



Executive Summary

During Q3/2023, average Dubai crude oil price rose to 86.6 USD/barrel, compared to 77.6 USD/barrel in Q2/2023. This increase was primarily driven by tight oil supply from extended production cuts by Russia and Saudi Arabia until the end of the year, ongoing tensions between Russia and Ukraine, a decrease in US crude oil inventories, and a seasonal hike in oil demand from Western countries. Looking ahead into Q4/2023 and Q1/2024, Dubai crude price is expected to fluctuate within the range of 80 – 90 USD/barrel. The key factors to monitor include economic growth outlook, central bank's policy interest rate adjustments, OPEC+ and non-OPEC+ production, strategic petroleum reserve (SPR) supply, the ongoing conflict between Russia and Ukraine, and tensions between Israel and Hamas, which is probable to escalate.

PTTEP made several progress in its E&P operations as planned in Q3/2023. Firstly, the G1/61 (Erawan) Project had accelerated additional well drilling and wellhead platforms installation, with the aim to increase production level to 800 MMSCFD by April 2024. Next, the Arthit Project has been able to maintain an average production level of 350 MMSCFD, surpassing daily contract quantity (DCQ) level. Moreover, PTTEP acquired an additional participation interest in G12/48 Project from TotalEnergies EP Thailand, resulting in the company's ownership increasing to 100% upon completion. This project is located near the G2/61 Project, which PTTEP is an operator. In terms of progress on an overseas project, Algeria Hassi Bir Rekaiz Project successfully achieved the production target with an average crude oil production increasing from 13,000 BPD to 17,000 BPD in August 2023.

On the new business front, VARUNA, a subsidiary of AI and Robotics Ventures Company Limited (ARV), introduced the Varuna Land Monitoring Forest platform, which has been deployed to assist an energy firm in Thailand in monitoring changes in green areas and displaying the outcomes of reforestation efforts as well as quantifying the amount of carbon dioxide absorbed. Additionally, Zeaquest, a joint venture between ROVULA and Mermaid Subsea Services Company Limited (Thailand), has successfully secured a contract to provide subsea structural inspection and maintenance services in the Gulf of Moattama, Myanmar.

For the financial results in Q3/2023, PTTEP reported a decline in net profits, compared to the previous quarter. The decrease was primarily due to losses from non-operating items, which were mainly the foreign exchange forward contracts and oil price hedging instruments, where net gains from these items were reported in Q2/2023. The profits from normal operation also dropped, despite an increase in sales volume to 467,452 KBOED in Q3/2023, attributed to higher liquid sales from the Oman and Malaysia Projects as well as the G1/61 Project with the production ramping up to 400 MMSCFD for the first full quarter, couple with the average selling price rise to 48.62 USD/BOE, thanks to global oil price rally. However, the unit cost increased to 29.12 USD/BOE, together with higher tax expenses from Oman and Malaysia Projects. As at the end of Q3/2023, PTTEP had total assets of 24,719 MMUSD, of which 3,036 MMUSD was cash on hand, while total liabilities were at 10,627 MMUSD, of which 3,601 MMUSD was interest-bearing debt. Total shareholders' equity stood at 14,092 MMUSD with debt-to-equity ratio at 0.26.

Table of key financial results

(Unit: Million US Dollar)	Q2 2023	Q3 2023	Q3 2022	Inc. QoQ	Inc. YoY	9M 2023	9M 2022	Inc. YTD
Total Revenues	2,074	2,292	2,617	+218	-325	6,646	7,008	-362
Revenue from sales *	1,924	2,193	2,388	+269	-195	6,310	6,801	-491
EBITDA **	1,505	1,651	1,838	+146	-187	4,772	5,255	-483
Profit for the period	610	514	664	-96	-150	1,694	1,581	+113
Basic earnings per share (Unit: US Dollar)	0.14	0.13	0.17	-0.01	-0.04	0.41	0.40	+0.01
Profit (Loss) from normal operation	585	539	706	-46	-167	1,717	1,922	-205
Profit (Loss) from non-operating items	25	(25)	(42)	-50	+17	(23)	(341)	+318

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

** Excluded impairment loss on assets in Brazil which was recognized during 2022.



Strategies and Business Management

Strategies

PTTEP operates under the concept of “From We to World” and supports United Nations Sustainable Development Goals (UN SDGs) 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:

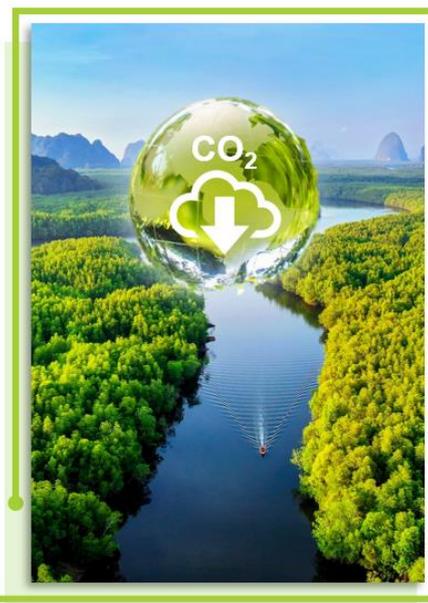


Drive Value

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

Decarbonize

- Manage E&P for lower carbon portfolio to reach Net Zero Greenhouse Gas Emissions by 2050. This goal covers both Scope 1 (direct emissions) and Scope 2 (indirect emissions from energy usage) 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 the development of 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)
- Explore 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:

1 *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. The main works progress are as follows:

- Conduct GRC Maturity Assessment to reflect GRC adaptation in PTTEP and Malaysia Asset in order to perform gap improvement and level up GRC Maturity Level in 2030.
- Conducted PTTEP ERM maturity assessment, the result is compared favorably to the benchmark. Also continually enhance Risk Management System by leveling up Chatbot to provide solutions corresponding to queries regarding Risk Management System and preliminary use Chatbot as a tool to communicate to relevant staff on risks related issues.
- Developed ONE BCMS as to improve Business Continuity Management (BCM) management performance by centralized management and combine five ISO 22301 BCMS certificates to only one certificate.
- Continually develop GRC One Digital System by adding Business Continuity Management status reporting.
- 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 and sharing GRC practices to other Thai Listed Companies.

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 Q3/2023, PTTEP revised its human rights risk assessment methodology in terms of severity and likelihood, aiming to enhance its relevance to human rights issues. Furthermore, PTTEP has launched an intermediate-level human rights e-learning course designed to enhance employees' understanding so they can proactively prevent human rights violations arising from all operations. The course encompasses a wide range of topics, including employees, safety, security, health, and environment (SSHE), supply chain and communities.

PTTEP has Safety, Security, Health and Environment Management System (SSHE MS) to minimize risks and impacts from its operations. In Q3/2023, PTTEP Lost Time Injury Frequency (LTIF) was 0.08, while the Total Recordable Incident Rate (TRIR) was 0.64 case per 1 million man-hours. The LTIF and TRIR were better than 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.

2 *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 Q3/2023, PTTEP concluded data to support Final Investment Decision (FID) for the expansion of Arthit Project's wellhead platform (WHP) topside reuse with business partners. Furthermore, PTTEP focuses on replacing landfill waste disposal with alternative methods to create value from waste e.g., waste to energy, where the heat energy generated is utilized for electricity production and the biodegradable organic waste is used to produce compost or biogas. In addition, PTTEP has considered methods for waste management that involve recycling waste materials, thus enabling them to be reused to support sustainable waste management practices.

