



## Executive Summary

Throughout Q2/2023, global recession concerns persisted as the expected inflation rates remained high, prompting consistent policy rate hikes by the Central Banks of the US and EU nations. Together with the slower-than-expected growth in China economy, a downward trend on global energy consumption was foreseen, despite a supply curb by OPEC+. As a consequence, during Q2/2023, Dubai price slightly declined to 77.59 USD/barrel, compared to 80.2 USD/barrel in Q1/2023. The average Dubai price for 2023 is anticipated to fluctuate in the range of 70 – 80 USD/barrel. The major factors to monitor are the trajectory of global economy, the monetary policies of Central Banks worldwide, OPEC+ supply cut agreement, the oil release from the Strategic Petroleum Reserves, and the prolonged Russia-Ukraine conflict.

In Q2/2023, PTTEP made significant progress in its operations. Firstly, since June 28, 2023, the G1/61 (Erawan) Project has successfully ramped up the production to 400 MMSCFD, which was on track to the initial plan. Next, the G2/61 (Bongkot) Project underwent a full transition to the Production Sharing Contract regime, with the production capacity at 840 MMSCFD. Additionally, PTTEP group has signed the Production Sharing Contracts of the newly awarded projects in the Gulf of Thailand, namely G1/65 and G3/65 blocks. On the business beyond E&P, PTTEP, together with the South Korean and French consortium partners, had been awarded Block Z1-02 and signed related agreements, which grant the exclusive business development and production rights of fully integrated Green Hydrogen Project, located in the Sultanate of Oman. This project covers the development of 5-gigawatt power plants, using renewable energy such as solar and wind, as well as the Green Hydrogen production plant with targeted production capacity of approximately 220,000 tons per year, and the ammonia production plant to convert the majority of green hydrogen output into green ammonia at the annual capacity of 1.2 million tons. The consortium will further carry out the feasibility and technical studies in order to finalize the total capital expenditures requirement.

PTTEP remains committed to creating sustainable value for the wider society (From We to World), in accordance with global practices and UN principles. This involves considering the interests of all stakeholders and ensuring energy security for the nation. To achieve this, PTTEP has developed a strategic framework consisting of three key strategies. Firstly, by maximizing the value of existing assets and expanding into core strategic areas to drive value. Secondly, by working towards achieving "Net Zero Greenhouse Gas Emission" by 2050 through decarbonization efforts. And thirdly, by diversifying and expanding into new businesses.

On the financial performance, in Q2/2023, PTTEP reported higher net profits from better non-operating profits in foreign exchange and financial derivatives gains, while in Q1/2023 net losses were reported for these items. The profits from normal operation slightly dropped, driven by a decline in sales volume to 444,868 KBOED in Q2/2023, after the full transition of the G2/61 (Bongkot) Project into Production Sharing Contract regime, and fall in global oil price cut down the company's average selling price to 45.72 USD/BOE, while the unit cost rose to 26.41 USD/BOE. As at the end of Q2/2023, PTTEP had total assets of 24,336 MMUSD, of which 3,065 MMUSD was cash on hand, while total liabilities were at 10,259 MMUSD, of which 3,661 MMUSD was interest-bearing debt. Total shareholders' equity stood at 14,077 MMUSD with debt-to-equity ratio at 0.26 reflecting healthy financial structure and robust financial position.

### Table of key financial results

(Unit: Million US Dollar)	Q1 2023	Q2 2023	Q2 2022	Inc. (Dec.) QoQ	Inc. (Dec.) YoY	6M 2023	6M 2022	Inc. (Dec.) YTD
Total Revenues	2,314	2,074	2,469	(240)	(395)	4,359	4,543	(184)
Revenue from sales *	2,193	1,924	2,383	(269)	(459)	4,117	4,413	(296)
EBITDA	1,616	1,505	1,816	(110)	(311)	3,121	3,417	(296)
Profit (Loss) for the period	569	610	600	41	10	1,180	918	262
Basic earnings (loss) per share (Unit: US)	0.14	0.14	0.15	-	(0.01)	0.28	0.23	0.05
Profit (Loss) from normal operation	592	585	647	(7)	(62)	1,178	1,217	(39)
Profit (Loss) from non-operating items	(23)	25	(47)	48	72	2	(299)	301

\* Included deemed income for the tax payment by Oman government but excluded from the average sales volume and selling price calculation.



## Strategies and Business Management

### Strategies

PTTEP adheres to the global sustainable development practices and UN principles and operates under the concept of “From We to World” in order to become a “Sustainable Organization” that takes a conscious consideration of all stakeholders’ interests. Delivering secure, affordable, and sustainable energy is a foundation of PTTEP’s strategy, especially in an on-going global energy crisis and energy transition. Therefore, PTTEP establishes a strategic framework consisting of three strategy pillars as follows:

#### Drive Value

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

#### Decarbonize

- Manage E&P for lower carbon portfolio to reach Net Zero Greenhouse Gas Emissions by 2050. This goal covers both Scope 1 and Scope 2 of the exploration and production business under PTTEP’s operational control. PTTEP has also set interim targets to reduce greenhouse gas emissions intensity by at least 30% within 2030 and 50% within 2040 (with 2020 base year).
- Execute greenhouse gas (GHG) emissions reduction plan through technology application.
- Maximize the use of renewables and explore other future energy application opportunities.
- Accelerate Carbon Capture and Storage (CCS) Projects
- Pursue carbon offsetting through initiatives such as forestation and blue carbon to absorb carbon dioxide in coastal and marine ecosystem under Ocean for Life strategy.

#### Diversify

- Scale up AI and Robotics Ventures (ARV)
- Capture gas-to-power and renewable energy opportunity
- Explore Carbon Capture, Utilization, and Storage (CCUS), hydrogen, and future energy
- Commercialize in-house technology

## *Business Management and Company Activity*

PTTEP aims to build sustainable growth encompassing Environmental, Social and Governance (ESG), which is in line with the Company's key material issues on sustainability following the expectations of the stakeholders and business directions. The implementation and progress can be summarized as follows:

### Good Corporate Governance Principles

PTTEP is committed to conducting its business with transparency and effectiveness by adhering to the good corporate governance principles, maintaining robust risk management and internal control system as well as strictly conforming to applicable laws and regulations.

- Conduct GRC Maturity Assessment to reflect GRC adaptation in PTTEP in order to perform gap improvement and level up GRC Maturity Level in 2030.
- Conduct Enterprise Risk Management Maturity Assessment in order to improve risk management and continually enhance Risk Management System.
- Continually develop GRC One Digital System by adding data analytic and utilizing artificial intelligence feature for more effectiveness on assurance function.
- Continue building GRC culture throughout several communication campaigns for all employee e.g., Comprehending GRC knowledge from case studies via GRC roadshow, e-Learning to obtain the understanding on GRC principle. Moreover, on external aspect, we promote good practices on GRC to communities, such as publish them through Explorer's Journal, and Facebook: PTTEP Shareholders Society to shareholders.

PTTEP has established its Human Rights Policy and Management System in line with the international best practices to ensure concrete implementation and prevention of human rights violations from our business operations. The Company also strictly conducts a human rights risk assessment on an annual basis, covering 100% of its operating assets and joint ventures. In Q2/2023, PTTEP reviewed its human rights risk assessment methodology to ensure better relevance to human rights issues. Additionally, PTTEP is developing an intermediate-level human rights e-learning course to enhance employees' understanding with plan to launch corporate-wide in Q3/2023.

PTTEP has Safety, Security, Health and Environment Management System (SSHE MS) to minimize risks and impacts from its operations. In Q2/2023, PTTEP Lost Time Injury Frequency (LTIF) was 0.12, while the Total Recordable Incident Rate (TRIR) was 0.73 case per 1 million man-hours. The LTIF and TRIR were in the average safety performance of the International Association of Oil & Gas Producers (IOGP). Furthermore, PTTEP continues the effort to raise safety awareness of all workforces through human factor clinic and learning from past incident.

### Natural Resource Conservation, Environmental Restoration, and Community and Social Development

The highlighted implementation to create long-term value for stakeholders can be summarized as follows:

- Circular Model for E&P: PTTEP's work processes are designed to ensure optimum resource efficiency. It is encouraged that all unused materials are reused and recycled whilst appropriate, safe, and only when they are in an efficient condition with aim to achieve our targets of at least 50% of main structures being reused with safety awareness, and efficient conditions; and zero waste to landfill by 2030. For the main structure reuse, with emphasis on reusing the wellhead platform (WHP) topside, in Q2/2023, PTTEP concluded data to support Final Investment Decision (FID) for the expansion of reuse the wellhead platform (WHP) topside at the Arthit Project. In addition, PTTEP focuses on replacing landfill waste disposal with alternative methods to create value from waste e.g., waste to energy, waste to Refuse-Derived Fuel (RDF), food waste composter, etc.

