



Executive Summary

During Q3/2022, average Dubai price stood at 96.7 USD/barrel, decreased by 11% from Q2/2022 where the Dubai price was averaged at 108.2 USD/barrel. The decline in oil demand outlook was underpinned by concerns over global recession, appreciation of US Dollars, and prolonged China Covid-19 lockdown measures. To tame the surging inflation, during this quarter, the Central Banks in several countries have started lifting interest rates - reaching the record high. Such interest rate hikes bring in global recession concerns. Crude price then continues its downward trends from June onwards. China Covid-19 lockdown measures, together with short-term droughts and power shortages also have significant impact on global crude price. On the supply side, the global supply outlook nearly reaches pre Covid-19 level in 2020. However, OPEC+ members had agreed in early October to curb oil production further. Therefore, the oil market is still expected to be in a small surplus, with the Dubai average in Q4/2022 to stand at 90-100 USD/barrel.

In Q3/2022, there are several progresses in E&P operations. First, Malaysia-Thailand Joint Development Area Project (MTJDA) was granted 10-year production period extension until 2039, as well as an additional gas production of at least 30 MMSCFD until 2025 to satisfy Thailand's gas demand. Next, PTTEP has made a successful gas discovery from Abu Dhabi Offshore 2 Project, located in United Arab Emirates, with the estimated gas reservoir of 2.5-3.5 trillion cubic feet (TCF). Regarding the onshore pipeline leakage incident at Zawtika Project in Myanmar, which caused 2-week suspension of gas supply imported into Thailand, the reparation was completed and normal gas delivery to Thailand was resumed. During September 2022, PTTEP has participated in 24th Gulf of Thailand Bid Round with award announcement in February 2023. Moreover, as part of PTTEP's portfolio rationalization to align with current business strategy. PTTEP had entered into a Sale and Purchase Agreement (SPA) to sell its entire participating interests in two Brazil projects, namely Barreirinhas AP1 and Brazil BM-ES-23, with the completion expected by the end of this year.

For the Business Beyond E&P, in Q3/2022, AI and Robotics Ventures Company Limited (ARV), a subsidiary of PTTEP, has signed a Memorandum of Understanding (MOU) with Aeronautical Radio of Thailand to develop Unmanned Aircraft System traffic management. ARV also partnered up with Easy Rice to enhance the value chain of Thai rice industry by the application of Artificial Intelligence (AI) and a farmer-to-consumer data collection platform. Moreover, ARV entered into a MOU with Dhipaya Insurance to jointly develop health platform which is an end-to-end health tech product connecting health insurance with healthy lifestyle. For Gas to Power Project, it is currently in the preparation stage with activities such as site survey, and Power Purchase Agreement drafting.

In terms of business strategy, PTTEP continues adhering to sustainable value creation to wider society (From We to World), in line with the global practices and UN principles, that takes conscious consideration of all stakeholders' interests, as well as maintains energy security for the nation. Together with relevant resources preparedness, PTTEP has established a strategic framework with three strategies; 1) Drive Value by maximizing values of existing assets, as well as business expansion in core strategic areas; 2) Decarbonize in order to achieve "Net Zero Greenhouse Gas Emission" by the year 2050, or "EP Net Zero 2050" target; and 3) Diversify to expand into the new businesses.

On the financial performance front, during Q3/2022, PTTEP reported sales volume at 478,323 BOED, 3% increase from Q2/2022, while the average selling price slightly declined to stand at 53.68 USD/BOE, following to a fall in global crude price. Unit cost increased 28.82 USD/BOE. In this quarter, PTTEP had recognized oil price hedging gain amounting to 94 MMUSD. Net income for Q3/2022 was then reported at 664 MMUSD. As at the end of the quarter, PTTEP had total assets of 24,684 MMUSD, of which 3,436 MMUSD was cash on hand, while total liabilities were reported at 11,623 MMUSD, of which 4,274 MMUSD was interest-bearing debt. Total shareholders' equity stood at 13,061 MMUSD with debt-to-equity ratio at 0.33 reflecting healthy financial structure and robust financial position.

Table of key financial results

(Unit: Million US Dollar)	Q2 2022	Q3 2022	Q3 2021	Inc. (Dec.) QoQ	Inc. (Dec.) YoY	9M 2022	9M 2021	Inc. (Dec.) YTD
Total Revenues	2,469	2,617	1,784	148	833	7,008	5,331	1,677
Revenue from sales *	2,383	2,388	1,744	5	644	6,801	4,864	1,937
EBITDA **	1,816	1,838	1,297	22	541	5,255	3,665	1,590
Profit (Loss) for the period	600	664	292	64	372	1,581	890	691
Basic earnings (loss) per share (Unit: US Dollar)	0.15	0.17	0.07	0.02	0.10	0.40	0.22	0.18
Profit (Loss) from normal operation	647	706	335	59	371	1,922	967	955
Profit (Loss) from non-operating items	(47)	(42)	(43)	5	1	(341)	(77)	(264)

