



# Investor Presentation BofA 2022 Asian Credit Conference

11 October 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.

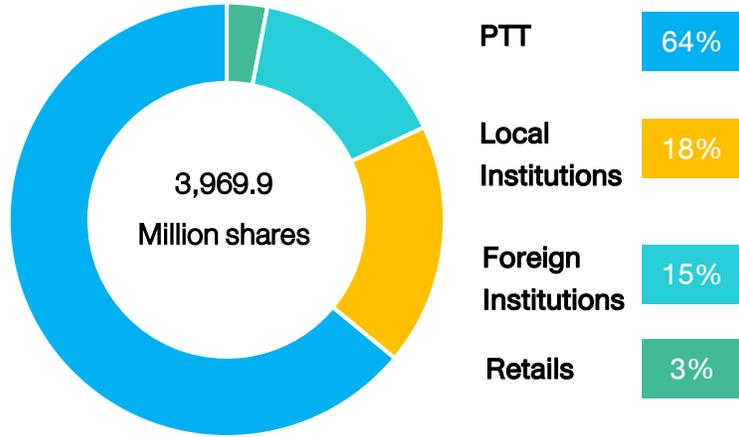
**Proved Reserves** - Proved reserves are defined as those quantities of petroleum which, by analysis of geological and engineering data, can be estimated with reasonable certainty to be commercially recoverable, from a given date forward, from known reservoirs and under current economic conditions,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



# Company Introduction

## Shareholding Structure



As of latest book closing Aug 2022

Stock Quote  
Market Cap.  
Sales Revenue  
Cash Cost

PTTEP  
> 17 Billion USD  
> 90% SEA & ME  
~ 15 USD/BOE

## Sustainability Framework



## Key Strategies

### E&P Growth

- Create Value from Existing Assets
- Maintain Competitive Unit Cost
- Expand Gas portfolio
- Drive LNG business

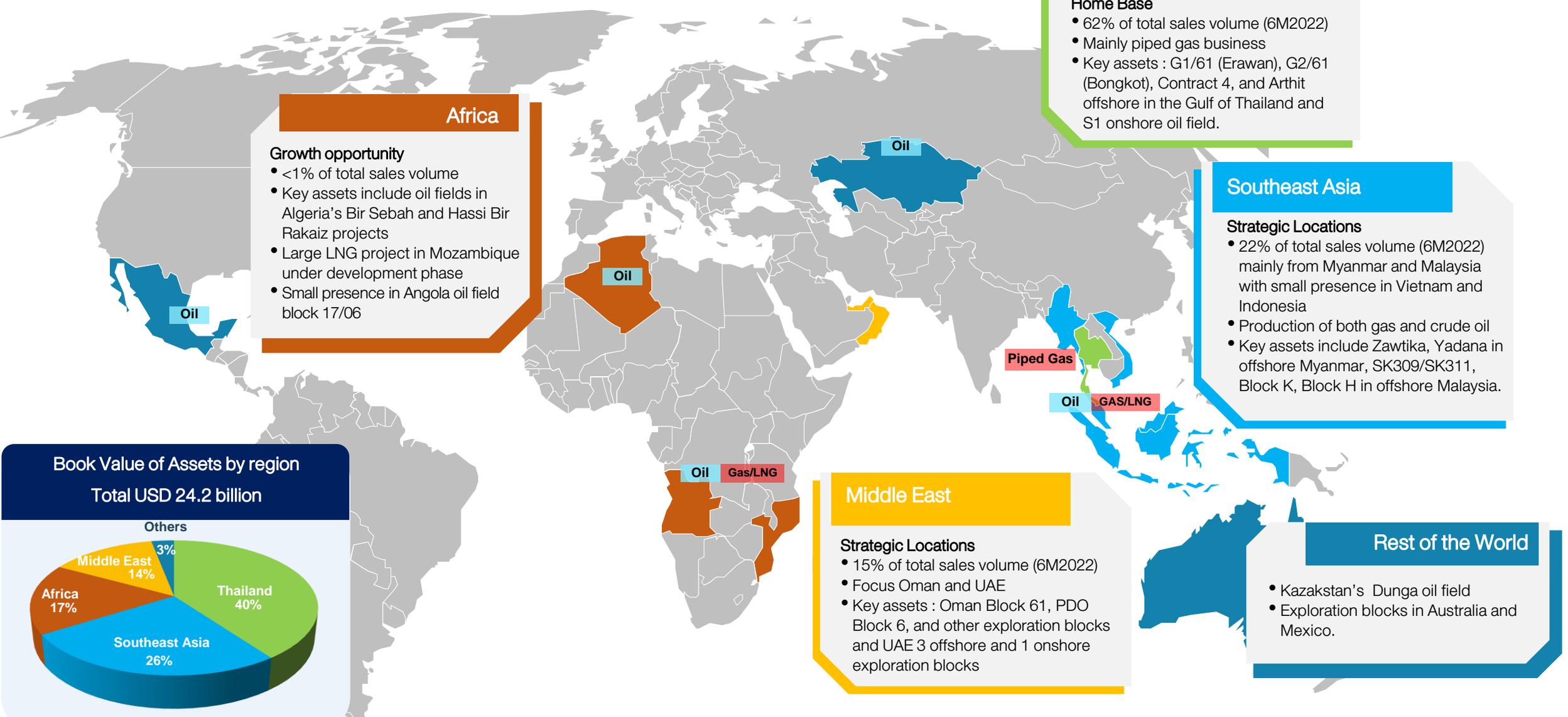
### Decarbonization

- E&P Net Zero 2050
- GHG Emission Reduction & CCS
- Technology Development
- Renewable at operation sites
- Emission Offsetting & Ocean for Life

### Beyond E&P

- A.I. & Robotics
- Power and Renewables
- CCUS and In-house Technology
- Business Opportunities and Future Energy

# Diversified Portfolio



## Thailand

- Home Base**
- 62% of total sales volume (6M2022)
  - Mainly piped gas business
  - Key assets : G1/61 (Erawan), G2/61 (Bongkot), Contract 4, and Arthit offshore in the Gulf of Thailand and S1 onshore oil field.

## Southeast Asia

- Strategic Locations**
- 22% of total sales volume (6M2022) mainly from Myanmar and Malaysia with small presence in Vietnam and Indonesia
  - Production of both gas and crude oil
  - Key assets include Zawtika, Yadana in offshore Myanmar, SK309/SK311, Block K, Block H in offshore Malaysia.

## Middle East

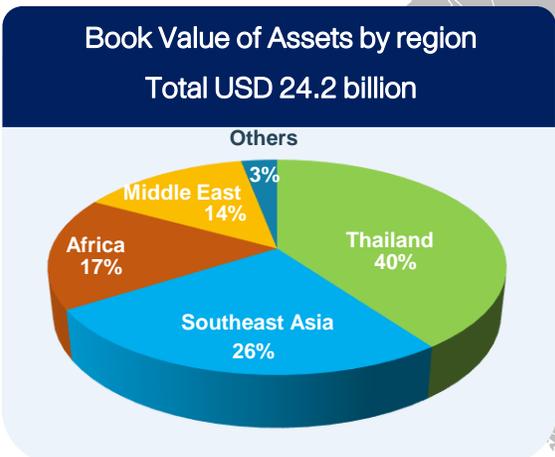
- Strategic Locations**
- 15% of total sales volume (6M2022)
  - Focus Oman and UAE
  - Key assets : Oman Block 61, PDO Block 6, and other exploration blocks and UAE 3 offshore and 1 onshore exploration blocks

## Africa

- Growth opportunity**
- <1% of total sales volume
  - Key assets include oil fields in Algeria's Bir Sebah and Hassi Bir Rakaiz projects
  - Large LNG project in Mozambique under development phase
  - Small presence in Angola oil field block 17/06

## Rest of the World

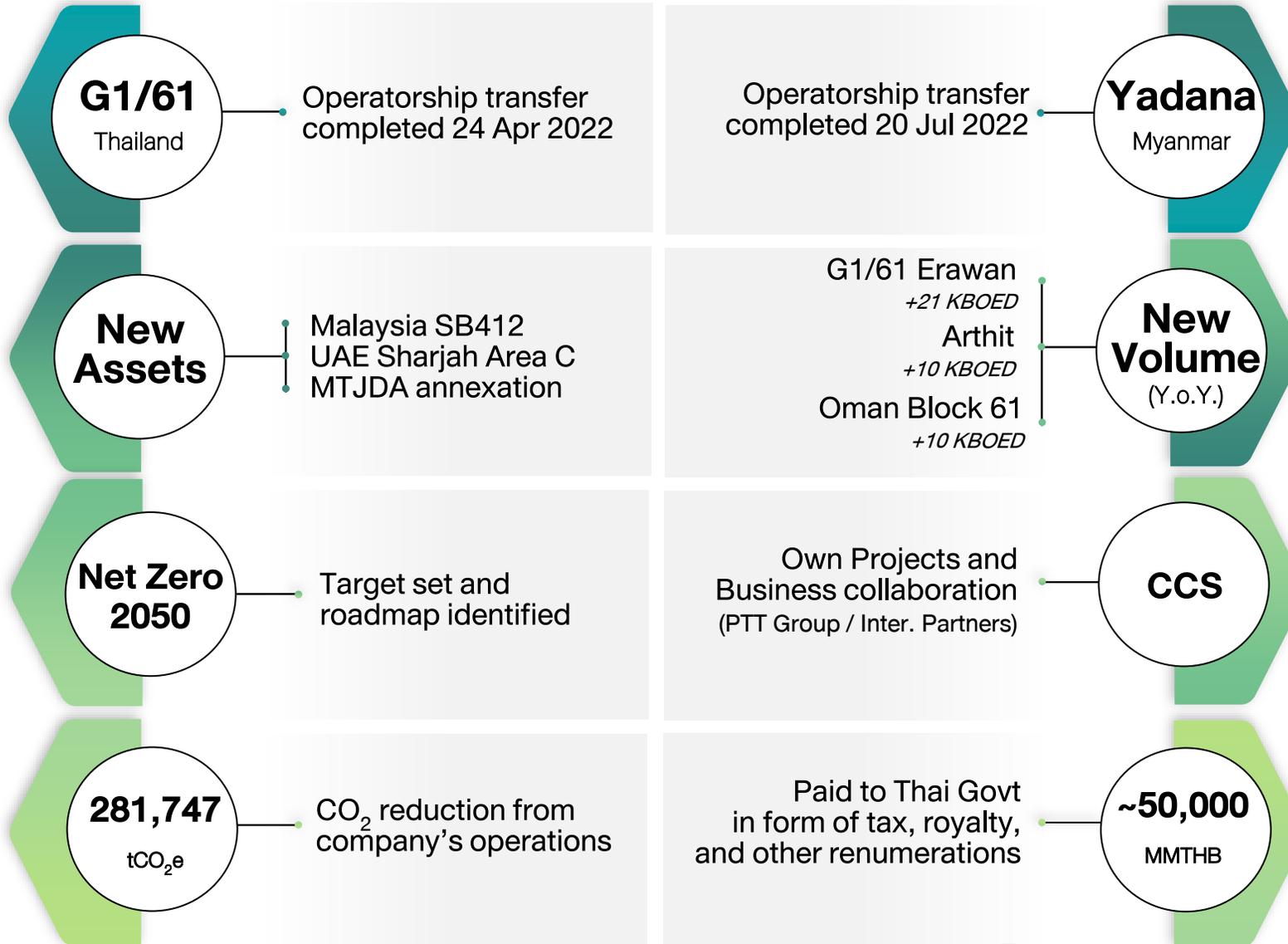
- Kazakstan's Dunga oil field
- Exploration blocks in Australia and Mexico.