- 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 Q3/2023, following the signing of a Memorandum of Agreement (MOA) for the study of marine habitat development, using petroleum platform jackets as artificial reefs for sustainable fisheries in the Gulf of Thailand, a kick-off meeting involving PTTEP and the project's advisory committee comprising executives from 5 collaborating agencies: Department of Mineral Fuels, Royal Thai Navy, Thai Maritime Enforcement Command Center, Department of Marine and Coastal Resources and Department of Marine was held. Additionally, the meeting was joined by the Thai Fisheries Association and the local fishermen's associations, as well as a project consultant. The purpose of this meeting was to present the study's scope in accordance with the MOA and the project's implementation plan, as well as gathering valuable feedbacks and recommendations for future research endeavors.
 - 2) Sustainable Ocean Health and Blue Carbon Solutions: PTTEP has initiated an ocean current mapping and seawater surface temperature study using buoy and satellite in collaboration with Hydro-Informatics Institute (HII) and Kasetsart University. In Q3/2023, PTTEP successfully deployed ocean current mapping buoys covering all seasons as planned. The buoys are equipped with temperature sensor and location tracking by satellite, enabling real-time data transmission through PTTEP Ocean Data Platform. Besides, the buoys have the capacity to operate continuously with a maximum duration of 40 days. The project marks the first in Thailand to deploy current mapper buoys from an offshore petroleum platform. The data collected is considered valuable for the integration of oceanographic research in the Gulf of Thailand, serving as key inputs for ocean conservation, emergency planning, including the enhancement of ocean mathematical models such as marine debris dispersion prediction, climate change impact monitoring and potential impact to ecosystem.
 - 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 Q3/2023, through the Company's continuous promotion of juvenile aquatic animal aquaculture, PTTEP was able to release over 1,500 million juvenile aquatic animals back to the nature. 8 fish homes were also installed in marine conservation areas, enabling 11.8 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 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 10 seafood product value enhancement groups. In addition, PTTEP organized 11 networking events to support marine resource conservation, with a total of 1,315 participants.

3 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 Q3/2023, the company maintained its cash on hand of approximately 3,036 MMUSD and interest-bearing debt was 3,601 MMUSD. Its debt-to-equity ratio was consequently at 0.26, which is in line with the Company's financial policy.

On August 29, 2023, PTTEP paid the interim dividend for the first-half operation at the of Baht 4.25 per share, totaling of 495 MMUSD. After dividend payment, PTTEP still has sufficient liquidity for operation and investment, 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.

4 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 Q3/2023, there are 68 projects under research and development and the progress of highlight projects are as follows;

- The condensate treatment technologies, which include chemical demulsifier injection for separating particulate contaminants, adsorbent, and filtration technology, have been implemented in both domestic and oversea assets, resulting in improvement of condensate treatment efficiency and production costs reduction.
- The technology to support pipeline decommissioning activities such as;
 - The decontamination chemicals for pipeline cleaning and intelligent PIG for collecting pipeline surface sample is currently being used for the decommissioning of subsea pipelines in the Gulf of Thailand. The development team is continually developing the equipment for better efficiency and supporting additional pipe sizes so that they can be used at all PTTEP production sites.
 - The development of methods for production wells plugging and abandonment through thermite reactions is successful in prototype phase and is being prepared for field testing in PTTEP's production fields.
- The development of an autonomous robot for performing operating tasks in wellhead platforms and an unmanned aerial vehicle for production platform inspection and equipment delivery is in the process of developing and testing prototype equipment, in PTTEP's production fields by Q4/2023.
- The development of surface coating technology for carbon steel and stainless-steel with diamond-like material to extend the service life of equipment. The prototype of coating machine is currently being tested and expected to complete in Q4/2023. The testing of the coated equipment will be conducted in PTTEP's production field in 2024.
- The development of technology to reduce Greenhouse gas emissions includes:
 - The low heating value flare tip to reduce greenhouse gas emissions: Currently, the front-end engineering design has been completed and procurement is underway to install equipment in G2/61 field in 2024.
 - Carbon-dioxide fixation by artificial reef development: The project aims to develop a method for utilizing carbon dioxide by converting it into minerals to enhance the strength of artificial reefs. Currently, the equipment to

produce prototype artificial reefs is under development, and the production process is being improved to enhance carbon dioxide fixation. There are plans to conduct testing the prototype artificial reefs in collaboration with the Department of Fisheries with the objective of marine resource recovery.

- The development of technology for capturing Carbon dioxide emissions from the exhaust of internal combustion engines: Currently, a feasibility study is underway to assess the potential application of this technology in PTTEP's production fields.
- The development of renewable energy use in production fields to reduce greenhouse gas emissions: The feasibility study is ongoing for various electricity generation technologies such as wave energy, floating solar.
- The direct air capture (DAC) technology development: There are two technologies that are currently being developed which are a solid adsorbent DAC in prototype scale and electrochemical DAC in lab-scale.
- The green energy technology playground project: Currently, the energy storage system is being installed and integrated with the existing renewable energy production technology. The preparations for the installation of hydrogen energy production equipment are underway, which the installation is planned to commence in 2024.
- The flare gas conversion to Carbon Nanotubes is currently underway. The front-end engineering design (FEED) for the pilot production unit is expected to be completed in Q4/2024 and the business feasibility is ongoing. Moreover, Carbon Nanotubes are being developed for various applications such as batteries, energy storage, composite materials, and more.

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 Q3/2023 such as;

- Received 3 awards from IAA Awards for Listed Companies 2022-2023, which was held by the Investment Analysts Association (IAA) and the Stock Exchange of Thailand, namely Outstanding CEO Award, Outstanding CFO Award and Best IR Award for the 2nd consecutive year. The IAA Awards for Listed Companies have covered listed companies in 11 industries that were nominated and ranked high by investment analysts and granted based on management excellence, constant feed of accurate, clear, complete and fast insights, ethical business operations, and good governance.
- Received the top tier award for 2023 Role Model Organization on Human Rights in the State Enterprise Sector for the 5th consecutive year from the Department of Rights and Liberties Protection, Ministry of Justice. The award recognizes PTTEP commitment to operating business by adhering to the principles of good corporate governance, social responsibility, and fundamental human rights at all operational sites. Additionally, the company has prioritized diversity, equity, and inclusion (DE&I) and put in place guidelines to proactively prevent human rights violations while emphasizing the importance of a grievance mechanism and remediation to ensure effectiveness in managing any possible impacts to stakeholders. Additionally, the company is dedicated to building shared responsibility on human rights in the organization.
- Received a SETA Energy Awards 2023 in the Carbon Reduction category, which was granted in recognition of PTTEP's implementation of strategies in pursuit of EP Net Zero 2050 goal as well as its development of relevant technologies and innovations. SETA Energy Awards are organized by the Ministry of Energy in cooperation with GAT International Co., Ltd., and awarded on an annual basis to honor accomplishments for individuals, companies, and organizations in the energy sector.
- Received the HR Excellence Awards 2023, Excellence in Hybrid Working at the HR Excellence Awards 2023 Thailand. The award presentation was organized by Lighthouse Independent Media and demonstrates PTTEP Human Resources management operational excellence for embedding efficient and flexible hybrid work modes into the organization which is the benchmark for all leading companies in Thailand.

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 third quarter of 2023

Crude Oil Price

During Q3/2023, the average price of Dubai crude oil improved to 86.6 USD/barrel, compared to 77.6 USD/barrel in the preceding quarter. This rebound was mainly impacted by tight oil supply as Russia and Saudi Arabia have extended production cuts to the end of the year. Additionally, there was a seasonal surge in oil demand, driven by the summer season in Western countries, which led to heightened travel and tourism activities.

In July, the average price of Dubai crude oil reached 80.5 USD/barrel, rising by approximately 5 USD/barrel compared to the previous month, primarily due to tight supply. This was a result of Saudi Arabia prolonging its production cuts for 1 month and Russia reducing exports further in August, in addition to previous voluntary production cuts. The quantity of crude oil in US inventory also tends to decrease due to rising demand.

In August, Dubai crude price rose further to 86.5 USD/barrel following Saudi Arabia's announcement of an extended voluntary production cuts by 1 MMBPD, lasting through September. Russia similarly declared a 0.3 MMBPD reduction in oil exports for September. Additionally, the drop in US crude oil inventories exceeded analysts' expectations. Moreover, the escalating tensions between Russia and Ukraine continue to be a concerning factor.