- Ocean for Life: As most of PTTEP's operations are offshore, PTTEP gives the highest priority to conserve, restore, and monitor natural resources and marine ecosystems to support economic growth and the quality of life for nearshore communities to reflect the company's targets of achieving net positive impact of ocean biodiversity and ecosystem services (BES) value in all offshore operations and increasing 50% of focused communities' income by 2030. The performance is divided into 3 workstreams as follows:
  - 1) Sustainable Ocean-Friendly Operations, focusing on safety and minimizing environmental impacts in the areas where PTTEP has operations: In Q2/2023, following the signing of a Memorandum of Understanding (MOU) to enhance academic collaboration for the national maritime interests among the Petroleum Institute of Thailand (PTIT), National Research Council of Thailand (NRCT) and Office of the National Security Council (NSC), there is an ongoing study with aim to explore suitable approaches to place artificial reefs (Rig to Reef) through a partnership with government and private organizations. The anticipated result of this study is to enhance the efficient utilization of rig to reef deployment for the conservation, restoration, and preservation of marine resources and biodiversity.
  - 2) Sustainable Ocean Health and Blue Carbon Solutions: In Q2/2023, PTTEP installed underwater cameras at 2 jacket legs of PTTEP's offshore petroleum platforms in the Gulf of Thailand together with the development of artificial intelligence software to automatically identify marine species passing the underwater cameras. Currently, the software can identify 7 marine species including *Caranx ignobilis* (Giant trevally) and *Abudefduf vaigiensis* (Indo-pacific sergeant) with a detection confidence level of 85%. It's planned to integrate data into the Thailand Biodiversity Information Facility (TH-BIF), in collaboration with the government agency responsible for biodiversity conservation.
  - 3) Sustainable Community around the Ocean through implementing corporate social responsibility projects with stakeholders around our operational areas covering 17 provinces around the Gulf of Thailand: In Q2/2023, through the Company's continuous promotion of juvenile aquatic animal aquaculture, PTTEP was able to release over 1,300 million juvenile aquatic animals back to the nature. 15 fish homes were also installed in marine conservation areas, enabling 9 square kilometers of coastal conservation areas. Furthermore, PTTEP has collaborated with local universities to develop innovative buoys made of plastic waste for experimentation in coastal conservation areas and planned to perform buoy testing with the Department of Marine and Coastal Resources (DMCR). As part of the Company's efforts to increase the income of focused communities participating in the projects, PTTEP successfully established 3 seafood product value enhancement groups. In addition, PTTEP organized 8 networking events to support marine resource conservation, with a total of 1,095 participants.

## Finance

PTTEP places great importance on effective financial management by focusing on building financial discipline and maintaining a robust capital structure. As at the end of Q2/2023, the company maintained its cash on hand of approximately 3,065 MMUSD, and its debt-to-equity ratio at 0.26 which is in line with the Company's financial policy.

- On April 24, 2023, PTTEP paid the remaining annual dividend for year 2022 at the rate of Baht 5.00 per share, totaling of 604 MMUSD.
- In May 2023, PTTEP Treasury Center Company Limited (PTTEP TC), a wholly-owned subsidiary of PTTEP Group issued 3-year senior guaranteed debentures with a bondholders' representative to institutional investors for 1,500 MMTHB, carrying the coupon rate of 2.51% per annum and is fully guaranteed by PTTEP.
- In June 2023, PTTEP exercised liability management of USD denominated debentures which consisted of a transfer of all outstanding Senior Debentures due in 2042 (2042 Notes) issued by PTTEP Canada International Finance Limited (PTTEP CIF) to PTTEP TC and an offer to partially repurchase 31,894,000 USD for the 2042 Notes and 50,000,000 USD for the Senior Debentures due in 2059. After the liability management exercise, a remaining outstanding principal amount of 458,106,000 USD and 600,000,000 USD for each respective debenture.

After dividend payment, bond issuance and liability management exercise, PTTEP still has sufficient liquidity for operation and investment after the redemptions and dividend payout, as well as maintain its solid financial position to withstand such oil price and global economic fluctuation.

To manage foreign exchange (FX) risks associated with revenues from petroleum products and major expenses denominated in the same currency, PTTEP has implemented the natural hedge method. For FX risks arising from non-USD revenues and expenses, PTTEP employs financial hedging instruments such as forwards and swaps. In addition to FX risks, fluctuations in interest rates do not have a material impact on its financial performance due to the fact that all of the company's interest-bearing debt is fixed rate.

### Research and Development of Technology

PTTEP encourages the development of technology and innovation as well as technological applications by carrying out research and development under 3 objectives, which consist of: 1) To drive value and enhance competitiveness in E&P business 2) To reduce greenhouse gas emissions to become a low-carbon organization 3) To support the energy transition and new businesses.

As of Q2/2023, there are 71 projects under research and development and the progress of highlight projects are as follows;

- The field trial of condensate treatment technologies, which include chemical demulsifier injection for separating particulate contaminants, adsorbent, and filtration technology, was successful. These technologies have been implemented both domestically and internationally, resulting in improved condensate treatment efficiency and reduced production costs.
- The technology for removing contaminants to support pipeline decommissioning activities, such as decontamination chemicals for pipeline cleaning and intelligent sampling PIG, underwent a field trial in the Bongkot field in Q1/2022, and its performance was satisfactory. The development team is currently working on improving the technology's performance and expanding its use to support future petroleum pipeline decommissioning activities.
- The development of a prototype robot for wellhead operation is underway. This robot is capable of detecting equipment abnormalities and autonomously manipulating process equipment on the production platform. Testing of the prototype was conducted on an offshore production platform during Q1 to Q2 of 2022, and the results were satisfactory. The development team plans to continue with the next phase of development and expand the scope to cover other production fields.
- The project to convert flare gas into Carbon Nanotubes for greenhouse gas emission reduction is currently underway. The team is working on the front-end engineering design (FEED) for the pilot production unit, which is expected to be completed in 2024. Carbon Nanotubes are being developed for various applications such as batteries, energy storage, composite materials, and more.
- The Carbon Dioxide (CO<sub>2</sub>) conversion to Propylene Carbonate for greenhouse gas emission reduction project is in progress to carry out the prototype process development and testing by the end of 2023.

PTTEP's strong commitment and concrete performance have made PTTEP recognized by both domestic and international institutions, which can be seen from the awards received in Q2/2023 such as;

- Received 5 awards in the 13<sup>th</sup> Asian Excellence Awards 2023, organized by Corporate Governance Asia, namely Asia's Best CEO for the 6<sup>th</sup> consecutive year, Asia's Best CFO for the 10<sup>th</sup> consecutive year, Best Investor Relations Company (Thailand) for the 12<sup>th</sup> consecutive year, Best Investor Relations Professional for the 2<sup>nd</sup> consecutive year, and Best Environmental Responsibility. The award ceremony was organized by Corporate Governance Asia, a leading financial journal on corporate governance in Hong Kong and Asia.
- Received the Thailand Top CEO of the Year 2023 Award in Exploration, Production of Natural Resource and Public Utility Industrial category, organized by BUSINESS+ Magazine and Thammasat Business School. The Thailand Top CEO of the Year 2023 awards are conferred to the top executives whose performance has been outstanding in each industry.

- Received the Global Silver Winner, Science for the H.T.M.S. Underwater Learning Site Project. This CSR recognition was from the Green World Awards 2023 Forum awarded for corporate social responsibility that focuses on environmental care and sets good environmental practices. This is the first time PTTEP has received this award and PTTEP is the only Thai company that have been honored on this global stage.

PTTEP takes great pride in receiving such recognitions, which motivate us to conduct our business with efficiency, transparency, accountability, and a conscientious approach towards all our stakeholders to become the "Energy Partner of Choice".





## Economic Overview in the second quarter of 2023

### *Crude Oil Price*

During Q2/2023, the average price of Dubai crude oil declined to 77.59 USD/barrel, compared to 80.2 USD/barrel in the preceding quarter. This decline was influenced by the decision to continue raising interest rates, which was driven by the evaluation of the US Federal Reserve and EU to control inflation. Additionally, the slower-than-anticipated growth of the Chinese economy also contributed to the expectations of reduced crude oil demand during this period.

In April, the average price of Dubai crude oil reached 83.4 USD/barrel, rising by approximately 5 USD/barrel compared to the previous month. This price surge was a consequence of reduced crude oil supply, as the OPEC+ decided to implement additional production cuts, totaling 1.66 MMBPD. These cuts will be in effect from May until the end of 2024, leading to a reduction of more than 3.66 MMBPD in total production capacity. This reduction represents approximately 3.7% of the global crude oil supply when compared to the production capacity in 2022.

In May, the average Dubai crude price experienced a significant decline, reaching 74.9 USD/barrel, which was 8 USD/barrel lower than the previous month. This drop was influenced by various economic concerns, such as the potential slowdown in oil demand due to tight monetary policies and interest rate hikes implemented by the US Federal Reserve and EU to combat inflation. Additionally, there were worries about the risk of default on US government debt as negotiations to increase the debt ceiling (US Debt Ceiling) approached the end of May. Furthermore, concerns about the stability of the US banking sector arose when the US Deposit Protection Agency took over First Republic Bank due to liquidity issues.

In June, the average price of Dubai crude oil remained relatively stable at 75 USD/barrel, with minimal fluctuations. Despite positive factors like Saudi Arabia's plan to cut production by 1 MMBPD in July and the expectation of decreasing US Strategic Petroleum Reserve (SPR) due to rising demand, the prices held steady. However, the price was still influenced by concerns surrounding the global economy, which was anticipated to experience a slowdown due to high US and EU interest rates. Additionally, production in industrial sectors worldwide began to decelerate, and the Chinese economy showed lower growth than initially expected. These factors put pressure on the crude oil price, adding uncertainty to the market.

### *Liquefied Natural Gas (LNG) Price*

The average Asian Spot LNG price in Q2/2023 experienced a significant drop from 16.36 to 10.94 USD/MMBTU compared to the previous quarter. The drop was primarily attributed to high LNG inventory levels in Europe and Northeast Asia since Q1/2023, resulting from lower-than-expected LNG demand due to milder winter weather in those regions. In April and May, the Asian Spot LNG prices further declined to 12.08 and 9.83 USD/MMBTU, respectively. These lower prices stimulated procurement activities from price-sensitive South Asian importers, including India, Bangladesh, Vietnam, the Philippines, and Thailand, to meet their summer power generation demand. Subsequently, in June, the LNG price saw a rally, reaching an average of 11.01 USD/MMBTU. This increase was driven not only by South Asian demand but also by concerns over gas supply due to the extended maintenance at the Nyhamna Gas Processing Plant in Norway, which serves as a crucial source of gas supply for Europe.