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

** Excluded gain from a bargain purchase of Oman Block 61 Project as well as write-off of assets and impairment loss on assets held-for-sale in Brazil which were recognized during the period



Strategies and Business Management

Strategies

PTTEP adheres to the sustainable development global practices and UN principles. Operating 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. Therefore, PTTEP establishes a strategic framework consisting of three strategy pillars as follows:

Drive Value

- Strengthen E&P and ensure Thailand energy security
 - Maximize production
 - Expedite development
 - Monetize discovery
- Enhance competitiveness of unit cost
- Expand gas-weighted portfolio and LNG 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 GHG emission reduction plan
- Accelerate CCS projects
- Maximize use of renewables and future energy in operation
- Pursue emission offsetting and ocean for life

Diversify

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

Business Management and Company Activity

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 progress of works is highlighted as follows:

- Continuously implement GRC-related activities as per GRC roadmap to embed GRC culture and enhance the understanding in Malaysia Asset to prepare for Company-wide GRC Maturity Level assessment program.
- Enhance Risk Management System by implementing Chatbot to cover suggesting risk, searching risk information with an aim of no improperly managed high-impact risks (no surprise problem).
- Develop GRC One Digital System which covers various reporting related to GRC i.e. Whistleblower Reporting, Risk Management, Business Continuity Management, Internal Control Assessment, and Compliance Reporting to assist management and relevant parties to obtain immediate GRC information for efficient decision making.
- Continue building GRC culture throughout several communication campaigns to enhance employee's understanding and awareness in order to ensure GRC implementation as part of their work. Furthermore, promoting GRC to outside organization to become a GRC role model.

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 through its business operations. The Company also strictly conducts a Human Rights risk assessment on an annual basis. In 2022, the risk assessment covers 100% of its operating assets, non-operated joint ventures, and Tier-1 suppliers. Furthermore, PTTEP continues its efforts to enhance staff's understanding and shared responsibility on Human Rights through Human Rights e-learning course and various promotional materials.

Furthermore, PTTEP has an environmental management system which is a subset of PTTEP's Safety, Security, Health and Environment Management System (SSHE MS). In Q3/2022, PTTEP Lost Time Injury Frequency (LTIF) was 0.12, while the Total Recordable Incident Rate (TRIR) was 0.87. The LTIF and TRIR were in the average safety performance of the International Association of Oil & Gas Producers (IOGP).

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

The main progress in Q3/2022 are 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 still in an efficient condition. In addition, potential studies for high-volume waste upcycling are being studied i.e., feasibility study of Nano-Silica and Zeolite from sand waste from Zawtika project, pre-FEED study for CNT reactor unit to convert flare gas to Carbon Nanotube, and the study of Oil Sludge Waste Conversion to Graphene. Furthermore, PTTEP is conducting a feasibility study for the reuse of Wellhead Platform (WHP) jacket in addition to the reuse of Wellhead Platform (WHP) topside.
- 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. Since June 2022, PTTEP has collaborated with Hydro-Informatics Institute (Public organization) and the Faculty of Fisheries, Kasetsart University to collect ocean current data from PTTEP's offshore operation by deploying an ocean current mapper on a monthly basis (conducted for the first time in Thailand). The company is also committed to restoring marine resources and promoting sustainable income generation from coastal fishery communities in 17 provinces around the Gulf of Thailand. Since January 2022, PTTEP has established 4 aquatic animal hatchery learning centers in Phetchaburi, Prachuap Khiri Khan, Samut Songkhram, and Rayong provinces. The company also handed over the sea turtle conservation

exhibition building and sea turtle hatchery building to the Royal Thai Navy Sea Turtle conservation center in Chonburi province. The aims are to raise public awareness about sea turtle conservation and promote the conservation of sea turtles in the marine ecosystem around Thailand.

Finance

PTTEP places great importance on effective financial management by focusing on building financial discipline and maintaining a robust capital structure. As at Q3/2022, the company maintained its strong liquidity position with cash on hand of approximately 3,436 MMUSD. The debt-to-equity ratio is 0.33 which is in line with the Company's financial policy.

On August 26, 2022, PTTEP paid the interim dividend for the first half year operation at the rate of 4.25 THB per share, totaling 458 MMUSD. After the 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.

Research development and technology

PTTEP encourages the development of technology and innovation as well as technological applications to increase business operation efficiency and competitiveness by carrying out research and development under 3 objectives, which consist of:

- 1) To enhance exploration and production business comprises of 4 sub development programs which are CO₂ removal from natural gas, condensate treatment, technology to support decommissioning activities, and operational efficiency improvement
- 2) To minimize environmental impact
- 3) To explore opportunities from the energy transition

As of Q3/2022, there are 57 projects under research and development and the progress of highlight projects are as follows;