In September, the average price of Dubai crude oil reached its peak at 93.3 USD/barrel. Crude oil prices remained this high level following Saudi Arabia's decision to extend the production cuts until the year's end. Russia also extended its reduction in crude oil exports until the end of the year. Meanwhile, the real estate crisis in China appears to be easing, with Country Garden, a major Chinese real estate company, has successfully met its bond repayment schedule. Nevertheless, the market tends to be under pressure due to the persistently weak economic outlook of the European Union. Lastly, an anticipation of an increase in crude oil supply from regions outside of OPEC+ is still key to watch.

Liquefied Natural Gas (LNG) Price

In Q3/2023, the Asian Spot LNG price is on the rise, compared to the second quarter, from an average of 10.90 to 12.55 USD/MMBTU, primarily attributed to labor union strikes in Australian LNG plants and maintenance activities, which affected global LNG supply. The price experienced a slight decrease in July, reaching 11.22 USD/MMBTU due to the maintenance shutdown of Sakhalin II in Russia. However, in August, it picked up to 12.62 USD/MMBTU as a consequence of the continued labor union strike in Australia and this caused the price to continue its upward trend, reaching 13.88 USD/MMBTU in September, with additional maintenance shutdowns at the Continental Shelf in Norway and Cove Point in the United States, including the increased demand as Northeast Asian countries sought to procure Spot LNG as winter season is approaching.

Thailand's Energy Demand

The Energy Policy and Planning Office (EPPO) of the Ministry of Energy reported that domestic energy demand from January to July 2023 increased by 2.8% compared to the same period in 2022, reaching around 2 MMBOED. The rise in energy consumption was mainly due to increased natural gas and LNG consumption for electricity generation following the increase in electricity demand.

Exchange Rates (Thai Baht against US Dollar)

The THB against USD depreciated from 35.59 THB at end of Q2/2023 to 36.56 THB at end of Q3/2023. This depreciation can be primarily attributed to several key factors. Firstly, the Federal Reserve's decision to raise interest rates from 5.00%-5.25% to 5.25%-5.50%, coupled with the expectation of further rate hikes by the year-end to tame inflation. The market then anticipates that the Federal Reserve would maintain higher interest rates for longer than previously expected. Meanwhile, the Bank of Thailand raised interest rates from 2.25% to 2.50% but market's concern over current account deficit and the slower-than-anticipated growth of the Chinese economy caused continuous capital outflows and pressured on THB.

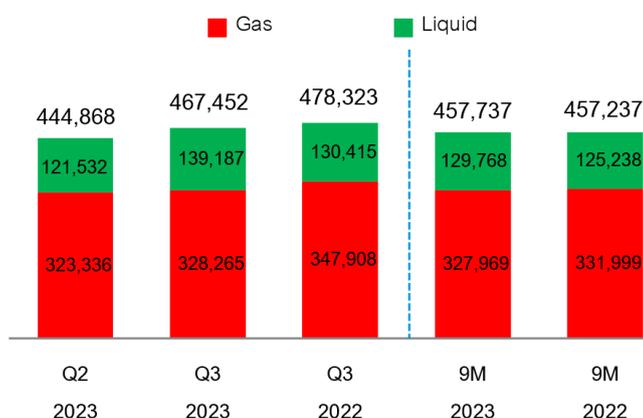


Financial Performance

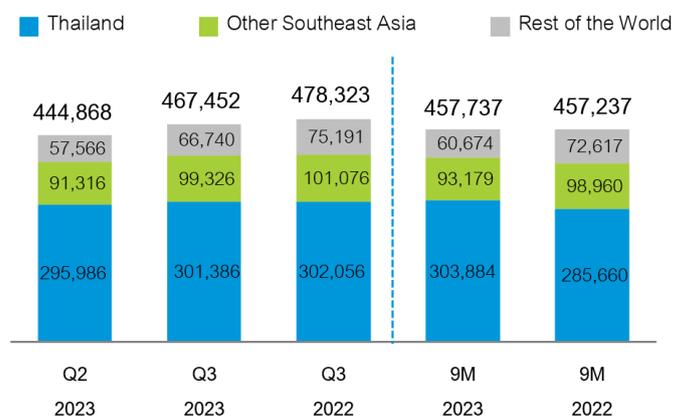
Average Sales Volume and Selling Price

Unit: Barrels of Oil Equivalent per Day

By Product Type



By Geographical Region



Average selling price and Dubai crude oil price (Unit : US Dollar)	Q2 2023	Q3 2023	Q3 2022	Inc. (Dec.) QoQ	Inc. (Dec.) YoY	9M 2023	9M 2022	Inc. (Dec.) YTD
Average selling price (/BOE)	45.72	48.62	53.68	+2.90	-5.06	48.14	53.62	-5.48
Liquid price (/BOE)	73.66	81.89	97.94	+8.23	-16.05	78.10	98.44	-20.34
Gas price (/MMBTU)	5.87	5.75	6.18	-0.12	-0.43	6.05	6.12	-0.07
Average Dubai crude oil price (/BBL)	77.59	86.63	96.68	+9.04	-10.05	81.53	100.29	-18.76

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

For the Third quarter of 2023 compared with the Second quarter of 2023

In Q3/2023, the average sales volume of PTTEP and its subsidiaries (the "Group") increased to 467,452 barrels of oil equivalent per day (BOED) or 5% when compared with Q2/2023 of 444,868 BOED, primarily from G1/61 Project has successfully ramped up its natural gas production from 210 MMSCFD to 400 MMSCFD at the end of June 2023. In addition, the crude oil sales of Malaysia Block K Project increased as a result of the shutdown in the previous quarter for maintenance work on FPSO storage tanks. Meanwhile, the average selling price increased by 6% to 48.62 USD/BOE (Q2/2023: 45.72 USD/BOE).

For the Third quarter of 2023 compared with the Third quarter of 2022

When compared the average sales volume of Q3/2023 to Q3/2022 of 478,323 BOED, the average sales volume decreased by 2%, 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 and G1/61 Project has successfully ramped up the natural gas production to 400 MMSCFD at the end of June 2023. Meanwhile, the average selling price decreased by 9% to 48.62 USD/BOE (Q3/2022: 53.68 USD/BOE).

For the nine-month period ended September 2023 compared with 2022

The average sales volume for the nine-month period ended September 2023, slightly increased to 457,737 BOED when compared with the same period of 2022 (nine-month period of 2022: 457,237 BOED). The increase was primarily due to full period recognition of sales volume from G1/61 Project and G2/61 Project, together with G1/61 Project has successfully ramped up the natural gas production to 400 MMSCFD at the end of June 2023. However, this was offset by lower sales volume from Bongkot Project end of concession and Oman 61 Project due to lower entitlement. On the other hand, the average selling price decreased by 10% to 48.14 USD/BOE (nine-month period of 2022: 53.62 USD/BOE).

Overall Operating Results

For the Third quarter of 2023 compared with the Second quarter of 2023

In Q3/2023, the Group had a net profit of 514 MMUSD. A decrease of 96 MMUSD or 16% from a net profit in Q2/2023 of 610 MMUSD, despite of higher revenue from sales, was primarily due to financial instruments turned from gain in Q2/2023 to loss in Q3/2023, along with an increase in tax expenses. The net profit for Q3/2023 of 514 MMUSD can be separated as following:

The profit from normal operation in Q3/2023 was 539 MMUSD. A decrease of 46 MMUSD from the profit in Q2/2023 of 585 MMUSD, despite of an increase in revenue from sales of 269 MMUSD resulting from higher average sales volume and average selling price, was primarily due to an increase in income taxes of 112 MMUSD, mainly from the projects in Oman and Malaysia. Moreover, operating expenses increased by 90 MMUSD, primarily from Malaysia Project due to higher sales volume and maintenance expenses. In addition, depreciation, depletion and amortization increased by 69 MMUSD, primarily from G1/61 Project due to higher sales volume and additional completed assets, along with Malaysia Project due to higher sales volume. Furthermore, royalties increased by 13 MMUSD mainly from higher sales revenue from projects in Thailand and Malaysia.