### *Thailand's Energy Demand*

The Energy Policy and Planning Office (EPPO) of the Ministry of Energy reported that domestic energy demand in April 2023 increased by 3.8% compared to the same period in 2022, reaching around 2 MMBOED. The rise in energy consumption was mainly due to increased petroleum product consumption, natural gas, and LNG for transportation and industrial uses. The overall growth can be attributed to higher economic activities in Thailand as compared to the same period in 2022.

### *Exchange Rates (Thai Baht against US Dollar)*

The THB against USD depreciated from 34.10 at end of Q1/2023 to 35.59 at end of Q2/2023. This depreciation was influenced by factors originating from both global and Thai economies. Firstly, the US Federal Reserve would continue its policy of increasing interest rates, even at a slower pace. Additionally, the slower-than-anticipated growth of the Chinese economy and political uncertainty in Thailand also contributed to this trend. In terms of monetary policy, the Bank of Thailand raised its interest rate from 1.75% in March 2023 to 2% in May 2023. Furthermore, the repatriation of profits by foreign investors during the seasonal period further contributed to the depreciation of the THB during Q2/2023.



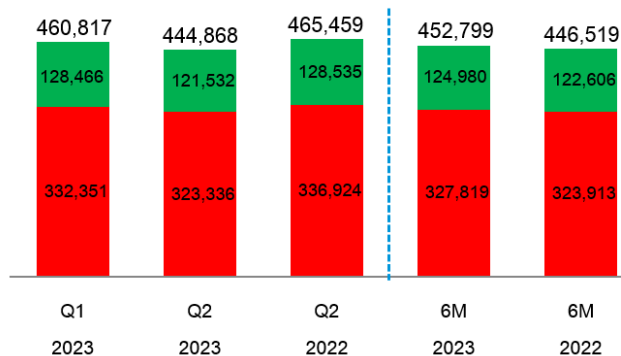
## Financial Performance

### Average Sales Volume and Selling Price

Unit: Barrels of Oil Equivalent per Day

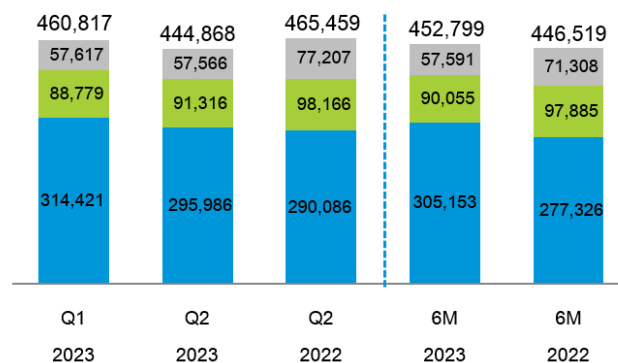
#### By Product Type

Gas Liquid



#### By Geographical Region

Thailand Other Southeast Asia Rest of the World



Average selling price and Dubai crude oil price (Unit : US Dollar)	Q1 2023	Q2 2023	Q2 2022	Inc. (Dec.) QoQ	Inc. (Dec.) YoY	6M 2023	6M 2022	Inc. (Dec.) YTD
Average selling price (/BOE)	50.01	45.72	55.61	(4.29)	(9.89)	47.89	53.59	(5.70)
Liquid price (/BOE)	78.14	73.66	105.47	(4.48)	(31.81)	75.95	98.72	(22.77)
Gas price (/MMBTU)	6.52	5.87	6.10	(0.65)	(0.23)	6.20	6.08	0.12
Average Dubai crude oil price	80.23	77.59	108.22	(2.64)	(30.63)	78.92	102.17	(23.25)

Remark: The average sales volume and selling price exclude deemed income for tax payment by Oman government

#### For the Second quarter of 2023 compared with the First quarter of 2023

In Q2/2023, the average sales volume of PTTEP and its subsidiaries (the “Group”) decreased to 444,868 barrels of oil equivalent per day (BOED) or 3% when compared with Q1/2023 of 460,817 BOED, primarily due to Bongkot Project end of concession in March 2023, offset with G2/61 Project and Arthit Project due to higher gas nomination from buyer. Meanwhile, the average selling price decreased by 9% to 45.72 USD/BOE (Q1/2023: 50.01 USD/BOE).

#### For the Second quarter of 2023 compared with the Second quarter of 2022

When compared the average sales volume of Q2/2023 to Q2/2022 of 465,459 BOED, the average sales volume decreased by 4%, primarily from Bongkot Project end of concession in March 2023 and Oman Block 61 Project due to lower entitlement, offset with G2/61 Project due to higher gas nomination from buyer. Meanwhile, the average selling price decreased by 18% to 45.72 USD/BOE (Q2/2022: 55.61 USD/BOE).

#### For the six-month period ended June 2023 compared with 2022

The average sales volume for the six-month period ended June 2023, increased by 1% to 452,799 BOED when compared with the same period of 2022 (for the six-month period ended June 2022: 446,519 BOED). The increase was primarily due to full period recognition of sales volume from G1/61 Project and G2/61 Project. However, the average selling price decreased by 11% to 47.89 USD/BOE (For the six-month period ended June 2022: 53.59 USD/BOE).



## Overall Operating Results

### *For the Second quarter of 2023 compared with the First quarter of 2023*

In Q2/2023, the Group had net profit of 610 MMUSD. An increase of 41 MMUSD or 7% from net profit in Q1/2023 of 569 MMUSD, despite of lower revenue from sales, was primarily due to gain on foreign exchange forward contracts in this quarter (Q1/2023 : recognized loss). The net profit for Q2/2023 of 610 MMUSD can be separated as following:

The profit from normal operation in Q2/2023 was 585 MMUSD. A decrease of 7 MMUSD from profit in Q1/2023 of 592 MMUSD was primarily from a decrease in revenue from sales of 269 MMUSD from lower average selling price and average sales volume, along with higher depreciation, depletion and amortization of 68 MMUSD primarily from G2/61 Project. However, income taxes decreased by 163 MMUSD mainly from projects in Thailand, Oman and Malaysia due to lower profits. In addition, operating expenses decreased by 113 MMUSD mainly from non-cash accounting transactions in Q1/2023 at the end of concession of Bongkot Project and royalties decreased by 47 MMUSD primarily from higher portion of sales revenue from projects under profit sharing contracts in Thailand.

The profit from non-operating items in Q2/2023 was 25 MMUSD. A change of 48 MMUSD from loss in Q1/2023 of 23 MMUSD was primarily from gain on foreign exchange forward contracts of 27 MMUSD due to depreciation of THB against USD, while loss of 44 MMUSD was recognized in Q1/2023 due to appreciation of THB against USD.

### *For the Second quarter of 2023 compared with the Second quarter of 2022*

In Q2/2023, the Group had net profit of 610 MMUSD. An increase of 10 MMUSD or 2% from net profit in Q2/2022 of 600 MMUSD, despite of lower revenue from sales, was primarily due to oil price hedging instruments turned from loss in Q2/2022 to gain in Q2/2023. The net profit for Q2/2023 of 610 MMUSD can be separated as following:

The profit from normal operation in Q2/2023 was 585 MMUSD. A decrease of 62 MMUSD from profit in Q2/2022 of 647 MMUSD was primarily from a decrease in revenue from sales of 459 MMUSD from lower average selling price and average sales volume. Nevertheless, income taxes decreased by 227 MMUSD mainly from projects in Thailand, Oman and Malaysia due to lower profits. In addition, royalties decreased by 85 MMUSD primarily from higher portion of sales revenue from projects under profit sharing contracts in Thailand and lower sales revenue from projects in Malaysia. Meanwhile, operating expenses decreased by 44 MMUSD primarily from Malaysia Block K Project and interest income increased by 31 MMUSD mainly from higher cash balance and higher interest rates.

The profit from non-operating items in Q2/2023 was 25 MMUSD. A change of 72 MMUSD from loss in Q2/2022 of 47 MMUSD was primarily from gain on oil price hedging instruments of 2 MMUSD (included unrealized gain from mark-to-market of 4 MMUSD) due to a downward trend of forward oil price, while loss of 38 MMUSD was recognized in Q2/2022 (included unrealized loss from mark-to-market of 23 MMUSD) due to an upward trend of forward oil price. In addition, the Group had gain on foreign exchange of 9 MMUSD mainly from dividend payment in April 2023 when THB depreciated against USD while loss of 44 MMUSD was recognized in Q2/2022 mainly from trade receivables collection when THB depreciated against USD.

### *For the six-month period ended June 2023 compared with 2022*

For the six-month period ended June 2023, the Group had net profit of 1,180 MMUSD. An increase of 262 MMUSD or 29% from net profit for the six-month period ended June 2022 of 918 MMUSD, despite of lower revenue from sales, was primarily due to oil price hedging instruments turned from massive loss in the six-month period 2022 to gain in the six-month period 2023. The net profit for the six-month period ended June 2023 of 1,180 MMUSD can be separated as following:

The profit from normal operation for the six-month period ended June 2023 was 1,178 MMUSD. A decrease of 39 MMUSD from profit for the six-month period ended June 2022 of 1,217 MMUSD was due to a decrease in revenue from sales of 296 MMUSD from lower

average selling price while average sales volume increased. Moreover, operating expenses increased by 119 MMUSD, primarily from non-cash accounting transactions at the end of concession of Bongkot Project, along with higher sales volume from G1/61 Project and G2/61 Project. However, income taxes decreased by 185 MMUSD mainly from projects in Thailand, Oman and Malaysia due to lower profits. Royalties decreased by 109 MMUSD mainly from higher portion of sales revenue from projects under profit sharing contracts in Thailand and lower sales revenue from projects in Malaysia. In addition, interest income increased by 62 MMUSD from higher cash balance and higher interest rates.