- The technologies for condensate treatment were successful in field trial tested which consist of the chemical demulsifier injection for particulate contaminants separation, adsorbent, and filtration technology. The technologies have been implemented in both the domestic and international production field resulting in the condensate treatment efficiency improvement and reducing production cost.
- The contaminant removal technology for supporting pipeline decommissioning activities such as the decontamination chemicals for pipelines cleaning and intelligent sampling PIG have been completed field trial in Bongkot field in Q1/2022, and the performance is satisfactory. The development team is carrying out the technology performance improvement as well as expanding its use to support future petroleum pipeline decommissioning activities.
- The wellhead operator robot project is in progress of developing a prototype robot which has capability to detect equipment abnormalities and to autonomously manipulate the process equipment in the production platform. The prototype testing in offshore production platform had been performed during Q1 to Q2 of 2022. The test result is satisfactory, and the development is going to be continued to the next phase as well as expanding the development scope to cover other production fields.
- The flare gas conversion to Carbon Nanotube for greenhouse gas emission reduction project is in progress to carry out the front-end engineering design (FEED) for the pilot production unit that is expected to complete in 2024. The Carbon Nanotubes application development projects are also carried out in various applications such as battery, energy storage, composite material, etc.
- The Carbon Dioxide (CO₂) conversion to Propylene Carbonate for greenhouse gas emission reduction project is in progress to carry out the prototype process development.

In Q3/2022, PTTEP received awards from various institutes in both domestic and international levels such as;

- Received 2022 Low Carbon and Sustainable Business Award (highest level) from the Thailand Greenhouse Gas Management Organization (TGO). This award aims to recognize organizations with best-in-class GHG emissions reduction and sustainable business practices in all dimensions: economics, social and environment.
- Received 2022 Role Model Organization on Human Rights in State Enterprise sector from the Department of Rights and Liberties Protection, Ministry of Justice for the fourth consecutive year. The award is given to organization that is committed to operate business by adhering to principles of good corporate governance, corporate social responsibility, respecting diversity and fundamental human rights in all operating areas.



Economic Overview in the third quarter of 2022

Crude Oil Price

Dubai crude price in Q3/2022 dropped to an average of 96.7 USD/barrel, decrease from Q2/2022 average price of 108.2 USD/barrel. Price reduction is mainly due to global recession concerns as central banks throughout the world simultaneously hike interest rates to unprecedented levels in order to deal with high inflation. In consequence, risky assets, including crude oil were sold, causing oil price to fall sharply for four consecutive months since June. In addition, as the global economic outlook worsens, investors have flocked to the U.S. dollar which is acting as a “safe haven” causing dollar index to hit a 20-year high. Strengthened U.S. dollar is also making crude more expensive for buyers using other currencies. China’s COVID-19 lockdowns, property market deterioration, as well as short-term droughts and power shortages have weakened its oil demand growth and could bring its 2022 demand to contraction for the first time in two decades, while crude supply has leveled back to pre-pandemic level. On the supply side, Russian oil production and exports have proved to be more resilient prior to EU crude ban effective on December 5, due to orders from China and India. OPEC oil output also rose in September to its highest since 2020 after production in Libya recovered from disruption and Gulf members boosted output while U.S. Production has been rising slowly to 11.8 MMBPD in July, its highest since April 2020.

Liquefied Natural Gas (LNG) Price

LNG demand has increased in Q3/2022 from Asian demand recovery and largely due to high European demand. Gas demand in Europe rose since summer due to the increase in electricity demand for cooling, while electricity supply from hydro and nuclear power plants were limited by drought. In addition, European’s policy to reduce its dependency on Russian gas through more usage of renewable energy and imported LNG, and stocking demand for upcoming winter has transformed Europe into a direct competitor with Northeast Asian countries for LNG supplies. This results in rising Asian Spot LNG price from Q2/2022 with price movement between 35 – 71 USD/MMBTU, averaged at 46.56 USD/MMBTU.

Thailand’s Energy Demand

According to the Energy Policy and Planning Office (EPPO), Ministry of Energy, domestic energy demand from January to July 2022 is approximately 2 MMBOED, which has increased 1.63 percent and 2.92 percent comparing to the same period in 2021 and 2020, respectively. This shows that Thailand’s energy demand gradually increases post COVID-19 outbreak in 2020. The increased energy consumption is mainly in the form of petroleum and coal consumptions for transportation and industrial uses, respectively.

Exchange Rates (Thai Baht against US Dollar)

The THB against USD depreciated from 35.30 at end of Q2/2022 to 37.91 at end of Q3/2022, reaching a 16-year low. The major factor impacting this depreciation is Federal Reserve’s interest rate hikes, which totaled 1.50 percent in Q3, and its signal of upcoming hawkish policies while the Bank of Thailand raised rates at a slower pace of 0.5 percent in Q3, resulting in the depreciated of THB. On top of monetary policy, uncertainty in global markets remains such as the Russia-Ukraine War and high inflation.



