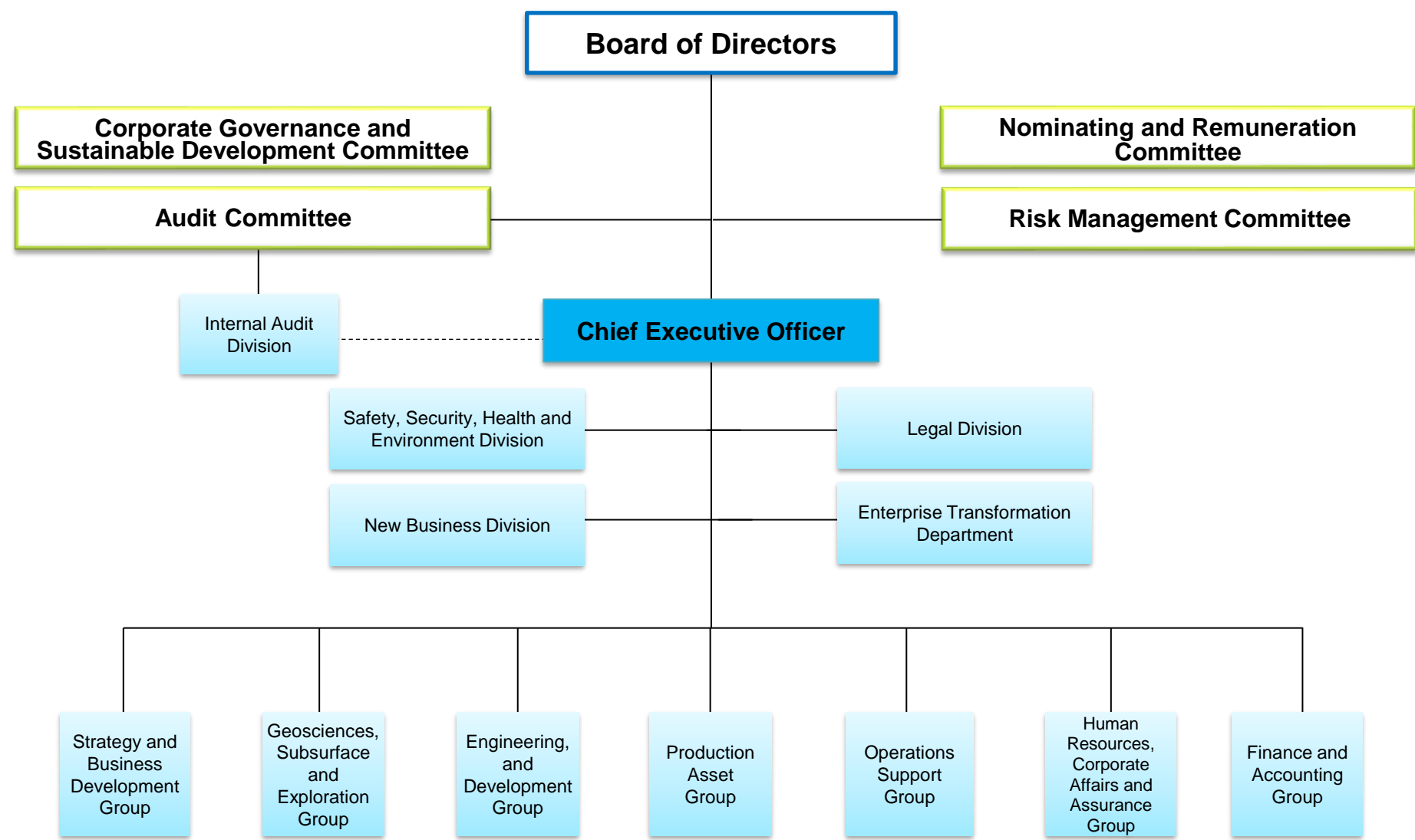
\*\* Sales volume stated at 100% basis

\*\*\* Products are propane, butane and naphtha.

\*\*\*\* Divestment of the Potiguar Project was announced on 30 July 2021 and the transaction was completed and in effect on 29 October 2021.

# Organization structure (as of 1 January 2022)

Ensuring performance excellence, transparency, and good corporate governance



# Ratio & Formula

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

<b>Net debt</b>	Total debt – Liquidity
<b>Debt to Equity</b>	Total debt / Shareholders' equity
<b>Net Debt to Equity</b>	Net debt / Shareholders' equity
<b>Total Debt to Capital</b>	Total debt / (Total debt + Shareholders' equity)
<b>Total Debt to EBITDA</b>	Total debt / Trailing-12-month EBITDA
<b>Net Debt to EBITDA</b>	Net debt / Trailing-12-month EBITDA
<b>EBITDA Interest Coverage Ratio</b>	Trailing-12-month EBITDA / Trailing-12-month Interest Expenses & Amortization of Bond Issuing Cost

Crude oil	To convert				
	Tonnes (metric)	Kilolitres	Barrels	US gallons	Tonnes/year
From	Multiply by				
Tonnes (metric)	1	1.165	7.33	307.86	-
Kilolitres	0.8581	1	6.2898	264.17	-
Barrels	0.1364	0.159	1	42	-
US gallons	0.00325	0.0038	0.0238	1	-
Barrels/day	-	-	-	-	49.8
Natural gas and LNG	To convert				
	Billion cubic Metres NG	Billion cubic feet NG	Million tonnes oil equivalent	Million tonnes LNG	Trillion BTU
From	Multiply by				
1 billion cubic metres NG	1.000	35.315	0.860	0.735	34.121
1 billion cubic feet NG	0.028	1.000	0.024	0.021	0.966
1 petajoule NG	0.028	0.981	0.024	0.021	0.952
1 million tonnes oil equivalent	1.163	41.071	1.000	0.855	39.683
1 million tonnes oil LNG	1.360	48.028	1.169	1.000	46.405
1 trillion British thermal units	0.029	1.035	0.025	0.022	1.000
1 million barrels oil equivalent	0.170	6.003	0.146	0.125	58.000