The profit from non-operating items for the six-month period ended June 2023 was 2 MMUSD. A change of 301 MMUSD from loss for the six-month period ended June 2022 of 299 MMUSD was primarily from gain on oil price hedging instruments of 3 MMUSD (included unrealized gain from mark-to-market of 7 MMUSD) due to a downward trend of forward oil price, while loss of 278 MMUSD was recognized in the six-month period 2022 (included unrealized loss from mark-to-market of 153 MMUSD) due to a strong upward trend of forward oil price.

### Operating Results by Segments

Net Profit (loss)	Q1 2023	Q2 2023	Q2 2022	Inc. (Dec.) QoQ	Inc. (Dec.) YoY	6M 2023	6M 2022	Inc. (Dec.) YTD
(Unit: Million US Dollar)								
Exploration and production	664	626	682	(38)	(56)	1,289	1,313	(24)
Thailand	413	384	480	(29)	(96)	797	898	(101)
Other Southeast Asia	163	173	152	10	21	336	318	18
Middle East	69	39	56	(30)	(17)	107	110	(3)
Australia	1	(1)	(1)	(2)	-	(1)	(2)	1
America	(2)	(3)	(4)	(1)	1	(5)	(11)	6
Africa	19	33	(6)	14	39	53	(9)	62
Others	1	1	5	-	(4)	2	9	(7)
Head office and others	(95)	(16)	(82)	79	66	(109)	(395)	286
<b>Total</b>	<b>569</b>	<b>610</b>	<b>600</b>	<b>41</b>	<b>10</b>	<b>1,180</b>	<b>918</b>	<b>262</b>

#### For the Second quarter of 2023 compared with the First quarter of 2023

For Q2/2023, the Group reported net profit of 610 MMUSD. An increase of 41 MMUSD when compared with net profit of 569 MMUSD in Q1/2023 was primarily from a decrease in net loss from Head Office and Others segment of 79 MMUSD, while there was a decrease in net profit from Exploration and Production segment in Middle East of 30 MMUSD and Thailand of 29 MMUSD, offset with an increase in Africa of 14 MMUSD.

#### Head Office and Others segment

In Q2/2023, Head Office and Others segment reported net loss of 16 MMUSD. A decrease of 79 MMUSD when compared with net loss of 95 MMUSD in Q1/2023 was primarily from gain on forward foreign exchange contracts due to depreciation of THB against USD, while there was loss in the previous quarter due to THB appreciation.

#### Exploration and Production segment

- Middle East

In Q2/2023, Middle East reported net profit of 39 MMUSD. A decrease of 30 MMUSD when compared with net profit of 69 MMUSD in Q1/2023 was primarily from a decrease in revenue from sales due to lower sales volume.

- Thailand

In Q2/2023, Thailand reported net profit of 384 MMUSD. A decrease of 29 MMUSD when compared with net profit of 413 MMUSD in Q1/2023 was primarily from a decrease in revenue from sales mainly from Bongkot Project end of concession, offset with G2/61 Project which had higher sales volume.

- Africa

In Q2/2023, Africa reported net profit of 33 MMUSD, an increase of 14 MMUSD when compared with net profit of 19 MMUSD in Q1/2023 was primarily from an increase in revenue from sales due to higher sales volume.

### *For the Second quarter of 2023 compared with the Second quarter of 2022*

For Q2/2023, the group reported net profit of 610 MMUSD. An increase of 10 MMUSD when compared with net profit of 600 MMUSD in Q2/2022 was primarily from a decrease in net loss from Head Office and Others segment of 66 MMUSD, while there was a decrease in net profit from Exploration and Production in Thailand of 96 MMUSD, offset with an increase in Africa of 39 MMUSD.

#### **Head Office and Others segment**

In Q2/2023, Head Office and Others segment reported net loss of 16 MMUSD. A decrease of 66 MMUSD when compared with net loss of 82 MMUSD in Q2/2022 was primarily from gain from oil price hedging instruments due to a downward trend of forward oil price, while Q2/2022 recognized loss due to an upward trend of forward oil price.

#### **Exploration and Production segment**

- **Thailand**

In Q2/2023, Thailand reported net profit of 384 MMUSD. A decrease of 96 MMUSD when compared with net profit of 480 MMUSD in Q2/2022 was primarily from a decrease in revenue from sales due to lower average selling price and sales volume.

- **Africa**

In Q2/2023, Africa reported a net profit of 33 MMUSD, a change of 39 MMUSD when compared with net loss of 6 MMUSD in Q2/2022 was primarily from an increase in revenue from sales from Algeria Hassi Bir Rekaiz Project which started the first crude oil sales in October 2022.

### *For the six-month period ended June 2023 compared with 2022*

For the six-month period ended June 2023, the Group reported net profit of 1,180 MMUSD. An increase of 262 MMUSD when compared with net profit for the six-month period ended June 2022 of 918 MMUSD was primarily from a decrease in net loss from Head Office and Others segment of 286 MMUSD, while there was a decrease in net profit from Exploration and Production segment in Thailand of 101 MMUSD, offset with an increase in Africa of 62 MMUSD.

#### **Head Office and Others segment**

For the six-month period ended June 2023, Head Office and Others segment reported net loss of 109 MMUSD. A decrease of 286 MMUSD when compared with net loss for the six-month period ended June 2022 of 395 MMUSD was primarily from gain from oil price hedging instruments due to a downward trend of forward oil price, while previous period recognized loss due to a strong upward trend of forward oil price.

#### **Exploration and Production segment**

- **Thailand**

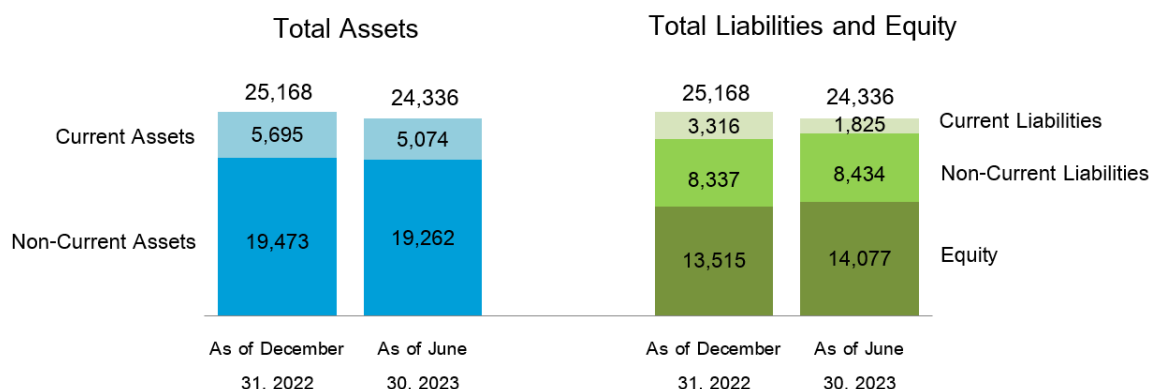
For the six-month period ended June 2023, Thailand reported net profit of 797 MMUSD. A decrease of 101 MMUSD when compared with net profit for the six-month period ended June 2022 of 898 MMUSD was primarily from a decrease in revenue from sales from lower average selling price, offset with higher sales volume of G1/61 and G2/61 Projects. Moreover, operating expenses increased from non-cash accounting transactions at the end of concession of the Bongkot Project.

- **Africa**

For the six-month period ended June 2023, Africa reported net profit of 53 MMUSD. A change of 62 MMUSD when compared with net loss for the six-month period ended June 2022 of 9 MMUSD was primarily from an increase in revenue from sales from Algeria Hassi Bir Rekaiz Project which started the first crude oil sales in October 2022.

*Financial Position*

*Unit: Million US Dollar*



**Assets**

As at June 30, 2023, the Group had total assets of 24,336 MMUSD. A decrease of 832 MMUSD from total assets as at December 31, 2022 of 25,168 MMUSD was primarily due to;

- (1) Current assets, which were primarily comprised of cash and cash equivalents, trade and other receivables and inventories, decreased by 621 MMUSD mainly from lower cash and cash equivalents of 474 MMUSD, together with trade and other receivables decreased by 325 MMUSD and other current assets decreased by 130 MMUSD mainly from the prepayment in relation to provision for decommissioning costs was derecognized in accordance with Asset Transfer Agreement at the end of concession of Bongkot Project. However, short-term investments increased by 209 MMUSD.
- (2) Non-current assets, which were primarily comprised of exploration and production assets in joint venture projects being recognized as part of the property, plant and equipment, right-of-use assets, goodwill and exploration and evaluation assets. Though the property, plant and equipment increased by 464 MMUSD mainly from G2/61 Project, G1/61 Project and Zawtika Project, total non-current assets decreased by 211 MMUSD mainly from decreases in deferred tax assets of 371 MMUSD and goodwill of 75 MMUSD, primarily from the non-cash accounting transactions at the end of concession of Bongkot Project. Meanwhile, exploration and production assets decreased by 118 MMUSD mainly from Malaysia project.