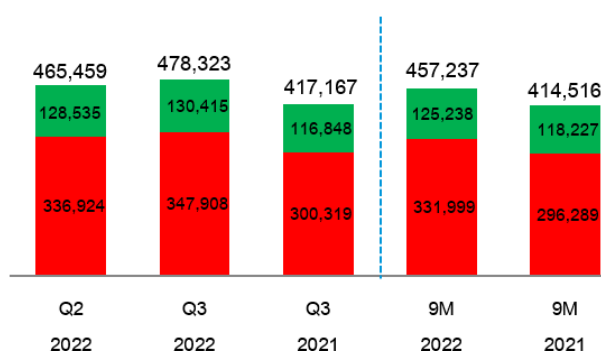
Financial Performance

Average Sales Volume and Selling Price

Unit: Barrels of Oil Equivalent per Day

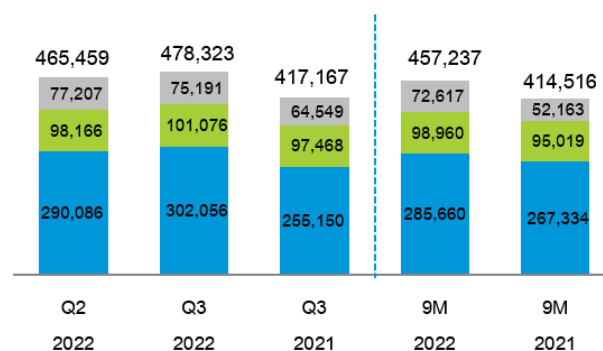
By Product Type

Gas Liquid



By Geographical Region

Thailand Other Southeast Asia Rest of the World



Average selling price and	Q2	Q3	Q3	Inc. (Dec.)	Inc. (Dec.)	9M	9M	Inc. (Dec.)
Dubai crude oil price	2022	2022	2021	QoQ	YoY	2022	2021	YTD
(Unit : US Dollar)								
Average selling price (/BOE)	55.61	53.68	44.25	(1.93)	9.43	53.62	42.34	11.28
Liquid price (/BOE)	105.47	97.94	69.16	(7.53)	28.78	98.44	63.40	35.04
Gas price (/MMBTU)	6.10	6.18	5.76	0.08	0.42	6.12	5.66	0.46
Average Dubai crude oil price (/BBL)	108.22	96.68	71.68	(11.54)	25.00	100.29	66.36	33.93

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

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

In Q3/2022, the average sales volume of PTTEP and its subsidiaries (the “Group”) increased to 478,323 BOED when compared with Q2/2022 of 465,459 BOED, primarily from Malaysia-Thailand Joint Development Area Project (“MTJDA Project”) from lower shutdown for maintenance and higher gas nomination from buyer, together with first production of G1/61 Project since the end of April 2022 and Contract 4 Project from higher gas nomination from buyer, offset with Bongkot Project from lower gas sales volume due to higher shutdown for maintenance. The average selling price in Q3/2022 decreased to 53.68 USD/BOE (Q2/2022 : 55.61 USD/BOE).

For the Third quarter of 2022 compared with the Third quarter of 2021

When compared the average sales volume for Q3/2022 to Q3/2021 of 417,167 BOED, the average sales volume increased, primarily from first production of G1/61 Project since the end of April 2022 together with Oman Block 61 Project due to higher gas nomination from buyer and MTJDA Project due to lower shutdown for maintenance and higher gas nomination from buyer. The average selling price increased to 53.68 USD/BOE (Q3/2021: 44.25 USD/BOE).

For the nine-month period ended September 2022 compared with 2021

The average sales volume for the nine-month period ended September 2022, increased to 457,237 BOED when compared with the same period of 2021 (for the nine-month period ended September 2021 of 414,516 BOED). The increase was primarily due to the acquisition of Oman Block 61 Project in March 2021 and first production of G1/61 Project since the end of April 2022. The average selling price for the nine-month period ended September 2022 increased to 53.62 USD/BOE (for the nine-month period ended September 2021: 42.34 USD/BOE).

Overall Operating Results

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

In Q3/2022, the Group had net profit of 664 MMUSD, an increase of 64 MMUSD from a net profit in Q2/2022 of 600 MMUSD was primarily from higher revenue from sales, lower income taxes and gain from oil price hedging instruments (Q2/2022: recognized loss), offset with impairment loss on assets held-for-sale (Q2/2022: no recognition). The net profit for Q3/2022 of 664 MMUSD can be separated as following.

The profit from normal operation in Q3/2022 was 706 MMUSD, an increase of 59 MMUSD when compared with a profit in Q2/2022 of 647 MMUSD was primarily from an increase in revenue from sales of 5 MMUSD from higher average sales volume while the average selling price decreased. In addition, income taxes decreased by 144 MMUSD primarily from projects in Thailand in accordance with lower profit and Malaysia Project from a recognition of tax benefit on investment. However, depreciation, depletion and amortization increased by 66 MMUSD primarily from Bongkot Project, together with G1/61 Project from higher sales volume and S1 Project from additional completed assets. The exploration expenses increased by 25 MMUSD primarily from write-off of assets of PTTEP Australasia Project.

