

# Investor Presentation

November 2023



## JOURNEY TO THE ENDLESS POSSIBILITIES





# 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 Overview

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## Business Update

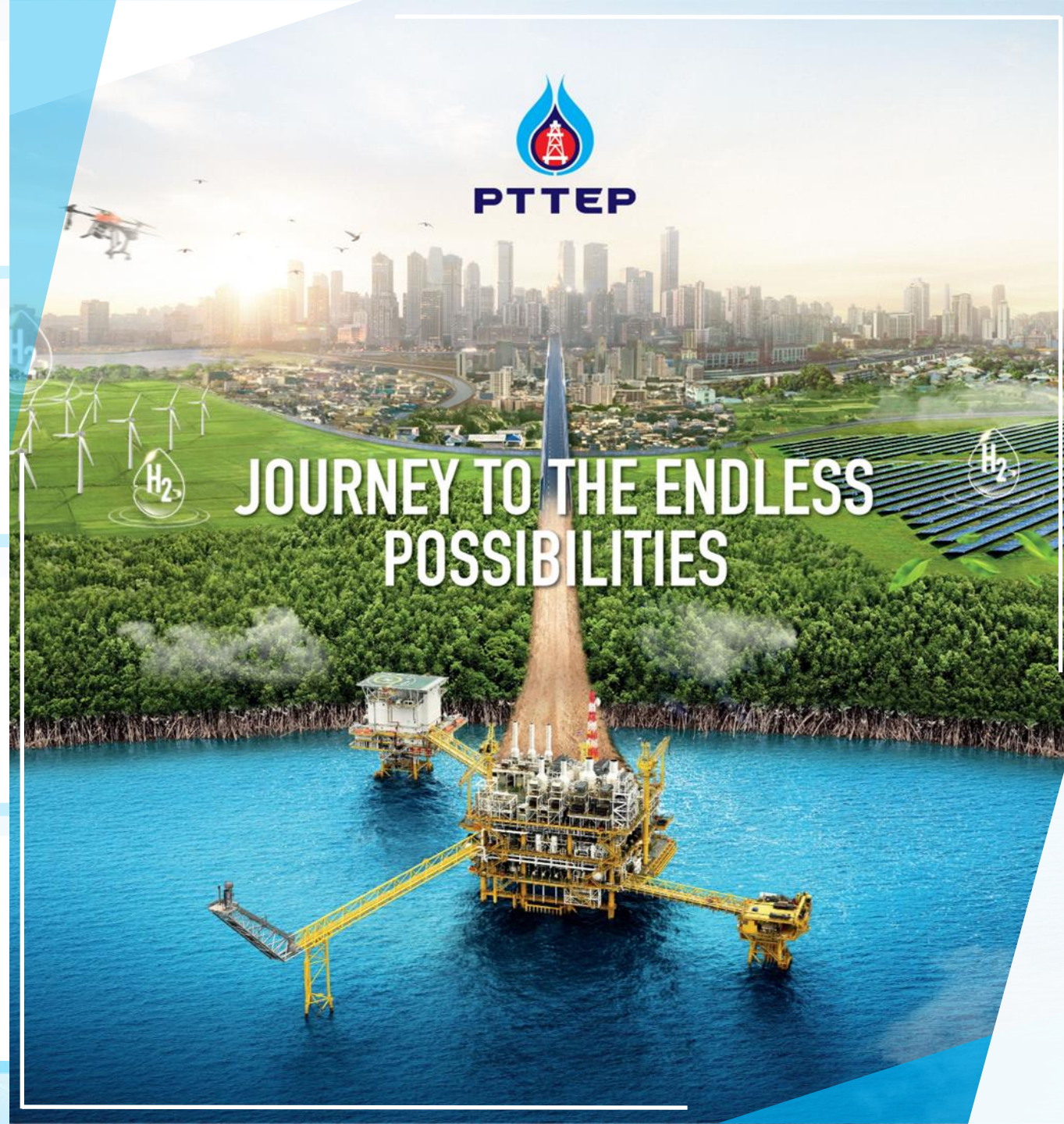
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## Corporate Strategy

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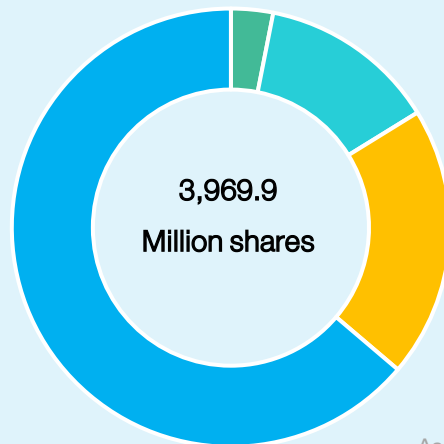
## Financial – Results and 5-Year Investment Plan

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# Company Overview



As of latest book closing Aug 2023

17

BN USD

Market Capitalization

9.7

BN USD

FY2022 Sales Revenue

580

KBOED

FY2022 Production Volume

~15

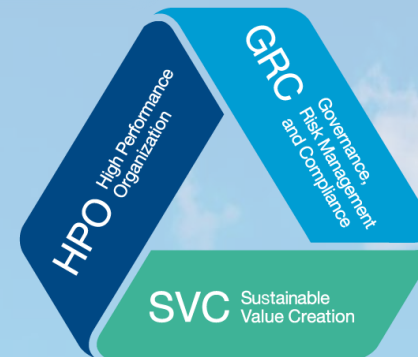
USD/BOE

Competitive Cash Cost

5.24%

FY2022 Dividend Yield

## Sustainability Framework



▶▶ Sustainability



# Corporate Strategy & Targets

Strategy

## Drive Value

- Strengthen E&P and ensure Thailand energy security
  - Maximize production
  - Expedite development
  - Monetize discovery
- Enhance competitiveness of unit cost
- Expand gas-weighted portfolio and LNG business

Targets

- Production growth 5% CAGR
- R/P not less than 5 years
- Competitive unit cost
- Zero incident organization



## Decarbonize

- Manage E&P for lower carbon portfolio
- Execute GHG emission reduction plan
- Accelerate CCS projects
- Maximize use of renewable and future energy in operation
- Pursue emission offsetting and Ocean for life

- Net Zero GHG emission 2050
- Reduce GHG emission intensity 30% by 2030 and 50% by 2040



## Diversify

- CCSaaS, CCU
- RE Power-to-X
- AI & Robotic Ventures (ARV)
- Commercialize in-house technology

- 20% NI contribution from Beyond E&P business by 2030



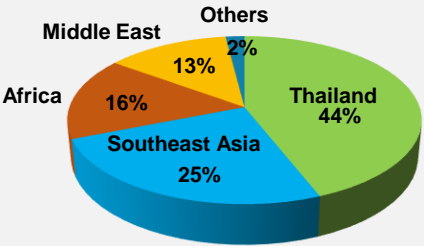
# Portfolio - E&P Business



Key Assets and % of Total Sales volume As of 9M2023

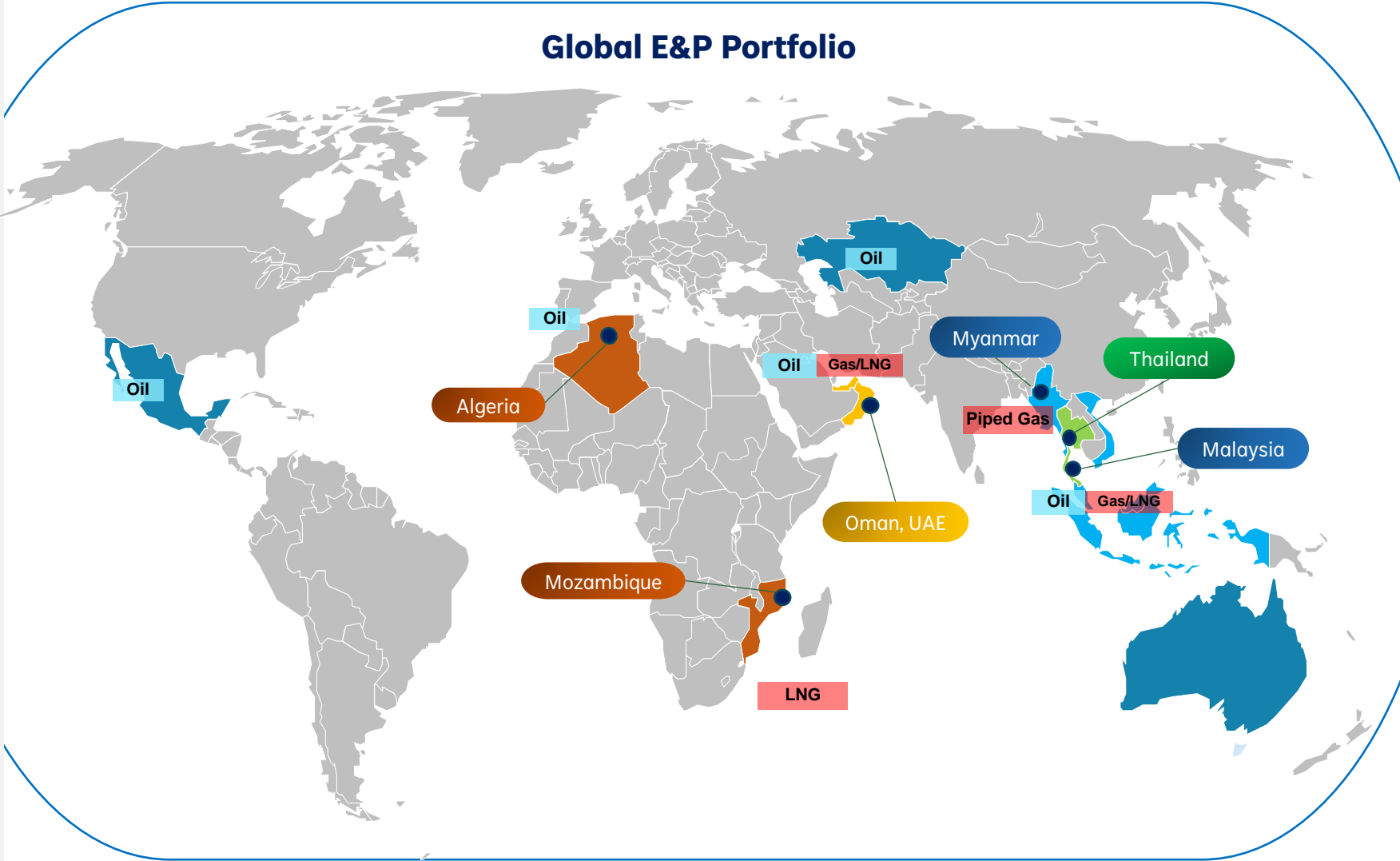
Focus Countries (96%)		
Thailand	66%	G1/61, G2/61, Arthit, S1
Malaysia	10%	SBK, SBH, SK309/311
Myanmar	9%	Yadana, Zawtika
Oman	11%	Block 61, PDO, OLNG
UAE	< 1%	Exploration fields, AGP

Africa & Rest of the World (4%)		
Africa	2%	HBR, BSB
Others	< 2%	Small presence in Vietnam, Indonesia, Kazakhstan, Mexico, Australia, Angola



24.7 bn\$  
(Sep 2023)

Book Value by region





**Company Overview**

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**Business Update**

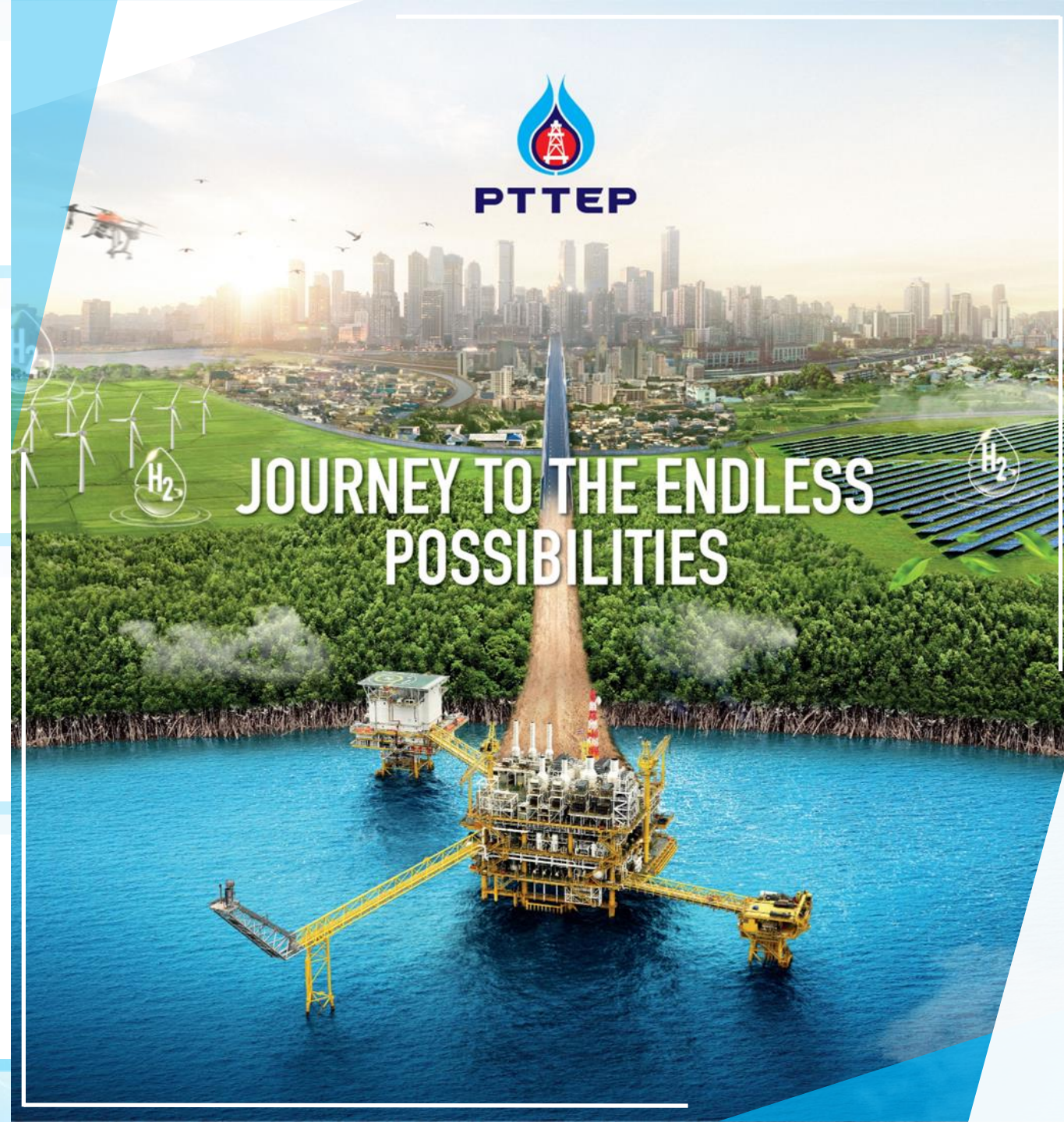
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**Corporate Strategy**

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**Financial – Results and  
5-Year Investment Plan**

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## Producing Projects



### **G1/61 (Erawan)**

Producing gas at 400-420 MMSCFD and target to 800 MMSCFD in April 2024

### **G2/61 (Bongkot)**

Producing gas at maximum level 860 MMSCFD

### **Arthit**

Producing gas at 350 MMSCFD for support Thailand gas demand

### **G12/48**

Acquired additional 33.33% stake from TotalEnergies

### **B8/32 & 9A**

Production resumed at the beginning of October 2023



### **Algeria HBR**

Successfully ramped up production from 13KBPD to 17KBPD since August 2023



### **Oman LNG**

10-year contract extension, until 2034, was signed in October 2023.