# Business Update

# 2022 Half-year Highlights



Safeguard  
**National energy security**

Drive growth  
**New Assets & Volume**

Decarbonization  
**Net Zero 2050 and CCS**

Continuous contribution  
**Social & Environmental**

## E&P Growth



### Create Value from Existing Assets

- Maximize Production
- Accelerate Development
- Turn Discovery to Production

Competitive Unit Cost

Expand Gas portfolio

Drive LNG business

## Decarbonization



E&P Net Zero

GHG Emission Reduction & Technology Development

CCS Projects

Renewable and Future energy at operating sites

Emission Offsetting and Ocean for Life

## Beyond E&P



Technology

ARV, In-house Tech

Power Business

G2P, L2P, Renewables

Business Opportunities and Future Energy

CCUS, H2

## Key Activities

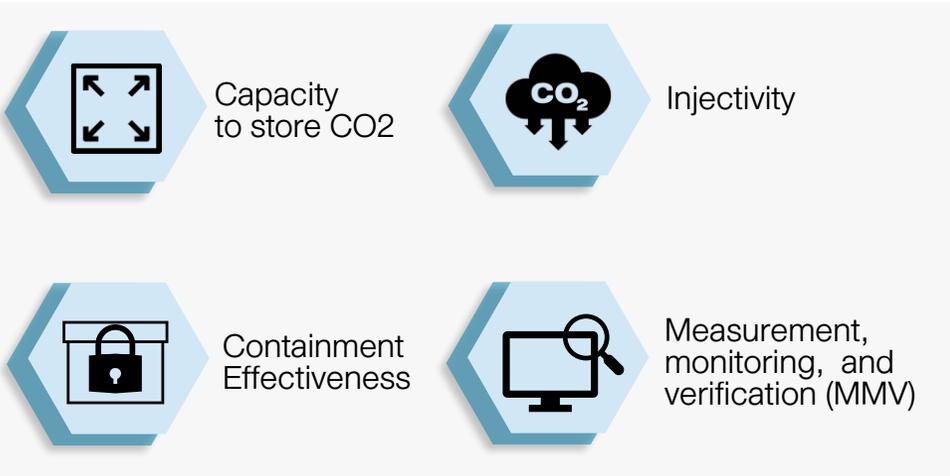
- G1/61 and Yadana Ops Transfer
- HBR 1st Oil Phase 1
- MZB 1st LNG Cargo (Late 2025)
- Develop SK410 LLB (FID 2023)
- Develop HBR Phase 2 (FID 2026)
- Development Sarawak clusters

- CCS at Arthit, Sinphuhom, Lang Lebah
- Energy Efficiency
- Zero Routine Flare
- Reforestation

- Scale up ARV
- Develop G2P (FID 2023)
- Solar S1 (COD early 2023)
- Seeking opportunity in Renewables, CCUS and H2

# CCS – Key contributor to Net Zero

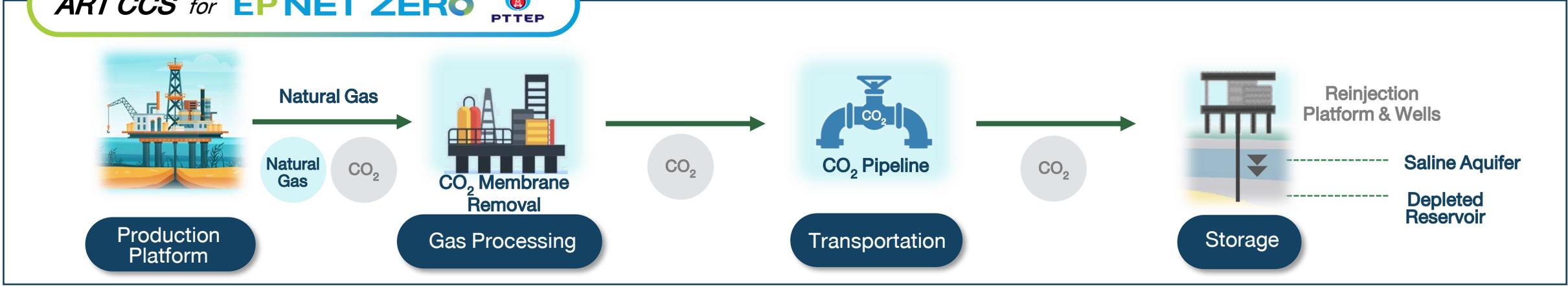
## Assessment criteria



## Enablers



## ART CCS for EP NET ZERO



# Projects Update



## E&P

	<b>Thailand</b>	<ul style="list-style-type: none"> <li>Maintain production G1/61 and speed up activities</li> </ul> <table border="1"> <tr> <td><b>FY2022</b></td> <td><b>FY2023</b></td> <td><b>FY2024</b></td> </tr> <tr> <td>200-250 MMSCFD</td> <td>300-500 MMSCFD</td> <td>500-800 MMSCFD</td> </tr> </table> <ul style="list-style-type: none"> <li>Technical review Bidding round 2022 (G1/65, G2/65, G3/65)</li> </ul>	<b>FY2022</b>	<b>FY2023</b>	<b>FY2024</b>	200-250 MMSCFD	300-500 MMSCFD	500-800 MMSCFD
<b>FY2022</b>	<b>FY2023</b>	<b>FY2024</b>						
200-250 MMSCFD	300-500 MMSCFD	500-800 MMSCFD						
	<b>Malaysia</b>	<ul style="list-style-type: none"> <li>SK410B LLB FEED in progress, FID 2023</li> <li>Participating in Bid Round 2022</li> <li>Drilling campaigns SK314A, SK405B, SK438 in progress</li> </ul>						
	<b>Myanmar</b>	<ul style="list-style-type: none"> <li>Yadana operatorship transfer completed 20 July 2022</li> <li>Yetagun withdrawal completed 31 May 2022</li> </ul>						
	<b>Mozambique</b>	<ul style="list-style-type: none"> <li>MZA1 pending site re-enter, 1<sup>st</sup> LNG cargo late 2025</li> </ul>						
	<b>Algeria</b>	<ul style="list-style-type: none"> <li>HBR 1<sup>st</sup> Oil commenced Jun 2022, estimated sales volume 7 KBPD during Q3-Q4/22</li> </ul>						
	<b>UAE</b>	<ul style="list-style-type: none"> <li>Offshore 2 exploration well was successfully drilled and discovered approximately 2.5-3.5 TCF of raw gas</li> <li>Explore farm-in opportunities, new bidding rounds</li> </ul>						

## Beyond E&P

	<p>MOU with Krungthai Bank to pilot ASEAN's first National Corporate Identification (NCID) platform, digitizing the Corporate KYC process for bank account opening</p>	
	<p>Delivered the Green area management web application for the "OUR Khung BangKachao" project, for Chaipattana Foundation to implement Smart Farming</p>	
	<ul style="list-style-type: none"> <li>MOU with Nam Thuan Energy Investment JSC for cooperation on the technology and use of smart drone solutions for renewable energy projects in Vietnam</li> <li>MOU with Thyssenkrupp to expand and develop engineering and industrial markets in Thailand, Germany and Southeast Asia</li> </ul>	
	<p>Launched "Arvic" application for personal health assistant platform that aggregates health data from various sources into one place, "Beaut" for wellness marketplace connecting customers and wellness service providers, and "Nextcercise" for personal exercise tracking</p>	
	<p>Successfully demoed subwater inspection by inhouse tech "XPLOER" to EGAT at Sirindhorn Dam (the world largest floating solar plant)</p>	



# Financial Results

# Profit and Loss

## Q2/2022 Key events

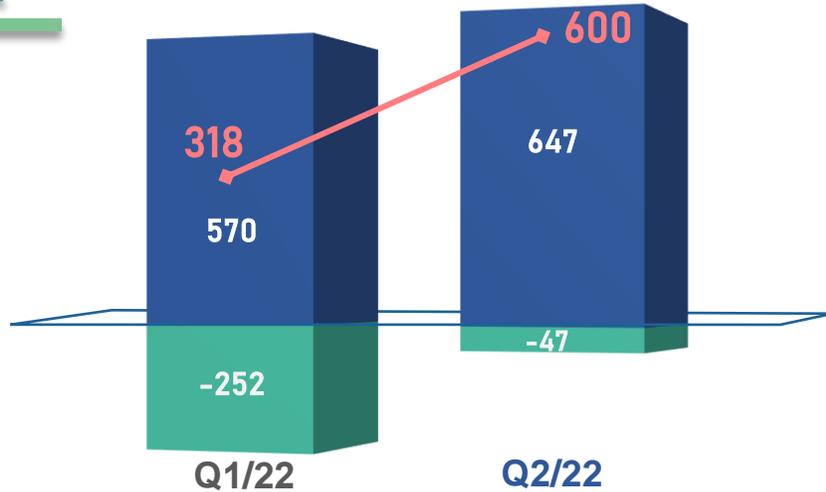
Start-up of G1/61 and G2/61 PSC  
On 24 April 2022

Algeria Hassi Bir Rekaiz 1<sup>st</sup> oil  
In June 2022

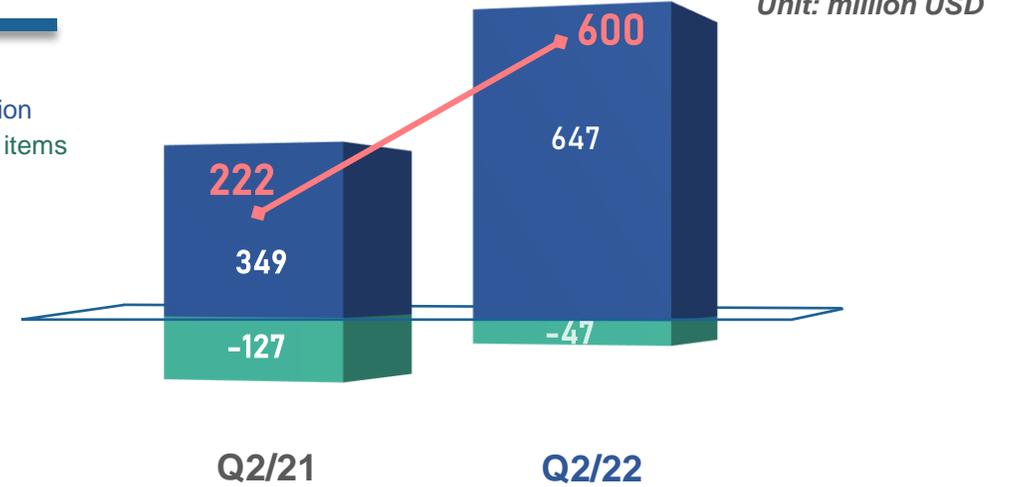
Withdrawal from Yetagun project  
in Myanmar, effective 31 May 2022

PTTGL divestment

### QoQ



### YoY



 Net Profit  
 P/L from normal operation  
 P/L from non-operating items

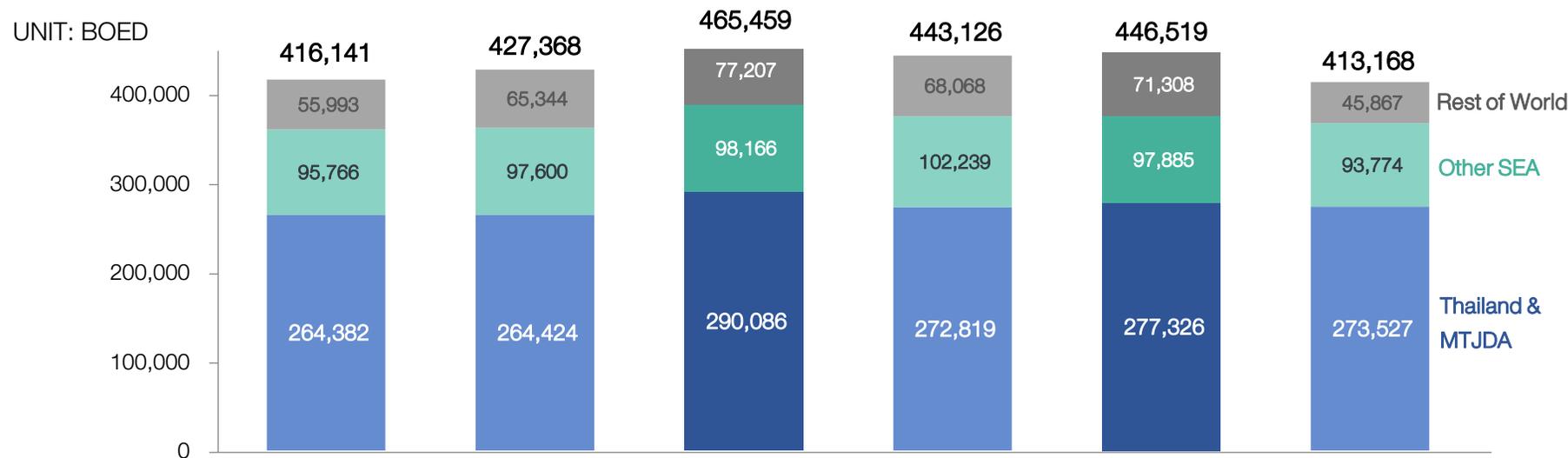
<b>P/L from normal operation</b> +77m\$ (+14%)	<b>+9%</b> G1/61 PSC  Average Sales Volume	<b>+8%</b> Global oil price trend  Average Selling Price	<b>+8%</b> Upfront OPEX of G1/61  Unit Cost
	Less oil price hedging losses QoQ		