The loss from non-operating items in Q3/2022 was 42 MMUSD, a decrease of 5 MMUSD when compared with a loss in Q2/2022 of 47 MMUSD was primarily from higher gain on financial instruments, mostly was gain from oil price hedging instruments of 94 MMUSD (included unrealized gain from mark-to-market of 64 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) from an upward trend of forward oil price. In addition, gain from foreign exchange forward contracts increased by 17 MMUSD from more depreciation of Baht against USD in this quarter compared to Q2/2022. However, impairment loss on assets held-for-sale of 95 MMUSD was recognized after assets and liabilities of PTTEP Brazil Investments in Oil and Gas Exploration and Production Limitada ("PTTEP BL") were classified to assets and liabilities held-for-sale (Q2/2022: no recognition). Moreover, loss on foreign exchange rate increased by 43 MMUSD from more depreciation of Baht against USD in this quarter compared to Q2/2022.

For the Third quarter of 2022 compared with the Third quarter of 2021

In Q3/2022, the Group had net profit of 664 MMUSD, an increase of 372 MMUSD from a net profit in Q3/2021 of 292 MMUSD was primarily from higher revenue from sales and gain from oil price hedging instruments (Q3/2021: recognized loss), offset with impairment loss on assets held-for-sale (Q3/2021: no recognition). The net profit for Q3/2022 of 664 MMUSD can be separated as following.

The profit from normal operation in Q3/2022 was 706 MMUSD, an increase of 371 MMUSD when compared with a profit in Q3/2021 of 335 MMUSD was primarily from an increase in revenue from sales of 644 MMUSD from higher average sales volume and average selling price. On the other hand, income taxes increased by 131 MMUSD mainly from projects in Thailand and Oman from higher profit. Operating expenses increased by 80 MMUSD primarily from first production of G1/61 Project and G2/61 Project, as well as an increase in petroleum royalties of 39 MMUSD was mainly from higher revenue from sales in Thailand and Malaysia.

The loss from non-operating items in Q3/2022 was 42 MMUSD, a decrease of 1 MMUSD when compared with a loss in Q3/2021 of 43 MMUSD was primarily from gain on financial instruments, mostly was gain from oil price hedging instruments of 94 MMUSD (included unrealized gain from mark-to-market of 64 MMUSD) due to a downward trend of forward oil price while loss of 41 MMUSD was recognized in Q3/2021 (included unrealized loss from mark-to-market of 46 MMUSD) from an upward trend of forward oil price. In addition, gain from foreign exchange forward contracts increased by 23 MMUSD from more depreciation of Baht against USD in this quarter compared to Q3/2021. However, impairment loss on assets held-for-sale of 95 MMUSD was recognized after assets and liabilities of PTTEP BL were classified to assets and liabilities held-for-sale (Q3/2021: no recognition). Moreover, loss on foreign exchange rate increased by 51 MMUSD from more depreciation of Baht against USD in this quarter compared to Q3/2021.

For the nine-month period ended September 2022 compared with 2021

For the nine-month period ended September 2022, the Group had net profit of 1,581 MMUSD, an increase of 691 MMUSD from a net profit for the nine-month period ended September 2021 of 890 MMUSD was primarily from higher revenue from sales and lower loss from oil price hedging instruments, together with a decrease in depreciation, depletion and amortization. In addition, there was a partial write-off of exploration and evaluation assets of the exploration project in Brazil in the nine-month period in 2021 while impairment loss on assets held-for-sale was recognized in the current period (nine-month period in 2021: no recognition). Moreover, the Group recognized gain from a bargain purchase of Oman Block 61 Project in the nine-month period in 2021. The net profit for the nine-month period ended September 2022 of 1,581 MMUSD can be separated as following.

The profit from normal operation for the nine-month period ended September 2022 was 1,922 MMUSD, an increase of 955 MMUSD when compared with a profit for the nine-month period ended September 2021 of 967 MMUSD was primarily from an increase in revenue from sales of 1,937 MMUSD from higher average sales volume and average selling price. In addition, depreciation, depletion and amortization decreased by 69 MMUSD primarily from Bongkot Project, offset with first production of G1/61 Project. On the other hand, income taxes increased by 721 MMUSD mainly from projects in Thailand and Oman from higher profit. Operating expenses increased by 203 MMUSD primarily from first production of G1/61 Project and G2/61 Project, along with Malaysia Project. Petroleum royalties increased by 126 MMUSD mainly from higher revenue from sales in Thailand and Malaysia.

The loss from non-operating items for the nine-month period ended September 2022 was 341 MMUSD, an increase of 264 MMUSD when compared with a loss for the nine-month period ended September 2021 of 77 MMUSD was primarily due to gain from a bargain purchase of Oman Block 61 Project amounting to 350 MMUSD which was recognized in the nine-month period in 2021, together with an increase in loss on foreign exchange rate by 93 MMUSD from more depreciation of Baht against USD in this period compared to the previous period. In addition, impairment loss on assets held-for-sale of 95 MMUSD was recognized after assets and liabilities of PTTEP BL were classified to assets and liabilities held-for-sale. However, for the nine-month period in 2021, there was a partial write-off of exploration and evaluation assets of the exploration project in Brazil amounting to 145 MMUSD. Meanwhile, loss on financial instruments decreased mostly from lower loss from oil price hedging instruments of 105 MMUSD (included lower unrealized loss from mark-to-market of 126 MMUSD) due to less upward trend of forward oil price in this period compared to the previous period. In addition, gain from foreign exchange forward contracts increased by 35 MMUSD due to more depreciation of Baht against USD in this period compared to the previous period.