The loss from non-operating items in Q3/2023 was 25 MMUSD. A change of 50 MMUSD from the profit in Q2/2023 of 25 MMUSD was primarily from the financial instruments. There was minor loss on foreign exchange forward contracts in Q3/2023 while the Group recognized gain of 27 MMUSD in the previous quarter due to depreciation of THB against USD. Moreover, there was loss on oil price hedging instruments of 20 MMUSD in Q3/2023 (including unrealized loss from mark-to-market of 10 MMUSD) due to an upward trend of forward oil price while gain of 2 MMUSD was recognized in Q2/2023 (including unrealized gain from mark-to-market of 4 MMUSD) from a downward trend of forward oil price.

For the Third quarter of 2023 compared with the Third quarter of 2022

In Q3/2023, the Group had a net profit of 514 MMUSD. A decrease of 150 MMUSD or 23% from a net profit in Q3/2022 of 664 MMUSD was primarily from a decrease in revenue from sales, as well as oil price hedging instruments turned from gain in Q3/2022 to loss in Q3/2023. The net profit for Q3/2023 of 514 MMUSD can be separated as following:

The profit from normal operation in Q3/2023 was 539 MMUSD. A decrease of 167 MMUSD from the profit in Q3/2022 of 706 MMUSD was primarily from a decrease in revenue from sales of 195 MMUSD resulting from lower average selling price and average sales volume. In addition, operating expenses increased by 37 MMUSD, primarily from G1/61 Project and G2/61 Project higher maintenance activities, together with Malaysia Project higher decommissioning costs. However, royalties decreased by 64 MMUSD primarily from higher portion of sales revenue from projects under profit sharing contracts in Thailand, along with lower sales revenue from projects in Malaysia.

The loss from non-operating items in Q3/2023 was 25 MMUSD. A decrease of 17 MMUSD from the loss in Q3/2022 of 42 MMUSD was primarily from impairment loss on assets in PTTEP BL amounting to 95 MMUSD was recognized in Q3/2022. In addition, loss on foreign exchange rate, net of foreign exchange forward contracts, decreased by 22 MMUSD due to less depreciation of THB against

USD in this quarter compared to Q3/2022. Moreover, tax expenses related to functional currency in Malaysia decreased by 13 MMUSD. On the other hand, there was loss on oil price hedging instruments of 20 MMUSD in Q3/2023 (including unrealized loss from mark-to-market of 10 MMUSD) due to an upward trend of forward oil price, while gain of 94 MMUSD was recognized in Q3/2022 (including unrealized gain from mark-to-market of 64 MMUSD) from a downward trend of forward oil price.

For the nine-month period ended September 2023 compared with 2022

For the nine-month period ended September 2023, the Group had a net profit of 1,694 MMUSD. An increase of 113 MMUSD or 7% from a net profit for the nine-month period ended September 2022 of 1,581 MMUSD, despite of lower revenue from sales, was primarily due to lower loss on oil price hedging instruments. The net profit for the nine-month period ended September 2023 of 1,694 MMUSD can be separated as following:

The profit from normal operation for the nine-month period ended September 2023 was 1,717 MMUSD. A decrease of 205 MMUSD from the profit for the nine-month period ended September 2022 of 1,922 MMUSD was primarily from a decrease in revenue from sales of 491 MMUSD resulting from lower average selling price. In addition, operating expenses increased by 156 MMUSD, primarily from non-cash accounting transactions at the end of concession of Bongkot Project, as well as higher sales volume from G1/61 Project and G2/61 Project. Meanwhile, royalties decreased by 173 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, income taxes decreased by 157 MMUSD mainly from projects in Thailand, Oman and Malaysia due to lower profits, along with interest income increased by 88 MMUSD from higher interest rates.

The loss from non-operating items for the nine-month period ended September 2023 was 23 MMUSD. A decrease of 318 MMUSD from the loss for the nine-month period ended September 2022 of 341 MMUSD was primarily from lower loss on oil price hedging instruments of 167 MMUSD (including lower unrealized loss from mark-to-market of 5 MMUSD) due to less upward trend of forward oil price in this period compared to the previous period. Furthermore, the impairment loss on assets in PTTEP BL amounting to 95 MMUSD was recognized during the nine-month period of 2022.

Operating Results by Segments

Net Profit (loss)	Q2 2023	Q3 2023	Q3 2022	Inc. QoQ	Inc. YoY	9M 2023	9M 2022	Inc. YTD
(Unit: Million US Dollar)								
Exploration and production	626	640	610	+14	+30	1,929	1,922	+7
Thailand	384	375	421	-9	-46	1,172	1,319	-147
Other Southeast Asia	173	187	261	+14	-74	524	577	-53
Middle East	39	59	64	+20	-5	166	174	-8
Australia	(1)	-	(31)	+1	+31	(1)	(32)	+31
America	(3)	(2)	(96)	+1	+94	(8)	(107)	+99
Africa	33	19	(10)	-14	+29	72	(19)	+91
Others	1	2	1	+1	+1	4	10	-6
Head office and others	(16)	(126)	54	-110	-180	(235)	(341)	+106
Profit for the period	610	514	664	-96	-150	1,694	1,581	+113

For the Third quarter of 2023 compared with the Second quarter of 2023

For Q3/2023, the Group reported a net profit of 514 MMUSD. A decrease of 96 MMUSD from a net profit in Q2/2023 of 610 MMUSD was primarily from an increase in a net loss from Head Office and Others segment of 110 MMUSD, while there was an increase in a net profit from Exploration and Production segment, mainly from Middle East amounting to 20 MMUSD.

Head Office and Others segment

In Q3/2023, Head Office and Others segment reported a net loss of 126 MMUSD. An increase of 110 MMUSD from a net loss of 16 MMUSD in Q2/2023 was primarily from the financial instruments. There was minor loss on forward foreign exchange contracts in this quarter, while the Group recognized gain in the previous quarter due to THB depreciation. In addition, this quarter, there was loss on oil price hedging instruments due to an upward trend of forward oil price, while in Q2/2023, the Group recognized gain due to a downward trend of forward oil price.

Exploration and Production segment

- Middle East

In Q3/2023, Middle East reported a net profit of 59 MMUSD. An increase of 20 MMUSD from a net profit of 39 MMUSD in Q2/2023 was primarily from an increase in revenue from sales due to higher sales volume from projects in Oman.

For the Third quarter of 2023 compared with the Third quarter of 2022

For Q3/2023, the group reported a net profit of 514 MMUSD. A decrease of 150 MMUSD from a net profit of 664 MMUSD in Q3/2022 was primarily from an increase in a net loss from Head Office and Others segment of 180 MMUSD, while there was an increase in a net profit from Exploration and Production segment, mainly from America amounting to 94 MMUSD, offset with a decrease of 74 MMUSD from Other Southeast Asia.

Head Office and Others segment

In Q3/2023, Head Office and Others segment reported a net loss of 126 MMUSD. A change of 180 MMUSD from a net profit of 54 MMUSD in Q3/2022 was primarily from loss on oil price hedging instruments due to an upward trend of forward oil price, while in Q3/2022, the Group recognized profit due to a downward trend of forward oil price.

Exploration and Production segment

- America

In Q3/2023, America reported a net loss of 2 MMUSD. A decrease of 94 MMUSD from a net loss of 96 MMUSD in Q3/2022 was primarily from impairment loss on assets in PTTEP BL of 95 MMUSD in Q3/2022.

- Other Southeast Asia

In Q3/2023, Other Southeast Asia reported a net profit of 187 MMUSD. A decrease of 74 MMUSD from a net profit of 261 MMUSD in Q3/2022 was primarily from a decrease in revenue from sales from Malaysia Project.

For the nine-month period ended September 2023 compared with 2022

For the nine-month period ended September 2023, the Group reported a net profit of 1,694 MMUSD. An increase of 113 MMUSD from a net profit for the nine-month period ended September 2022 of 1,581 MMUSD was primarily from a decrease in a net loss of Head Office and Others segment of 106 MMUSD, as well as an increase in a net profit from Exploration and Production segment, mainly from America amounting to 99 MMUSD, Africa amounting to 91 MMUSD, offset with a decrease of 147 MMUSD from Thailand.