<b>Non-operating items</b> +205m\$ (+81%)	Less oil price hedging losses QoQ		
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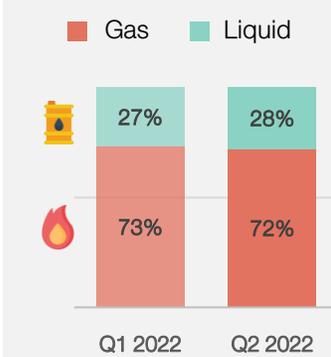
<b>P/L from normal operation</b> +298m\$ (+85%)	<b>+5%</b> G1/61 PSC  Average Sales Volume	<b>+32%</b> Global oil price trend  Average Selling Price	<b>+6%</b> Upfront OPEX of G1/61  Unit Cost
	Less oil price hedging losses YoY		

<b>Non-operating items</b> +80m\$ (+63%)	Less oil price hedging losses YoY		
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# Volume and Price

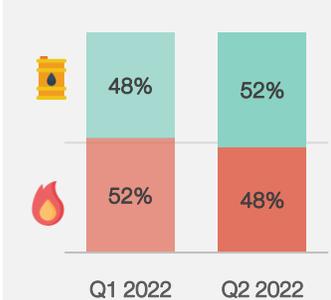


## Volume Mix



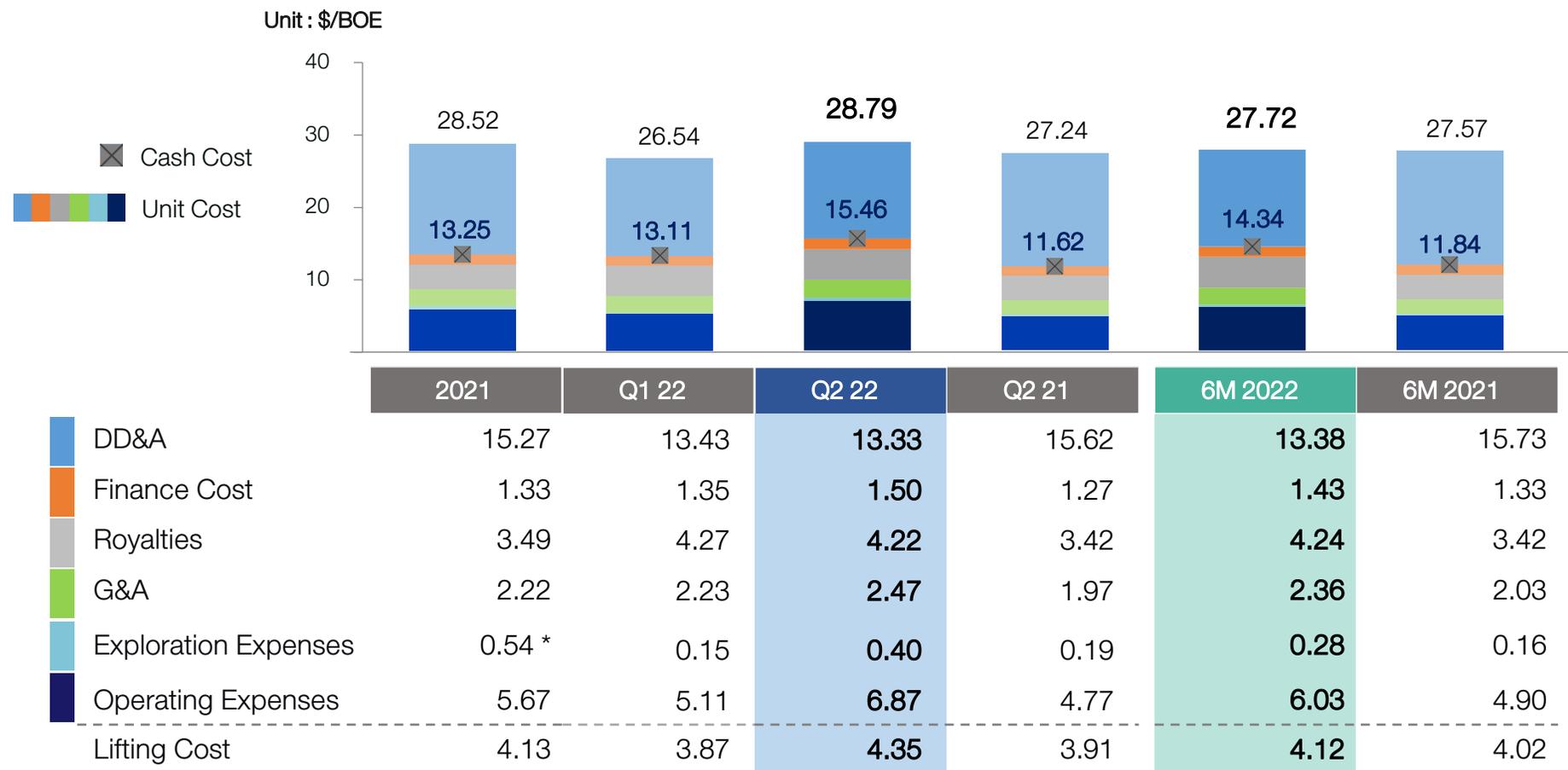
Product Price	2021	Q1 22	Q2 22	Q2 21	6M 2022	6M 2021
Gas (\$/MMBTU)	5.69	6.07	6.10	5.59	6.08	5.60
Liquid (\$/BBL)	66.70	91.19	105.47	63.98	98.72	60.52
<b>Weighted Avg. (\$/BOE)</b>	<b>43.49</b>	<b>51.35</b>	<b>55.61</b>	<b>42.19</b>	<b>53.59</b>	<b>41.35</b>
Avg. Dubai (\$/BBL)	69.39	96.21	108.22	67.02	102.17	63.62
Avg. HSFO (\$/BBL) (High Sulphur Fuel Oil)	64.42	87.96	104.67	61.21	96.32	58.98

## Revenue Mix



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

# Unit Cost

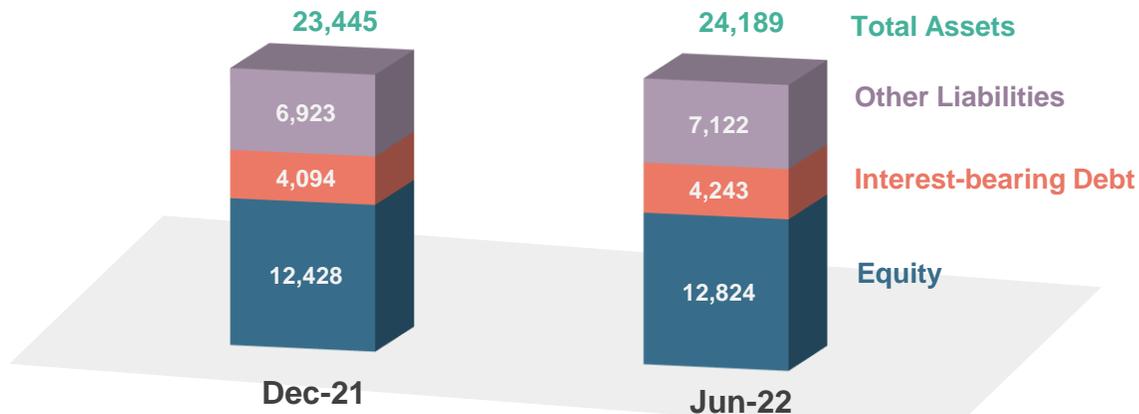
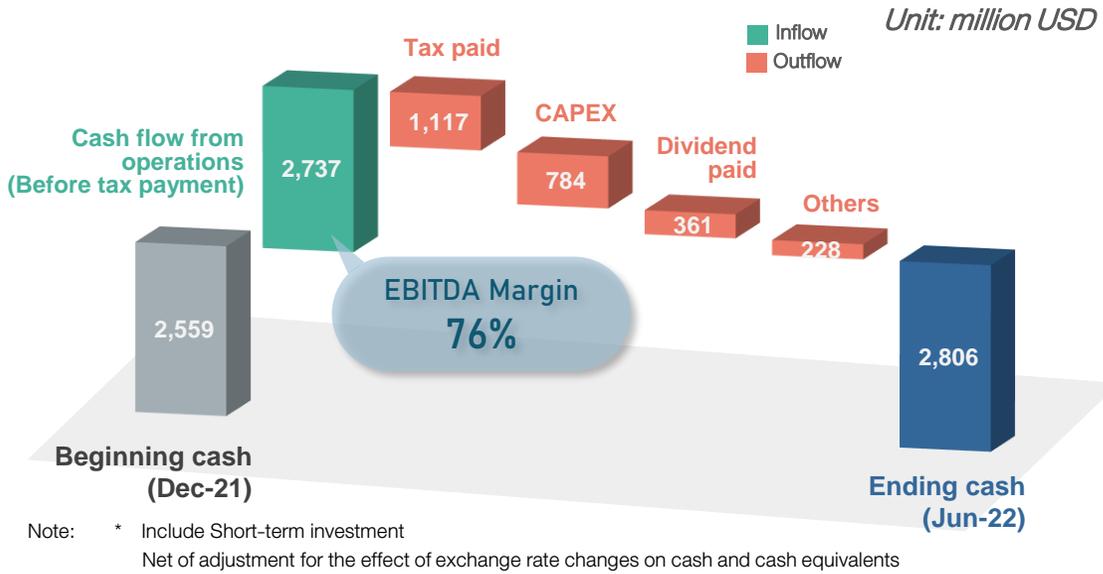


**Note:** \* Exclude Exploration assets write-off in Brazil for Q2 21, 6M 21, and 2021  
 All Unit Cost shown above exclude costs related to new business  
 The formulas for calculating ratios are provided in the supplementary section for your reference

# Cashflow, Financial Position, and Interim Dividends



## Cashflow & Financial Position



## Interim Dividend



	2017	2018	2019	2020	2021	1H2022
<b>Payout Ratio</b>						
% of Net Profit	88	55	49	77	50	50
% of Profit from Normal Operation	63	51	53	71	41	38

# Guidance, Debt Profile and Ratings

## Outlook

		Q3 2022	FY 2022
Sales Volume (KBOED)		~481	~465
Gas Price (US\$/MMBTU)		~6.4	~6.4
Unit Cost (US\$/BOE)		~29-30	
Profitability (EBITDA Margin)		70-75%	

\* Based on average Dubai oil price in 2022 at 99 \$/BBL

## Ratings

			 <small>McGraw Hill Financial</small> BBB stand-alone rating
			 BBB stand-alone rating

## Debt Profile

	2021	Q2' 2022
Debt to Equity	0.33	0.33
Debt to EBITDA	0.80	0.69
Average Cost of Debt	3.38% p.a.	3.73% p.a.
Average Loan Life	12.7 Yrs	13.4 Yrs
Interest Rate (Fixed : Float)	83:17	83:17



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# Thank you and Q&A



+66 2 537 4000



IR@pttep.com



<http://www.pttep.com>



## Supplementary information

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# Finance | Profit & Loss Statement