## Development & Pre-sanction Projects



### **Mozambique LNG**

Aiming for site re-access by early 2024. Expect 1<sup>st</sup> cargo in 1H2028



### **SK410B Lang Lebah**

FEED completed in October 2023. Expect 1<sup>st</sup> gas by 1H2028

### **SK405B**

Recent discovery, expect monetization plan to be concluded by end 2025

## Exploration Projects



### **Mariana Oil Sand**

Relinquishment completed in August 2023



### **Cash Maple**

Entered into a SPA to sell its total interests in AC/RL7.



# G2/61 and Arthit: Surpassing the Commitment to Bridge G1/61's Shortfall

Total production (in MMSCFD)

1,619   1,555   1,594   1,530   1,580   1,630   1,794   1,794

Net Surplus /// Net Deficit

-64

-64

-14

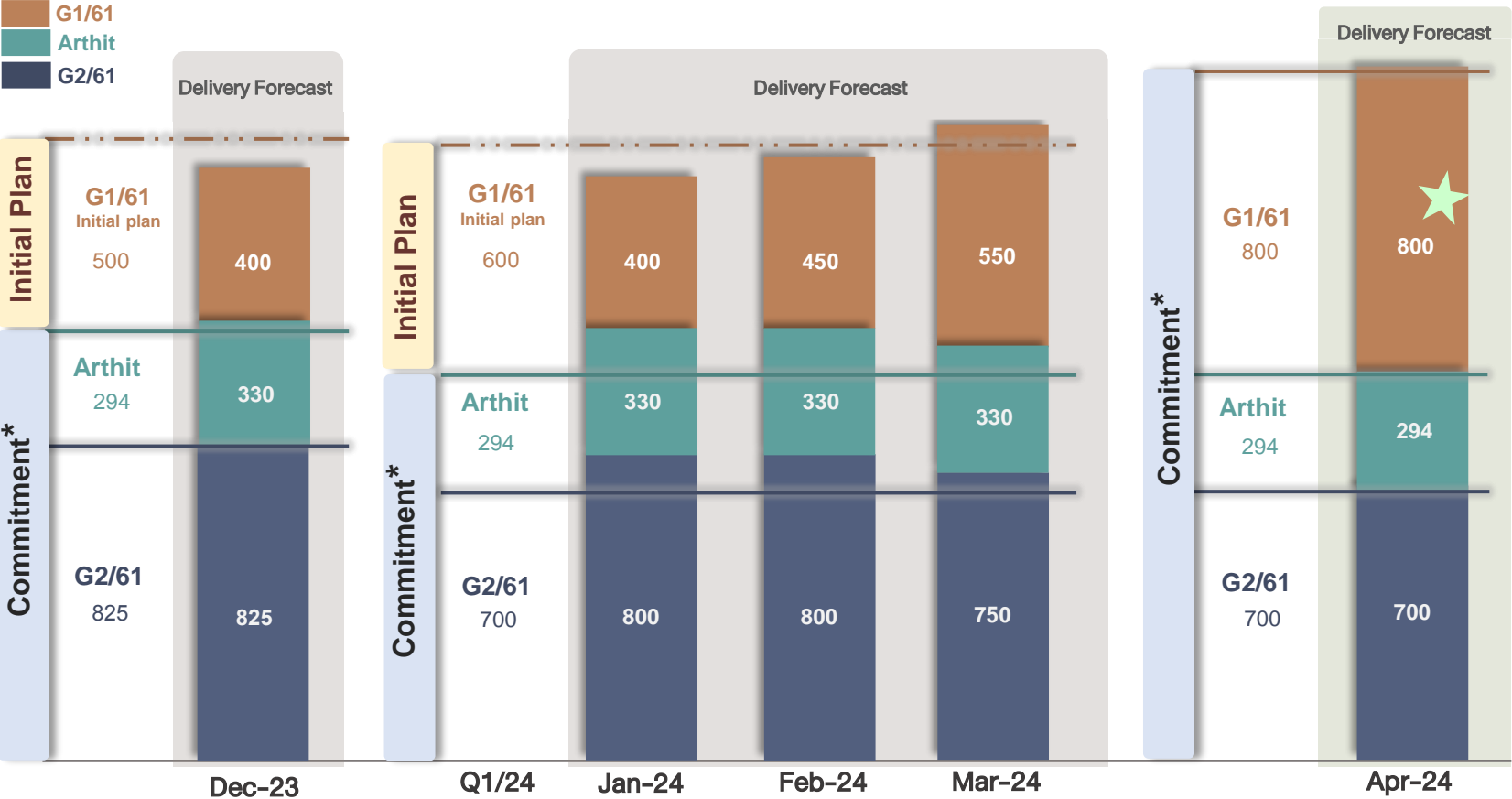
+36

-



(in MMSCFD)

G1/61  
Arthit  
G2/61



Note: \* Commitment shall mean;  
G2/61: Daily Contract Quantity (DCQ), according to Production Sharing Contract and (PSC) and Gas Sales Agreement (GSA)  
Arthit: Contractual Delivery Capacity (CDC), according to GSA  
G1/61: DCQ, according to PSC and GSA

"G1/61 is on track to 800 MMSCFD by April 2024, according to the commitment"



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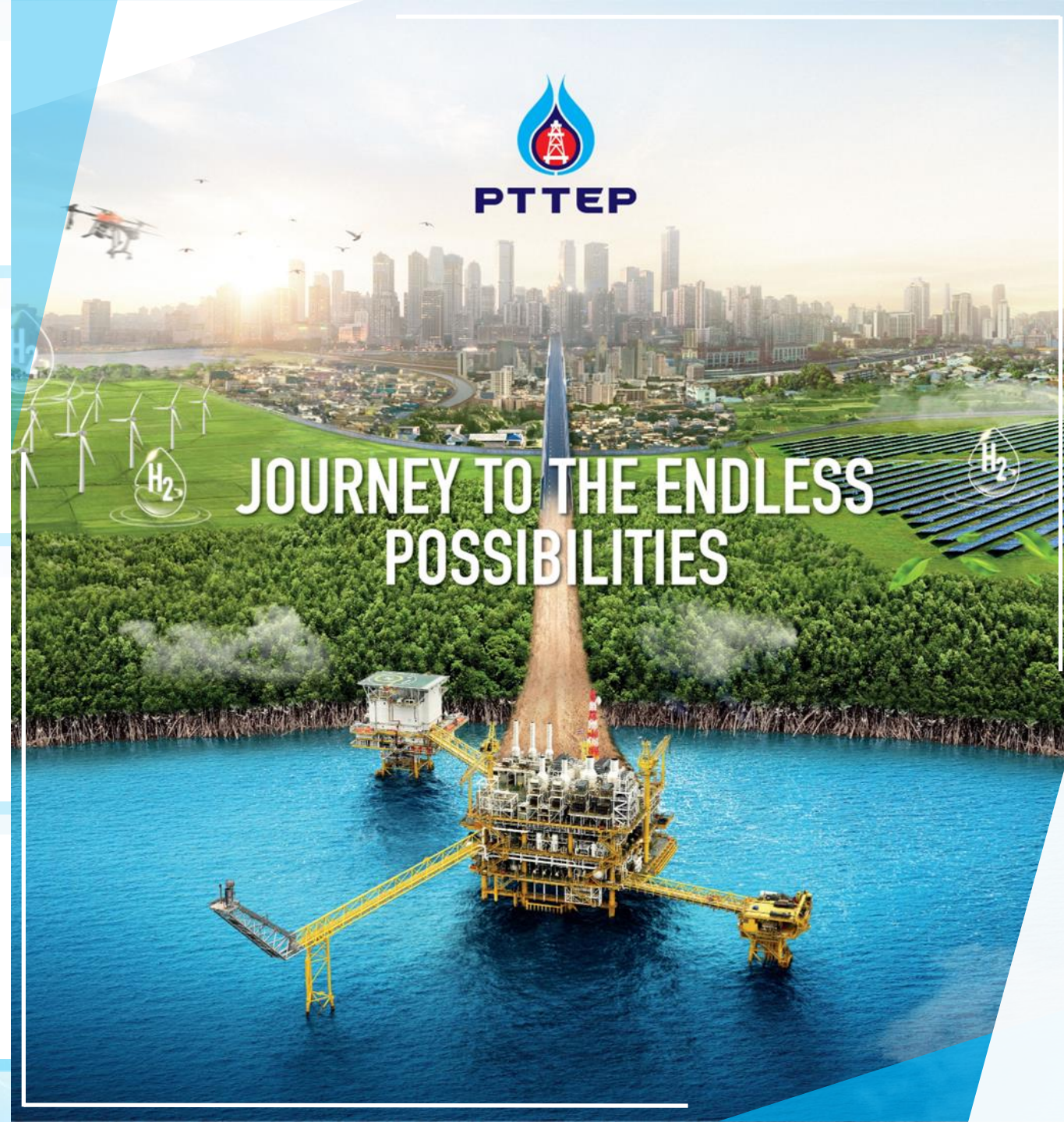
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## Corporate Strategy

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## Financial – Results and 5-Year Investment Plan

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**Strong Footprints in Strategic Countries**

**Heartland**



Thailand **40 years**

**67%**

of 2023 total sales volume

Security of supply to  
the country

Cost optimization  
GoT Synergy

**Source of National  
Supply Security**



Myanmar **35 years**

**9%**

of 2023 total sales volume

Continue supply to  
Thailand and Myanmar

Secure strategic stance

**Main Hub to Drive E&P**



Malaysia **30 years**

**10%**

of 2023 total sales volume

Accelerate monetization

CCS initiative for  
“Decarbonization”

Synergy among projects

**Where to Grab and Grow  
Opportunity**



Middle East **20 years**

**11%**

of 2023 total sales volume

Be deterministic to grow  
and thrive

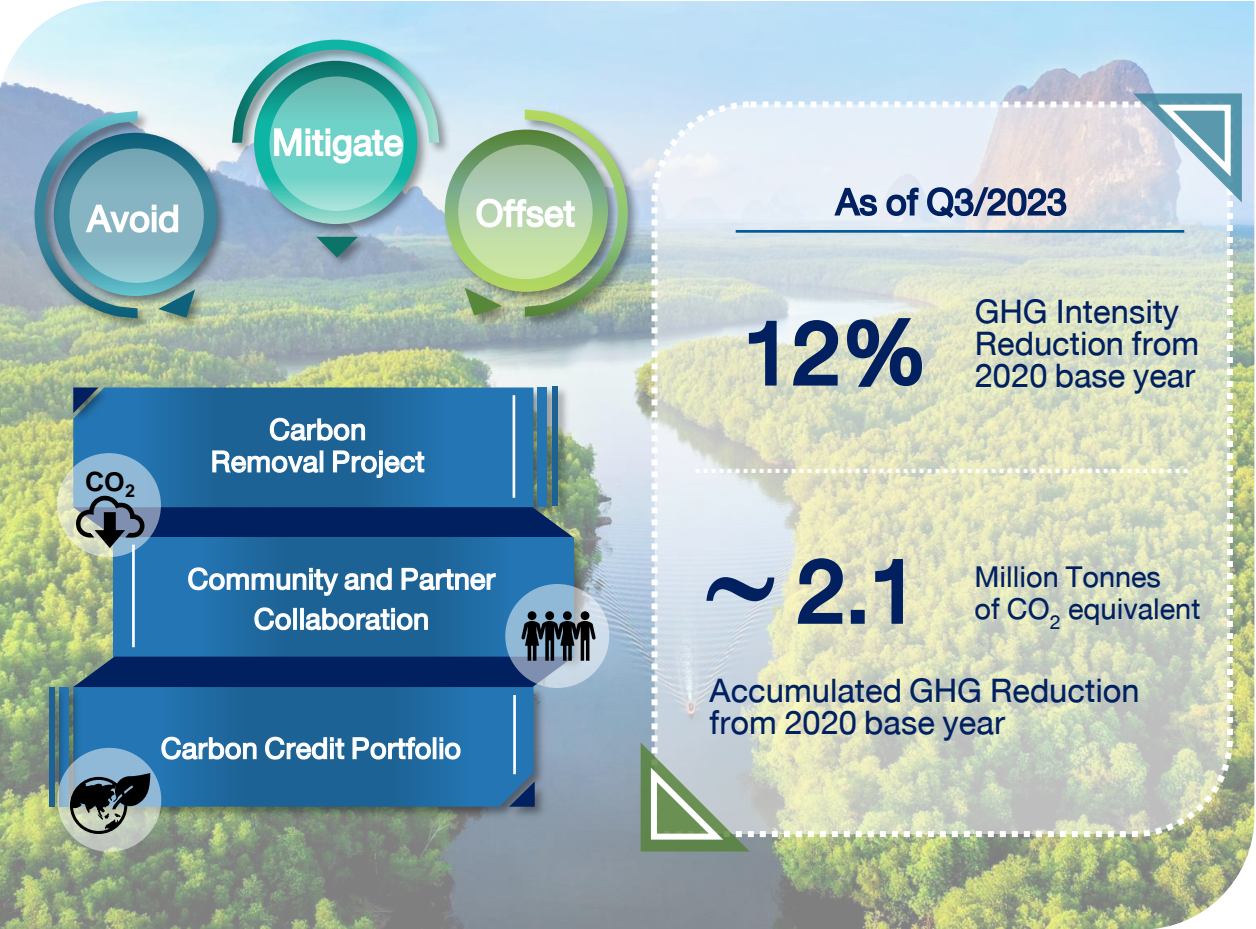
“Diversification”  
Beyond E&P

Collaborate with  
strategic partners



# Commitment to **DECARBONIZATION**

## Striving towards Low Carbon Organization



### MoU with Oil & Gas Methane Partnership (OGMP) 2.0

On 4 October, PTTEP signed MoU with UNEP for Oil & Gas Methane Partnership (OGMP), which is the voluntary initiative to help companies reduce methane emissions in the oil and gas sector.



### Carbon Capture and Storage (CCS) at Arthit Project

It is in the process of discussion with relevant government bodies. A clarity is required for 3 key elements;

- License to Operate
- Recoverability of additional costs
- MMV (Measurement, Monitoring and Verification) or Liability

### New GHG reduction initiatives execution

In Q3/2023, PTTEP successfully implemented process optimization and enhance flaring efficiency initiatives in Malaysia and G2/61 projects, which expected GHG reduction approximately 33,000 tCO<sub>2</sub>e/year.