Head Office and Others segment

For the nine-month period ended September 2023, Head Office and Others segment reported a net loss of 235 MMUSD. A decrease of 106 MMUSD from a net loss for the nine-month period ended September 2022 of 341 MMUSD was primarily from lower loss on oil price hedging instruments due to less upward trend of forward oil price compared to the previous period.

Exploration and Production segment

- America

For the nine-month period ended September 2023, America reported a net loss of 8 MMUSD. A decrease of 99 MMUSD from a net loss for the nine-month period ended September 2022 of 107 MMUSD was primarily from impairment loss on assets in PTTEP BL of 95 MMUSD in the nine-month period of previous year.

- Africa

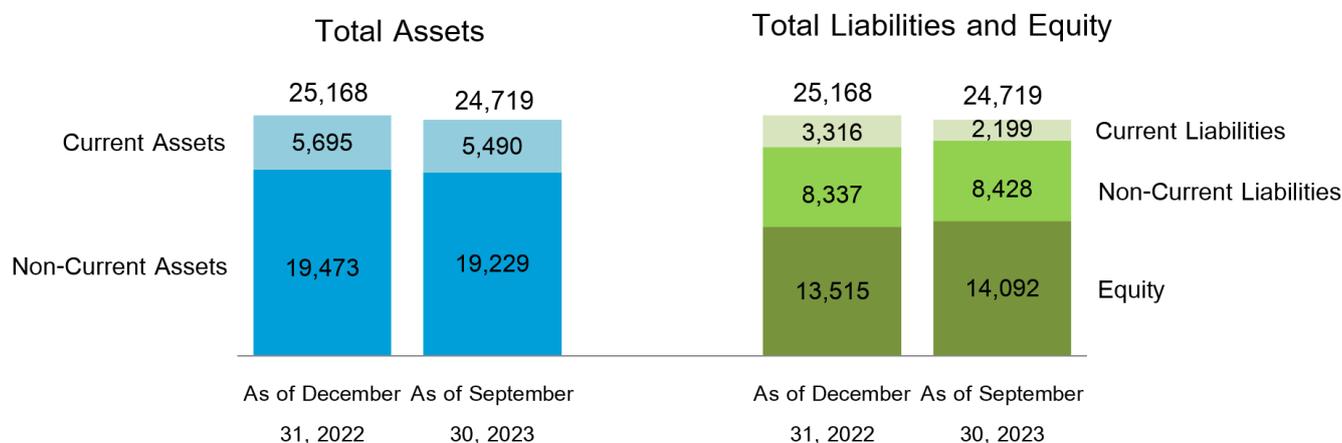
For the nine-month period ended September 2023, Africa reported a net profit of 72 MMUSD. A change of 91 MMUSD from a net loss for the nine-month period ended September 2022 of 19 MMUSD was primarily from an increase in revenue from sales from Algeria Hassi Bir Rekaiz Project which started the first crude oil sales in October 2022.

- Thailand

For the nine-month period ended September 2023, Thailand reported a net profit of 1,172 MMUSD. A decrease of 147 MMUSD from a net profit for the nine-month period ended September 2022 of 1,319 MMUSD was primarily from a decrease in revenue from sales from lower average selling price, offset with higher sales volume from G1/61 Project and G2/61 Project, while operating expenses increased from non-cash accounting transactions at the end of concession of the Bongkot Project.

Financial Position

Unit: Million US Dollar



Assets

As at September 30, 2023, the Group had total assets of 24,719 MMUSD. A decrease of 449 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 205 MMUSD mainly from lower cash and cash equivalents of 503 MMUSD, together with other current assets decreased by 174 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 259 MMUSD, as well as trade and other receivables increased by 133 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, exploration and evaluation assets. Although the property, plant and equipment increased by 459 MMUSD, mainly from G1/61 Project, G2/61 Project, Zawtika Project and S1 Project, total non-current assets decreased by 244 MMUSD mainly from decreases in deferred tax assets of 393 MMUSD and goodwill of 75 MMUSD, primarily from the non-cash accounting adjustments at the end of concession of Bongkot Project. Meanwhile, right-of-use assets decreased by 129 MMUSD from additional depreciation during the period, as well as exploration and production assets decreased by 85 MMUSD mainly from Malaysia project.

Liabilities

As at September 30, 2023, the Group had total liabilities of 10,627 MMUSD. A decrease of 1,026 MMUSD from total liabilities as at December 31, 2022 of 11,653 MMUSD was primarily due to;

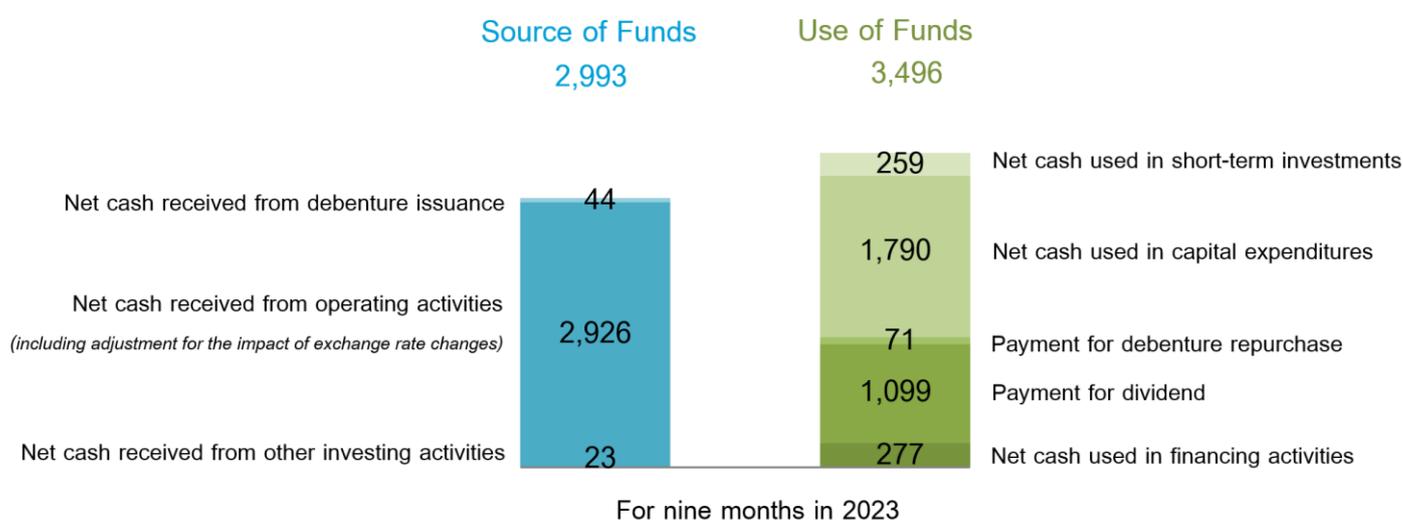
- (1) Current liabilities, which were primarily comprise of trade and other payables, decreased by 1,117 MMUSD mainly from lower income tax payable of 475 MMUSD from 2022 tax payment in May 2023, together with lower short-term provisions of 399 MMUSD, mainly from provision for decommissioning costs at 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 160 MMUSD.
- (2) Non-current liabilities, which were primarily comprised of debentures, deferred tax liabilities and provision for decommissioning costs, increased by 91 MMUSD mainly due to higher provision for decommissioning costs of 284 MMUSD primarily from G2/61 Project. However, lease liabilities decreased by 100 MMUSD and debentures decreased by 82 MMUSD mainly from repurchase of unsubordinated debentures of PTTEP Canada International Finance Limited and PTTEP Treasury Center Company Limited, offset with an issuance of Thai Baht senior guaranteed debentures of 1,500 MMTHB (equivalent to 45 MMUSD).

Equity

As at September 30, 2023, the Group had equity of 14,092 MMUSD. An increase of 577 MMUSD from equity as at December 31, 2022 of 13,515 MMUSD was primarily due to the net profit for the nine-month period of 2023, offset with dividend payments in April and August 2023. The equity included non-controlling interest of 3 MMUSD from an 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 September 30, 2023, the Group had cash and cash equivalents of 3,036 MMUSD, a decrease of 503 MMUSD when compared with December 31, 2022 of 3,539 MMUSD.