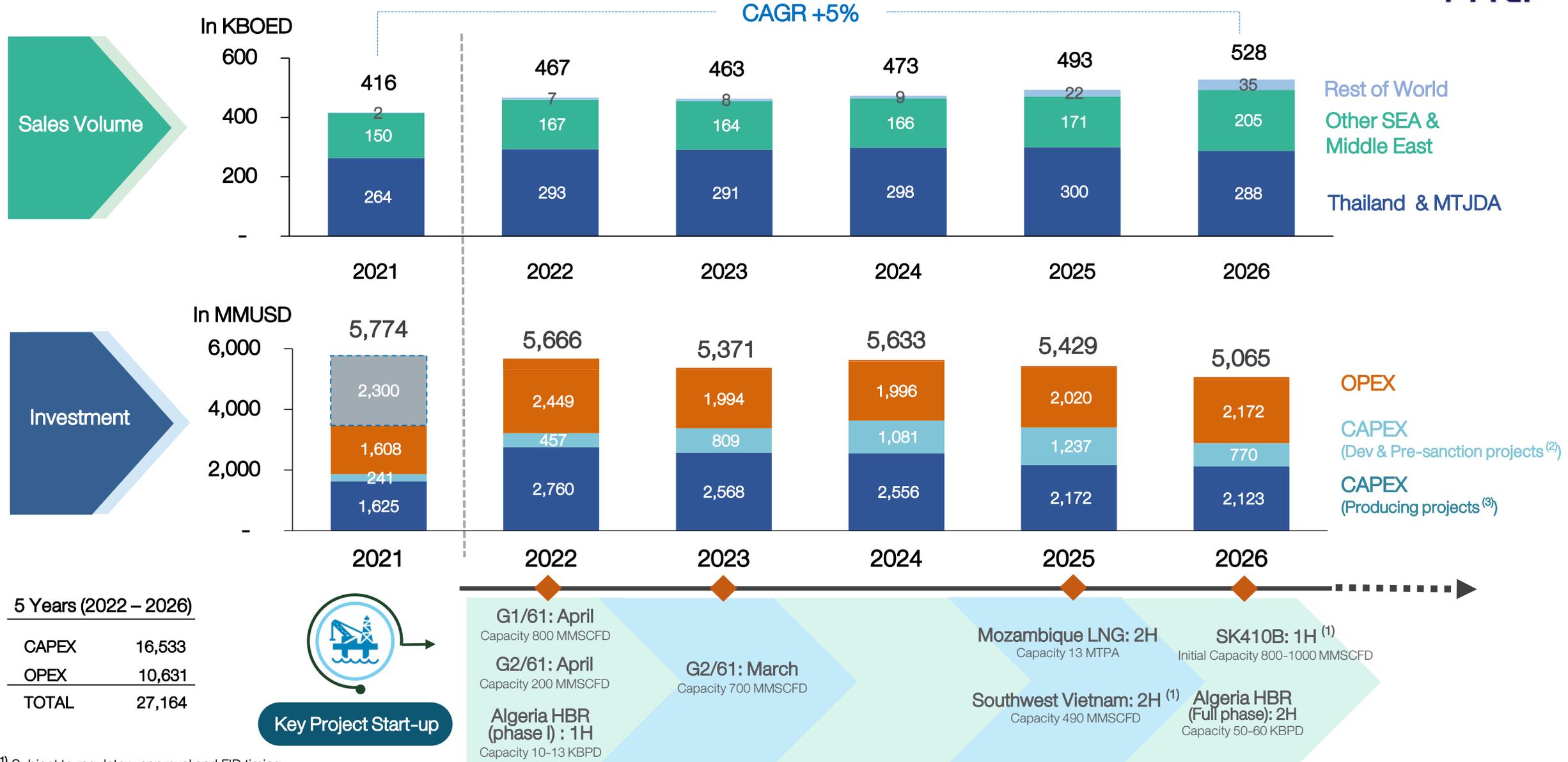
Unit: million USD

	Q2 22	Q1 22	%QoQ	Q2 21	%YoY	6M 22	6M 21	%YTD	FY2021
<b>Total Revenues</b>	<b>2,469</b>	<b>2,083</b>	<b>19%</b>	<b>1,767</b>	<b>40%</b>	<b>4,543</b>	<b>3,546</b>	<b>28%</b>	<b>7,314</b>
Sales <sup>(1)</sup>	2,383	2,030	17%	1,729	38%	4,413	3,120	41%	6,731
Sales Volume (BOED) <sup>(2)</sup>	465,459	427,368	9%	443,126	5%	446,519	413,168	8%	416,141
Sales Price (US\$/BOE)	55.61	51.35	8%	42.19	32%	53.59	41.35	30%	43.49
Gain from a bargain purchase	-	-	-	-	-	-	350	(100%)	342
Others <sup>(3)</sup>	86	53	62%	39	>100%	130	76	71%	241
<b>Total Expenses</b>	<b>1,882</b>	<b>1,776</b>	<b>+6%</b>	<b>1,548</b>	<b>22%</b>	<b>3,649</b>	<b>2,953</b>	<b>24%</b>	<b>6,118</b>
<b>Major Expenses:</b>									
Operating Expenses	291	197	48%	193	51%	488	367	33%	861
Exploration Expenses	17	6	>100%	7	>100%	23	156	(85%)	226
G&A	112	93	20%	83	35%	205	158	30%	355
DD&A	565	517	9%	629	(10%)	1,082	1,176	(8%)	2,202
Loss on Financial Instruments	-	245	(100%)	125	(100%)	237	223	6%	234
Impairment Loss on Assets	-	-	-	-	-	-	-	-	183
Income Tax Expenses	610	497	23%	321	90%	1,106	513	>100%	1,287
<b>Share of profit (loss) from associates and JV</b>	<b>13</b>	<b>11</b>	<b>18%</b>	<b>2</b>	<b>&gt;100%</b>	<b>24</b>	<b>5</b>	<b>&gt;100%</b>	<b>15</b>
<b>Net Profit</b>	<b>600</b>	<b>318</b>	<b>89%</b>	<b>222</b>	<b>&gt;100%</b>	<b>918</b>	<b>598</b>	<b>54%</b>	<b>1,211</b>
Profit (Loss) from normal operation	647	570	14%	349	85%	1,217	631	93%	1,479
Profit (Loss) from non-operating items	(47)	(252)	81%	(127)	(63%)	(299)	(33)	>100%	(268)
<b>Non-operating items breakdown:</b>									
Oil Price Hedging	(38)	(240)	84%	(141)	73%	(278)	(248)	(12%)	(284)
Tax from Effect of FX	(11)	(2)	(>100%)	-	(100%)	(13)	(9)	(44%)	(10)
Effect from FX and others	2	(10)	>100%	14	(86%)	(8)	19	(>100%)	12
Impairment Loss on Assets	-	-	-	-	-	-	-	-	(183)
Exploration assets write-off	-	-	-	-	-	-	(145)	100%	(145)
Gain from a bargain purchase	-	-	-	-	-	-	350	(>100%)	342

Note:

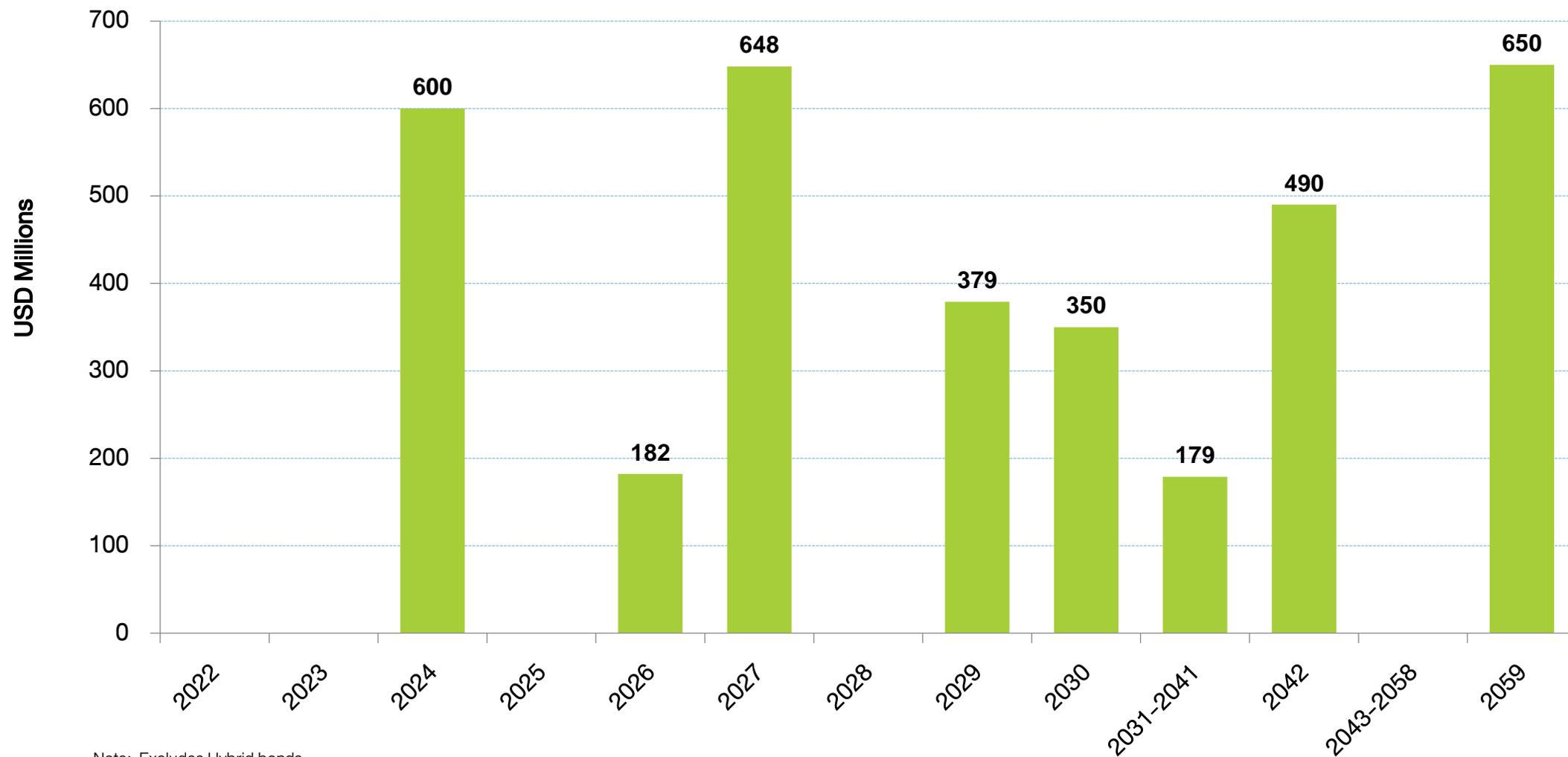
- (1) Include Oman Block 61 deemed sales revenues from tax payment by government
- (2) Exclude Oman Block 61 deemed sales volume from tax payment by government
- (3) Consisted of Revenue from Pipeline, Gain from FX, Forward Contract, and Gain from Oil price Hedging.

# Finance | 5-year Sales Volume & Investment Budget (announced December 2021)



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

# Finance | Debt Maturity Profile

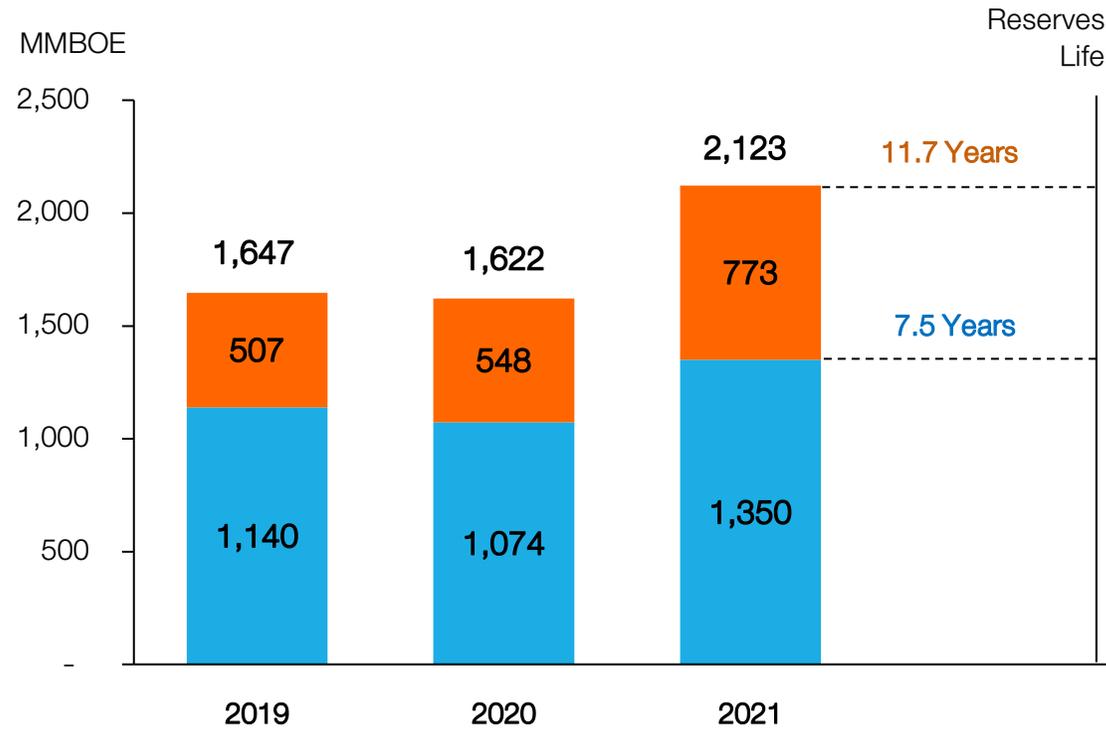


Note: Excludes Hybrid bonds

Unit: USD Millions or equivalent after cross currency swap

As of June 2022

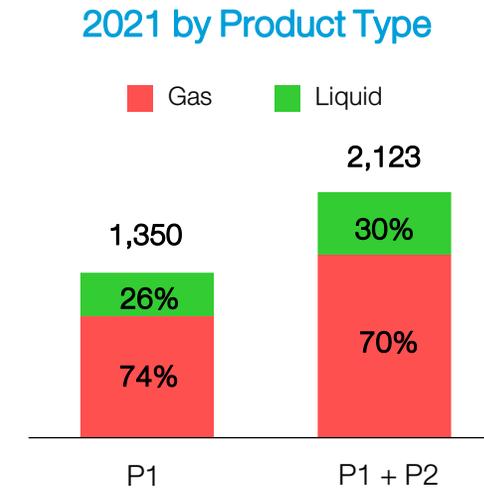
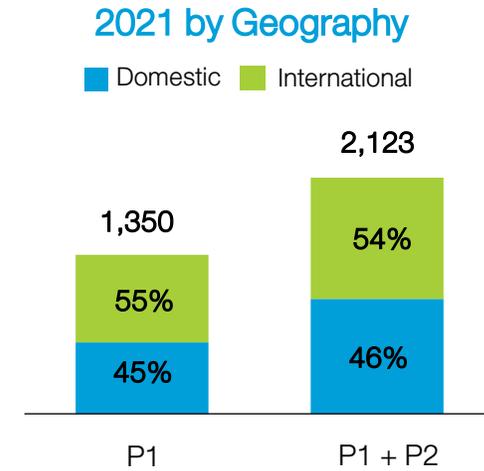
# Reserves