Operating Results by Segments

Net Profit (loss)	Q2 2022	Q3 2022	Q3 2021	Inc. (Dec.) QoQ	Inc. (Dec.) YoY	9M 2022	9M 2021	Inc. (Dec.) YTD
(Unit: Million US Dollar)								
Exploration and production	682	610	366	(72)	244	1,922	1,299	623
Southeast Asia	632	682	324	50	358	1896	1,031	865
- Thailand	480	421	271	(59)	150	1319	848	471
- Other Southeast Asia	152	261	53	109	208	577	183	394
Middle East	56	64	32	8	32	174	389	(215)
Australia	(1)	(31)	(0.5)	(30)	(31)	(32)	(2)	(30)
America	(4)	(96)	(2)	(92)	(94)	(107)	(151)	44
Africa	(6)	(10)	9	(4)	(19)	(19)	22	(41)
Others	5	1	3	(4)	(2)	10	10	-
Head office and others	(82)	54	(74)	136	128	(341)	(409)	68
Total	600	664	292	64	372	1,581	890	691

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

For Q3/2022, the Group reported a net profit of 664 MMUSD, an increase of 64 MMUSD when compared with a net profit of 600 MMUSD in Q2/2022 was primarily from an increase in Head Office and Others segment of 136 MMUSD and Exploration and Production segment in Southeast Asia (Southeast Asia increased by 109 MMUSD), offset with a decrease in America of 92 MMUSD.

Head Office and Others segment

In Q3/2022, Head Office and Others segment reported a net gain of 54 MMUSD, an increase of 136 MMUSD when compared with a 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

- **Southeast Asia**
 - Other Southeast Asia

In Q3/2022, Other Southeast Asia reported a net profit of 261 MMUSD, an increase of 109 MMUSD when compared with a net profit of 152 MMUSD in Q2/2022 was primarily from an increase in revenue from sales due to higher average selling price, along with lower income taxes from Malaysia Project due to the recognition of tax benefit on investment.

- **America**

In Q3/2022, America reported a net loss of 96 MMUSD, an increase of 92 MMUSD when compared with a net loss of 4 MMUSD in Q2/2022 was primarily from impairment loss on assets held-for-sale of 95 MMUSD was recognized after assets and liabilities of PTTEP BL were classified to assets and liabilities held-for-sale.

For the Third quarter of 2022 compared with the Third quarter of 2021

For Q3/2022, the Group reported a net profit of 664 MMUSD, an increase of 372 MMUSD when compared with a net profit of 292 MMUSD in Q3/2021 was primarily from an increase of Exploration and Production segment in Southeast Asia (Thailand increased by 150 MMUSD and Other Southeast Asia increased by 208 MMUSD), offset with a decrease in America of 94 MMUSD and an increase in Head Office and Others segment of 128 MMUSD.

Exploration and Production segment

- Southeast Asia

- Thailand

In Q3/2022, Thailand reported a net profit of 421 MMUSD, an increase of 150 MMUSD when compared with a net profit of 271 MMUSD in Q3/2021 was primarily from an increase of revenue from sales due to higher average sales volume which included first production of G1/61 Project since the end of April 2022 as well as higher average selling price while income tax increased in accordance with higher profit and operating expenses increased in line with higher sales volume.

- Other Southeast Asia

In Q3/2022, Other Southeast Asia reported a net profit of 261 MMUSD, an increase of 208 MMUSD when compared with a net profit of 53 MMUSD in Q3/2021 was primarily from an increase in revenue from sales due to higher average selling price, together with a decrease in exploration expenses from exploration wells write-off in Q3/2021.

- America

In Q3/2022, America reported a net loss of 96 MMUSD, an increase of 94 MMUSD when compared with a net loss of 2 MMUSD in Q3/2021 was primarily from impairment loss on assets held-for-sale of 95 MMUSD was recognized after assets and liabilities of PTTEP BL were classified to assets and liabilities held-for-sale.

Head Office and Others segment

In Q3/2022, Head Office and Others segment reported a net profit of 54 MMUSD, an increase of 128 MMUSD when compared with a net loss of 74 MMUSD in Q3/2021 was primarily from gain from oil price hedging instruments due to a downward trend of forward oil price, while in Q3/2021 recognized loss due to an upward trend of forward oil price.

For the nine-month period ended September 2022 compared with 2021

For the nine-month period ended September 2022, the Group reported a net profit of 1,581 MMUSD, an increase of 691 MMUSD when compared with a net profit for the nine-month period ended September 2021 of 890 MMUSD was primarily from an increase in Exploration and Production segment in Southeast Asia (Thailand increased by 471 MMUSD and Other Southeast Asia increased by 394 MMUSD), offset with a decrease in Middle East of 215 MMUSD.