Decarbonization Solutions & New Energy Transition



Carbon Solutions



Low-carbon Energy



Advanced Technology

Business Development



CCS as a Service  
(domestic/inter)

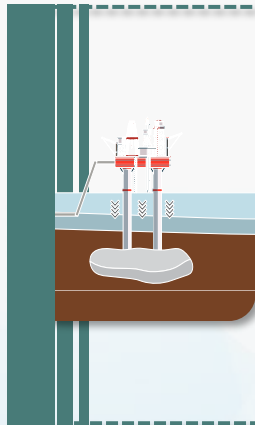


RE Power-to-X  
(Hydrogen)



In-house Tech  
Commercialization

R&D , CVC



Carbon Capture Tech

DAC

CO<sub>2</sub> to Fuel  
conversion



Offshore Wind Tech  
Low-speed Wind

Bio-fuel Conversion

SAF



E&P Tech

Advanced Material –  
Carbon Nanotube (CNT)

Company Overview

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Business Update

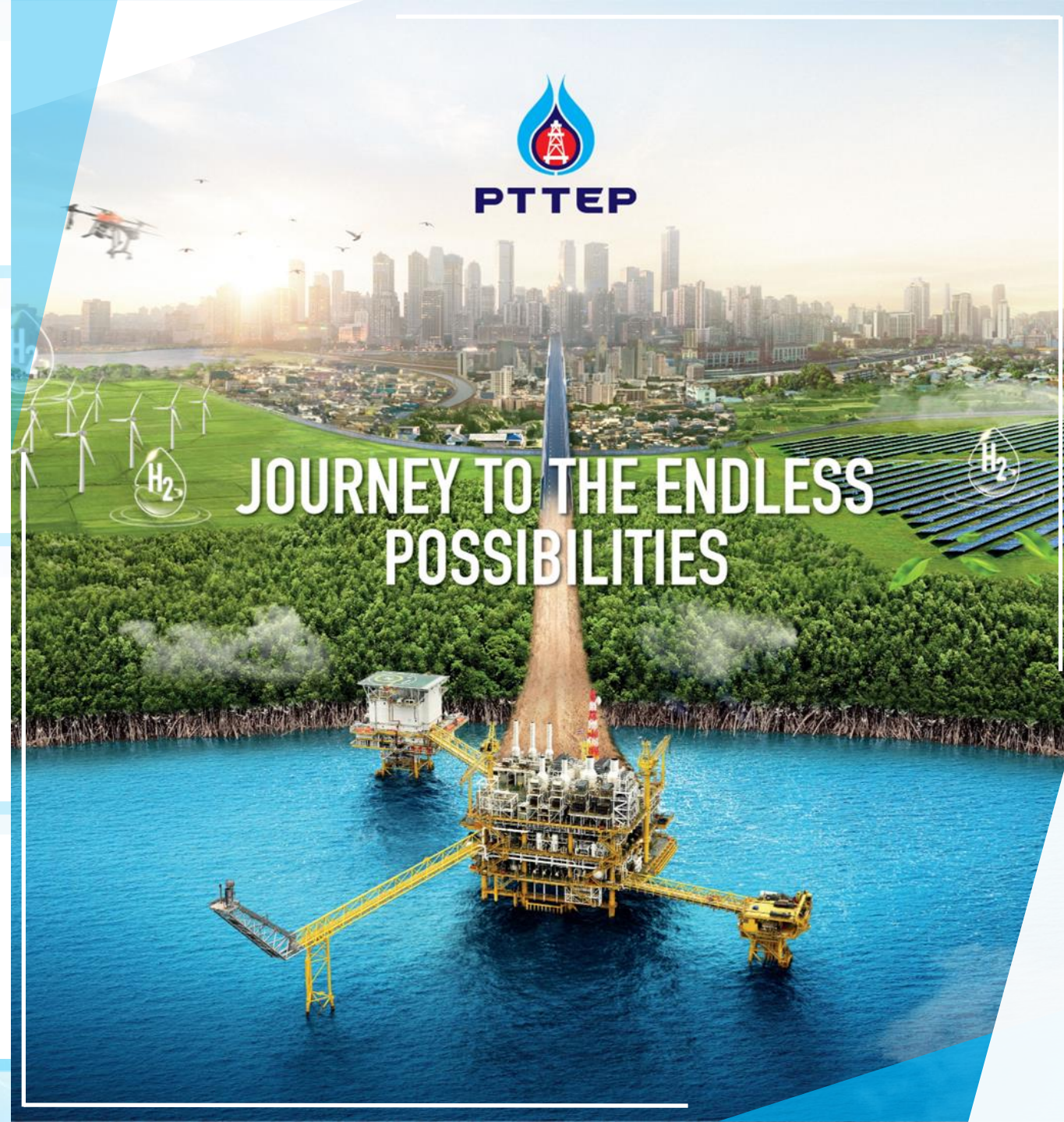
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Corporate Strategy

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**Financial – Results and  
5-Year Investment Plan**

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# Financial Results | Q3 23



Major Events  
in Q3/23

1 G1/61 Production Reached  
400 mmscfd for Full Quarter

2 Liquid Portion Increased

3 Revision of Malaysia Tax Incentives

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

## Profit from Normal Operations



Sales Volume



Average Selling Price



Unit Cost

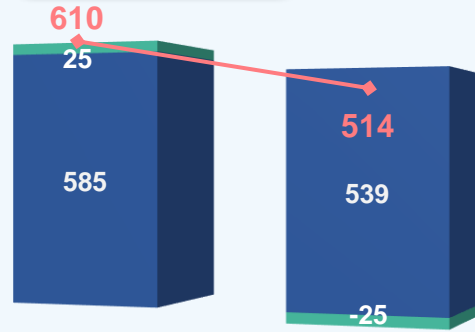
## Major Non-operating items (in million USD)

Oil Price Hedging

Effect from FX and Others

Impairment / Asset Write-off

QoQ



Q2 23

Q3 23

+5%

Higher G1/61, SBK, PDO and Oman B61

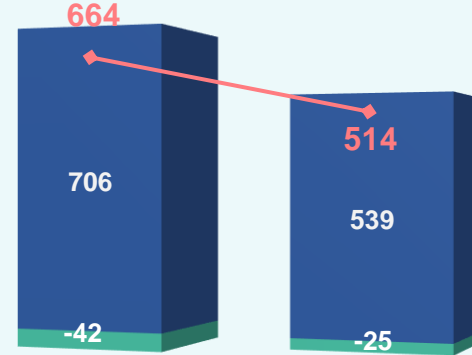
+6%

Higher Liquid Price offset with Lower Gas Price

+10%

Higher OPEX and DD&A

YoY



Q3 22

Q3 23

-2%

Lower Oman B61 and G2/61 offset with Higher G1/61

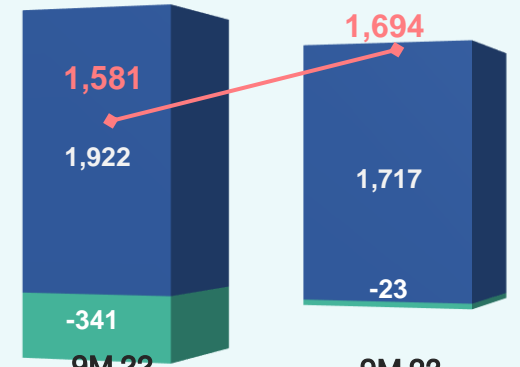
-9%

Lower liquid and gas prices

+1%

Higher OPEX and G&A offset with Lower Royalties

YTD



9M 22

9M 23

+0.1%

Higher G1/61 offset with Lower Oman B61

-10%

Lower liquid and gas prices

-3%

Lower Royalties and DD&A offset with Higher OPEX

Q2 23

Q3 23

Q3 22

Q3 23

9M 22

9M 23

+2

-20

+94

-20

-184

-17

+23

-5

-41

-5

-62

-6

-

-

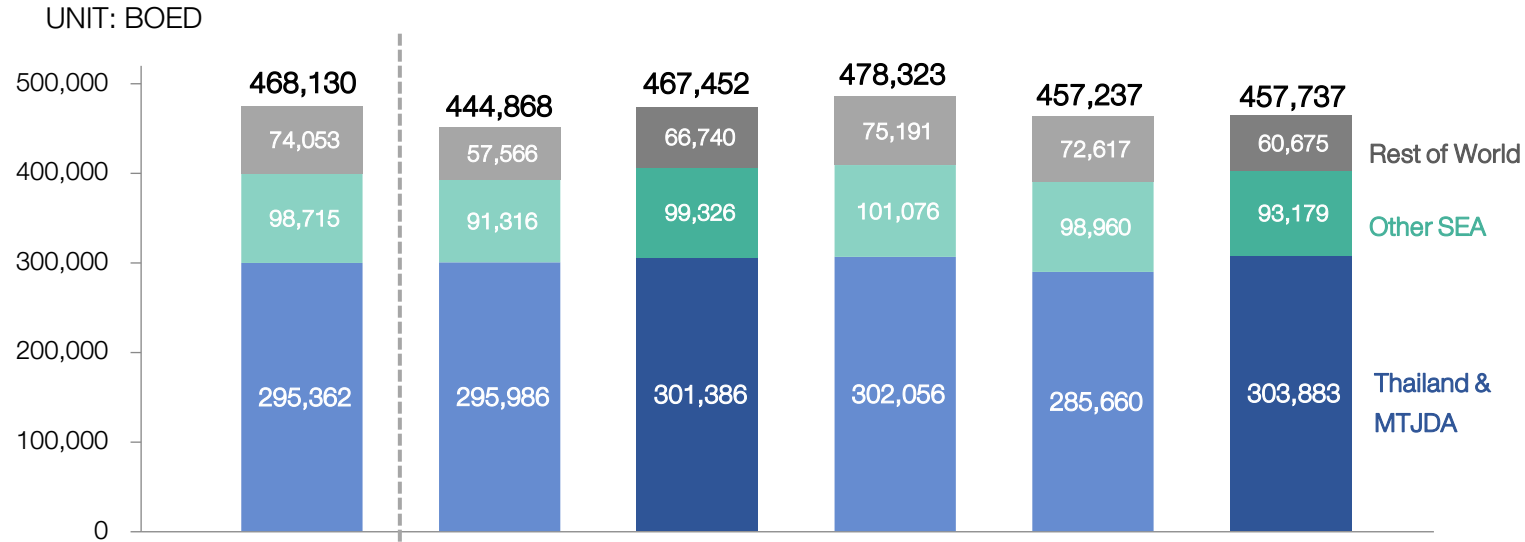
-95  
Brazil

-

-95  
Brazil

-

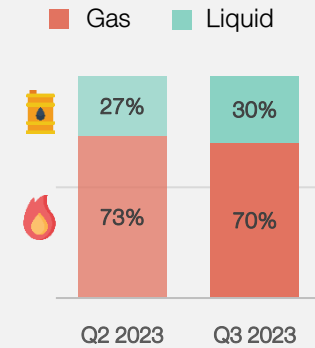
# Financial Results | Volume and Price



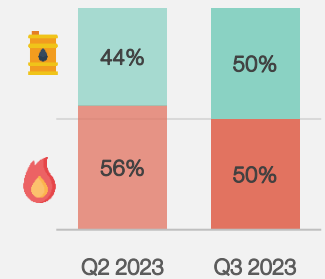
Product Price	2022	Q2 23	Q3 23	Q3 22	9M 22	9M 23
Gas (\$/MMBTU)	6.27	5.87	5.75	6.18	6.12	6.05
Liquid (\$/BBL)	94.89	73.66	81.89	97.94	98.44	78.10
<b>Weighted Avg. (\$/BOE)</b>	<b>53.39</b>	<b>45.72</b>	<b>48.62</b>	<b>53.68</b>	<b>53.62</b>	<b>48.14</b>
Avg. Dubai (\$/BBL)	96.38	77.59	86.63	96.68	100.29	81.53
Avg. HSFO (\$/BBL) (High Sulphur Fuel Oil)	82.38	69.01	81.41	74.44	89.02	71.61