**Liabilities**

As at June 30, 2023, the Group had total liabilities of 10,259 MMUSD. A decrease of 1,394 MMUSD from total liabilities as at December 31, 2022 of 11,653 MMUSD was primarily due to;

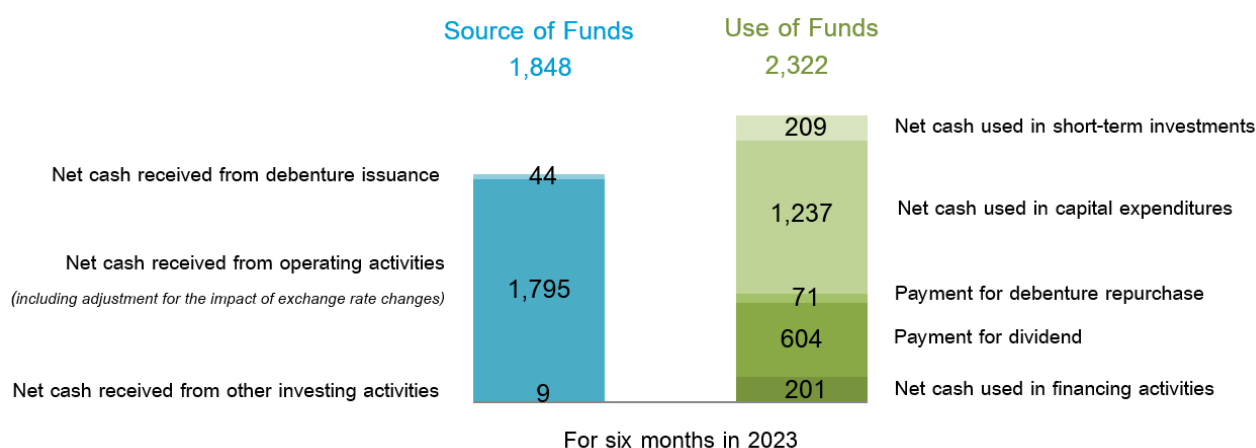
- (1) Current liabilities, which were primarily comprised of trade and other payables decreased by 1,491 MMUSD mainly due to lower income tax payable of 649 MMUSD from 2022 tax payment in May 2023, together with lower short-term provisions of 384 MMUSD, mainly from provision for decommissioning cost at the end of concession of Bongkot Project and provision for the Class Action settlement from Montana incident. In addition, trade and other payables decreased by 295 MMUSD.
- (2) Non-current liabilities, which were primarily comprised of debentures, deferred tax liabilities and provision for decommissioning costs, increased by 97 MMUSD primarily due to higher provision for decommissioning costs of 254 MMUSD mainly from G2/61 Project. However, lease liabilities decreased by 80 MMUSD, as well as debentures decreased by 61 MMUSD mainly from repurchase of unsubordinated debentures of PTTEP Canada International Finance Limited and PTTEP Treasury Center Company Limited, offset with issuance of Thai Baht senior guaranteed debentures of 1,500 MMTHB (equivalent to 45 MMUSD).

Equity

As at June 30, 2023, the Group had equity of 14,077 MMUSD. An increase of 562 MMUSD when compared with December 31, 2022 of 13,515 MMUSD was primarily due to the net profit for the six-month period ended 2023, offset with the dividend payment in April 2023. The equity included non-controlling interests of 3 MMUSD from issuance of authorized share capital to external investors by subsidiary companies under AI and Robotics Ventures Group.

Cash Flows

Unit: Million US Dollar



As at June 30, 2023, the Group had cash and cash equivalents of 3,065 MMUSD, a decrease of 474 MMUSD when compared with December 31, 2022 of 3,539 MMUSD.

Source of funds amount of 1,848 MMUSD primarily came from **Net cash received from operating activities** as a result of the positive net cash flow from revenue from sales, offset with cash payment for expenses and income taxes, as well as **Net cash received from financing activities** from issuance of senior guaranteed debentures of 1,500 MMTHB (equivalent to 44 MMUSD).

Uses of funds amount of 2,322 MMUSD primarily came from **Net cash used in additional capital expenditures** in exploration and production assets mainly from G1/61 Project, G2/61 Project, and Zawtika Project, **Net cash used in investing activities** from payment for short-term investments and **Net cash used in financing activities** primarily from the repurchase of unsubordinated debentures of PTTEP Canada International Finance Limited and PTTEP Treasury Center Company Limited, including the dividend payment for the second half of 2022, as well as payments for lease liabilities and interests during the six-month period of 2023.



*Key Financial Ratios*

	Q1 2023	Q2 2023	Q2 2022	6M 2023	6M 2022
<b>Profitability Ratio (%)</b>					
EBITDA margin	72.54	76.90	75.19	74.58	76.34
Return on equity	16.99	16.81	12.32	16.81	12.32
Net profit margin	22.28	23.30	18.40	23.30	18.40
<b>Leverage Ratio (Times)</b>					
Debt to equity	0.27	0.26	0.33	0.26	0.33
Debt to EBITDA	0.56	0.58	0.69	0.58	0.69

Remark:

- EBITDA margin = Profit before deduction of interest, tax and depreciation to revenue from sales (included deemed income for tax payment by Oman government), and revenue from pipeline transportation
- Return on equity = Net profit for the past 12 months to average equity
- Net profit margin = Net profit to total revenue (for the past 12 months)
- Debt to equity = Interest Bearing Debt to equity
- Debt to EBITDA = Average Interest-Bearing Debt to profit before deduction of interest, tax and depreciation for the past 12 months



## Operational Highlights

### Drive Value

As of Q2/2023, PTTEP Group has over 50 projects with domestic and international operations in 14 countries. The following are key project highlights.

#### Projects in Southeast Asia

PTTEP Group’s primary operational base is in Thailand, with projects located across Southeast Asia including the Republic of the Union of Myanmar (Myanmar), Malaysia, the Socialist Republic of Vietnam (Vietnam), and the Republic of Indonesia (Indonesia). In Q2/2023, the average sales volume from projects in Thailand is 295,986 BOED, accounting for 67% of total sales volume. Average sales volume from other countries in this region is 91,316 BOED, which accounted for 21% of total sales volume.



Projects	Participation Interest	Operator	Activities
<b>Projects in Thailand</b>			
<i>Production Phase</i>			
1. S1	100%	PTTEP	The project is producing crude oil, natural gas and liquefied petroleum gas (LPG). Currently, the project continuously drills exploration and development wells to maintain its production level. Environmental impact assessments are also undertaken in both existing and new production areas.

Projects	Participation Interest	Operator	Activities
2. Arthit	80%	PTTEP	The project is producing natural gas and condensate. In Q2/2023, the project produced gas from the new production well and was able to produce gas more than the GSA with an average production level of 340 MMSCFD.
3. Contract 4	60%	Chevron	The project is producing natural gas, condensate, and crude oil. In Q2/2023, the project continued to drill additional development wells aiming to maintain production plateau.
4. B8/32 & 9A	25%	Chevron	The project is producing natural gas and crude oil located offshore in the Gulf of Thailand. In March 2023, the buyer's vessel faced an accident during maintenance, leading to an unplanned shutdown. However, the operation is expected to resume in September 2023.
5. G1/61 (Erawan field)	60%	PTTEP	The project is producing natural gas, condensate, and crude oil. On July 28, 2023, the project successfully increased natural gas production from 210 MMSCFD to 400 MMSCFD. Currently, the project is in the process of accelerating well drilling and has plans to install 4 additional wellhead platforms in 2023, with the aim target to increase production level to 800 MMSCFD by April 2024.
6. G2/61 (Bongkot field)	100%	PTTEP	The project is producing natural gas and condensate. Currently, the project is producing natural gas at an average level of 840 MMSCFD and also continuously constructing and installing production platforms and drilling development wells aiming to maintain gas production according to PSC.
7. Malaysia-Thailand Joint Development Area (MTJDA)	50%	CPOC	The Project is producing natural gas. In Q2/2023, the project continuously drilled production wells to maintain production levels. In addition, the project is planning to drill exploration and development wells to prepare for the further development phase.
<i>Exploration Phase</i>			
8. G1/65	100%	PTTEP	The project is located in the north of the Gulf of Thailand. On June 1, 2023, PTTEP Group signed the PSC, which has a 6-year exploration period and a 20-year production period. Currently, the project is in the process of preparing the work program and budget for approval by the Department of Mineral Fuels to commence petroleum activities.
9. G3/65	100%	PTTEP	The project is located in the south of the Gulf of Thailand. On June 1, 2023, PTTEP Group signed the PSC, which has a 6-year exploration period and a 20-year production period. Currently, the project is in the process of preparing the work program and budget for approval by the Department of Mineral Fuels to commence petroleum activities.