Exploration and Production segment

- Southeast Asia

- Thailand

For the nine-month period ended September 2022, Thailand reported a net profit of 1,319 MMUSD, an increase of 471 MMUSD when compared with a net profit of 848 MMUSD for the nine-month period ended September 2021 was primarily from an increase in revenue from sales due to higher average selling price, together with a decrease in depreciation, depletion and amortization mainly from Bongkot Project while income taxes increased in accordance with higher profit.

- Other Southeast Asia

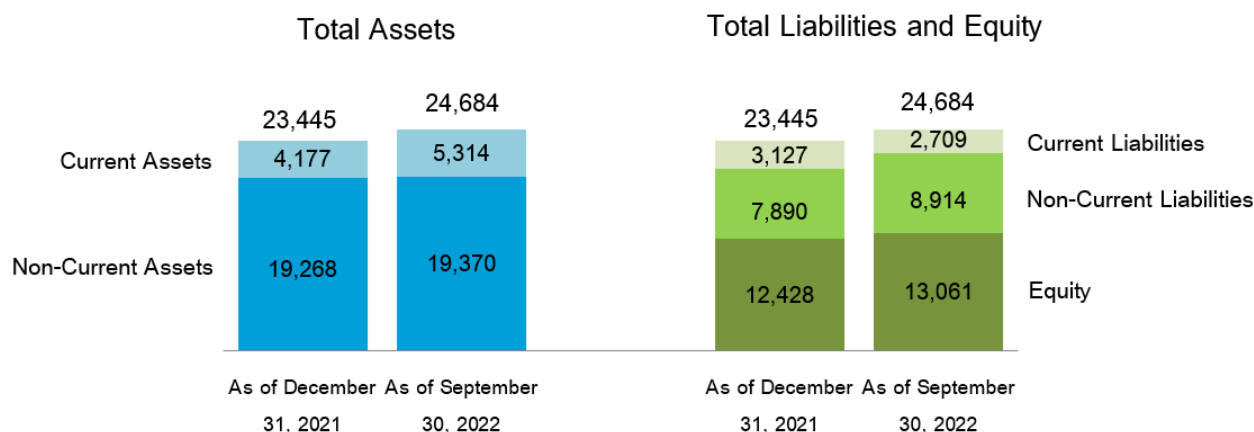
For the nine-month period ended September 2022, Other Southeast Asia reported a net profit of 577 MMUSD, an increase of 394 MMUSD when compared with a net profit of 183 MMUSD for the nine-month period ended September 2021 was primarily from an increase in revenue from sales due to higher average selling price while income taxes increased in accordance with higher profit, together with operating expenses increased from maintenance activities and higher sales volume.

- **Middle East**

For the nine-month period ended September 2022, Middle East reported a net profit of 174 MMUSD, a decrease of 215 MMUSD when compared with a net profit of 389 MMUSD for the nine-month period ended September 2021. Despite of an increase in revenue from sales due to higher average selling price and higher sales volume from Oman Block 61 Project, there was a decrease in net profit from a recognition of gain from a bargain purchase of Oman Block 61 Project for the nine-month period in 2021.

Financial Position

Unit: Million US Dollar



Assets

As at September 30, 2022, the Group had total assets of 24,684 MMUSD, an increase of 1,239 MMUSD from total assets as at December 31, 2021 of 23,445 MMUSD was primarily due to;

- (1) Current assets, which were primarily comprised of cash and cash equivalents, trade and other receivables and inventories, increased by 1,137 MMUSD mainly from higher cash and cash equivalents of 877 MMUSD and higher other current assets of 158 MMUSD which was primarily from prepayment upon Asset Transfer Agreement of Bongkot Project.
- (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, exploration and evaluation assets, goodwill and right-of-use assets, increased by 102 MMUSD mainly due to higher property, plant and equipment, together with higher right-of-use assets of 382 MMUSD and 392 MMUSD, respectively which were mainly from G1/61 Project and G2/61 Project. However, deferred tax assets decreased by 418 MMUSD from Bongkot Project and Oman Block 61 Project. In addition, investments in associates decreased by 120 MMUSD from selling shares of PTT Global LNG Company Limited.

Liabilities

As at September 30, 2022, the Group had total liabilities of 11,623 MMUSD, an increase of 606 MMUSD from total liabilities as at December 31, 2021 of 11,017 MMUSD was primarily due to;

- (1) Non-current liabilities, which were primarily comprised of provision for decommission costs, debentures and deferred tax liabilities, increased by 1,024 MMUSD mainly due to higher provision for decommission costs of 418 MMUSD, together with higher debentures from the issuance of senior guaranteed debentures of 12,000 MMTHB (equivalent to 359 MMUSD) in April 2022. In addition, lease liabilities increased by 296 MMUSD mainly from G1/61 Project and G2/61 Project.