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

## Volume Mix

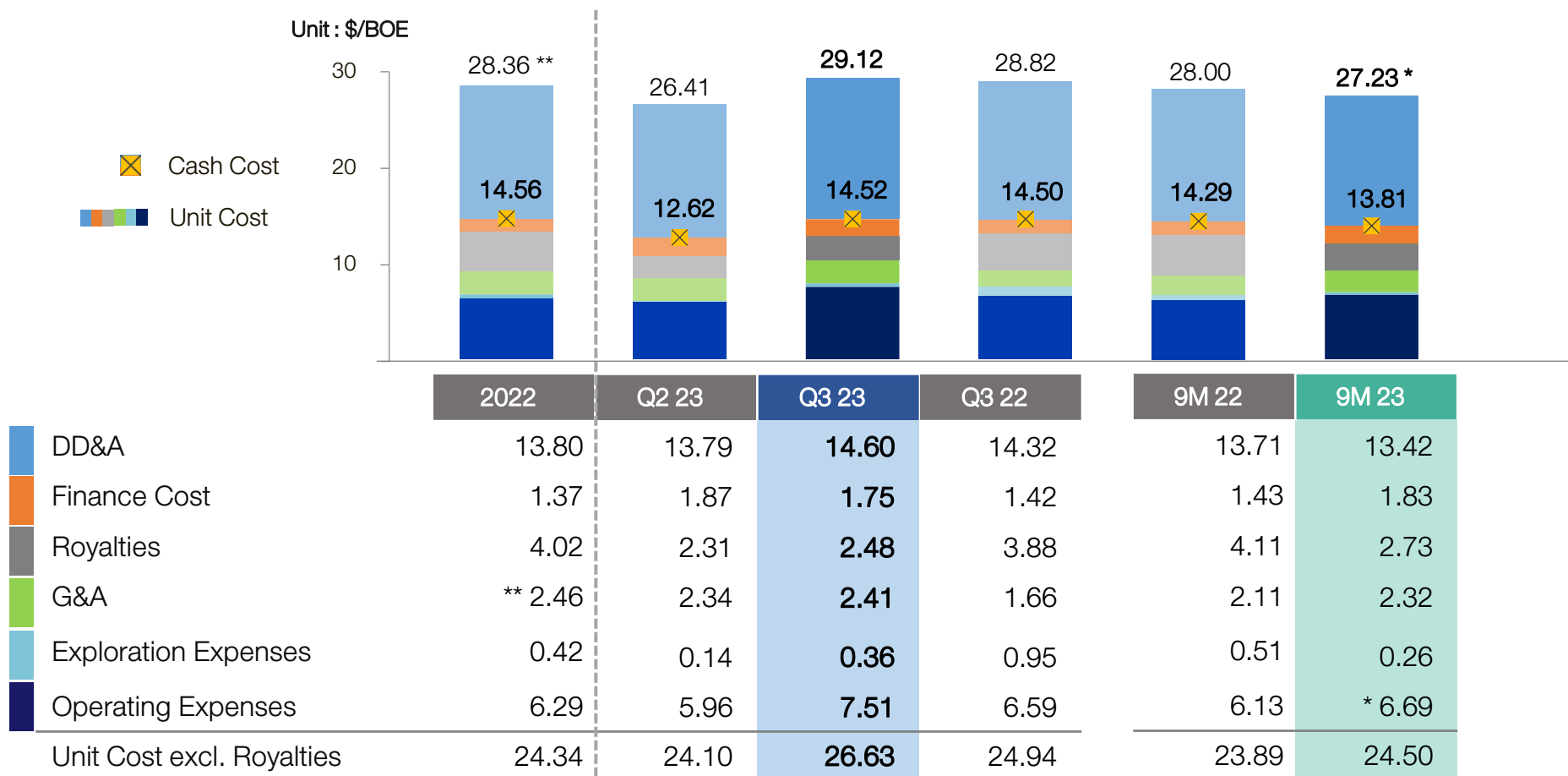


## Revenue Mix





# Financial Results | Unit Cost



**Note:** \* Exclude Bongkot Goodwill write-off in Q1/23 (OPEX)

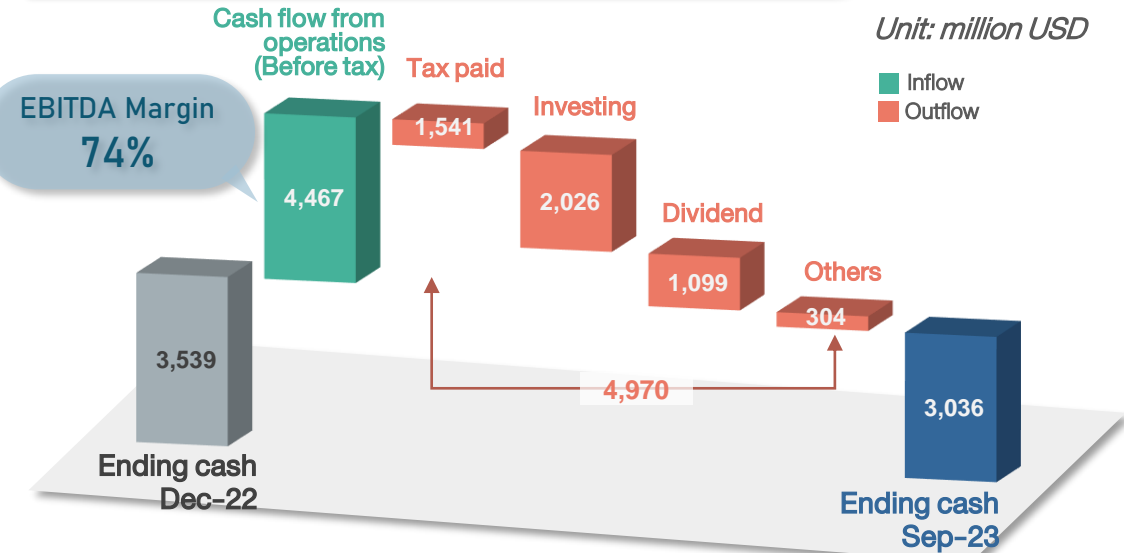
\*\* Exclude Montara Class action settlement in Q4/22 (G&A)

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

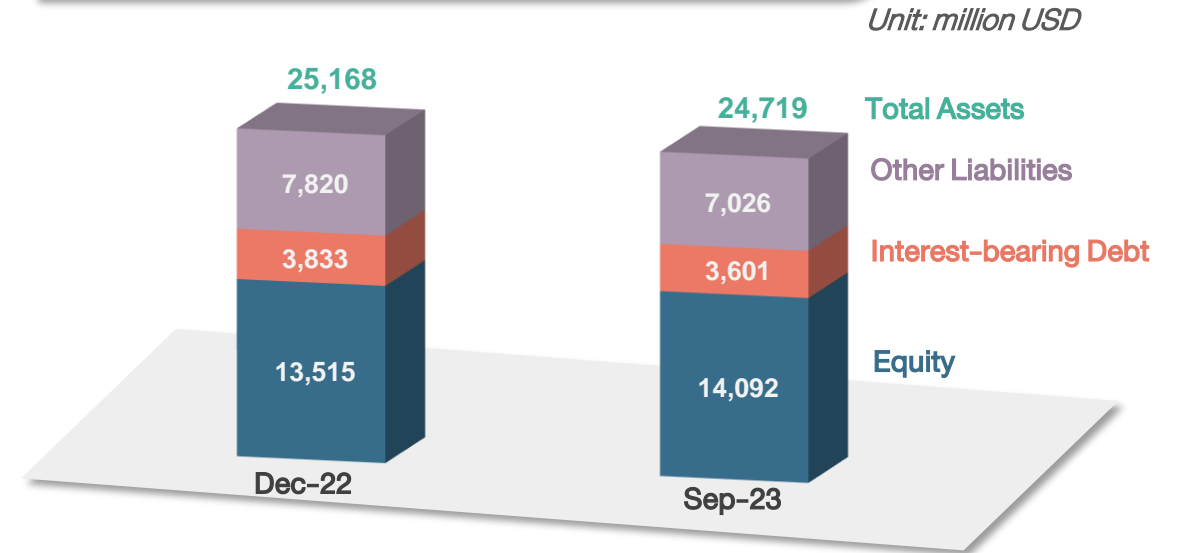
# Financial Results | Cashflows & Financial Position

## Cashflows



Note: Net of adjustment for the effect of exchange rate changes on cash and cash equivalents

## Financial Position



## Debt Profile

	Dec-22	Sep-23		Dec-22	Sep-23
Debt to Equity	0.28	0.26	Average Cost of Debt	3.99% p.a.	3.94% p.a.
Debt to EBITDA	0.56	0.59	Average Loan Life	15.2 Yrs	13.8 Yrs

**Interest Rates**  
**100%**  
Fixed rate



# Results Guidance

## Outlook

FY 2023



Sales Volume  
(KBOED)

~463



Gas Price  
(US\$/MMBTU)

~6.0



Unit Cost  
(US\$/BOE)

~27-28



Profitability  
(EBITDA Margin)

70-75%

\* Based on average Dubai oil price in 2023 at 80-85 \$/BBL

## Ratings



TRIS  
RATING

AAA  
Stable

BBB+  
Stable



STANDARD & POOR'S  
RATINGS SERVICES

McGRAW HILL FINANCIAL

BBB stand-alone rating

MOODY'S

Baa2 stand-alone rating

Baa1  
Stable

BBB+  
Stable

FitchRatings

bbb+ stand-alone rating

# Finance – 5 Years Investment Budget

## 2023–2027 E&P Budget

**29.1** bnUS\$

CAPEX 18.1 bnUS\$

OPEX 11 bnUS\$

## 2023 Exploration Budget

**223** mUS\$

CAPEX 193 mUS\$

OPEX 30 mUS\$



11 wells in Malaysia



5 wells in Thailand

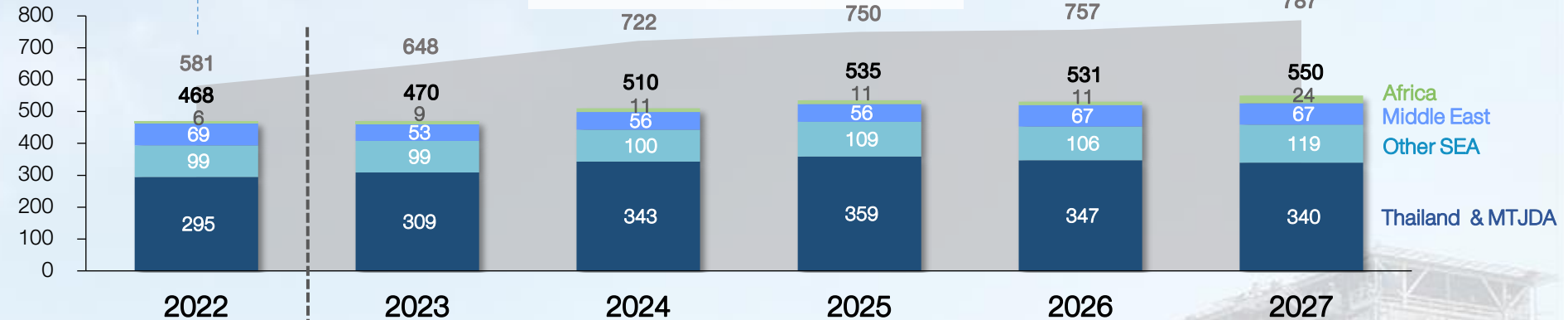


1 well in Oman

in KBOED

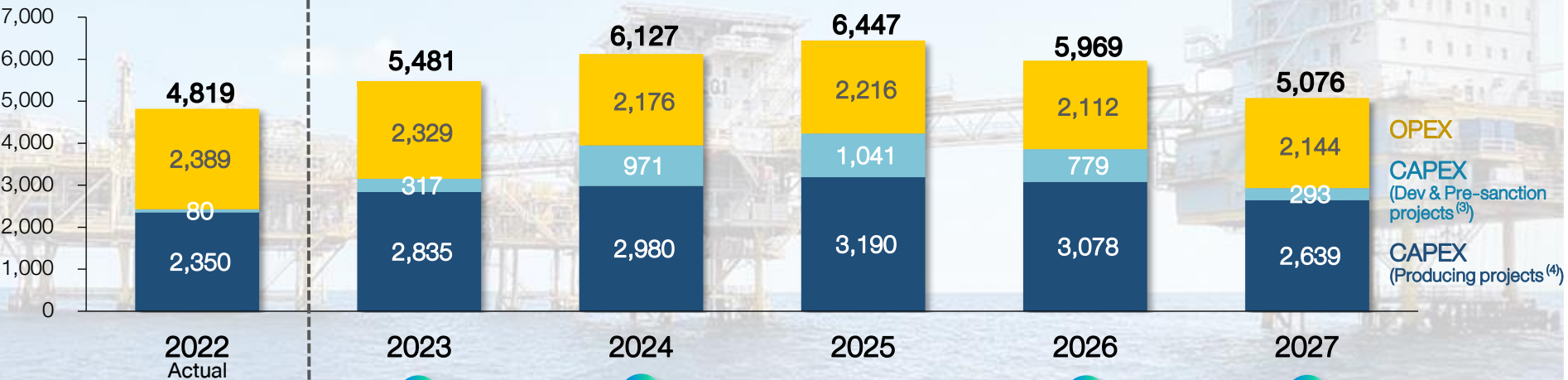
Sales Volume

Production CAGR +6.3%



MMUSD

Investment



- Note: (1) Subject to site re-entering and resume construction timing  
 (2) Subject to regulatory approval and FID timing  
 (3) Development & Pre-sanction projects include Mozambique LNG, SK410B, and Southwest Vietnam  
 (4) Including exploration and appraisal in all projects and head office CAPEX, and new businesses



G2/61 : March  
Capacity 700 MMSCFD  
(Apr'22: 200 MMSCFD  
Mar'23: 500 MMSCFD)

G1/61 : April  
Full Capacity 800 MMSCFD

Southwest  
Vietnam: 2H <sup>(2)</sup>

MZA1 LNG : 1H <sup>(1)</sup>  
HBR (Full phase) : 2H <sup>(2)</sup>  
SK410B : 2H <sup>(2)</sup>  
SK405B : 1H <sup>(2)</sup>





**Thank you and Q&A**



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# JOURNEY TO THE ENDLESS POSSIBILITIES

## Supplementary Information

Topics	Page
<b>Finance</b>	<b>23-25</b>
<ul style="list-style-type: none"><li>• Profit and Loss Statement</li><li>• Key financial ratios</li><li>• Debt Maturity profile</li></ul>	
<b>E&amp;P Business</b>	<b>26-28</b>
<ul style="list-style-type: none"><li>• Thailand and SEA</li><li>• Middle East</li><li>• Africa</li></ul>	
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# Finance – P&L



<i>Unit: million USD</i>	Q3 23	Q2 23	%QoQ	Q3 22	%YoY	9M23	9M22	%YTD	2022
<b>Total Revenues</b>	<b>2,292</b>	<b>2,074</b>	<b>11%</b>	<b>2,617</b>	<b>(12%)</b>	<b>6,646</b>	<b>7,008</b>	<b>(5%)</b>	<b>9,660</b>
Sales <sup>(1)</sup>	2,193	1,924	14%	2,388	(8%)	6,310	6,801	(7%)	9,270
Sales Volume (BOED) <sup>(2)</sup>	467,452	444,868	5%	478,323	(2%)	457,737	457,237	0.1%	468,130
Sales Price (US\$/BOE)	48.62	45.72	6%	53.68	(9%)	48.14	53.62	(10%)	53.39
Others <sup>(3)</sup>	99	150	(34%)	229	(57%)	336	207	62%	390
<b>Total Expenses</b>	<b>1,786</b>	<b>1,473</b>	<b>(21%)</b>	<b>1,936</b>	<b>(8%)</b>	<b>4,984</b>	<b>5,433</b>	<b>(8%)</b>	<b>7,681</b>
<b>Major Expenses:</b>									
Operating Expenses	337	247	36%	300	12%	945	789	20%	1,110
Exploration Expenses	15	6	>100%	42	(64%)	32	64	(50%)	72
G&A	113	106	7%	80	41%	319	285	12%	578
DD&A	629	560	12%	631	(0.3%)	1,681	1,713	(2%)	2,363
Loss on Financial Instruments	20	-	100%	-	100%	33	84	(61%)	184
Impairment Loss on Assets	-	-	-	95	(100%)	-	95	(100%)	300
Income Tax Expenses	484	385	26%	468	(37%)	1,405	1,575	(11%)	2,061
<b>Share of profit (loss) from associates and JV</b>	<b>8</b>	<b>9</b>	<b>(11%)</b>	<b>(17)</b>	<b>&gt;100%</b>	<b>32</b>	<b>6</b>	<b>&gt;100%</b>	<b>20</b>
<b>Net Profit</b>	<b>514</b>	<b>610</b>	<b>(16%)</b>	<b>664</b>	<b>(23%)</b>	<b>1,694</b>	<b>1,581</b>	<b>7%</b>	<b>1,999</b>
Profit (Loss) from normal operation	539	585	(6%)	706	(22%)	1,717	1,922	(11%)	2,647
Profit (Loss) from non-operating items	(25)	25	(>100%)	(42)	10%	(23)	(341)	93%	(648)
<b>Non-operating items breakdown:</b>									
Oil Price Hedging	(20)	2	(>100%)	94	(>100%)	(17)	(184)	91%	(186)
Tax from Effect of FX	-	(13)	0%	(13)	0%	(13)	(26)	50%	(15)
Effect from FX and others	(5)	36	(>100%)	(28)	82%	7	(36)	>100%	(89)
Impairment Loss on Assets	-	-	-	(95)	100%	-	(95)	100%	(300)
Montara Mediation agreement on Class Action	-	-	-	-	-	-	-	-	(129)
Gain from a bargain purchase / Reversal of Contingent Liab.	-	-	-	-	-	-	-	-	71

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, Gain from reversal of Oman Block 61 Contingent Liabilities