Projects	Participation Interest	Operator	Activities
<b>Projects in Myanmar</b>			
<i>Production Phase</i>			
10. Zawtika	80%	PTTEP	The project is natural gas field located in the Gulf of Moattama. In Q2/2023, the project operated as per development plan, completed drilling 4 appraisal wells and commenced 1 <sup>st</sup> production from phase 1D to maintain the production level.
11. Yadana	37.1%	PTTEP	The project is producing natural gas. Currently, the project is able to produce as planned.
<i>Exploration Phase</i>			
12. Myanmar M3	100%	PTTEP	The project is located offshore in the Gulf of Moattama. The project is currently pending development.
<b>Projects in Malaysia</b>			
<i>Production Phase</i>			
13. Malaysia Block K	7.2 - 56%	PTTEP	The project is oil producing field consisting of Kikeh, Siakap North-Petai (SNP), and Gumusut-Kakap (GK) fields located offshore Sabah. In Q2/2023, the project suspended production for 1.5 months to inspect the operation of the oil vessel. Currently, the project has resumed production and is in the process of accelerating production to meet the planned.
14. Malaysia SK309 and SK311	42 – 59.5%	PTTEP	The projects are oil and gas producing fields located in the shallow water offshore Sarawak. Currently, the projects produce condensate and crude oil from infill wells.
15. Malaysia Block H	42 – 56%	PTTEP	The project is located in the deep-water offshore Sabah. In Q2/2023, the project was able to produce natural gas as planned in order to ensure the buyer's demand.
<i>Exploration Phase</i>			
16. Malaysia SK410B	42.5%	PTTEP	The project is located in offshore Sarawak and is in the Front-End Engineering Design (FEED) at Lang Lebah. In addition, the project has commenced commercial negotiations to support the Final Investment Decision (FID) as planned. For Paprika, the project has also started a study for future development.
17. Malaysia SK417	80%	PTTEP	The project is located in shallow water offshore Sarawak and is in the preparation process for drilling at Nangka to evaluate the field potential along with studies and preparation for drilling another exploration well. In addition, the project has started a study and development at Dokong for future development.
18. Malaysia SK405B	59.5%	PTTEP	The project is located in shallow water offshore Sarawak and is currently in the process of developing the Sirung field. The production potential study is ongoing, and it is expected to be completed in Q3/2023. In addition, the project completed drilling 2 exploration wells according to the plan of 2023. Currently, the project is in the process of evaluating the results after the discovery of petroleum potential.

Projects	Participation Interest	Operator	Activities
19. Malaysia SK438	80%	PTTEP	The project is located in shallow water offshore Sarawak. Currently, the project is in the process of drilling 1 exploration well and preparing to drill another exploration well in Q3/2023.
20. Malaysia SK314A	59.5%	PTTEP	The project is located in shallow water offshore Sarawak. In Q2/2023, the project was in the process of reviewing the petroleum potential of the exploration block under the exploration extended period phase 3. Currently, the project is evaluating the results, which will further inform the joint venture.
21. Malaysia PM407	55%	PTTEP	The project is located in shallow water offshore Peninsular. In Q2/2023, the project was in process of commencement to drill the 1 <sup>st</sup> exploration well according to commitment.
22. Malaysia PM415	70%	PTTEP	The project is located in shallow water offshore Peninsular. In 2022, the project completed post-drilling evaluation which does not have sufficient petroleum potential for commercial development. In Q2/2023, the project was in the process of block relinquishment after the exploration period had ended.
23. Malaysia SB412	60%	PTTEP	The project is located in shallow-deep water offshore Sabah. In Q2/2023, the project has performed the geological and geophysical studies to evaluate the petroleum potential of the block.
24. Malaysia SK325	32.5%	PCSB	The project is located in shallow water offshore Sarawak and is currently in the preparation process to commence geophysical and 3D seismic.
<b>Projects in Vietnam</b>			
<i>Production Phase</i>			
25. Vietnam 9-2	25%	HV JOC	The project is producing natural gas and crude oil located offshore southeast of Vietnam. In Q2/2023, the project was under negotiation and preparation for Petroleum Contract Extension for another 5 years, which result is expected in 2023.
26. Vietnam 16-1	28.5%	HL JOC	The project is producing natural gas and crude oil located offshore southeast of Vietnam. In Q2/2023, the project was under negotiation and preparation for Petroleum Contract Extension for another 5 years, which result is expected in 2023.
<i>Exploration Phase</i>			
27. Vietnam B & 48/95 and the Vietnam 52/97	8.5% 7%	Vietnam Oil and Gas Group	The projects are located offshore Vietnam. It is currently in the negotiation process on commercial terms in order to push forward the Final Investment Decision (FID) with targeted first production by the end of 2026, and gradual ramp up to 490 MMSCFD, including the production from Vietnam 52/97 Project.

Projects in the Middle East and Africa



Projects	Participation Interest	Operator	Activities
<b>Projects in Sultanate of Oman (Oman)</b>			
<i>Production Phase</i>			
28. Oman Block 6 (PDO) and Oman Block 53	2% 1%	Petroleum Development Oman / Occidental	Oman Block 6 is the largest potential onshore oil producing asset in Oman, and the Oman Block 53 Project is a large producing onshore oil field located in the southern part of Oman. Both projects continue to produce as per OPEC+ agreement.
29. Oman Block 61	20%	BP	The project is producing natural gas and condensate. Currently, the project has a full production capacity of natural gas and condensate at 1,500 MMSCFD and 57,000 barrels per day (BPD), respectively.
<i>Exploration Phase</i>			
30. Oman Onshore block 12	20%	TotalEnergies	The project is located in central Oman. Currently, the project is in the geological and geophysical studies process and has planned to drill 2 exploration wells in 2023-2024.
<b>Project in United Arab Emirates (UAE)</b>			
<i>Exploration Phase</i>			
31. Abu Dhabi Offshore 1	30%	Eni	The project is located in offshore northwest of Abu Dhabi. Currently, the project is in the geological study and evaluation process of the petroleum potential for the future exploration plan and preparation of geological and geophysical study reports.
32. Abu Dhabi Offshore 2	30%	Eni	The project is located in offshore northwest of Abu Dhabi. In Q2/2023, the project prepared the development plan for the discovery area which is currently under review by the government.



Projects	Participation Interest	Operator	Activities
33. Abu Dhabi Offshore 3	30%	Eni	The project is located in offshore northwest of Abu Dhabi. Currently, the project is in progress of petroleum potential evaluation for the preparation of appraisal well and exploration well which to be drilled in 2024-2028.
34. Sharjah Onshore Area A	25%	Eni	The project is located onshore in the central part of Sharjah. Currently, the project is in the process of conducting further G&G studies and preparing to drill 1 exploration well in 2024.
35. Sharjah Onshore Area C	25%	Eni	The project is located onshore in the central part of Sharjah. The project is in the process to interpret 3D seismic survey in order to assess the petroleum potential.
<b>Projects in People's Democratic Republic of Algeria (Algeria)</b>			
<i>Production Phase</i>			
36. Algeria 433a & 416b	35%	GBRS	The project is crude oil producing located onshore in the eastern part of Algeria. The average crude oil production in Q2/2023 was at approximately 16,500 BPD.
37. Algeria Hassi Bir Rekaiz	49%	GHBR	The project is located onshore in the eastern part of Algeria. In Q2/2023, the project successfully achieved the production target for the first half of the year with an average crude oil production of 13,000 KBPD and it is currently in the process of increasing production to 17,000 BPD at the end of 2023.
<b>Project in Republic of Mozambique (Mozambique)</b>			
<i>Development Phase</i>			
38. Mozambique Area 1	8.5%	TotalEnergies	The project is a large LNG project located in offshore Mozambique. From April 2022, all construction activities were suspended due to Force Majeure resulting from unrest near the project site. However, the current situation has continuously improved, and the project is currently in the process of evaluating the possibility of returning to the area.
<b>Project in Republic of Angola (Angola)</b>			
<i>Development Phase</i>			
39. Block 17/06	2.5%	TotalEnergies	The project is located offshore west coast of Angola. On December 16, 2022, PTTEP Group has entered into a Sale and Purchase Agreement (SPA) to sell all participation interest in the project. Completion of the sale is expected in the year 2023 subject to the conditions prescribed in the SPA.

### Projects in Australia

Projects	Participation Interest	Operator	Activities
<b>Projects in Commonwealth of Australia (Australia)</b>			
<i>Exploration Phase</i>			
40. PTTEP Australasia	90 - 100%	PTTEP	This Project is located in Australia. In Q2/2023, the project completed the abandonment of 2 wells in the AC/RL4 and AC/RL12 fields. It has also relinquished the AC/RL4 field, which expired on June 15, 2023. Currently, the project is waiting for government approval for the further process.

### Projects in the Americas



Projects	Participation Interest	Operator	Activities
<b>Projects in Canada</b>			
<i>Exploration Phase</i>			
41. Mariana Oil Sands	100%	PTTEP	The project is located in Alberta, Canada, and underway for reclamation activities according to government's conditions.
<b>Project in United Mexican States (Mexico)</b>			
<i>Exploration Phase</i>			
42. Mexico block 12 (2.4)	20%	Petronas	The project is located in the Mexican Ridges, Western part of Gulf of Mexico. The exploration well drilling was completed according to work commitment under the concession, with no petroleum potential confirmed. Currently, the project is in the process of block relinquishment to the government.
43. Mexico block 29 (2.4)	16.67%	Repsol	The project is located in the Campeche basin, southern part of Gulf of Mexico. Currently, the project is undergoing a study to prepare the future petroleum development plan.

## Decarbonize

For our decarbonization efforts, we have made progress as follows:

- Currently, PTTEP has reduced the accumulated greenhouse gas (GHG) emissions by approximately 1.9 million tonnes of CO<sub>2</sub> equivalent or greenhouse gas emissions intensity by 11.2% from the 2020 base year through exploration and production portfolio and well management as well as GHG reduction initiatives. In addition, PTTEP is conducting a front-end engineering design (FEED) at Arthit field and a feasibility study at Lang Lebah field for the Carbon Capture and Storage (CCS) Project. Currently, the Company is preparing for integration of GHG reduction concept into PTTEP's business activities.
- PTTEP has foreseen an opportunity to support greenhouse gas offsetting through initiatives to absorb greenhouse gas from the atmosphere. In Q2/2023, PTTEP has maintained and preserved the mangrove forestation initiated in 2022 for the 2<sup>nd</sup> year, covering 1,000 rai-of-land and prepared for additional mangrove forestation covering 4,007.15 rai-of-land. In addition, the Company is gathering information for registration under Thailand Voluntary Emission Reduction program (T-VER) with the Thailand Greenhouse Gas Management Organization (Public Organization) or TGO. PTTEP is also preparing to acquire an additional area of 5,000 rai-of-land for mangrove forestation in 2023 while making arrangements for the land forestation for carbon credits, covering over 21,000 rai-of-land: 6,730 rai-of-land of which under the National Park, Wildlife and Plant Conservation Department while 14,345 rai-of-land under the Royal Forest Department.