Source of funds amount of 2,993 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 an issuance of senior guaranteed debentures of 1,500 MMTHB (equivalent to 44 MMUSD).

Uses of funds amount of 3,496 MMUSD primarily came from **Net cash used in additional capital expenditures** in exploration and production assets mainly from G1/61 Project, G2/61 project, Zawtika project and S1 Project, **Net cash used in investing activities** from payment of short-term investments and **Net cash used in financing activities** primarily from the dividend payments for the second half of 2022 period and the first half of 2023, payments for lease liabilities and interests during the nine-month period of 2023 and the repurchase of unsubordinated debentures from PTTEP Canada International Finance Limited and PTTEP Treasury Center Company Limited.

Key Financial Ratios

	Q2 2023	Q3 2023	Q3 2022	9M 2023	9M 2022
Profitability Ratio (%)					
EBITDA margin	76.90	74.24	75.61	74.46	76.08
Return on equity	16.81	15.55	15.14	15.55	15.14
Net profit margin	23.30	22.51	20.78	22.51	20.78
Leverage Ratio (Times)					
Debt to equity	0.26	0.26	0.33	0.26	0.33
Debt to EBITDA	0.58	0.59	0.62	0.59	0.62

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 Q3/2023, 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 Q3/2023, the average sales volume from projects in Thailand is 301,386 BOED, accounting for 65% of total sales volume. Average sales volume from other countries in this region is 99,326 BOED, which accounted for 21% of total sales volume.



Projects	Participation Interest	Operator	Activities
Projects in Thailand			
<i>Production Phase</i>			
1. S1	100%	PTTEP	The project is producing crude oil, natural gas and liquefied petroleum gas (LPG). Currently, the project is in the process of accelerating drilling 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 Q3/2023, the project produced gas from the new production well and was able to continuously produce gas with an average production level of 350 MMSCFD.
3. Contract 4	60%	Chevron	The project is producing natural gas, condensate, and crude oil. In Q3/2023, 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. The project resumed operation at the beginning of October 2023.
5. G12/48	66.67%	PTTEP	The project is producing natural gas and condensate located offshore in the Gulf of Thailand. On September 1, 2023, the company entered into a Sale and Purchase Agreement (SPA) to acquire a participation interest of 33.3333% from TotalEnergies EP Thailand, resulting in the company's ownership increasing to 100% following government approval. The completion of the SPA is expected in 2023.
6. G1/61 (Erawan field)	60%	PTTEP	The project is producing natural gas, condensate, and crude oil. Currently, the project is producing natural gas at an average of 400-420 MMSCFD and is in the process of accelerating well drilling and installing 3 additional wellhead platforms, with the aim to increase production level to 800 MMSCFD by April 2024.
7. 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 825 MMSCFD and also continuously constructing and installing production platforms and drilling development wells aiming to maintain gas production according to PSC.
8. Malaysia-Thailand Joint Development Area (MTJDA)	50%	CPOC	The Project is producing natural gas. In Q3/2023, the project continuously drilled production wells to maintain production levels. In addition, the project is in the process of planning the drilling of exploration and development wells in preparation for the further project development phase.
<i>Exploration Phase</i>			
9. 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 has received its yearly work program and budget, which were approved by the Department of Mineral Fuels, and it has plans to commence further exploration activities.
10. 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 has received its yearly work program and budget, which were approved by the Department of Mineral Fuels, and it has plans to commence further exploration activities.

Projects	Participation Interest	Operator	Activities
Projects in Myanmar			
<i>Production Phase</i>			
11. Zawtika	80%	PTTEP	The project is natural gas field located in the Gulf of Moattama. In Q3/2023, the project operated according to development plan and is in the process of accelerating the drilling of development wells from phase 1D to maintain the production level.
12. Yadana	37.1%	PTTEP	The project is producing natural gas. Currently, the project is able to produce as planned.
<i>Exploration Phase</i>			
13. Myanmar M3	100%	PTTEP	The project is located offshore in the Gulf of Moattama. The project is currently pending development.
Projects in Malaysia			
<i>Production Phase</i>			
14. 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 Q3/2023, the project has normal production as planned.
15. Malaysia SK309 and SK311	42 – 59.5%	PTTEP	The projects are oil and gas producing fields located in the shallow water offshore Sarawak. In Q3/2023, the project had annual shutdown activity which was smoothly completed, and it was able to resume production as planned.
16. Malaysia Block H	42 – 56%	PTTEP	The project is located in the deep-water offshore Sabah. In Q3/2023, the project was able to produce natural gas as planned in order to ensure the buyer's demand.
<i>Exploration Phase</i>			
17. Malaysia SK410B	42.5%	PTTEP	The project is located in offshore Sarawak and is in the Front-End Engineering Design (FEED) at Lang Lebah which completed in October 2023, parallel with commercial negotiations, and It is expected that the 1 st gas production will be able to commence in 1H/2028.
18. 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's potential, along with preparation for drilling another exploration well. In addition, the project has started a development study for another filed at Dokong.
19. Malaysia SK405B	59.5%	PTTEP	The project is located in shallow water offshore Sarawak The project has discovered petroleum potential and will further consider a suitable development plan, which is expected to be completed within 2025.
20. Malaysia SK438	80%	PTTEP	The project is located in shallow water offshore Sarawak. In Q3/2023, the project completed drilling 2 exploration well as planned and is currently in the process of evaluating the further result and potential.

Projects	Participation Interest	Operator	Activities
21. Malaysia SK314A	59.5%	PTTEP	The project is located in shallow water offshore Sarawak. In Q3/2023, the project completed the exploration extension phase 4. Currently, the project is in the process of evaluating the petroleum potential for further exploration.
22. Malaysia PM407	55%	PTTEP	The project is located in shallow water offshore Peninsular. In Q3/2023, the project completed the evaluation of the exploration well, as per the commitment.
23. 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 Q3/2023, the project was in the process of block relinquishment after the exploration period had ended.
24. Malaysia SB412	60%	PTTEP	The project is located in shallow-deep water offshore Sabah. In Q3/2023, the project has performed the geological and geophysical studies to evaluate the petroleum potential of the block.
25. Malaysia SK325	32.5%	PCSB	The project is located in shallow water offshore Sarawak. Currently, the project is in the process of preparing to commence geophysical and 3D seismic surveys, as well as conducting an underground structure potential study at the PSC area.
Projects in Vietnam			
<i>Production Phase</i>			
26. Vietnam 9-2	25%	HV JOC	The project is producing natural gas and crude oil located offshore southeast of Vietnam. In Q3/2023, the project has submitted the Petroleum Contract Extension proposal for another 5 years to the Vietnamese Government, which result is expected in 2023.
27. Vietnam 16-1	28.5%	HL JOC	The project is producing natural gas and crude oil located offshore southeast of Vietnam. In Q3/2023, the project has submitted the Petroleum Contract Extension proposal for another 5 years to the Vietnamese Government, which result is expected in 2023.
<i>Exploration Phase</i>			
28. 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
Projects in Sultanate of Oman (Oman)			
<i>Production Phase and Midstream</i>			
29. 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.
30. 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.
31. Oman LNG	2%	OLNG	Oman LNG is a liquefied natural gas (LNG) processing plant located near Sur, Oman. On October 23, 2023, PTTEP Group entered into a Shareholder Agreement to extend for an additional 10 years to December 2034.
<i>Exploration Phase</i>			
32. 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.
Project in United Arab Emirates (UAE)			
<i>Exploration Phase</i>			
33. 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.