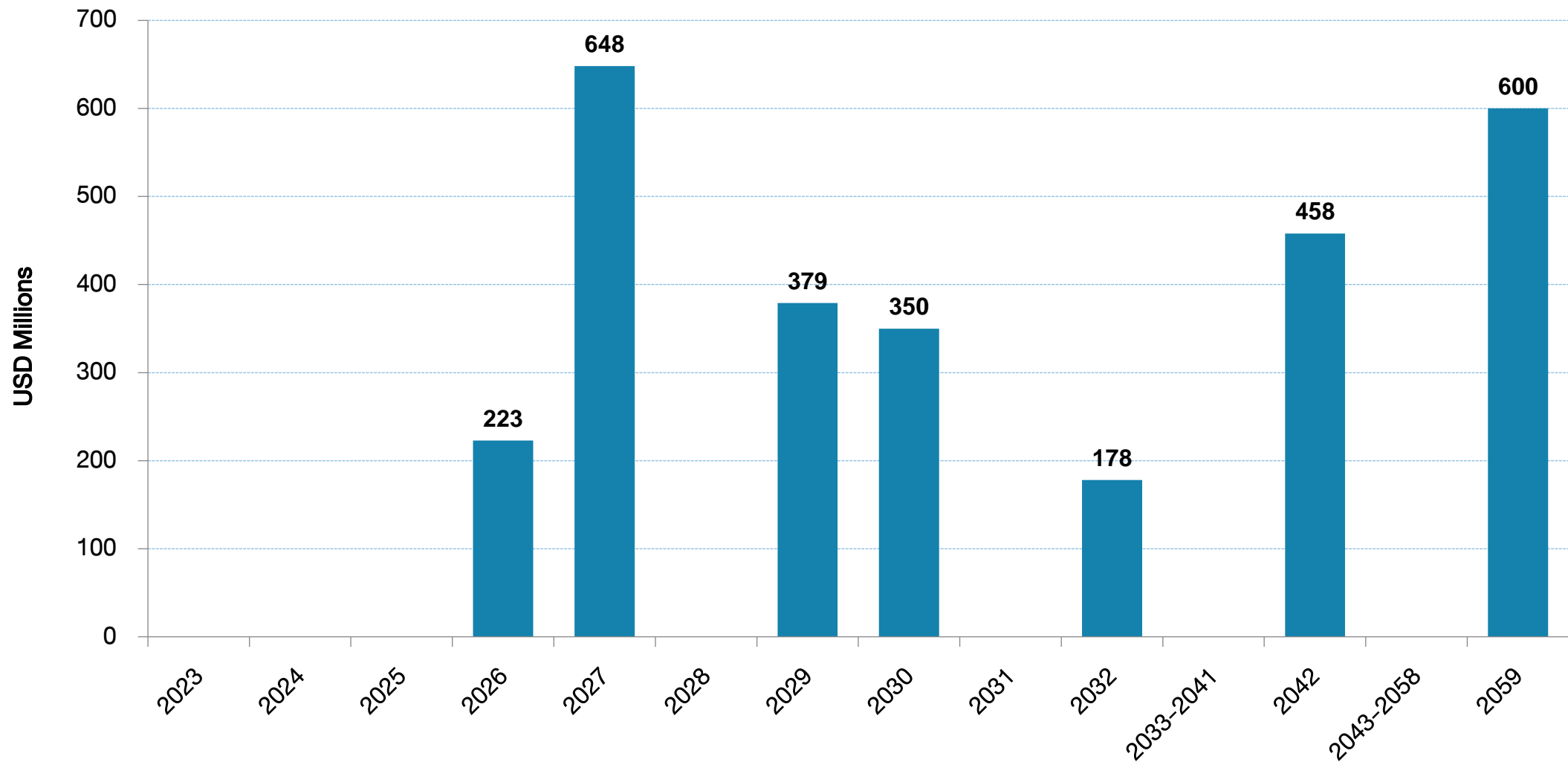
# Finance – Key Ratios



		Q2 2023	Q3 2023
Profitability Ratios (%)	EBITDA Margin	77%	74%
	Return on Equity	17%	16%
	Net Profit Margin	23%	23%
Leverage Ratios (Times)	Debt to Equity	0.26	0.26
	Debt to EBITDA	0.58	0.59
Liquidity Ratio (Times)	Current Ratio	2.78	2.50



# Finance - Debt Maturity Profile



Unit: USD Millions or equivalent after cross currency swap  
As of September 2023

# E&P Business – Thailand, Myanmar, Malaysia

## Myanmar

### Production

#### Zawtika (WI 80%)

- Production Volume gas 338 MMSCFD (9M2023)

#### Yadana (WI 37.1%)

- Production Volume gas 537 MMSCFD (9M2023)

### Exploration

#### M3 (WI 100%)

- Pending development

## Malaysia

### Production

#### Block K (WI Kikeh 56%, SNP 22.4%, GK 7.2%)

- Production Volume crude 23 KBPD and gas 21 MMSCFD (9M2023)

#### Block H (WI Rotan 56%, Others 42%)

- Production Volume gas 226 MMSCFD (9M2023)

#### SK309 and SK311 (WI 42–59.5%)

- Including East Patricia field
- Production Volume gas 209 MMSCFD, and crude 15 KBPD (9M2023)

### Exploration

- SK410B (LLB), SK417, SK314A, SK438, SK405B
- PM415, PM407, SK325



● Production ● Exploration

## Thailand

### Production

#### G1/61 Erawan (WI 60%)

- 9M2023 daily gas production 288 MMSCFD
- Ramp-up in progress to 800 MMSCFD in Apr 2024
- Sole investment 100%

#### G2/61 Bongkot (WI 100%)

- PSC transition completed since 8 Mar 2023.
- 9M2023 daily gas production at 667 MMSCFD
- The project will be producing at 700 MMSCFD from Jan 2024 onward.

#### Arthit (WI 80%)

- Production Volume gas 339 MMSCFD and condensate 16 KBPD (9M2023)

#### Contract 4 (WI 60%)

- Production Volume gas 412 MMSCFD and condensate 15 KBPD (9M2023)

#### S1 (WI 100%)

- Production Volume crude oil 25 KBPD (9M2023)

#### MTJDA (WI 50%)

- Production Volume gas 301 MMSCFD (9M2023)
- Supplying to Thailand at least 30 MMSCFD

### Exploration

- G1/65 and G3/65



# E&P Business – Middle East

## UAE

### Exploration

#### Abu Dhabi Offshore 1, 2, 3 (WI 30%)

- High potential prospective resources with significant sizeable discoveries
- Operated by ENI (WI 70%)

#### Sharjah Onshore Area A (WI 25%)

- High potential onshore gas project to expand investments in strategic area.
- Operated by ENI (WI 50%)

#### Sharjah Onshore Area C (WI 25%)

- High gas & condensate potential with the possibility of integrating with surrounding fields
- Operated by ENI (WI 50%)

### Midstream

#### ADNOC Gas Processing (WI 2%)

- 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 economy
- Sizable volume of Propane, Butane and Naphtha
- Operated by ADNOC (WI 68%)



- Production phase
- Exploration phase
- Midstream

## OMAN

### Production

#### Block 6 (PDO) (WI 2%)

- Largest asset covering around 1/3 of the country.
- Average oil production volume of 652 KBPD (9M2023)
- Operated by Petroleum Development of Oman (WI 60%)

#### Block 53 (WI 1%)

- Largest single onshore producing field in Oman.
- Average oil production volume of 82 KBPD (9M2023)
- Operated by Occidental (WI 47%)

#### Block 61 (WI 20%)

- Largest tight gas development in Middle East
- Gas and condensate daily production rate of 1,496 MMSCFD and 57 KBPD (9M2023).
- Operated by BP (WI 40%)

### Exploration

#### Onshore Block 12 (WI 20%)

- Operated by TotalEnergies (WI 80%)

### Midstream

#### OMAN LNG (WI 2%)

- The only LNG facility in Oman.
- Operated by Government of Oman (WI 51%)

# E&P Business – Africa

## Algeria

### Production

#### 433a & 416b (WI 35%)

- Oil production consisting of block 433a, 416b
- Operated by GBRS (WI 35%)
- Average Daily Production volume of crude at 16 KBPD

#### Hassi Bir Rekaiz (WI 49%)

- HBR oil field consisting of block 443a, 424a and 415ext
- 1<sup>st</sup> Oil in June 2022 and started delivering sales volume in Q4/2022.
- Operated by GHBR (WI 49%)
- Average Daily Production volume of crude at 14 KBPD

## Angola

### Development

#### Block 17/06 (WI 2.5%)

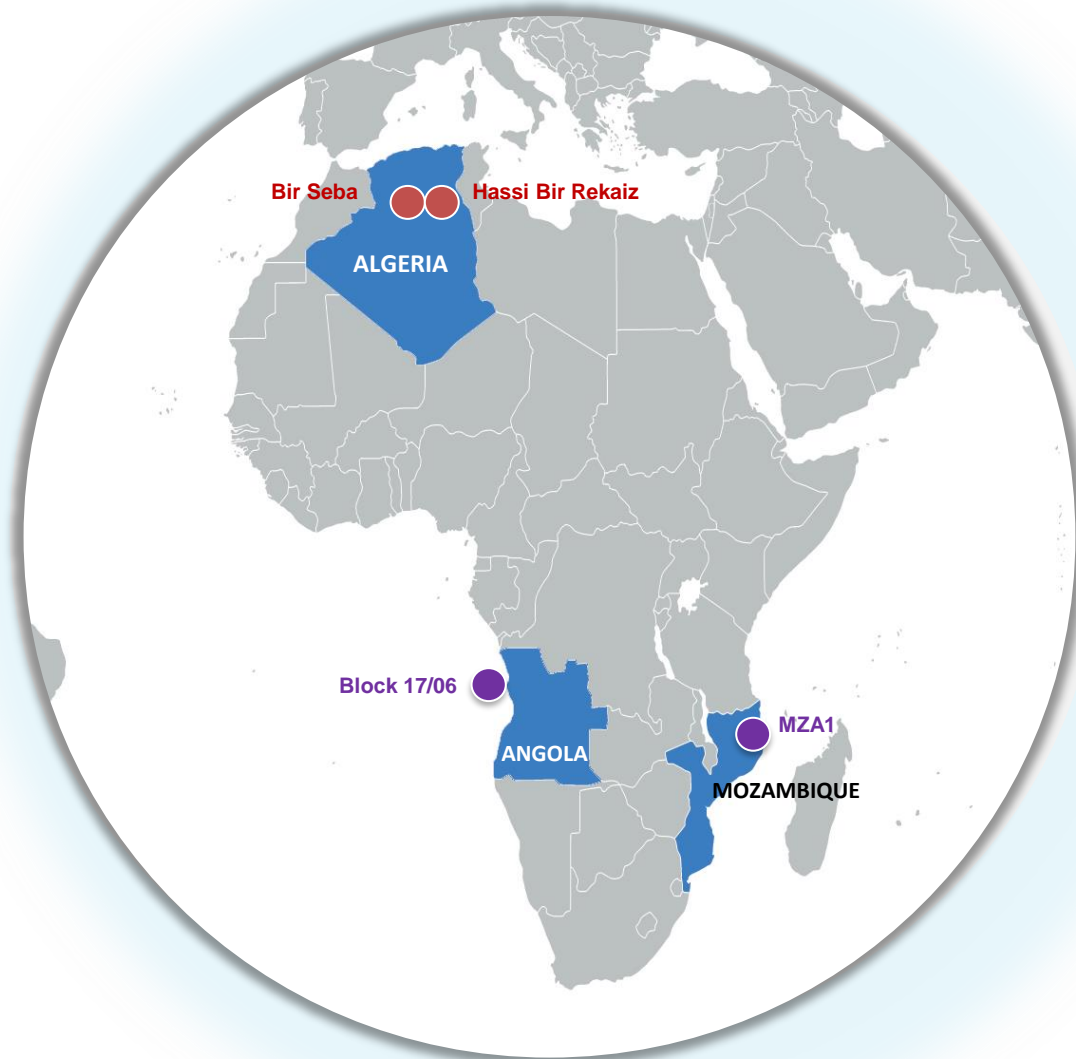
- Operated by TotalEnergies (WI 30%)
- Divestment in progress estimate completion in 2023

## Mozambique

### Development

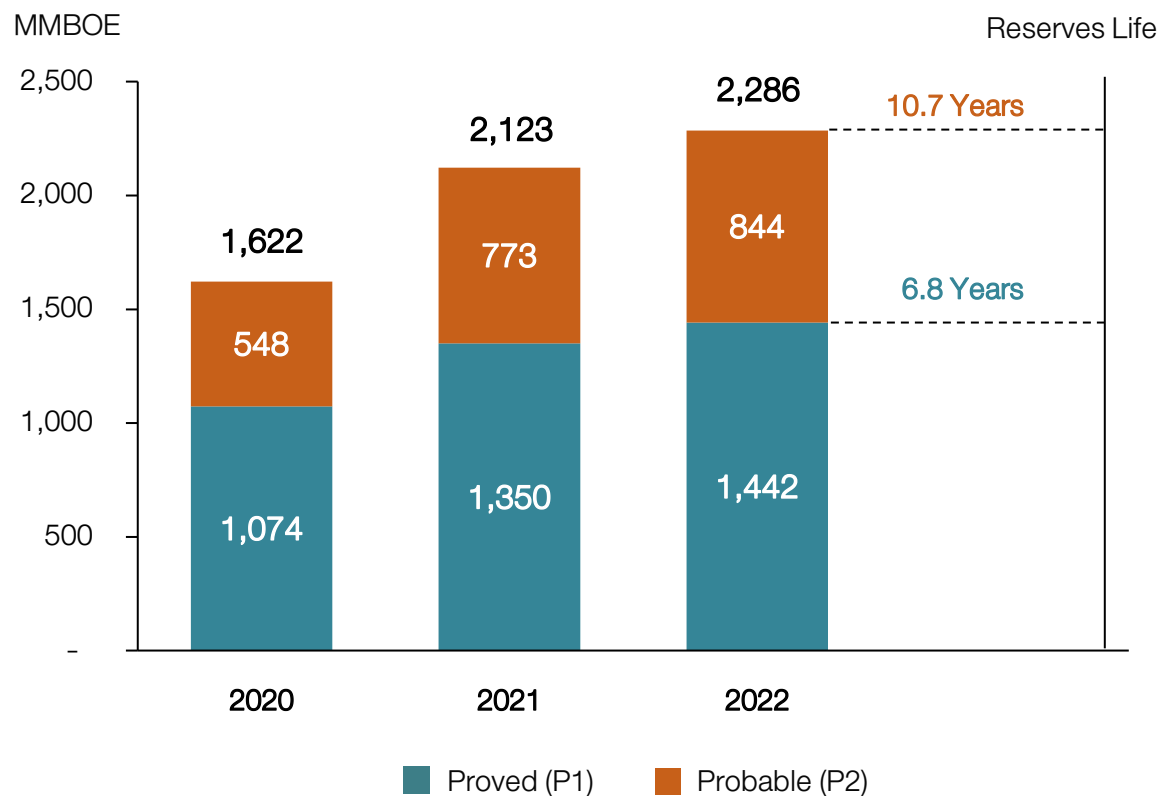
#### Area 1 (WI 8.5%)