■ 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

## Advanced Technology

Exploring Potential Areas



**In-house Tech**  
e.g. carbon nanotube, graphene, etc.

- *Advanced Technology*
- *Future Energy Infrastructure*

**Develop Technology**

## Decarbonization

Capturing Growing Demand from Climate Change



**CCU**  
• CO2-to-Methanol  
• Others e.g. CNT, cement, aggregate, etc.

- *Direct Air Capture*

**Value-added Technology**

## Future Energy

Expanding to Future Energy Business



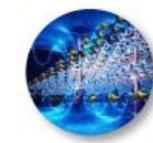
**Hydrogen**

- *Fusion*
- *Biofuels*
- *Next-Gen Renew. Technology*

**Act now for Future Energy / Fuel**



**AI & Robotic**



**In-house Tech**  
Pipeline Decontamination

**Market Opportunity**



**CCS Initiative**

- *Reforestation*
- *Carbon credit*

**Capture Demand**



**Power Business**

- *G2P & L2P*
- *Renewables*

**Accelerate Monetization**



## AI AND ROBOTICS VENTURES



### ROVULA

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



**Xplorer AUV**  
Surveillance & inspection



**Nautilus**  
Horizontal Repair & Maintenance



**RotoClimber**  
Vertical Repair & Maintenance



**Software & Data**  
Analytics & Insights

#### JOINT VENTURES



with Mermaid Subsea Services



### SKYLLER

Unmanned Aerial Vehicle (UAV) asset inspection and management platform



**Drone Inspection**



**HORRUS**  
Automatic dispatching drone box



**Asset Management Platform**



**HIGHTSIGHT**  
Integrated autonomous aerial inspect solution



with Aerodyne Group and Digital Creation



### varuna

One-stop Service for AgroTech and ClimateTech Solutions



**Smart-Farm**



**Smart-Forrest**



**Smart-Credit**



**Service Matching**



with Thaicom



### CARIVA

Healthcare Technology platform to empower people and the healthcare industry



**NEXTCERCISE**  
Fitness Monitoring



**ARVIC Health Ecosystem Platform**



**BEAUT**  
Personalized Care and Wellness



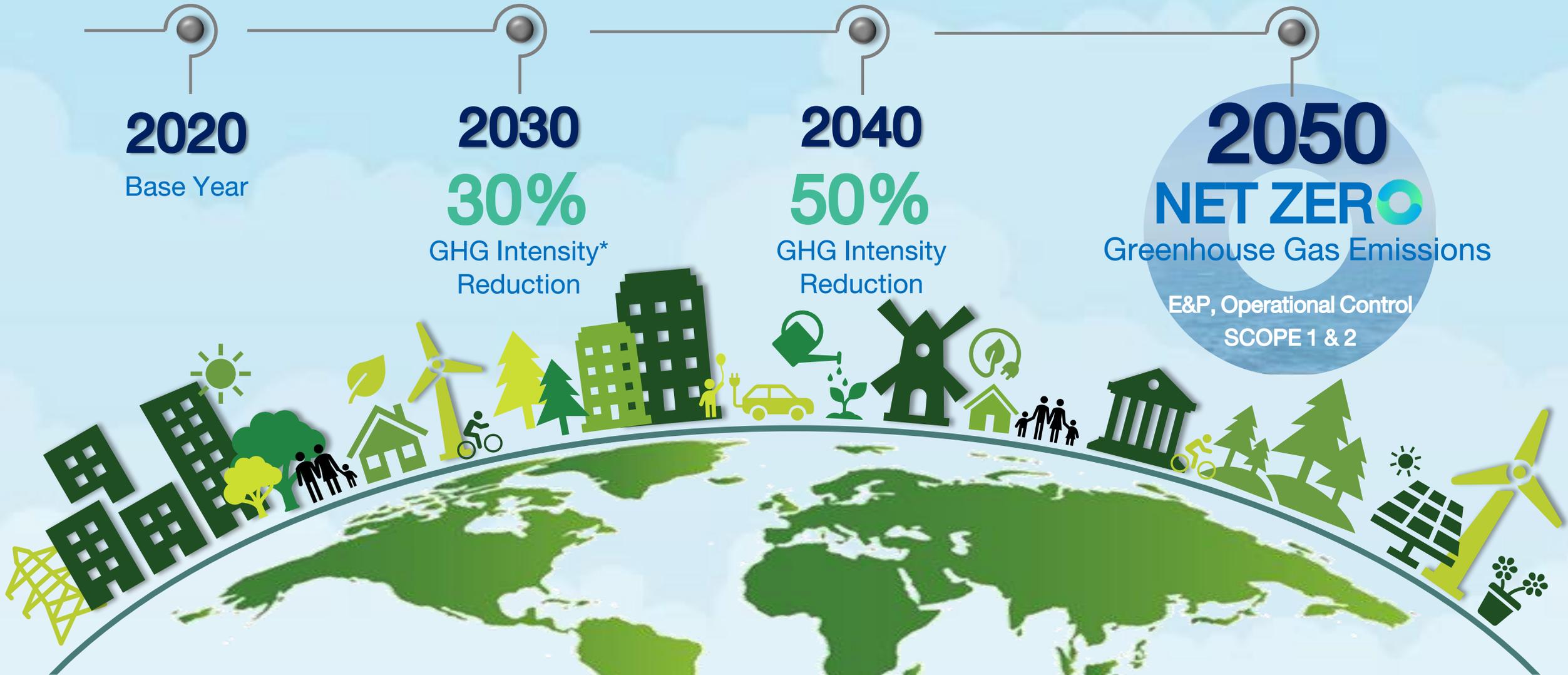
with BJC

# Technologies & Businesses

## AI and Robotics Ventures

ARV is the venture building platform of PTTEP. We leverage artificial intelligence and robotics technologies to unlock value and create business growth opportunities across industries spanning air, land, and sea. Through innovation, R&D, go-to-market and partnership activities, we aspire to deliver unparalleled experiences to the ecosystems we engage with.

# Our Net Zero Ambition



\*Intensity refers to GHG released in Tonne CO<sub>2</sub>e per thousand tonnes of hydrocarbon production

# SD / ESG | Progress



## Decarbonization

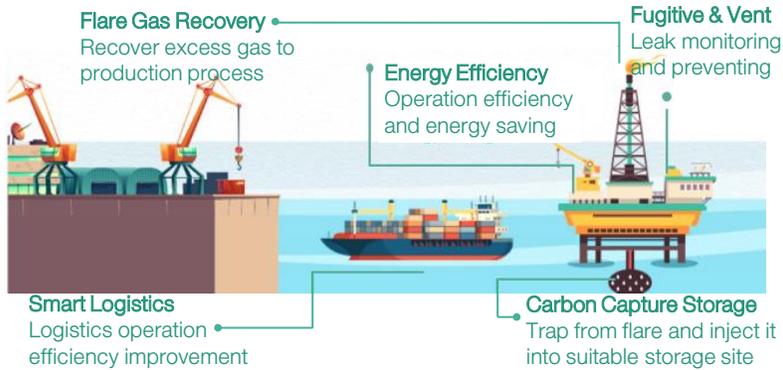
GHG Intensity Reduction Target  
**25%** By 2030 (2012 base year)

**Net Zero** By 2050

### ◆ PROGRESS ◆

#### Reduction of GHG Emission Intensity

As of Q2/2022, **25.2% Reduction** (2012 base year)  
 (0.28 MMTCO<sub>2</sub>e Reduction since Jan 2022)



#### EP Net Zero



Exploring for Lower Carbon E&P Portfolio

**EP** Production and Planet in Balance



## Circular Model

**Zero** Waste to Landfill by 2030

**≥50%** of Main Structure Reuse by 2030

### ◆ PROGRESS ◆

#### Waste to Landfill



#### Upcycling High Volume Waste

**Sand to Zeolite:** Completed prototype study result to turn sand waste from petroleum production at Zawtika project to nano silica and zeolite with good moisture absorption rate



**Oil sludge conversion to Graphene:** Completed lab scale unit fabrication



## 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



MOU signed with Hydro-Informatics Institute (HII) on Ocean Data Platform

Blue Carbon Initiatives on mangrove, seagrass, seaweed, seashell and coral to potentially support GHG offsetting and increasing biodiversity



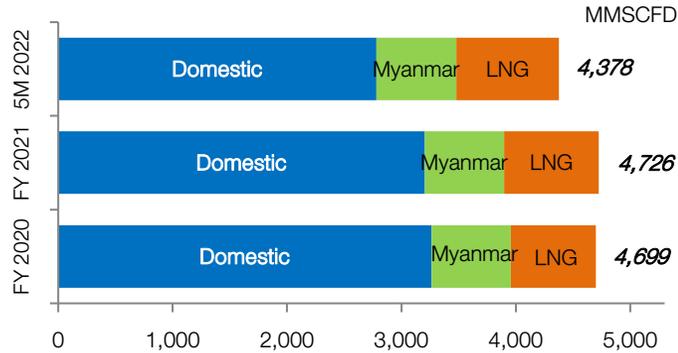
#### Ramp Up CSR around Ocean Flagship Projects



- 2 Aquatic Animal Hatchery Learning Centers Established (Phetchaburi and Prachuap Khiri Khan)
- More than 10 km<sup>2</sup> Conservation Area & Fish Home
- Seafood Product Value Enhancement to improve community income

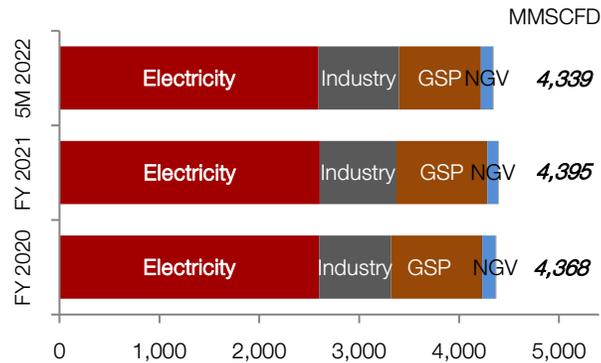
## Thailand Energy Overview

### Natural Gas Supply

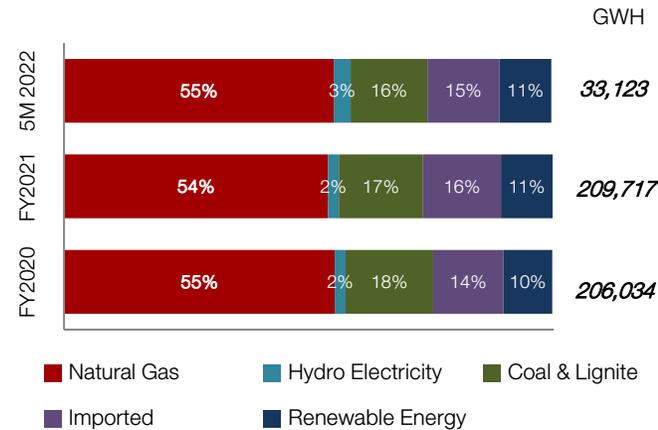


- Increase in energy demand & become closer to demand before COVID-19 pandemic, along with high level of energy prices
- As of May 2022, compared with the same period of last year: significantly declined in domestic supply, while gas from Myanmar and LNG imports remained constant.