## Diversify

AI and Robotics Ventures Company Limited (ARV) is a Ventures Builder with two key groups of operations: 1) ARV-Core is the headquarter engaging in research and development, and provision of solutions using AI and Robotics technologies, as well as ventures ideation, incubation, development, and commercialization; and 2) Startups, which ARV has spun-off into separate legal entities focused on further commercialization and development of their respective deep-tech domains. Key business highlights in Q2/2023 are as follows:

### 1) AI & Robotics Ventures (ARV)

- ARV signed a MOU with SRI International, which is a research institution founded by Stanford University. The objective of this partnership is to enhance Thailand's capabilities in deep technology development by leveraging the PTTEP Technology and Innovation Center (PTIC) and the Eastern Economic Corridor of Innovation (EECi) in Wangchan Valley, located in the Rayong province. The ultimate goal of this collaboration is to propel Thailand towards becoming an advanced innovation hub in the ASEAN region. The signing ceremony of this MOU took place in Menlo Park, California, United States.
- ARV successfully tested the Autonomous Wellhead Platform Robot under real working conditions at an offshore wellhead platform. Users were able to remotely operate and analyze data using ARV's Tele-operations Platform. The main goal of this robot is to perform a range of tasks on a wellhead platform, including operating valves, collecting fluid samples, and conducting patrols to detect abnormal gas levels, hydrogen sulfide, or unusual temperatures.

### 2) ARV's Start-ups

**ROVULA: Specializing in intelligent underwater inspection, maintenance, and repair**

- ROVULA has expanded its business into Vietnam, with a focus on the renewable energy sector. ROVULA signed an agency agreement with Oilfield Services Co., Ltd. and participated in the bidding process for the Subsea Cable Inspection Project for the renewable energy company in Southeast Asia that operates an Offshore Wind Farm Project in southern Vietnam. The announcement of the bidding results is anticipated to occur in July this year.

- ROVULA has focused on completing the final stage of product development for the Xspecter Platform. This platform is a cloud-based data management and analysis system for subsea inspections, enabling users to access real-time inspection results while conducting offshore operations. The commercial launch of the Xspecter is scheduled for August this year.
- ZeaQuest, the joint venture between ROVULA and Mermaid Subsea Services Company Limited (Thailand), was awarded a contract for the Marine Growth Cleaning Project which is a part of the platform decommissioning project in the Gulf of Thailand. The execution period for this project is 3 months, scheduled to start in August this year.

#### SKYLLER: Specializing in the inspection of critical infrastructures through robotics and artificial intelligence

- On May 17 – 19, 2023, SKYLLER exhibited the Skyller Platform at the Future Energy Asia Exhibition and Summit 2023 (FEA 2023), at PTTEP's booth, to support the concept of Asia's energy transition towards a sustainable future. Skyller's Platform is an intelligent analytics and computing platform that provides comprehensive inspection services for various infrastructure assets, which analyzes and processes data from drones and other sensors to provide fast, accurate and convenient inspection results. This technology has a wide range of applications for inspections across various industries, including power transmission lines, solar panels, and wind turbines.
- SKYLLER carried out various infrastructure inspections projects, including the Dehydrator, Flare & Equipment Aerial Inspection by Unmanned Aerial Vehicle (UAV) Project in the Malaysia – Thailand Joint Development Area. This project involved using drones to inspect equipment on the production platform during a major maintenance shutdown, enabling a fast initial damage assessment. The operation was successfully completed during May 8 – 17, 2023. In addition, SKYLLER is also involved in an Aerial Survey and Mapping Project for an oil and gas company in Thailand. The project utilizes drones to survey and collect data around oil depots in four provinces, aiming to generate plant digitalization for further utilization. The operation for this project is scheduled to commence in June 2023.

#### VARUNA: Focusing on Smart Agriculture, Forestry and Nature-based Carbontech

- VARUNA exhibited the Smart Forest Solution technology at FEA 2023 at PTTEP's booth. This technology aids in processing and management of forest areas, with a specific focus on reducing greenhouse gas emissions and increasing greenhouse gas sequestration. It includes the "Varuna Land Monitoring Service Forest" platform, which utilizes satellite technology, as well as data and images from multispectral drones powered by artificial intelligence, to analyze and manage of greenhouse gas sequestration in forest areas. Moreover, it provides a dashboard to display results and enables tracking and analyzing of changes in green areas, as well as monitoring tree health. Additionally, the "KANNA" application allows users to input tree details and locations to assess tree types and indicate their carbon dioxide absorption capacity, measured in tons. This technology aims to promote sustainable carbon credits within the forestry sector.
- VARUNA successfully developed its Geospatial distributed environment service, which offers an improvement of processing speeds by up to 7 times; reducing satellite image processing time from approximately 5 minutes per image to only 45 seconds per image. Additionally, the upgrade service significantly reduces the processing time from 3 days to less than 1 day. As a result, VARUNA currently possesses the most up-to-date Geospatial data service offering near real-time information.
- In the second quarter, VARUNA closed its Series A fundraising round. The increased investment and participation of strategic investors in this round will strengthen VARUNA's position as a comprehensive leader in nature-based carbon credits. This includes the verification and supply of carbon credits, as well as the development of the carbon credit trading platform. These efforts aim to elevate the standards and quality of the carbon credit market in Thailand, in preparation for the anticipated growth in the near future. The completion of the fundraising for this round is expected by the third quarter.

**CARIVA: Dedicating to personalized digital health solutions leveraging data, networks, and DeepTech**

- CARIVA collaborated with Tepakorn Hospital, Bangkok Sanam Chan Hospital, and Health Plaza Co., Ltd (a subsidiary of Bangkok Dusit Medical Services Public Co., Ltd or BDMS) to launch the first "Smart Medical Room" at Ingredion (Thailand) Co., Ltd in Nakhon Pathom Province. The project involves the participation of occupational health physicians from Tepakorn Hospital, who provide services through a comprehensive healthcare mobile application. This collaboration incorporates modern medical equipment, enabling preliminary health evaluations to be conducted before consulting with a doctor via telemedicine. The aim of the Smart Medical Room is to offer standardized and comfortable medical services to employees.
- CARIVA successfully developed PreceptorAI, a medical artificial intelligence technology that assists medical professionals in searching, summarizing, and answering medical questions. It is designed to incorporate information from the clinical practice guidelines applicable in each country where it is available. Currently, the PreceptorAI system is undergoing testing by real users to gather feedback and suggestions for further enhancing the product. A full operational deployment of PreceptorAI is expected by the end of 2023.
- On June 14 – 15, 2023. CARIVA participated in the "Thailand HR Tech 2023" event, organized by the Personnel Management Association of Thailand (PMAT). At the event, CARIVA showcased two health solutions: the NextCercise application, which aims to increase employee engagement in healthcare and reduce the workload of the human resources department in organizing health promotion activities, and the ARVIC application, which provides annual health checks for employees. The ARVIC application also displays health check results through an HR Dashboard, making it easier for the HR Department to collect and manage employee health data. Additionally, the PreceptorAI feature in the ARVIC application allows users to assess initial symptoms and request medical information.

**BEDROCK: Specializing in Location Intelligence**

- BEDROCK disseminated and promoted its proprietary City Digital Data Platform through workshops and seminars, with the aim of elevating local administrators to become professional developers and fostering social coordination among local governments, the private sector, and educational institutions. This effort enables the application of knowledge, technology, artificial intelligence, and innovation in carrying out various missions, maximizing operational efficiency. In the first half of 2023, BEDROCK conducted these set of sessions eight times, with the participation of over 100 organizations nationwide.
- BEDROCK collaborated with Cariva Thailand to develop and test dependent care solutions; BEDROCK has developed the Dependent Person Map, which enables responsible personnel or organizations to access the positions and important details of dependent patients. The system is integrated with fall detection tools and basic health monitoring devices (Care kit) capable of measuring body temperature, conducting blood tests, monitoring blood oxygen levels, and checking blood sugar levels. These devices work in conjunction with Cariva's Care Kit application, which collects data and displays health check results for users. Initial testing of this solution will be conducted in Khon Kaen Municipality, and if successful, it will be expanded to other municipalities in the future.

**BIND: Focusing on bringing Digital Identity for Corporations and juristic entities**

- BIND's business plan during the previous quarter was primarily focused on banking customers in Southeast Asia. BIND has successfully obtained an in-principle mandate from a leading state-owned commercial bank in Thailand for the implementation of the Digital Corporate Identity (DCID) system, aiming to streamline the Corporate Know-your-customer (KYC) and onboarding processes. Moreover, BIND has established a robust sales pipeline in Thailand and across Southeast Asia including local commercial banks, as well as leading global financial

institutions with a strong corporate presence in Thailand. Furthermore, BIND has been working towards introducing the DCID system into Indian financial institutions. After the initial feasibility discussions with several renowned banks in India, BIND expects to sign its first deal with one of the banks in India later this year.