- Construction phase for LNG facility with capacity 13.1 MTPA (2 trains).
- Currently under Force Majeure due to local security situation
- Operated by TotalEnergies (WI 26.5%)





# Reserves

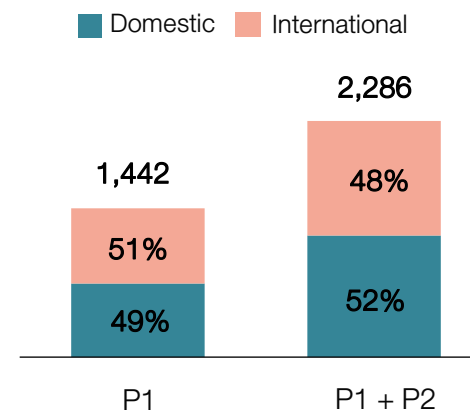


5-Year Average Proved Reserves Replacement Ratio (RRR)

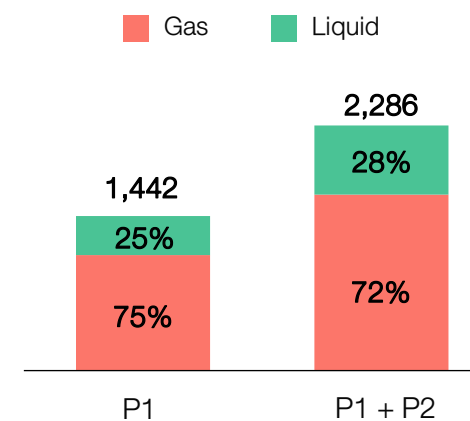
2020	2021	2022
1.5X	1.9X	2.0X

- Based on average production per day of natural gas, condensate, and crude oil (including LPG) of 585 KBOED for the year ended December 31, 2022
- Figures include reserves from equity method

## 2022 by Geography



## 2022 by Product Type





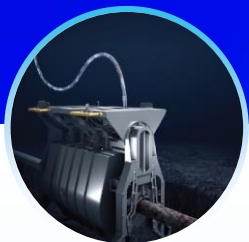
## AI AND ROBOTICS VENTURES

## VENTURES BUILDER

ARV is a Ventures Builder principally engaged in the research, development and provision of solutions using Artificial Intelligence and Robotics technologies, as well as ventures ideation, incubation, development and commercialization.

## BUSINESS UNITS

ARV has successfully spun-off start-ups into separate legal entities focused on further commercialization and development of their respective deep-tech domains.



**ROVULA**

Unmanned Robotic Technologies and Data Analytics for Marine, Offshore and Underwater Assets



**SKYLLER**

AI-driven and Autonomous Aerial Drone Technologies, Operations and Data Analytics for Various Industries and Operations



**varuna**

One-Stop Agriculture and Climate Technology Solutions



**CARIVA**

Health Solutions Platform that Simplifies Data Access, Manage Security and Accelerates the Creation of Digital Health Solutions



**bind**

Bridging Identity, Network and Data

Software Solutions for Security, Privacy, and Data Controlling in the Web 3.0



**bedrock**

Geospatial Location Intelligence Platform and AI Technology to provide advanced location insights



### XGATEWAY

Unmanned Surface Vehicle for Hydrographic Survey and Surveillance



### XPLOER

Autonomous Underwater Vehicle for Subsea Pipeline Inspection



### NAUTILUS

Underwater Robotic System for Inspection, Repair & Maintenance of Subsea Pipelines



### XSPECTOR

IA cloud-based data management platform specifically tailored for subsea inspection and survey operations



### HORRUS

Autonomous Nested Drone Systems for Asset Inspection, Surveillance and Mapping



### SKYLLER PLAFORM

Data Platform for Fleet Management, Data Visualization and Analytics



### SKYLLER AI ML

AI-Assisted anomalies detection for fast and accurate decision making



### UAV LOGISITIC

Drone Delivery Solutions for intra-city, long range and remote delivery of critical cargo and parts



### AiANG SPRAYER UAV

UAV for blanket and precision-spraying services for various crops



### SMART FOREST

Green Area management platform and carbon credit solutions



### KANNA CARBOM FARMING

Mobile application for productivity improvement and carbon project registration



### CARBON CREDIT TOKENIZATION PLATFORM

Platform enables seamless trading of carbon credit using blockchain technology



### HEALTH APPLICATIONS

Variety of completed health applications for health and wellness solutions



### HARDWARE SOLUTIONS

Seamless integrate to software with IoT and Robotics solutions



### BUILDING BLOCKS

Data management and software API platforms for building the custom-made digital health solutions.



### AI HEALTH PRODUCTS

AI-powered solutions for personalized health care and precision medicine



Automatic and Seamless Verification of Digital Signature with E-Power of Attorney and National Identities of the Singers in any corporate transactions with global interoperability



### TRUSTME

Secured Wallet that keeps all identities and personal data



### CITY DIGITAL DATA PLATFORM

Platform to supporting cities to operate urban infrastructure components and services efficiently with data connectivity



### MUNICIPAL TAX PLATFORM

One-stop tax collection & valuation intelligent system to facilitate citizens for submission of online petition form, payment check and status tracking



### BUILDING PERMIT PLATFORM

The integration of AI and GIS to streamline rive accurate, quick and convenient permission processes for officer and citizen



### ASSET MANAGEMENT PLATFORM

Allows government offices to monitor, review and update assets' status for informed evaluation and decision making

JOINT VENTURES ROVULA

JOINT VENTURES SKYLLER

JOINT VENTURES VARUNA

JOINT VENTURES CARIVA

JOINT VENTURES BIND

JOINT VENTURES BEDROCK

ZEAOQUEST

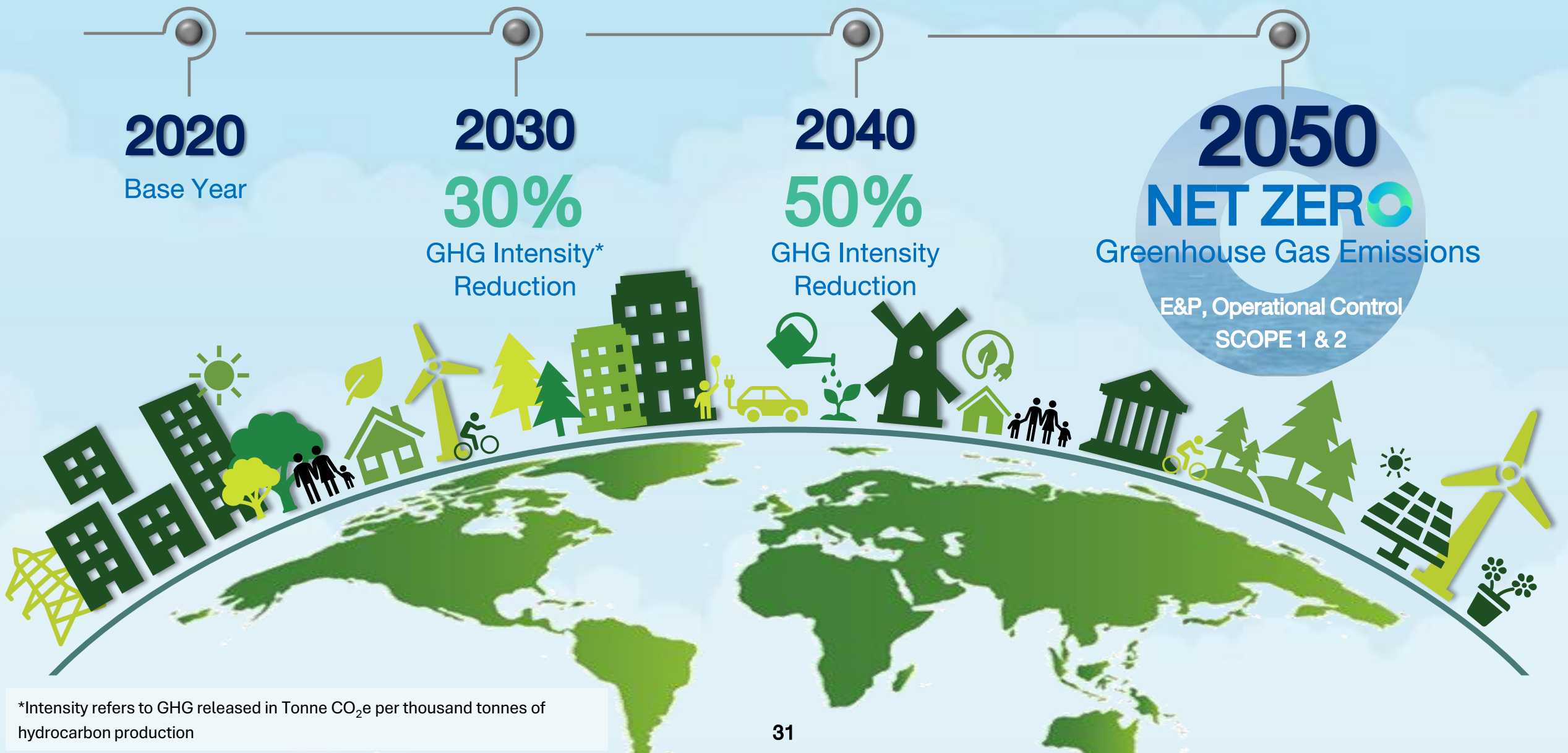


30





# Net Zero 2050



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

# ESG Disclosure & Ratings

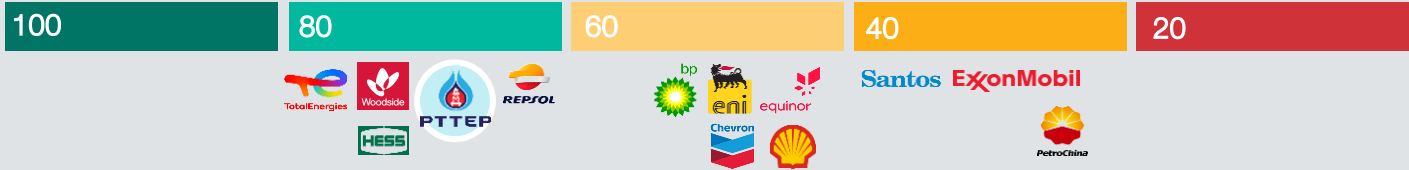


Global Reporting Initiative Reporting Standards (GRI Standards)

Oil and Gas Sector Disclosures (OGSD)