### Natural Gas Consumption

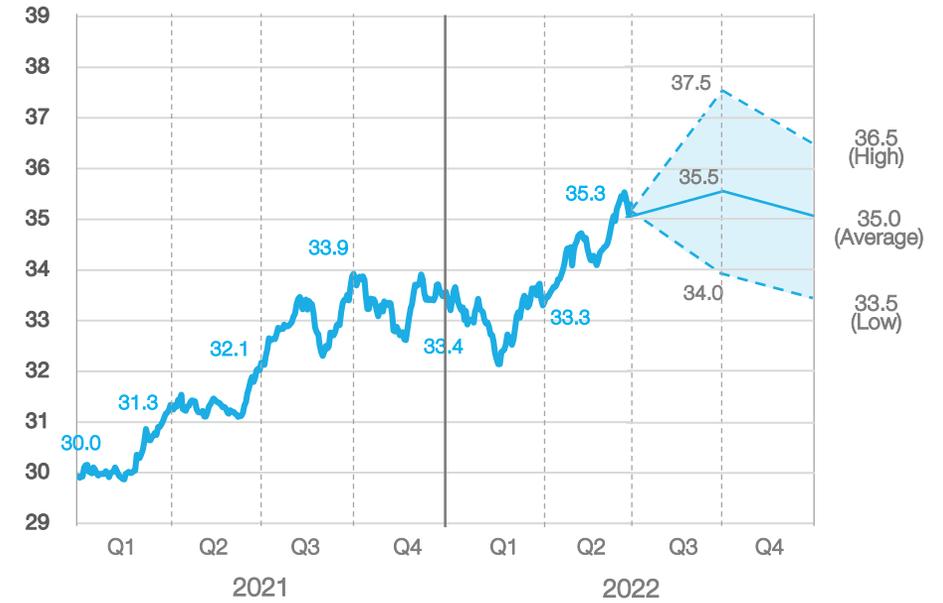


### Electricity Generation



Source: Energy Policy and Planning Office (EPPO)

## Exchange Rate Movement (USD/THB)



### Consensus on the exchange rate mostly depends on

- General investor risk-off sentiment from persistent inflation and supply chain disruptions
- Bank of Thailand and Federal Reserve monetary policy tightening schedule
- Thailand tourism recovery as lockdown measures ease and countries reopen

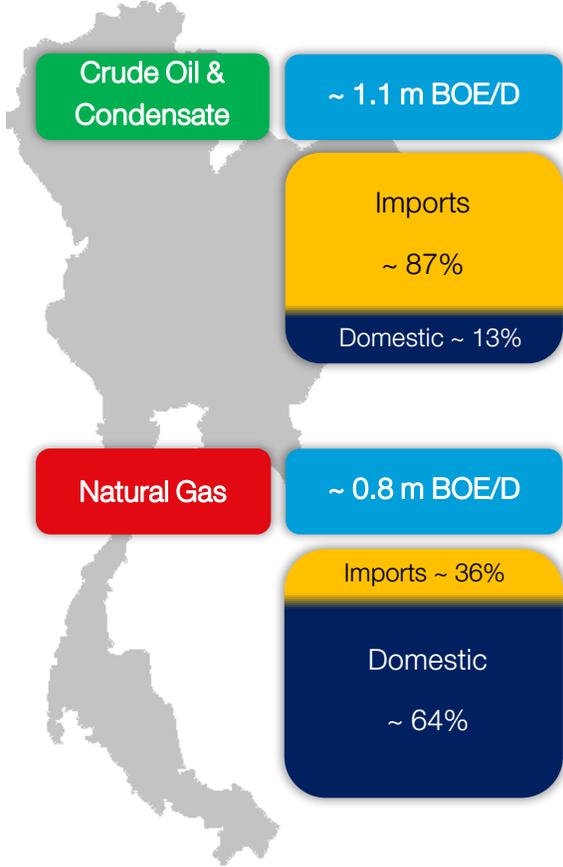
Source: Bank of Thailand, Bloomberg

Forecast based on Bloomberg Consensus as of 14 July 2022

# Thailand | Energy Value Chain

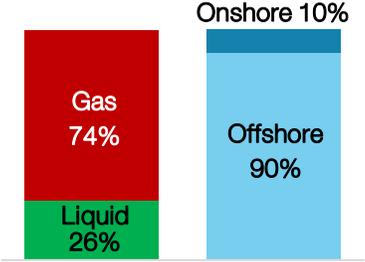


5M 2022 Thailand's Oil and Gas Demand

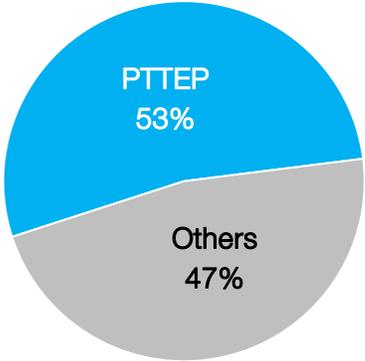


6M 2022 Thailand Petroleum Production

% by Petroleum Type and Area



% Production by Company



Midstream

Gas: operated by PTT

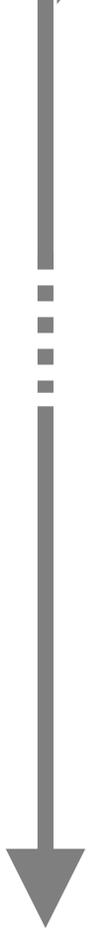
Transmission Pipelines  
Gas Separation Plants

Oil: PTT participates through subsidiaries

Refineries

Downstream

Petrochemicals  
Oil and gas marketing

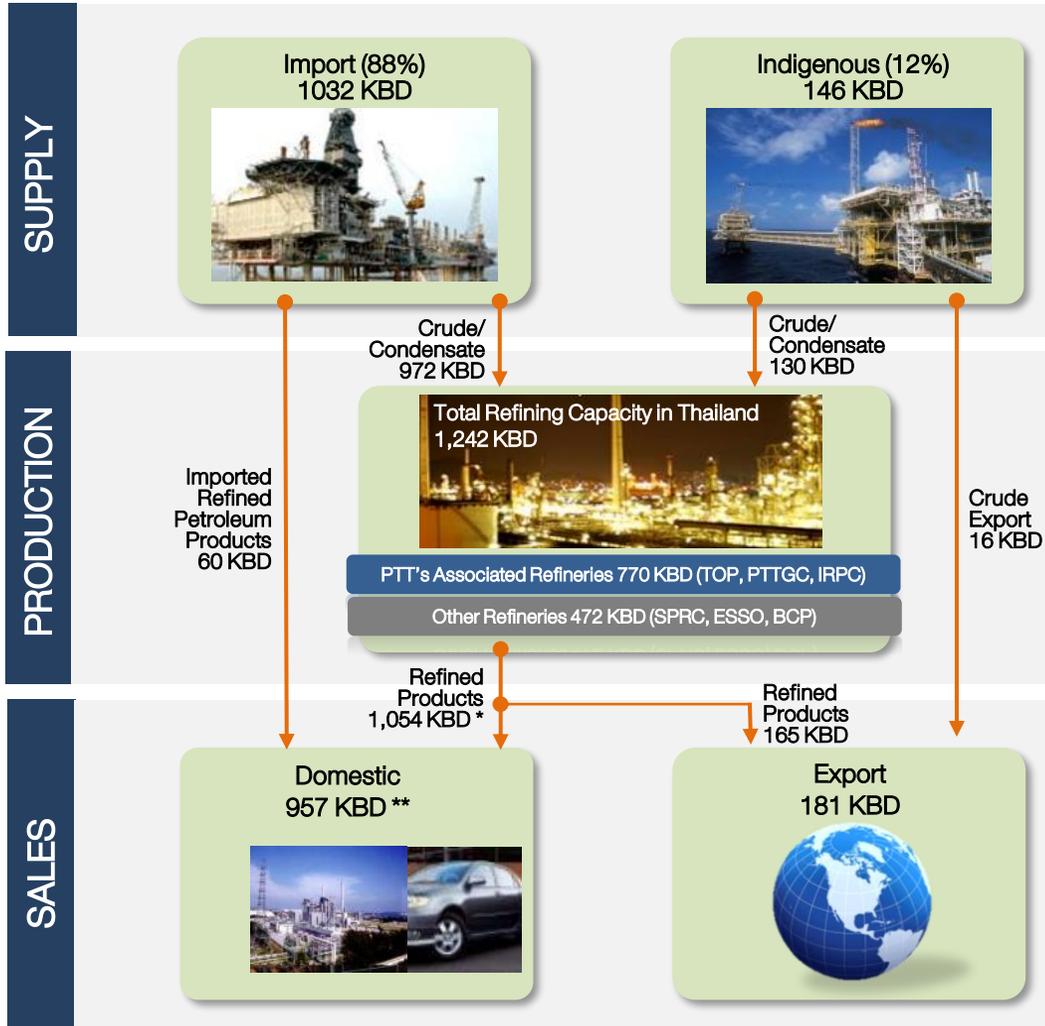


Source: Energy Policy and Planning Office (EPPO) and Department of Mineral Fuels (DMF)

# Thailand | Oil and Gas Balance

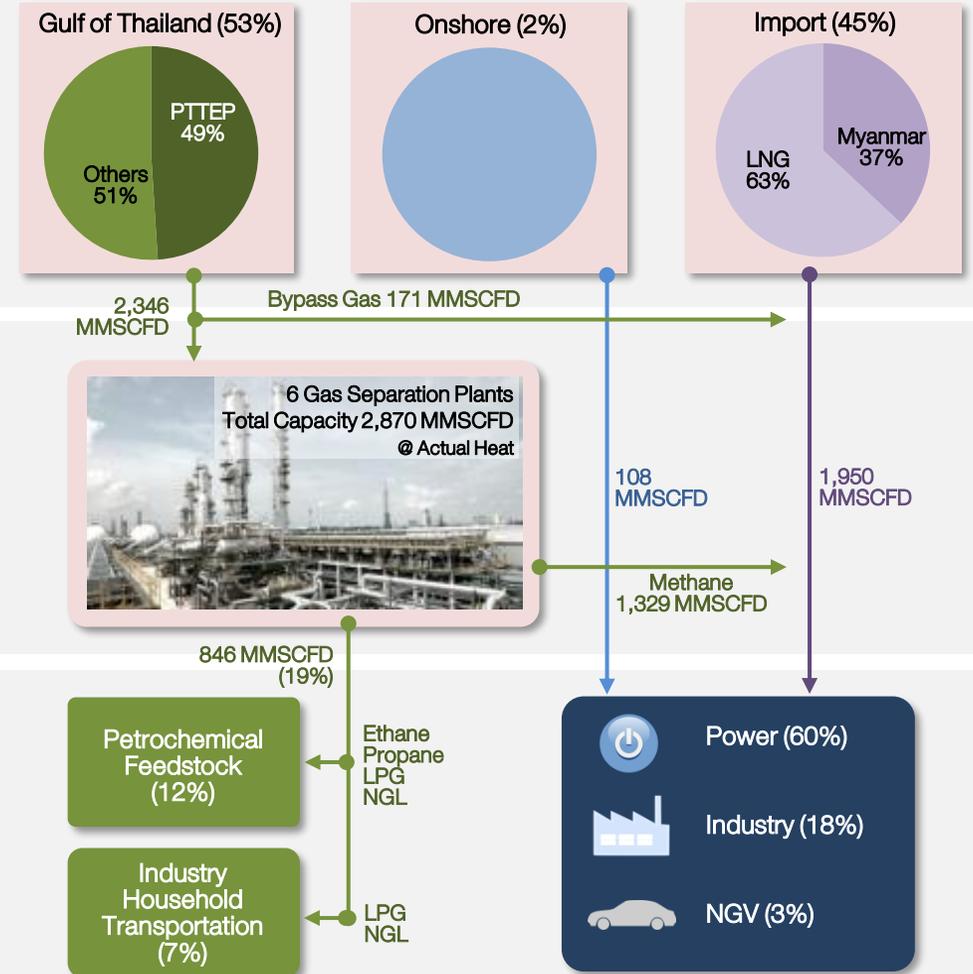
## Oil Balance\*\*\*

Maintains stability supply through adequate refining capacity



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

Main driver of the Thailand economy



Source: PTT

Note: \* Refined product from refineries = 971 KBD, including domestic supply of LPG from GSPs and Petrochemical Plants = 83 KBD

\*\* Not included Inventory

\*\*\* Information as of 3M 2022

\*\*\*\* Information as of 3M 2022

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

# Projects | Thailand, Myanmar and Malaysia



## Myanmar

### Production

**Zawtika (80% WI)**

Operate Zawtika project, start up in March 2014 with current gas supply of 322 MMSCFD for 6M2022

**Yadana (37.1% WI)**

Become an operator of Yadana project on July 20, 2022

### Exploration

**M3 (100% WI)**

Awaiting development

## Thailand

### Production / Ramp-up Projects

**Bongkot (66.6667% WI)**

Average natural gas and condensate sales volume of 751 MMSCFD and 20 KBPD in 6M2022

**S1 (100% WI)**

The largest onshore crude oil production field in Thailand with 6M2022 average crude oil sales volume of 25 KBPD

**Arthit (80% WI)**

Average sales volume in 6M2022 was 287 MMSCFD of natural gas and 16 KBPD of condensates

**Contract 4 (60% WI)**

Average sales volume in 6M2022 was 393 MMSCFD of natural gas and 15 KBPD of condensate

**G1/61 (60% WI)**

- Operatorship transfer completed. First year production rate of 200-250MMSCFD.
- Sole investment 100%

**G2/61 (100% WI)**

- GBN transition completed. Production rate at 200 MMSCFD



● 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 6M2022 was 25 KBPD of crude oil and 28 MMSCFD of natural gas

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

For East Patricia field (42% WI)

- Average production volume in 6M2022 was 198 MMSCFD of natural gas and 18 KBPD of condensates and crude

**Block H Project :**

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

- First gas early February 2021 with average production volume in 6M2022 at 256 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

**Sabah SB412**

- New block awarded from 2021 Malaysia Bid Round
- The project is under preparation for Exploration activities.