- BIND has been consistently enhancing its DCID product by introducing a range of new features including Anti-Money Laundering (AML) check, AI-assistant for onboarding, AI-assistant in pre-sales activities of banks, as well as collaboration modules to facilitate interactions between banks and corporates. BIND plans to launch these features in quarter 3. In addition, BIND is developing two new features for the Thailand banking sector. The first feature is an e-corporate seal solution that utilizes NFT technology to enhance document authentication, offering increased security and efficiency for businesses in Thailand. The second feature involves the integration with the Revenue Department for e-stamping, which facilitates e-stamping procedures within the banking framework. For the Indian market, BIND is integrating its solution with all local databases, ensuring a seamless and complete localization process.

## Other Updates on Beyond E&P Businesses

### Gas to Power Project

The Myanmar government granted PTTEP an exclusive right to develop the Integrated Domestic Gas-to-Power Project since 2020. The project has been delayed from the current situation in Myanmar.

### Green e-methanol Project

PTTEP and another 5 multinational companies have signed a MOU on a 'Green Methanol Value Chain Collaboration' to explore the feasibility of establishing a green e-methanol pilot plant in Singapore. Green e-methanol is being considered as one of the candidates for alternate fuel to reduce greenhouse gas emissions in various industries, including the maritime industry, which has legal frameworks and standards such as the EU Emission Trading System (EU ETS), Fuel EU Maritime, and the International Maritime Organization (IMO) decarbonization target. Moreover, the marine industry has ordered a significant number of vessels powered by methanol fuel, which can significantly reduce carbon dioxide emissions and support the company's goals of becoming a low-carbon organization.

### Green Hydrogen Project

PTTEP's subsidiary FutureTech Energy Ventures Co., Ltd. (FTEV) and its partners, consisting of POSCO Holdings, Samsung Engineering Co., Ltd., Korea East-West Power Co., Ltd., Korea Southern Power Co., Ltd., and ENGIE's subsidiary MESCAT Middle East DMCC, have been awarded the Green Hydrogen Concession Block in Oman and entered into the Project Development Agreement and Sub-Usufruct Agreement with Hydrogen Oman SPC (Hydrom) for the exclusive business development and production rights of green hydrogen project in Block Z1-02 for 47 years. The awarded block is located in Duqm, the eastern part of Oman, covering area approximately 340 square kilometers. The consortium will carry out the feasibility and technical studies in order to finalize the total capital expenditure requirement for the project. The project is expected to commence production in 2030 with a capacity of approximately 220,000 tons of green hydrogen per year, generated from 5 gigawatts (GW) of installed renewable energy from solar and wind. Majority of green hydrogen production output will be converted into green ammonia with the capacity of 1.2 million tons per year for exporting to South Korea.



### Carbon Capture and Storage (CCS) Project

- PTTEP and PTT Group companies signed a MOU to conduct a feasibility study on the application of Carbon Capture and Storage (CCS) under the concept of CCS Hub Model. The study started off in PTT Group's operational sites in Rayong and Chonburi provinces, targeting the reduction of emissions from the Group and nearby industries.
- PTTEP, INPEX CORPORATION (INPEX) and JGC Holdings Corporation (JGC) have initiated a collaboration to explore the potential development of a CCS Project in Thailand, aimed at reducing greenhouse gas emissions from industries in the future.

### Solar Farm Project

The Solar Farm Project is located in Lan Krabue District, Kamphaeng Phet Province, covering an area of approximately 110 rais and has a capacity of approximately 9.98 megawatts. The objective of this project is to help reduce carbon dioxide emissions by generating electricity from renewable energy for use in the S1 Project. The project has supplied the electricity to S1 Project since June 29, 2023.



## Business Outlook

### *Oil Price Outlook*

On the demand side, the third quarter expects an upsurge in crude oil demand driven by seasonal needs in western countries and a gradual economic recovery in China. Nevertheless, this rising demand is offset by worries over a global economic slowdown amid the stringent monetary policies of the US Federal Reserve and EU central banks, which concerned about persistent high inflation levels, consider it essential to continue raising interest rates as a measure to curb inflation.

On the supply side, OPEC+ has reached an agreement to reduce production by more than 3.66 MMBPD from May 2023 to December 2024. Additionally, in July and August, Saudi Arabia announced further production cuts of 1 MMBPD, aiming to uphold stability in crude oil prices in the world market. As a result, it is anticipated that crude oil supply in the global market will tighten during the third quarter.

PTTEP anticipates a slight tightening of crude oil supply in the second half of 2023. However, the market remains concerned about the economy as a key factor influencing crude oil prices. As a result, the price of Dubai crude oil fluctuated within the range of 70 to 80 USD/barrel, influenced by various factors, including central bank's policy interest rate adjustments, OPEC+ oil production policy, SPR supply policy, and the ongoing Russian-Ukrainian war.

### *LNG Market Outlook*

The oversupply situation in the global LNG market is expected to persist throughout 2023, with the total production capacity of existing and upcoming LNG projects increasing from 2022 by 20 MTPA to 430 MTPA (approximately 5% growth from 2022), while demand for LNG is expected to be around 412 MTPA (source: FGE as of June 2023). The average 2023 Asian Spot LNG price is forecasted to range between 13 – 17 USD/MMBTU (source: PIRA as of May, Wood Mackenzie and FGE as of June 2023). The main factors weighing the Asian Spot LNG prices down are record-high inventory levels in Europe and Northeast Asia from milder winter than forecasted, more power generation from nuclear and renewables, and soft European industrial demand due to weak economic outlook. However, LNG demand is expected to gradually increase from market liberalization in several Asian countries as well as Europe's and Asia's pre-winter restocking. The market will also depend on China's demand recovery to balance the surplus.

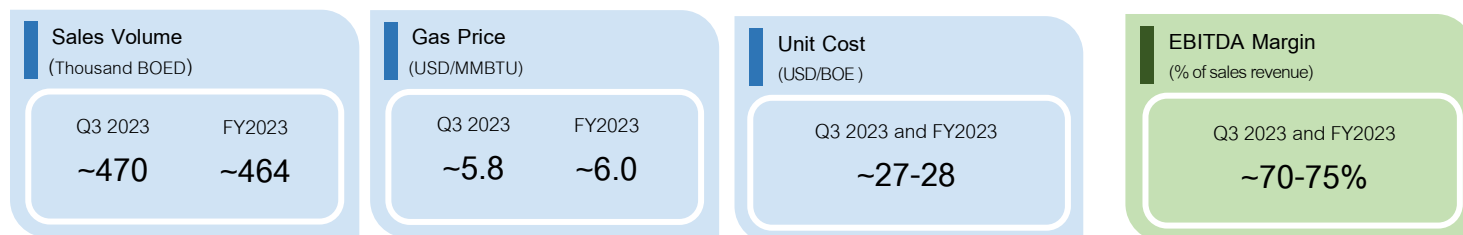
### *Thai Economy and Foreign Exchange Outlook*

The Bank of Thailand expects the economy to expand at 3.6% in 2023, primarily driven by the recovery of Thailand's tourism industry. Foreign tourist arrivals increased beyond expectation, particularly from Malaysia and Europe, in the first half of the year. It is also anticipated to see further recovery in the second half of 2023. Moreover, private consumption has resumed its role as a growth driver for the Thai economy. However, merchandise exports are expected to recover gradually, supported by the rebound of demand of major economies and China. Regarding inflation, the Bank of Thailand foresees it falling within the target range of 2.5%. Although this level is relatively high compared to the past, it is anticipated to decrease further in 2024.

In terms of the Thai Baht's performance in 2023, it is expected to remain volatile and potentially depreciate in the short term due to uncertainties arising from new political policies and the formation of a new government. Additionally, the US Federal Reserve's monetary policy, driven by high inflation data, is expected to lead to two more interest rate hikes. However, as Thailand's tourism industry and political stability are foreseen to improve, the THB is projected to appreciate in the second half of 2023.

### PTTEP's performance outlook for the third quarter and the year 2023

PTTEP's performance depends on three major factors including sales volumes, gas price and unit cost with guidance as follows.



Note: 1. The sales volume includes the sales volume from ADNOC Gas Processing (AGP)

2. The assumption is based on average Dubai price in 2023 of 75-80 USD/Barrel

3. Including increased sales volume from G1/61 sole investment

4. EBITDA margin: A percentage of Earnings before interest, taxes, depreciation, and amortization to the Sales Revenues and Revenue from pipeline transportation

#### Sales Volume:

PTTEP expects the average sales volume for the third quarter and full year 2023 to be approximately 470,000 and 464,000 barrels of oil equivalent per day, respectively. Sales volume is expected to decline in 2023, compared to the previous year, as a result of lower sales volume from overseas projects.

#### Sales Price:

- PTTEP's liquid prices will fluctuate according to global crude prices.
- PTTEP's gas price formulas are partially linked to oil prices with reference to average historical prices ranging from the past 6 to 24 months. The average gas price for the third quarter and full year 2023 is estimated at approximately 5.8 and 6.0 USD/MMBTU, respectively, lower than the previous year, reflecting more sales volume contribution from the G1/61 (Erawan) and the G2/61 (Bongkot) Project under Petroleum Sharing Contracts, which the gas price will be lower, compared to the concession regime. Additionally, the lower Dubai price assumption also affects the gas price.
- The Company has entered into oil price hedging contracts, where the outstanding volume as at the end of the second quarter of 2023 was 3.2 million barrels. The Company has consistently monitored crude oil price movements and has the flexibility to adjust its hedging plan as appropriate.

#### Unit Cost:

For the third quarter and full year 2023, PTTEP expects to be able to maintain unit cost in the range of 27 – 28 USD/BOE, lower than the reported unit cost of 2022 mainly from lower royalty expense per unit, as there are higher sales volume contributions from projects under Production Sharing Contract regime, couple with a decline in average selling price. Besides, a drop in depreciation expense per unit is also anticipated.