ESG Ratings

S&P Global Ratings



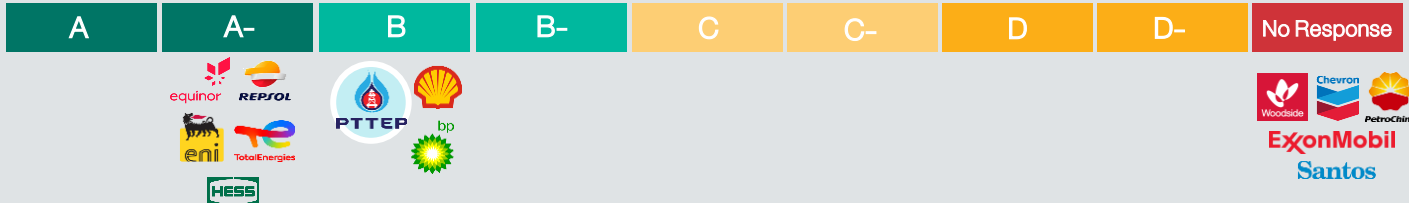
MSCI



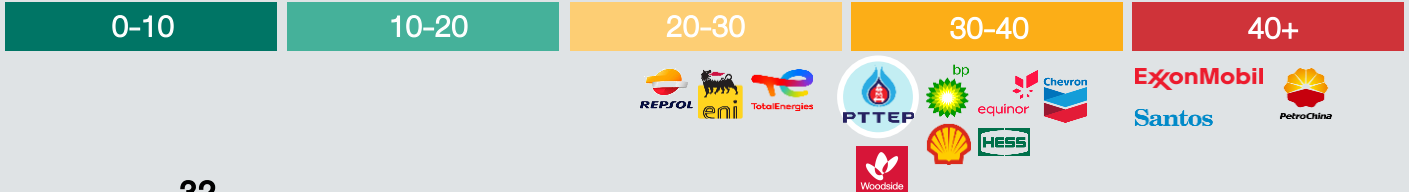
Moody's



CDP



SUSTAINALYTICS  
a Morningstar company

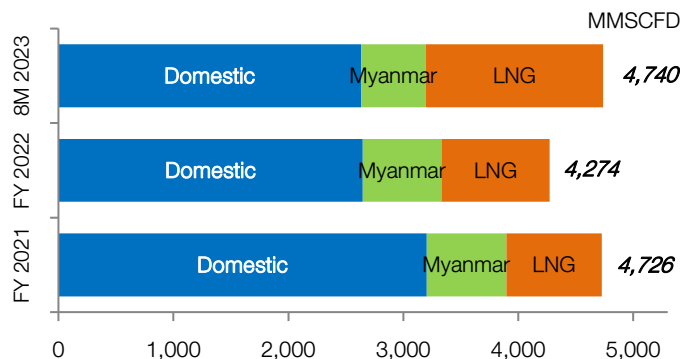




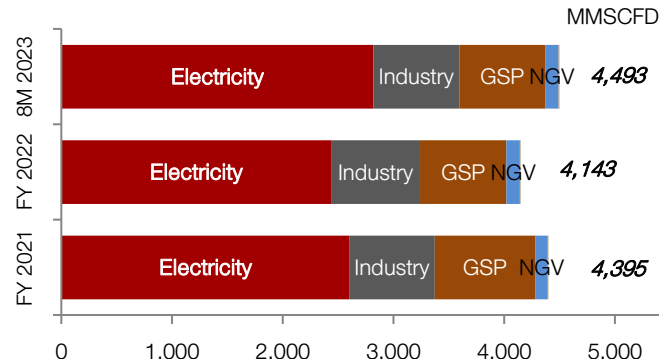
# Thailand Energy Market

## OVERVIEW

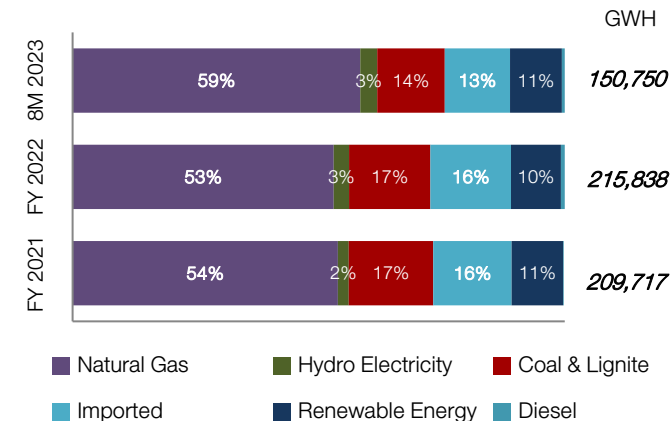
### Natural Gas Supply



### Natural Gas Consumption

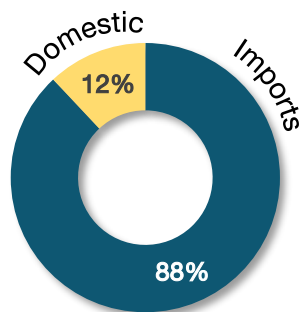


### Electricity Generation

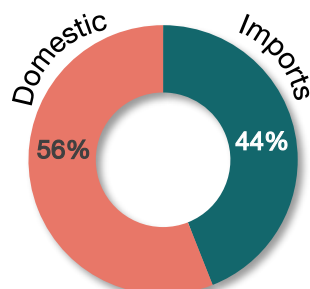


### 8M 2023 Thailand's Oil and Gas Supply

#### Crude Oil & Condensate ~ 1.1 m BOE/D

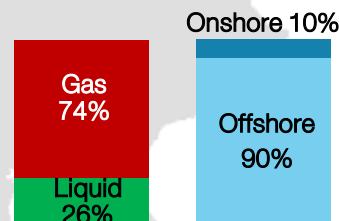


#### Natural Gas ~ 0.9 m BOE/D

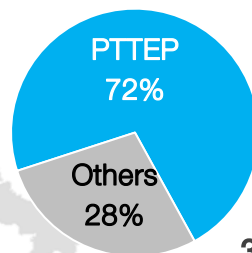


### 9M 2023 Thailand Petroleum Production

#### % by Petroleum Type and Area



#### % Production by Company



### Midstream

Gas: operated by PTT

Oil: PTT participates through subsidiaries

Transmission Pipelines  
Gas Separation Plants

Refineries

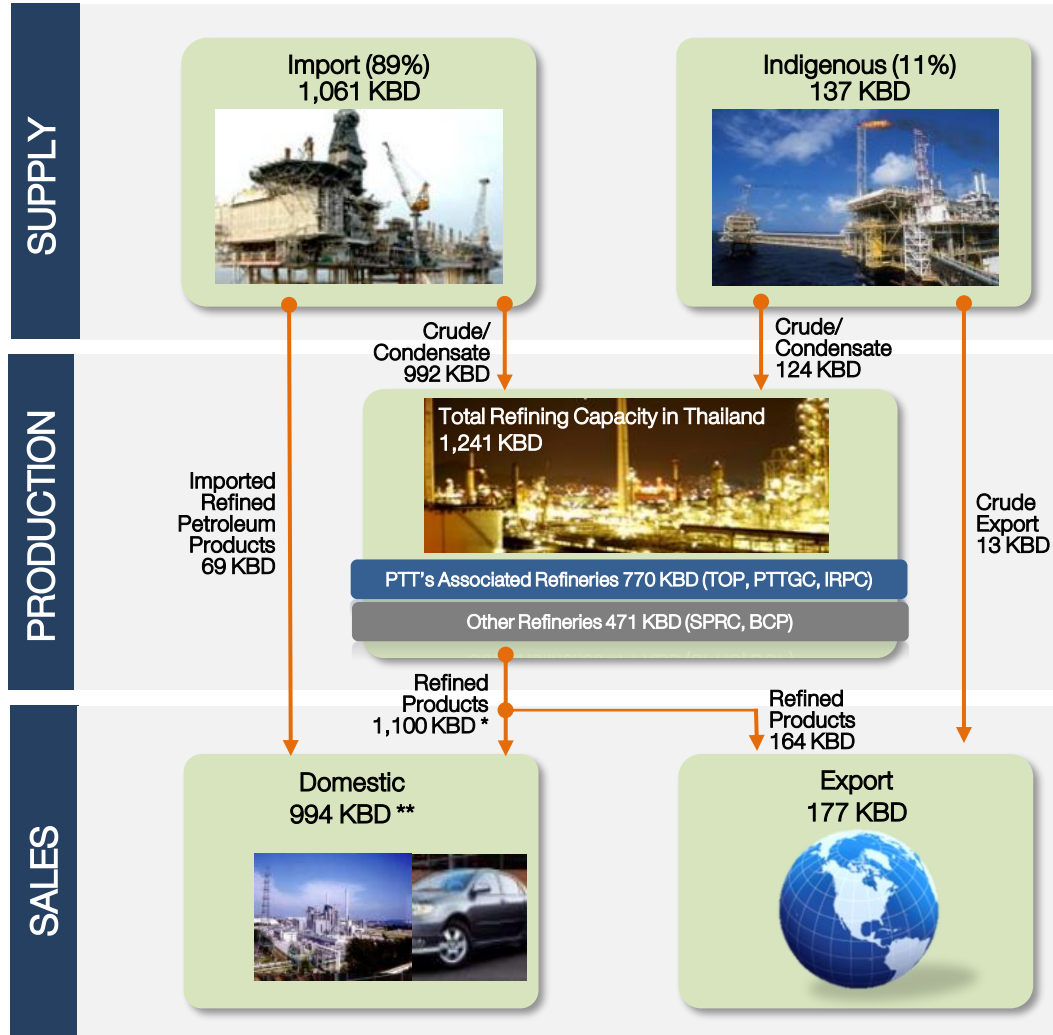
### Downstream

Petrochemicals  
Oil and gas marketing

# Thailand Energy Market

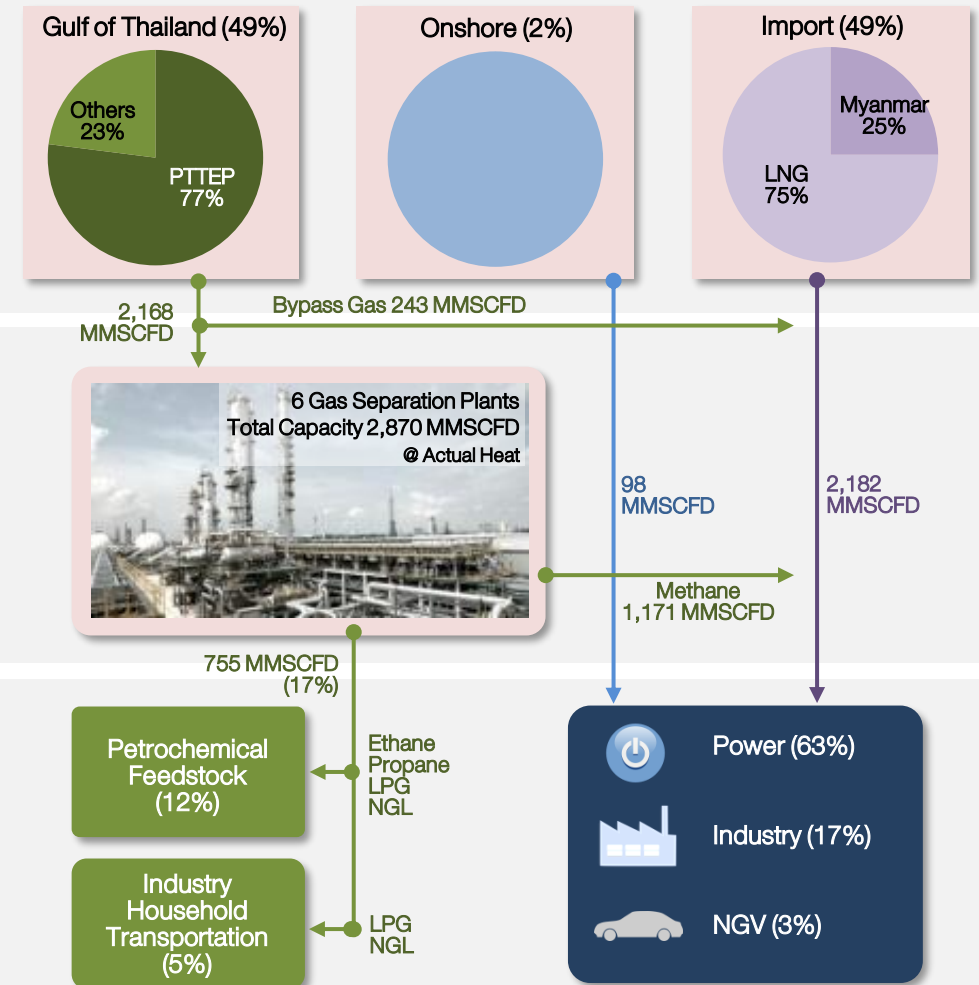
## Oil Balance\*\*\*

Maintains the stability of country supply through adequate refining capacity



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

Main driver of Thailand's economy



Source: PTT

Note: \* Refined product from refineries = 1,024 KBD, including domestic supply of LPG from GSPs and Petrochemical Plants = 76 KBD

\*\* Included Inventory

\*\*\* Information as of 6M 2023

\*\*\*\* Information as of 6M 2023

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



# E&P Projects Detail - Thailand



	Project Name	Status	Phase	Participating Interest* (%)		Production Volume		Latest Status
						Gas (MMSCFD)	Liquid (KBPD)	
1	Arthit	OP	Production	PTTEP Chevron MOECO	80% 16% 4%	353	16	<ul style="list-style-type: none"> <li>Gas delivery at the level beyond commitment to compensate shortfall from G1/61</li> </ul>
2	B6/27	OP	Production	PTTEP	100%	-	-	<ul style="list-style-type: none"> <li>Prepare for decommissioning activities</li> <li>Final Decommissioning Plan (FDP) and Decommissioning Cost Estimation (DCE) were approved by DMF</li> </ul>
3	B8/32 & 9A	JV	Production	PTTEP Chevron MOECO KrisEnergy Palang Sophon	25.00% 51.66% 16.71% 4.63% 2%	4	4	<ul style="list-style-type: none"> <li>Production resumed at the beginning of October 2023.</li> </ul>
4	G12/48	OP	Production	PTTEP	66.67%	7	-	<ul style="list-style-type: none"> <li>PTTEP acquired additional 33.3333% stake from TotalEnergies, the completion of the SPA is expected in 2023</li> <li>Normal operations</li> </ul>
5	Contract 4 (Pailin)	JV	Production	PTTEP Chevron MOECO	60% 35% 5%	408	15	<ul style="list-style-type: none"> <li>Ensure gas deliverability level at DCQ.</li> <li>On-going drilling additional development wells activities.</li> </ul>
6	E5	JV	Production	PTTEP ExxonMobil	20% 80%	7	-	<ul style="list-style-type: none"> <li>Maximize gas potential at CDC level.</li> </ul>

Note: \* PTTEP denotes respective PTTEP subsidiaries participating in the project  
 \*\* Production volume represent **average volume for 100% of the project in Q3/2023**  
 \*\*\* Status: OP = PTTEP operatorship / JOC = PTTEP joint operatorship/ JV = PTTEP Joint Venture Partner  
 \*\*\*\* DCQ = Daily Contractual Quantity

# E&P Projects Detail - Thailand



	Project Name	Status	Phase	Participating Interest* (%)		Production Volume		Latest Status
						Gas (MMSCFD)	Liquid (KBPD)	
7	G4/43	JV	Production	PTTEP Chevron MOECO Palang Sophon	21.375% 51% 21.25% 6.375%	-	0.7	<ul style="list-style-type: none"> <li>Production resumed at the beginning of October 2023.</li> </ul>
8	G4/48	JV	Production	PTTEP Chevron MOECO	5% 71.25% 23.75%	-	-	<ul style="list-style-type: none"> <li>Decommissioning activities in progress</li> </ul>
9	L53/43 & L54/43	OP	Production	PTTEP	100%	-	1	<ul style="list-style-type: none"> <li>Started 1<sup>st</sup> oil production in Q2/2023</li> </ul>
10	PTTEP 1	OP	Production	PTTEP	100%	-	0.1	<ul style="list-style-type: none"> <li>Maintain production plateau</li> </ul>
11	S1	OP	Production	PTTEP	100%	4	Crude: 25 KBPD LPG: 170 MTon/Day	<ul style="list-style-type: none"> <li>On-going drilling development wells activities.</li> <li>On-going production optimization and long-term development according to proposed business plan and work plan's activities.</li> </ul>
12	Sinphuhorm	OP	Production	PTTEP Apico ExxonMobil	55% 35% 10%	94	0.2	<ul style="list-style-type: none"> <li>Maximize gas/oil production.</li> </ul>
13	L22/43	OP	Production	PTTEP	100%	-	-	<ul style="list-style-type: none"> <li>Completed evaluation of drilling results to determine further production/ development plans.</li> </ul>

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

\*\* Production volume represent **average volume for 100% of the project in Q3/2023**

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



# E&P Projects Detail - Thailand



	Project Name	Status	Phase	Participating Interest* (%)		Production Volume		Latest Status
						Gas (MMSCFD)	Liquid (KBPD)	
14	MTJDA	JOC	Production	PTTEP CPOC	50% 50%	286	7	<ul style="list-style-type: none"> <li>Normal operations</li> <li>On-going drilling activities on development and exploration/appraisal wells.</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%	369	Condensate: 7 KBPD Crude: 10 KBPD	<ul style="list-style-type: none"> <li>Maintain gas sales at 400 MMSCFD</li> <li>Continue drilling new production wells</li> <li>Completed 1 new production platform and plan to install 3 additional platforms.</li> </ul>
17	G2/61 (Bongkot)	OP	Production	PTTEP	100%	710	23	<ul style="list-style-type: none"> <li>Maintain average gas production at 825 MMSCFD</li> <li>Continue drilling development wells</li> <li>On-going constructing and installing the production platforms.</li> </ul>
18	G1/65	OP	Exploration	PTTEP	100%	-	-	<ul style="list-style-type: none"> <li>Received its yearly work program and budget from DMF</li> </ul>
19	G3/65	OP	Exploration	PTTEP	100%	-	-	<ul style="list-style-type: none"> <li>Received its yearly work program and budget from DMF</li> </ul>

Note: \* PTTEP denotes respective PTTEP subsidiaries participating in the project  
 \*\* Production volume represent **average volume for 100% of the project in Q3/2023**  
 \*\*\* Status: OP = PTTEP operatorship / JOC = PTTEP joint operatorship/ JV = PTTEP Joint Venture Partner

# E&P Projects Detail – SEA



	Project Name	Status	Phase	Participating Interest* (%)		Production Volume		Latest Status
						Gas (MMSCFD)	Liquid (KBPD)	
1	Malaysia Block K - Kikeh - Siakap-North Petai field (SNP) - Gumusut-Kakap field (GK)	OP (Kikeh & SNP) JV (GK)	Production	PTTEP	Kikeh 56% SNP 22.4% GK 7.17%	10	31	<ul style="list-style-type: none"> <li>Normal operations</li> </ul>
2	Malaysia SK309 and SK311	OP	Production	PTTEP	42 – 59.5%	165	19	<ul style="list-style-type: none"> <li>Normal operations</li> </ul>
3	Malaysia Block H	OP	Production	PTTEP	42 – 56%	250	1	<ul style="list-style-type: none"> <li>Normal operations</li> <li>Completed post-drilling evaluation of 2 exploration wells</li> </ul>
4	Malaysia – Other projects	OP	Exploration	PTTEP	42.5 - 80% (varied by permits)	-	-	<ul style="list-style-type: none"> <li><u>SK410B</u> : Completed FEED study for LLB</li> <li><u>SK417</u> : Preparing to drill appraisal well and evaluating prospects well.</li> <li><u>SK405B</u> : Completed reservoir modeling design of the Sirung field.</li> <li><u>SK438</u> : Completed drilling activities for 2 exploration well and is in the evaluation process.</li> <li><u>SK314A</u> : Evaluating drilling result.</li> <li><u>SB412</u> : On-going 3D seismic reprocessing, evaluating prospects well and G&amp;G study.</li> </ul>
5	Yadana (Myanmar)	OP	Production	PTTEPI Chevron MOGE	37.1% 41.1% 21.8%	511	-	<ul style="list-style-type: none"> <li>Major activities were completed as planned.</li> </ul>
6	Zawtika : M9 & a part of M11 (Myanmar)	OP	Production	PTTEP MOGE	80% 20%	339	-	<ul style="list-style-type: none"> <li>Maintain operations</li> <li>Continue Phase 1D drilling activities</li> </ul>