*Note: WI – working interest*



- Production projects
- Pre sanction projects

## Vietnam



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

- Average sales volume of crude oil was 13 KBPD in 6M2022
- In 2022, the project has plan to drill 2 development wells in Q3 - Q4/2022.



### 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 187 MMSCFD in 6M2022



## 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

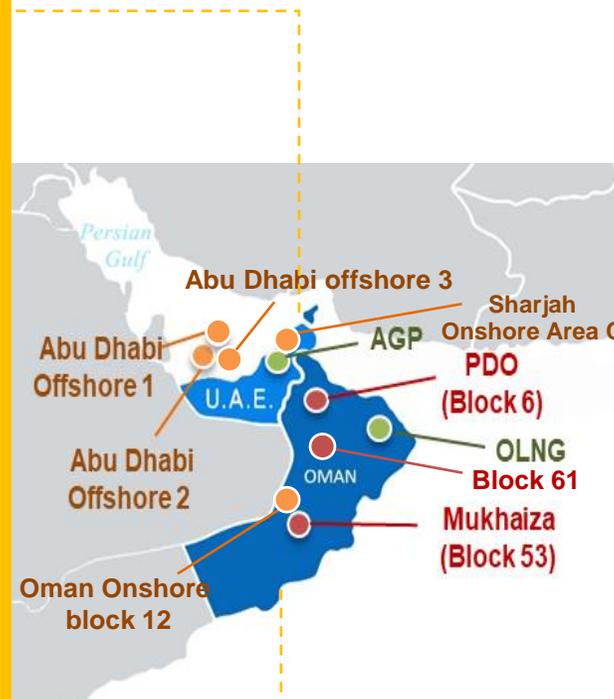
- High gas & condensate potential with the possibility of integrating with surrounding fields
- Located in the central part of Sharjah Emirate, United Arab Emirates
- Operated by Eni Abu Dhabi B.V. (50% interest)

### 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)



**Note:** ADNOC : Abu Dhabi National Oil Company



\*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 660 KBPD for 6M2022
- 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 94 KBPD for 6M2022
- 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 65,000 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)

# Projects | Rest of the World



## Algeria

### Bir Sebah

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

### Hassi Bir Rekaiz

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

## Mozambique

### Mozambique Area 1

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

## Mexico

### Mexico block 12 (2.4)

- Non-operating partner with 20% participating interest
- Located in the Mexican Ridges, western Gulf of Mexico
- Currently evaluating the petroleum potential for further way forward

### 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
- Currently undergoing a pre-development study

## 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



# Projects Details | Thailand



	Project Name	Status	Phase	Participating Interest* (%)		Sales Vol Gas (MMSCFD)	Sales Vol Liquid (KBPD)	Latest Status
1	Arthit	Operator	Production	PTTEP Chevron MOECO	80% 20% 4%	289	16	<ul style="list-style-type: none"> <li>Increase Sales Gas DCQ from 220 to 280 MMSCFD in Feb'22</li> <li>Select as a pilot project for CCS and completed CCS conceptual study in Q2 2022</li> </ul>
2	B6/27	Operator	Production	PTTEP	100%	-	-	<ul style="list-style-type: none"> <li>Decommissioning activities in progress</li> </ul>
3	B8/32 and 9A	JV	Production	PTTEP Chevron MOECO KrisEnergy Palang Sophon	25.01% 51.66% 16.71% 4.63% 2%	47	10	<ul style="list-style-type: none"> <li>Ensure gas deliverability level at DCQ</li> <li>Drill development wells</li> </ul>
4	Bongkot	Operator	Production	PTTEP TotalEnergies	66.67% 33.33%	751	20	<ul style="list-style-type: none"> <li>Block 15 ended the concession on 23 Apr 2022 and operates under G2/61 project. Block 16 and Block 17 has maintained production until end of concession on 7 March 2023.</li> <li>Infills drilling for BKT Sole investment</li> <li>Maintain production level as planned</li> <li>Carry out wells plug and abandonment</li> </ul>
5	Contract 4 (Formerly Pailin)	JV	Production	PTTEP Chevron MOECO	60% 35% 5%	398	16	<ul style="list-style-type: none"> <li>Ensure gas deliverability level at DCQ</li> <li>Drill development wells</li> </ul>
6	E5	JV	Production	PTTEP EXXON MOBIL	20% 80%	7	-	<ul style="list-style-type: none"> <li>Ensure gas deliverability level at DCQ</li> </ul>

Note: \* PTTEP denotes respective PTTEP subsidiaries participating in the project

\*\* Sales volume represent **average volume for 100% of the project during 6M2022**

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

\*\*\*\* DCQ = Daily Contractual Quantity

# Projects Details | Thailand



	Project Name	Status	Phase	Participating Interest* (%)		Sales Vol Gas (MMSCFD)	Sales Vol Liquid (KBPD)	Latest Status
7	G4/43	JV	Production	PTTEP Chevron MOECO Palang Sophon	21.375% 51% 21.25% 6.375%	1	2	<ul style="list-style-type: none"> <li>Deliver production volumes as nominated from the buyer and oil production as planned</li> </ul>
8	G4/48	JV	Production	PTTEP Chevron MOECO	5% 71.25% 23.75%	1	-	<ul style="list-style-type: none"> <li>Decommissioning activities in progress</li> </ul>
9	L53/43 & L54/43	OP	Production	PTTEP	100%	-	0.5	<ul style="list-style-type: none"> <li>Completed 6-well drilling in Apr'22 and commence 1<sup>st</sup> oil production in Jun'22</li> <li>Plan for production facilities debottlenecking and relocation projects to handle additional gross production from new wells.</li> </ul>
10	PTTEP1	OP	Production	PTTEP	100%	-	0.2	<ul style="list-style-type: none"> <li>Maintain production plateau</li> <li>Relocate facilities from PTTEP1 to L54/43 to be minimized CAPEX cost</li> </ul>
11	S1	OP	Production	PTTEP	100%	8	Crude: 25 KBPD LPG: 175 Mton/Day	<ul style="list-style-type: none"> <li>Production optimization and long-term development are on-going for business plan and work activities identification.</li> </ul>
12	Sinphuhorm	OP	Production	PTTEP Apico EXXON MOBIL	55% 35% 10%	96	0.3	<ul style="list-style-type: none"> <li>Ensure gas deliverability at CDC high nomination</li> <li>On-going the drilling campaign for 2 development wells in Q2 - Q4 2022</li> </ul>
13	L22/43	OP	Production	PTTEP	100%	-	-	<ul style="list-style-type: none"> <li>On-going execution plan of total 5 drilling wells scheduled in Q4 2022.</li> <li>Plan to prepare for the resume production or exit strategy in future after drilling results confirmed.</li> </ul>

Note: \* PTTEP denotes respective PTTEP subsidiaries participating in the project

\*\* Sales volume represent **average volume for 100% of the project during 6M2022**

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

# Projects Details | Thailand



	Project Name	Status	Phase	Participating Interest* (%)		Sales Vol Gas (MMSCFD)	Sales Vol Liquid (KBPD)	Latest Status
14	MTJDA	JOC	Production	PTTEP Petronas Carigali	50% 50%	258	8	<ul style="list-style-type: none"> <li>Facility Readiness for Additional Gas to Thailand for 30-50 MMSCFD</li> </ul>
15	G9/43	OP	Exploration	PTTEP	100%	-	-	<ul style="list-style-type: none"> <li>Activity suspended</li> </ul>
16	G1/61 (Erawan)	OP	Production	PTTEP Mubadala	60% 40%	88	2	<ul style="list-style-type: none"> <li>Successful transition to become operator on 24 April 2022</li> <li>Production ramp-up in progress with installing 2 WHPs of Phase 1A Development and another 6 WHPs to be installed within 2022.</li> </ul>
17	G2/61 (Bongkot)	OP	Production	PTTEP	100%	80	3	<ul style="list-style-type: none"> <li>Normal operations</li> </ul>

Note: \* PTTEP denotes respective PTTEP subsidiaries participating in the project

\*\* Sales volume represent **average volume for 100% of the project during 6M2022**

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

# Projects Details | Myanmar



1	Project Name	Status	Phase	Participating Interest* (%)		Sales Vol Gas (MMSCFD)	Sales Vol Liquid (KBPD)	Latest Status
	Yadana [Myanmar]	JV	Production	PTTEP TotalEnergies Chevron MOGE	25.5% 31.24% 28.26% 15%	734	-	<ul style="list-style-type: none"> <li>Became a new operator on 20 July 2022</li> <li>Activities for transition performed in a safe and orderly manner for smooth and continuity of operation</li> </ul>
	Zawtika [Myanmar]	OP	Production	PTTEP Myanma Oil and Gas Enterprise (MOGE)	80% 20%	322	-	<ul style="list-style-type: none"> <li>Maintain operations. Some activities are delayed due to COVID-19 and political situation.</li> </ul>
	M3 [Myanmar]	OP	Exploration	PTTEP	100%	-	-	<ul style="list-style-type: none"> <li>Waiting for approval of PSC Supplementary</li> <li>Closely monitor the situations to assess risks, as well as to prepare for an appropriate action plan</li> </ul>
	MD-7 [Myanmar]	OP	Exploration	PTTEP TotalEnergies	50% 50%	-	-	<ul style="list-style-type: none"> <li>Termination process in progress</li> </ul>

Note: \* PTTEP denotes respective PTTEP subsidiaries participating in the project

\*\* Sales volume represent **average volume for 100% of the project during 6M2022** except Malaysia (Production volume 100%)/ For Block K, gross production is net off unitization

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

# Projects Details | Malaysia



	Project Name	Status	Phase	Participating Interest* (%)		Sales Vol Gas (MMSCFD)	Sales Vol Liquid (KBPD)	Latest Status
1	Block K [Malaysia]	OP (Kikeh & SNP) JV (GK)	Production	PTTEP	Kikeh 56% SNP 22.4% GK 7.17%	28 **	25 **	<ul style="list-style-type: none"> <li>The inspection and maintenance were completed as planned and the Project continued drilling well in GK as part of field development phase 3</li> </ul>
2	SK309 and SK311 [Malaysia]	OP	Production	PTTEP	42 – 59.5%	198 **	18 **	<ul style="list-style-type: none"> <li>2 new infill wells have completed drilling, with expected production in Jul'22</li> </ul>
3	Block H [Malaysia]	OP	Production	PTTEP	42 – 56%	256 **	-	<ul style="list-style-type: none"> <li>Capable of producing up to 270 MMSCFD.</li> </ul>
4	Malaysia Other projects [Malaysia]	OP	Exploration	PTTEP	42.5 - 80%	-	-	<ul style="list-style-type: none"> <li><u>SK410B</u> : Plan to drill 1 wildcat well in Jul'22. LLB expected FID in 2023.</li> <li><u>SK417</u> : Planning and preparing for the drilling of appraisal well (NANGKA-2) in 2022 exploration campaign</li> <li><u>SK405B, SK438, SK314A</u> : Well planning in progress</li> <li><u>SB412</u> : Preparing for exploration activities and focusing on seismic activity</li> </ul>