Projects	Participation Interest	Operator	Activities
34. Abu Dhabi Offshore 2	30%	Eni	The project is located in offshore northwest of Abu Dhabi. The project prepared the development plan for the discovery area which is currently under review by the government.
35. 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 2024-2026.
36. 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.
37. 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.
Projects in People's Democratic Republic of Algeria (Algeria)			
<i>Production Phase</i>			
38. 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 Q3/2023 was at approximately 15,600 BPD and it is in the process of accelerating the drilling of new production wells, along with preparing the existing wells to increase production capacity.
39. Algeria Hassi Bir Rekaiz	49%	GHBR	The project is located onshore in the eastern part of Algeria. In 1H/2023, the project successfully achieved the production target with an average crude oil production of 13,000 KBPD and was able to increase production to 17,000 BPD in August 2023.
Project in Republic of Mozambique (Mozambique)			
<i>Development Phase</i>			
40. 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 and preparing to returning to the area.
Project in Republic of Angola (Angola)			
<i>Development Phase</i>			
41. 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 2023 subject to the conditions prescribed in the SPA.

Projects in Australia

Projects	Participation Interest	Operator	Activities
Projects in Commonwealth of Australia (Australia)			
<i>Exploration Phase</i>			
42. PTTEP Australasia	90 - 100%	PTTEP	This Project is located in Australia. On August 18, 2023, PTTEP Group entered into a Sale and Purchase Agreement (SPA) to sell its total interests in AC/RL7 to INPEX Cash Maple Pty Ltd and TotalEnergies Exploration Australia Pty Ltd. PTTEP AAA has 100% participation interests of the field. Completion of the sale is expected in 2023 subject to the conditions prescribed in the SPA.

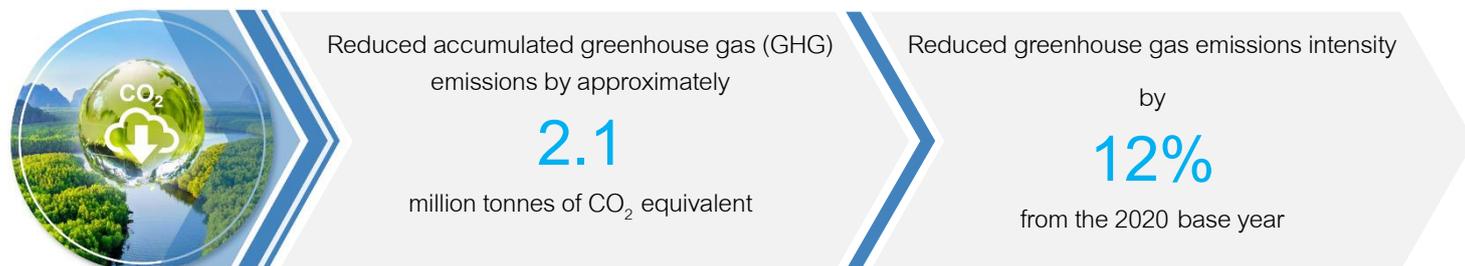
Projects in the Americas



Projects	Participation Interest	Operator	Activities
Projects in Canada			
<i>Exploration Phase</i>			
43. Mariana Oil Sands	100%	PTTEP	The project is located in Alberta. In August 2023, the project completed the block relinquishment according to government's conditions.
Project in United Mexican States (Mexico)			
<i>Exploration Phase</i>			
44. 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.
45. 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 of Q3/23 as follows:



The reduction was through exploration and production portfolio and well management. In addition, PTTEP has made efforts to drive the reduction of greenhouse gas emissions through various initiatives such as;

<p>CCS Capture and Storage</p>	<p>A Front-End Engineering Design (FEED) for the CCS project at Arthit and Lang Lebah fields.</p>
<p>Lan Sang Arun Solar Power Project</p>	<p>A utilization of renewable energy from the “Lan Sang Arun” solar power project to supply energy to S1 project. This marks Thailand’s first stepping stone for applying 9.98-megawatt clean energy in the onshore petroleum production process, which is aligned with PTTEP’s roadmap in increasing the proportion of clean energy and striving towards becoming a lower-carbon organization.</p>

PTTEP has foreseen an opportunity to support greenhouse gas offsetting through initiatives to absorb greenhouse gas from the atmosphere.

<p>Mangrove Forestation</p>	<p>PTTEP has maintained and preserved the mangrove forestation initiated in 2021 for the 2nd year, covering 1,000 rai-of-land and prepared for additional mangrove forestation covering 4,007.15 rai-of-land, with over 30% of the project completed. The project is expected to be concluded by October 2023. In addition, the Company is gathering information for registration under Thailand Voluntary Emission Reduction program (T-VER) with Thailand Greenhouse Gas Management Organization (Public Organization) or TGO.</p>
<p>Land Forestation</p>	<p>PTTEP is also preparing to acquire an additional land forestation area for carbon credits, covering over 21,000 rai-of-land. This includes 6,730 rai-of-land under National Park, Wildlife and Plant Conservation Department and 14,345 rai-of-land under Royal Forest Department.</p>
<p>Regulations for the T-VER and Premium T-VER Methodologies for conservation and restoration of peatland</p>	<p>PTTEP, in collaboration with Pid Thong Lang Phra of the Royal Initiative Discovery Foundation and Kasetsart University, has submitted draft regulations for the T-VER and Premium T-VER methodologies for conservation and restoration of peatland to TGO. These methodologies have been certified and officially published on TGO's website for public dissemination and future utilization.</p>

Diversify



AI and Robotics Ventures Company Limited (ARV)



AI and Robotics Ventures Company Limited (ARV) is a Venture Builder with two key groups of operations:

1) **ARV-Core Business** 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

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 Q3/2023 are as follows:

AI & Robotics Ventures (ARV) - Core Business

Received two awards at the Asian Technology Excellence Awards 2023, which included the Thailand Technology Excellence Award in the Robotics category, recognizing the pioneering use of the "Horus" - unmanned aerial vehicle (UAV) for practical applications, which is an unprecedented achievement in Thailand. This technology assists the Department of Highways in efficiently managing traffic conditions during festivals. Additionally, ARV was honored with the Thailand Technology Excellence Award in the Oil and Gas category for the development of the Offshore Robotics Ecosystem. This innovative system seamlessly integrates various robotic technologies to enable comprehensive offshore operations.



Partnering with Energy Complex Company Limited (EnCo) aims to enhance the management of the Energy Complex area, to be more efficient, modern, and significantly strengthening security measures. This collaboration utilizes artificial intelligence technology in three key areas: 1) integrating AI with CCTV (AI-CCTV), 2) conducting carbon footprint assessments, and 3) implementing surveillance through robot systems.



Collaboration with Advanced Info Service Public Company Limited (AIS) to introduce an innovation effort through the 5 G AI Autonomous Drone System (Horus). This marks the first instance of unmanned aerial vehicle autonomously conducting remote operations over the 5 G network in Thailand, significantly enhancing work efficiency, especially in high-risk areas. The system operates intelligently, conducting precise inspections and promptly transmitting real-time data, including images, audio, and video, to the control center.

ARV's Start-ups



ROVULA

Specializes in intelligent underwater inspection, maintenance, and repair

Zeaquest, a joint venture between ROVULA and Mermaid Subsea Services Company Limited (Thailand), has successfully secured a contract to provide subsea structural inspection and maintenance services in the Gulf of Moattama, Myanmar. The project is scheduled to commence in November.



SKYLLER

SKYLLER

Specializes in the inspection of critical infrastructures through robotics and artificial intelligence

SKYLLER and Tipco Asphalt Public Company Limited (TASCO) established a joint venture called Nila Solutions Company Limited (“Nila”) to develop an integrated platform combining robotics and artificial intelligence designed for inspection and management of road infrastructure and construction. This advanced software leverages computer vision AI for data analysis, monitoring work progress and verify the quantities of construction materials. This innovation enhances cost efficiency and improves project management effectiveness.



VARUNA

VARUNA

Focusing on Smart Agriculture, Forestry and Nature-based Carbon Technology



VARUNA provided the VLM Forest (Varuna Land Monitoring Forest) platform to support a prominent energy company in Thailand. This platform assists the organization in monitoring changes in green area, displaying the outcomes of reforestation and forest restoration efforts. Additionally, the platform offers an annual forest health assessment report that can be expanded to calculate the amount of carbon dioxide absorbed, in support of the organization's carbon neutrality objectives.