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

\*\* Production volume represent **average volume for 100% of the project in Q3/2023**

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



# E&P Projects Detail - SEA



	Project Name	Status	Phase	Participating Interest* (%)		Production Volume		Latest Status
						Gas (MMSCFD)	Liquid (KBPD)	
7	Myanmar M3	OP	Exploration	PTTEP	100%	-	-	• Pending for development
8	Vietnam 9-2	JOC	Production	PTTEP Vietnam Oil and Gas Group Pharos Energy	25% 50% 25%	8	5	• Submitted the proposal for Petroleum Contract Extension (5 yrs.) to Vietnamese Government
9	Vietnam 16-1	JOC	Production	PTTEP Vietnam Oil and Gas Group Pharos Energy OPECO	28.5% 41% 28.5% 2%	6	10	• Submitted the proposal for Petroleum Contract Extension (5 yrs.) to Vietnamese Government
10	Vietnam B & 48/95	JV	Exploration	PTTEP Vietnam Oil and Gas Group MOECO	8.5% 65.88% 25.62%	-	-	• In the negotiation process on commercial terms in order to push forward the Final Investment Decision (FID)
11	Vietnam 52/97	JV	Exploration	PTTEP Vietnam Oil and Gas Group MOECO	7% 73.4% 19.6%	-	-	• In the negotiation process on commercial terms in order to push forward the Final Investment Decision (FID)
12	Natuna Sea A (Indonesia)	JV	Production	PTTEP Harbour Energy KUFPEC Petronas Pertamina	11.5% 28.67% 33.33% 15% 11.5%	98	2	• Continue further compression project activities

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

\*\* Production volume represent **average volume for 100% of the project in Q3/2023**

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

# E&P Projects Detail – Middle East



	Project Name	Status	Phase	Participating Interest* (%)		Production Volume		Latest Status
						Gas (MMSCFD)	Liquid (KBPD)	
1	Abu Dhabi Offshore 1 (UAE)	JV	Exploration	PTTEP Eni	30% 70%	-	-	• G&G study is ongoing
2	Abu Dhabi Offshore 2 (UAE)	JV	Exploration	PTTEP Eni	30% 70%	-	-	• The development plan has been prepared and currently under reviewed by government
3	Abu Dhabi Offshore 3 (UAE)	JV	Exploration	PTTEP Eni	30% 70%	-	-	• G&G study is on-going
4	Sharjah Onshore Area A (UAE)	JV	Exploration	PTTEP Eni SNOC	25% 50% 25%	-	-	• In progress of additional geological study exploration well drilling preparation
5	Sharjah Onshore Area C (UAE)	JV	Exploration	PTTEP Eni SNOC	25% 50% 25%	-	-	• Seismic processing in progress
6	Oman Block 6 (PDO)	JOC	Production	PTTEP Petroleum Development of Oman Shell TotalEnergies	2%  60% 34% 4%	-	881	• Normal operations

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

\*\* Production volume represent **average volume for 100% of the project in Q3/2023**

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

# E&P Projects Detail – Middle East



	Project Name	Status	Phase	Participating Interest* (%)		Production Volume		Latest Status
						Gas (MMSCFD)	Liquid (KBPD)	
7	Oman Block 53	JV	Production	PTTEP Occidental OOCEP Indian Oil Mubadala	1% 47% 20% 17% 15%	-	105	<ul style="list-style-type: none"> <li>Normal operations</li> </ul>
8	Oman Onshore Block 12	JV	Exploration	PTTEP Total E&P Oman Block 12 B.V.	20% 80%	-	-	<ul style="list-style-type: none"> <li>Review G&amp;G study result</li> <li>Plan for exploration wells drilling in 2023-2024</li> </ul>
9	Oman Block 61	JV	Production	PTTEP BP Makarim Gas Development LLC Petronas	20% 40% 30% 10%	1,501	78	<ul style="list-style-type: none"> <li>Normal operations</li> </ul>

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

\*\* Production volume represent **average volume for 100% of the project in Q3/2023**

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



# E&P Projects Detail – Rest of the World

	Project Name	Status	Phase	Participating Interest* (%)		Production Volume		Latest Status
						Gas (MMSCFD)	Liquid (KBPD)	
1	PTTEP Australasia	OP	Exploration	PTTEP	90%-100%	-	-	<ul style="list-style-type: none"> <li>Signed an SPA to sell its total interests in AC/RL7</li> </ul>
2	Mozambique Area 1	JV	Development	PTTEP TotalEnergies, Mitsui, ENH, OVL OVRL & Oil India , Bharat	8.5% 26.5% 20% 15%, 10% 10%, 10%	-	-	<ul style="list-style-type: none"> <li>The project is still under Force Majeure and suspension</li> <li>The current security situation has improved greatly and more manageable</li> <li>In the process of evaluating the possibility and preparing to returning to the area.</li> </ul>
3	Algeria 433a & 416b (Bir Seba)	JOC	Production	GBRS PetroVietnam Sonatrach	35% 40% 25%	-	10	<ul style="list-style-type: none"> <li>On-going drilling activities</li> <li>Continue produce new wells and intervention existing wells.</li> </ul>
4	Algeria Hassi Bir Rekaiz	OP	Production	GHBR Sonatrach	49% 51%	-	9	<ul style="list-style-type: none"> <li>Normal operations</li> <li>Achieved the plan to increase production level from 13 KBPD to 17 KBPD since August 2023</li> </ul>
5	Mariana Oil Sands (Canada)	OP	Exploration	PTTEP	100%	-	-	<ul style="list-style-type: none"> <li>Completed the block relinquishment</li> </ul>

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

\*\* Production volume represent **average volume for 100% of the project in Q3/2023**

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

# E&P Projects Detail – Rest of the World

	Project Name	Status	Phase	Participating Interest* (%)		Production Volume		Latest Status
						Gas (MMSCFD)	Liquid (KBPD)	
6	Mexico block 12 (2.4)	JV	Exploration	PTTEP Petronas Ophir Mexico	20% 60% 20%	-	-	• In process of the block relinquishment
7	Mexico block 29 (2.4)	JV	Exploration	PTTEP Repsol PC Carigali Mexico Wintershal DEA	16.67% 30% 28.33% 25%	-	-	• Pre-development study in progress
8	Block 17/06 (Angola)	JV	Development	PTTEP TotalEnergies Sonangol SSI Acrep Falcon Oil	2.5% 30% 30% 27.5% 5% 5%	-	-	• Divestment in progress, the completion expected in 2023
9	Dunga (Kazakhstan)	JV	Production	PTTEP TotalEnergies OOCEP	20% 60% 20%	2	12	• Normal operations

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

\*\* Production volume represent **average volume for 100% of the project in Q3/2023**

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

# Midstream Projects Detail



	Project Name	Status	Phase	Participating Interest* (%)		Production Volume		Latest Status
						Gas (MMSCFD)	Liquid (KBPD)	
1	Oman LNG	Shareholder	Production	PTTEP Government of Oman Shell TotalEnergies Korea LNG Mitsubishi Mitsui Itochu	2% 51% 30% 5.54% 5% 2.77% 2.77% 0.92%	N/A	N/A	<ul style="list-style-type: none"> <li>Normal Operations</li> <li>Total capacity 10.4 MTPA</li> <li>Signed the Shareholder Agreement, in October 2023, to extend for an additional 10 years until 2034</li> </ul>
2	ADNOC Gas Processing (AGP) [UAE]	JV	Production	PTTEP ADNOC Shell TotalEnergies	2% 68% 15% 15%	N/A	N/A	<ul style="list-style-type: none"> <li>Normal Operations</li> <li>Total capacity 8 BCFD</li> </ul>

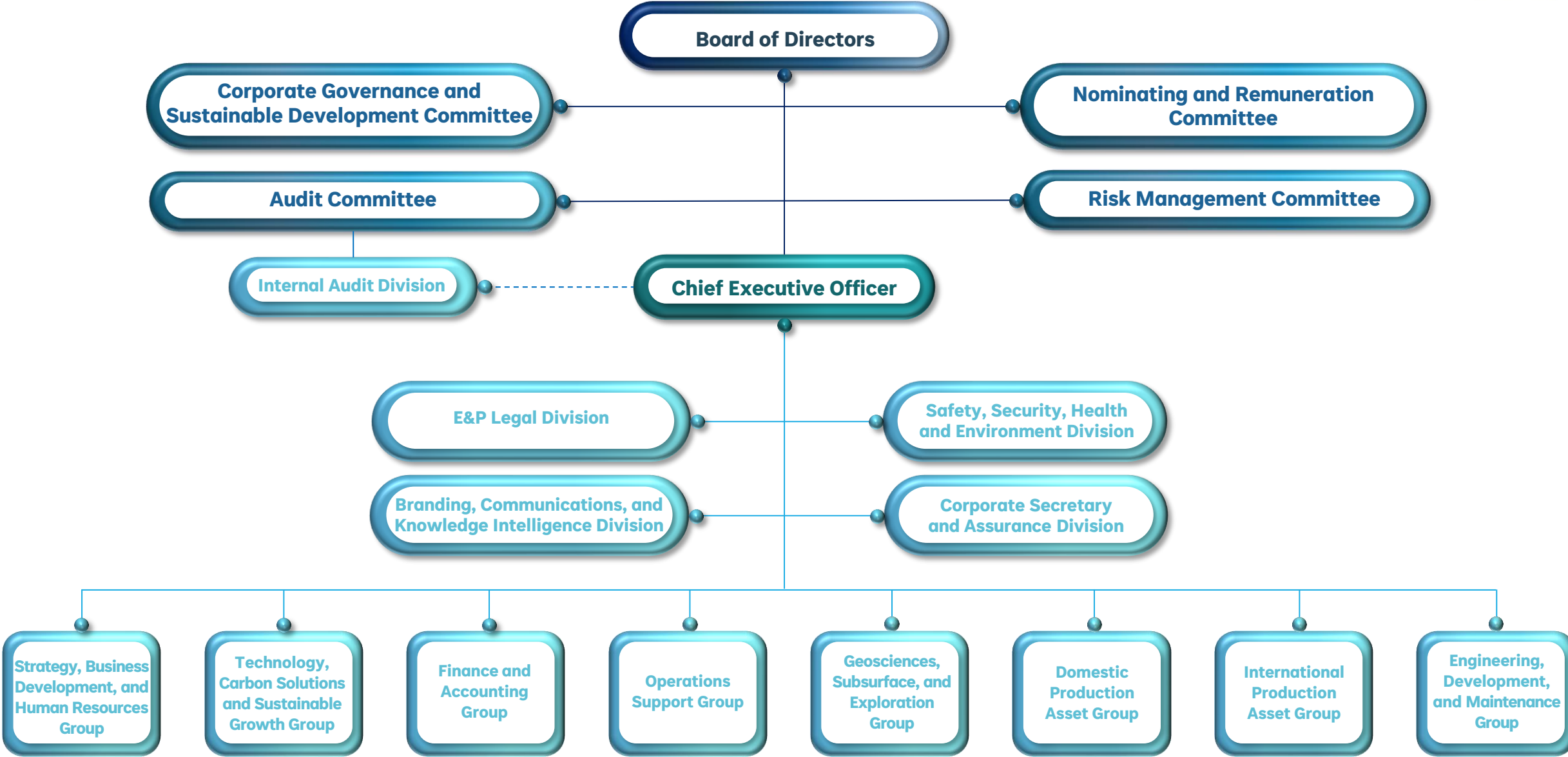
Note: \* PTTEP denotes respective PTTEP subsidiaries participating in the project

\*\* Production volume represent **average volume for 100% of the project in Q3/2023**

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



# Organization Structure



# Ratios and Formula

## Oil and Gas Reserves

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	$\text{Number of wells with petroleum discovery} / \text{Total number of exploration and appraisal wells}$

## Profitability

Sales Revenue	$\text{Sales} + \text{Revenue from pipeline transportation}$
Lifting Cost (USD/BOE)	$(\text{Operating Exp.} - \text{Transportation Cost} - \text{Stock Variation} - \text{Other expenses not related to lifting}) / \text{Production Volume}$
Cash Cost (USD/BOE)	$(\text{Operating Exp.} + \text{Exploration Exp.} + \text{G\&A} + \text{Royalties} + \text{Finance Cost}) / \text{Sales Volume}$
Unit Cost (USD/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	$\text{EBITDA} / \text{Sales Revenue}$
ROA	$\text{Trailing-12-month net income} / \text{Average assets between the beginning and the end of the 12-month period}$
ROE	$\text{Trailing-12-month net income} / \text{Average shareholders' equity between the beginning and the end of the 12-month period}$

## Leverage

Total Debt	$\text{Short-term loans from financial institution} + \text{Current portion of long-term debts} + \text{Bonds} + \text{Long-term loans from financial institution}$
Net Debt	$\text{Total debt} - \text{Liquidity}$
Debt to Equity	$\text{Total debt} / \text{Shareholders' equity}$
Net Debt to Equity	$\text{Net debt} / \text{Shareholders' equity}$
Total Debt to Capital	$\text{Total debt} / (\text{Total debt} + \text{Shareholders' equity})$
Total Debt to EBITDA	$\text{Total debt} / \text{Trailing-12-month EBITDA}$
Net Debt to EBITDA	$\text{Net debt} / \text{Trailing-12-month EBITDA}$
EBITDA Interest Coverage Ratio	$\text{Trailing-12-month EBITDA} / \text{Trailing-12-month Interest Expenses \& Amortization of Bond Issuing Cost}$

# Conversion Table

Crude Oil					
From	Tonnes	Kilolitres	Barrels	US Gallons	Tonnes/year
Tonnes	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 per Day	-	-	-	-	49.8

Natural Gas and LNG						
From	BN Cubic metres NG	BN Cubic feet NG	MM tonnes oil equivalent	MM tonnes LNG	Trillion BTU	MM BOE
1 BN cubic metres NG	1	35.315	0.86	0.735	34.121	5.883
1 BN cubic feet Ng	0.028	1	0.024	0.021	0.966	0.167
1 MM tonnes oil equivalent	1.163	41.071	1	0.855	39.683	6.842
1 MM 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 MM BOE	0.17	6.003	0.146	0.125	58	1