Note: \* PTTEP denotes respective PTTEP subsidiaries participating in the project

\*\* Sales volume represent **average volume for 100% of the project during 6M2022** except Malaysia (Production volume 100%)/ For Block K, gross production is net off unitization

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

# Projects Details | Other SEA



	Project Name	Status	Phase	Participating Interest* (%)		Sales Vol Gas (MMSCFD)	Sales Vol Liquid (KBPD)	Latest Status
1	9-2 [Vietnam]	JOC	Production	PTTEP Vietnam Oil and Gas Group Pharos Energy	25% 50% 25%	12	3	<ul style="list-style-type: none"> <li>Maintain production level</li> <li>Procurement for drilling campaign of 1 development well</li> </ul>
2	16-1 [Vietnam]	JOC	Production	PTTEP Vietnam Oil and Gas Group Pharos Energy OPECO	28.5% 41% 28.5% 2%	4	13	<ul style="list-style-type: none"> <li>Maintain production level</li> <li>Procurement for drilling campaign of 2 development wells</li> </ul>
3	B & 48/95 [Vietnam]	JV	Exploration	PTTEP Vietnam Oil and Gas Group MOECO	8.5% 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>
4	52/97 [Vietnam]	JV	Exploration	PTTEP Vietnam Oil and Gas Group MOECO	7% 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>
5	Natuna Sea A [Indonesia]	JV	Production	PTTEP Premier Oil KUFPEC Petronas Pertamina	11.5% 28.67% 33.33% 15% 11.5%	187	1	<ul style="list-style-type: none"> <li>Maintain production level</li> </ul>

Note: \* PTTEP denotes respective PTTEP subsidiaries participating in the project

\*\* Sales volume represent **average volume for 100% of the project during 6M2022**

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

# Projects Details | Middle East



	Project Name	Status	Phase	Participating Interest* (%)		Sales Vol Gas (MMSCFD)	Sales Vol Liquid (KBPD)	Latest Status
1	Abu Dhabi Offshore 1 [UAE]	JV	Exploration	PTTEP Eni Abu Dhabi	30% 70%	-	-	<ul style="list-style-type: none"> <li>G&amp;G study is on-going.</li> </ul>
2	Abu Dhabi Offshore 2 [UAE]	JV	Exploration	PTTEP Eni Abu Dhabi	30% 70%	-	-	<ul style="list-style-type: none"> <li>Completed the first exploration well drilling and wait for the result</li> </ul>
3	Abu Dhabi Offshore 3 [UAE]	JV	Exploration	PTTEP Eni Abu Dhabi	30% 70%	-	-	<ul style="list-style-type: none"> <li>G&amp;G study is on-going.</li> </ul>
4	Sharjah Onshore Area C [UAE]	JV	Exploration	PTTEP Eni Abu Dhabi SNOC	25% 50% 25%	-	-	<ul style="list-style-type: none"> <li>Completed the acquisition of 25% interest on 1 March 2022</li> <li>Seismic activity is on-going.</li> </ul>
5	PDO Block 6 [Oman]	JOC	Production	PTTEP Government of Oman Shell TotalEnergies	2% 60% 34% 4%	-	659 **	<ul style="list-style-type: none"> <li>Normal operations</li> </ul>
6	Mukhaizna Block 53 [Oman]	JV	Production	PTTEP Occidental OOCEP Indian Oil Mubadala	1% 47% 20% 17% 15%	-	94 **	<ul style="list-style-type: none"> <li>Normal operations</li> </ul>

Note: \* PTTEP denotes respective PTTEP subsidiaries participating in the project  
 \*\* Sales volume represent **average volume for 100% of the project during 6M2022** except for PDO Block 6 and Mukhaizna (Production volume 100%)  
 \*\*\* Status: OP = PTTEP operatorship / JOC = PTTEP joint operatorship/ JV = PTTEP Joint Venture Partner

# Projects Details | Middle East



	Project Name	Status	Phase	Participating Interest* (%)		Sales Vol Gas (MMSCFD)	Sales Vol Liquid (KBPD)	Latest Status
7	Oman Onshore Block 12 [Oman]	JV	Exploration	PTTEP	20%	-	-	<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>
				Total E&P Oman Block 12 B.V.	80%			
8	Oman Block 61 [Oman]	JV	Production	PTTEP	20%	1,504	61	<ul style="list-style-type: none"> <li>Normal operations</li> </ul>
				BP	40%			
				Makarim Gas Development LLC	30%			
				PC Oman Ventures Limited (PETRONAS)	10%			

Note: \* PTTEP denotes respective PTTEP subsidiaries participating in the project

\*\* Sales volume represent **average volume for 100% of the project during 6M2022**

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

# Projects Details | Rest of the World



	Project Name	Status	Phase	Participating Interest* (%)		Sales Vol Gas (MMSCFD)	Sales Vol Liquid (KBPD)	Latest Status
1	PTTEP Australasia [Australia]	OP	Exploration	PTTEP	90%-100%	-	-	<ul style="list-style-type: none"> <li>Cash Maple (AC/RL7) and Oliver (AC/RL12) : Defining proper direction in order to increase development opportunities</li> <li>Tenacious and Oliver : Well abandonment in progress</li> <li>Other exploration projects: G&amp;G studies</li> </ul>
2	Mozambique Area 1 [Mozambique]	JV	Development	PTTEP	8.5%	-	-	<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</li> </ul>
				TotalEnergies, Mitsui,	26.5%,20%			
				ENH, OVL	15%, 10%			
				OVRL & Oil India , Bharat	10%, 10%			
3	Bir Seba 433a & 416b [Algeria]	JOC	Production	PTTEP	35%	-	17 **	<ul style="list-style-type: none"> <li>Drilling of 8 infilled wells are on-going.</li> <li>Target to tie-in and produce new wells starting from Q4 2022</li> <li>Existing wells intervention</li> </ul>
				PetroVietnam	40%			
				Sonatrach	25%			
4	Hassi Bir Rekaiz [Algeria]	OP	Production	PTTEP	49%	-	-	<ul style="list-style-type: none"> <li>1<sup>st</sup> oil production June 1, 2022 for the initial phase target 10,000-13,000 BPD</li> <li>Sales starting Q3 2022</li> <li>Continue remaining drilling and construction work to be completed Phase 1 in Q2 2023</li> </ul>
				Sonatrach	51%			
5	Mariana Oil Sands [Canada]	OP	Exploration	PTTEP	100%	-	-	<ul style="list-style-type: none"> <li>Reclamation activities in progress to return the area to Canadian government</li> </ul>
6	Barreirinhas AP1 [Brazil]	JV	Exploration	PTTEP	25%	-	-	<ul style="list-style-type: none"> <li>Pending exploration wells drilling permit from the government</li> </ul>
				Shell Brasil	65%			
				Mitsui E&P Brasil	10%			

Note: \* PTTEP denotes respective PTTEP subsidiaries participating in the project

\*\* Sales volume represent **average volume for 100% of the project during 6M2022** except for Algeria 433a & 416b (production volume)

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

# Projects Details | Rest of the World



	Project Name	Status	Phase	Participating Interest* (%)		Sales Vol Gas (MMSCFD)	Sales Vol Liquid (KBPD)	Latest Status
7	Brazil BM-ES-23 [Brazil]	JV	Exploration	PTTEP Petrobras INPEX	20% 65% 15%	-	-	<ul style="list-style-type: none"> <li>Evaluating the petroleum potential for development concept</li> </ul>
8	Mexico block 12 (2.4) [Mexico]	JV	Exploration	PTTEP PC Carigali Mexico Ophir Mexico	20% 60% 20%	-	-	<ul style="list-style-type: none"> <li>Evaluating the remaining petroleum potential for future block way forward</li> </ul>
9	Mexico block 29 (2.4) [Mexico]	JV	Exploration	PTTEP Repsol Mexico PC Carigali Mexico Wintershal DEA	16.67% 30% 28.33% 25%	-	-	<ul style="list-style-type: none"> <li>Pre-development study in progress</li> </ul>
10	Block 17/06 [Angola]	JV	Pre-development	PTTEP TotalEnergies Sonangol SSI Acrep Falcon Oil	2.5% 30% 30% 27.5% 5% 5%	-	-	<ul style="list-style-type: none"> <li>FID plan in Q3 2022 for Begonia Oil Field</li> </ul>
11	Dunga [Kazakhstan]	JV	Production	PTTEP TotalEnergies OOCEP	20% 60% 20%	2	12	<ul style="list-style-type: none"> <li>Procurement process and design engineering compression package and Gathering Lines</li> <li>Continue Engineering of Utilities upgrade packages</li> <li>Fabrication of Flare packages</li> </ul>

Note: \* PTTEP denotes respective PTTEP subsidiaries participating in the project

\*\* Sales volume represent **average volume for 100% of the project during 6M2022**

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

# Projects Details | Mid-stream LNG



	Project Name	Status	Phase	Participating Interest* (%)		Sales Vol Gas (MMSCFD)	Sales Vol Liquid (KBPD)	Latest Status
1	Oman LNG [OMAN]	Shareholder	Production	PTTEP	2%	-	-	• Normal Operations
				Government of Oman	51%			
				Shell	30%			
				TotalEnergies	5.54%			
				Korea LNG	5%			
				Mitsubishi	2.77%			
				Mitsui	2.77%			
				Itochu	0.92%			
2	ADNOC Gas Processing [UAE]	JV	Production	PTTEP	2%	-	-	• Normal Operations
				ADNOC	68%			
				Shell	15%			
				TotalEnergies	15%			

Note: \* PTTEP denotes respective PTTEP subsidiaries participating in the project

\*\* Sales volume represent **average volume for 100% of the project during 6M2022**

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

# Organization Chart



# Ratio, Formula and Conversion Table



<b>Oil and Gas Reserves</b>	Reserves Replacement Ratio	$5\text{-Yr Additional Proved Reserves} / 5\text{-Yr Production Volume}$
	Reserves Life Index (Year)	$\text{Proved Reserves} / \text{Production Volume}$
	Success Ratio	$\text{Number of wells with petroleum discovery} / \text{Total number of exploration and appraisal wells}$
<b>Profitability</b>	Sales Revenue	Sales + Revenue from pipeline transportation
	Lifting Cost (\$/BOE)	$(\text{Operating Exp.} - \text{Transportation Cost} - \text{Stock Variation} - \text{Other expenses not related to lifting}) / \text{Production Volume}$
	Cash Cost (\$/BOE)	$(\text{Operating Exp.} + \text{Exploration Exp.} + \text{G\&A} + \text{Royalties} + \text{Finance Cost}) / \text{Sales Volume}$
	Unit Cost (\$/BOE)	$(\text{Operating Exp.} + \text{Exploration Exp.} + \text{G\&A} + \text{Royalties} + \text{Finance Cost} + \text{DD\&A}) / \text{Sales Volume}$
	EBITDA	$(\text{Sales} + \text{Revenue from pipeline transportation}) - (\text{Operating expenses} + \text{Exploration expenses} + \text{Administrative expenses} + \text{Petroleum royalties and remuneration} + \text{Management's remuneration})$
	EBITDA Margin	$\text{EBITDA} / \text{Sales Revenue}$
	Return on Equity	$\text{Trailing-12-month net income} / \text{Average shareholders' equity between the beginning and the end of the 12-month period}$
	Return on Capital Employed	$(\text{Trailing-12-month net income} + \text{Trailing-12-month Interest Expenses \& Amortization of Bond Issuing Cost}) / (\text{Average shareholders' equity and average total debt between the beginning and the end of the 12-month period})$
Simple Effective Tax Rate	$\text{Income tax expenses} / \text{Income before income taxes}$	
<b>Leverage</b>	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	$\text{Trailing-12-month EBITDA} / \text{Trailing-12-month Interest Expenses \& Amortization of Bond Issuing Cost}$

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	1.1364	0.159	1	42	-	
US Gallons	0.00325	0.0038	0.0235	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	MBOE
From	Multiply by					
1 billion cubic metres NG	1	35.315	0.86	0.735	34.121	5.883
1 billion cubic feet NG	0.028	1	0.024	0.021	0.966	0.167
1 million tonnes oil equivalent	1.163	41.071	1	0.855	39.683	6.842
1 million tonnes LNG	1.36	48.028	1.169	1	46.405	8.001
1 trillion BTU	0.029	1.035	0.025	0.022	1	0.172
1 MBOE	0.17	6.003	0.146	0.125	58	1