VARUNA collaborated with the Rice Department to promote the Alternate Wetting and Drying (AWD) rice farming method. This event highlighted a comprehensive knowledge-sharing program encompassing agriculture sustainability, Thailand's carbon credit landscape, AWD guidelines for rice cultivation, and the promotion of Varuna's KANNA application for monitoring rice cultivation. These efforts aim to elevate the value proposition for Thai farmers.

CARIVA

CARIVA

Dedicated to personalized digital health solutions leveraging data, networks, and DeepTech

CARIVA signed a Memorandum of Understanding (MOU) with the Faculty of Medicine Siriraj Hospital, Mahidol University, to advance Thailand's medical industry by integrating artificial intelligence (AI) innovations and specialized health expertise. These initiatives aim to enhance healthcare efficiency, modernize the Thai medical industry, and strengthen Thailand's global position as a medical hub.



PreceptorAI, CARIVA's Medical AI, won the first prize at “HACKaTHAILAND 2023: Digital Infinity”, the largest digital solutions competition in Thailand. This event was arranged in August by Digital Economy Promotion Agency (Depa) to tackle issues and enhance digital skills amongst all members of the Thai community.

bedrock®

BEDROCK

Empowering transformation and success with location intelligence



The smart building permit platform and the online incident reporting system have been deployed and are in operation, serving over 20 municipalities nationwide. The smart building permit platform enables citizens to conveniently and promptly request permissions for building construction. It also enables BEDROCK to gather user feedback and suggestions, which will be used to enhance system efficiency before broader expansion in the future.



BIND

Focused on bringing Digital Identity for Corporations and juristic entities

BIND has consistently improved the Digital Corporate Identity (DCID) system and its features, with a strong focus on sales and servicing banking groups in Thailand and Southeast Asia, including local commercial banks and world-class financial institutions based in Thailand.

Other Updates on Beyond E&P Businesses

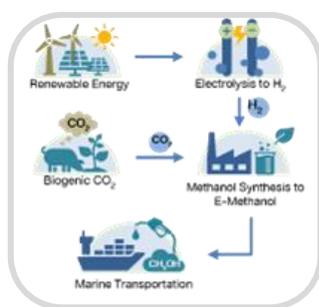
Green Hydrogen Project



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.



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, of which regulatory frameworks and standards have been developed, 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.

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 Power Project
(Lan Sang Arun)*



The Solar Power Project "Lan Sang Arun" 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 fourth quarter is expected to see a decline in crude oil demand due to off-peak seasonal needs in western countries. Economic activities in Asian countries are projected to remain steady throughout the first quarter of 2024. Additionally, the continuation of high interest rates and tightening monetary policies by the US Federal Reserve, Bank of England, and EU Central Bank, aimed at curbing inflation, may potentially hamper economic growth and oil demand.

On the supply side, OPEC+ has reached an agreement to reduce production by over 3.66 MMBPD from May 2023 to December 2024. Additionally, from July to December 2023, Saudi Arabia announced additional production cuts of 1 MMBPD, aiming to uphold stability in crude oil prices in the global market. As a result, it is anticipated that crude oil supply in the global market will remain constrained throughout the fourth quarter, with market tightness expected to ease in the first quarter of 2024 due to an increase in non-OPEC+ crude production and the unwinding of Saudi Arabia's cuts. Additionally, the ongoing conflict between Israel and Hamas has the potential to escalate significantly, potentially impacting oil production and transportation in the Middle East.

During Q4/2023 – Q1/2024, PTTEP anticipates a steady high oil prices but expects softer price trend following more relieved demand and supply tightness. As a result, the price of Dubai crude oil fluctuated within the range of 80 to 90 USD/barrel. This will be influenced by various factors, including economic growth outlook, adjustments in central bank policy interest rates, OPEC+ oil production policies, non-OPEC+ production, SPR supply policies, the ongoing Russian-Ukrainian war, and the conflict between Israel and Hamas.

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 19 MTPA to 422 MTPA (approximately 5% growth from 2022), while demand for LNG is expected to be around 409 MTPA (source: FGE as of September 2023). The average 2023 Asian Spot LNG price is forecasted to range between 13 - 14 USD/MMBTU (source: Platts, Wood Mackenzie and FGE as of September 2023). The main factor supporting the Asian Spot LNG prices is demand for flexible LNG cargoes to meet incremental gas demand for heating during winter by countries in Europe and Northeast Asia. However, there are still headwinds weighing the Asian Spot LNG prices such as Europe's strong storage buffer possibly easing the urgency of LNG buyers to replenish inventories, and warmer Northeast Asia winter forecasts which could result in weaker gas consumption for heating.

Thai Economy and Foreign Exchange Outlook

The Bank of Thailand expects the economy to recover in 2023, primarily driven by the recovery of Thailand's tourism sector. Despite the lower-than-expected number of Chinese tourists, other foreign tourist arrivals have improved significantly, as a result of new government initiatives to promote tourism e.g., expansion of flight options, tourism marketing campaigns, and the introduction of free visa for Chinese and Kazakhstani tourists. Additionally, private consumption has improved following higher business confidence over the newly formed government. However, the outlook for exports remains uncertain due to the slow pace of global economic recovery.

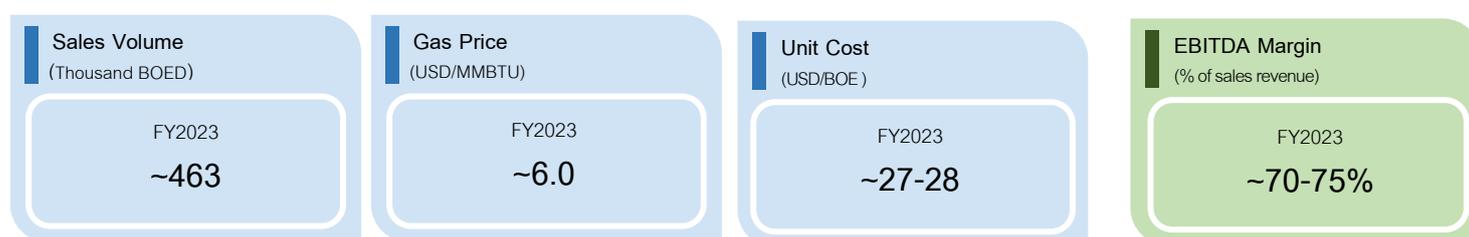
For THB outlook in 2023, it is expected to remain volatile and potentially depreciate in the short term due to uncertainties arising from new government spending policies, which may impact the national budget. The Federal Reserve's interest rate hikes, combined with their signal to keep interest rates higher for an extended period, are also factors contributing to this volatility. However, THB is expected to appreciate towards the end of year from expected improvement in the current account primarily driven by the tourism sector during the traveling season in Q4 and improvement in export sector while import is expected to decline given high commodity prices.

Other Important factors that affect the Company's operations

From the Policy Statement of the Council of Ministers announced on September 11, 2023, the policy is to alleviate the burden of energy costs for people through the management of energy prices, including electricity, liquefied petroleum gas and gasoline. The company anticipates that this policy will not adversely affect its operations. Furthermore, the policy opens opportunities for an exploration of additional energy sources through accelerating negotiations with neighbouring countries on development of energy resources in overlapping claims areas, exploring additional energy sources, and supporting the search for new energy resources. These are to ensure the country's energy security, an encouragement of the investment in renewable energy in accordance with a sustainable economic and environmental development of Thailand.

PTTEP's performance outlook for 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 80-85 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 full year 2023 to be approximately 463,000 barrels of oil equivalent per day. Sales volume is expected to decline slightly in 2023, compared to the previous year, as a result of lower sales volume from overseas projects, offset with higher sales volume from projects in Thailand.

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 full year 2023 is estimated at approximately 6.0 USD/MMBTU, 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 lagged time adjustment following global oil price also affects the gas price.
- The Company has entered into oil price hedging contracts, where the outstanding volume as at the end of the third quarter of 2023 was 4.4 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 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.