While

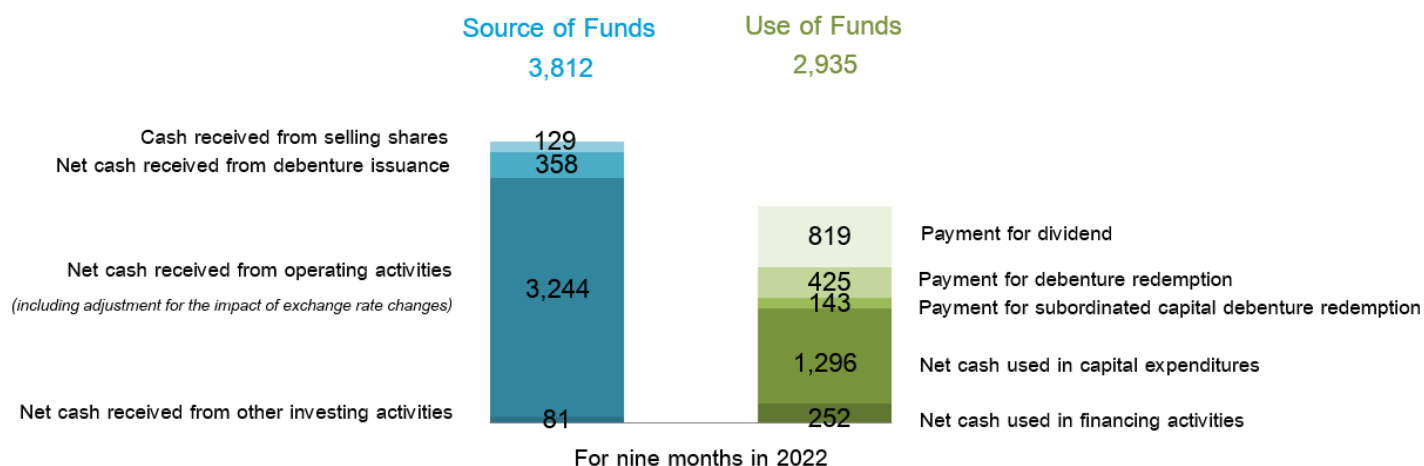
- (2) Current liabilities, which were primarily comprised of trade and other payables, income tax payable, and short-term provision, decreased by 418 MMUSD mainly due to lower current portion of long-term liabilities from the redemption of senior guaranteed debentures of 15,000 MMTHB (equivalent to 449 MMUSD) in June 2022. In addition, income tax payable decreased by 179 MMUSD from 2021 tax payment in May 2022 while trade and other payables increased by 241 MMUSD mainly from G1/61 Project.

Equity

As at September 30, 2022, the Group had equity of 13,061 MMUSD, an increase of 633 MMUSD from equity as at December 31, 2021 of 12,428 MMUSD was primarily due to the net profit for the period, offset with the dividend payments in April and August 2022 and the redemption of subordinated capital debentures of 5,000 MMTHB (equivalent to 157 MMUSD) in June 2022.

Cash Flows

Unit: Million US Dollar



As at September 30, 2022, the Group had cash and cash equivalents of 3,436 MMUSD, an increase of 877 MMUSD when compared with December 31, 2021 of 2,559 MMUSD.

Source of funds amount of 3,812 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 payments for expenses and income taxes, **Net cash received from financing activities** from the issuance of senior guaranteed debentures of 12,000 MMTHB (equivalent to 358 MMUSD) and **Net cash received from investing activities** from selling shares of PTT Global LNG Company Limited.

Uses of funds amount of 2,935 MMUSD primarily came from **Net cash used for additional capital expenditures** in exploration and production assets mainly from G1/61 Project, G2/61 Project, Zawtika Project, Bongkot Project and S1 Project, as well as **Net cash used in financing activities** primarily from the redemption of senior guaranteed debentures of 15,000 MMTHB (equivalent to 425 MMUSD) and subordinated capital debentures of 5,000 MMTHB (equivalent to 143 MMUSD), together with the dividend payments for the second half of 2021 and the first half of 2022.

Key Financial Ratios

	Q2 2022	Q3 2022	Q3 2021	9M 2022	9M 2021
Profitability Ratio (%)					
EBITDA* margin	75.19	75.61	73.24	76.08	74.34
Return on equity	12.32	15.14	8.16	15.14	8.16
Net profit margin	18.40	20.78	14.69	20.78	14.69
Leverage Ratio (Times)					
Debt to equity	0.33	0.33	0.32	0.33	0.32
Debt to EBITDA*	0.69	0.62	0.86	0.62	0.86

* EBITDA excluded gain from a bargain purchase of Oman Block 61 Project as well as write-off of assets and impairment loss on assets held-for-sale in Brazil which were recognized during the period

Remark:

- EBITDA margin = Profit before deduction of interest, tax and depreciation to revenue from sales (included deemed income for tax payment by Oman government) including 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

E&P Business Updates

As of Q3/2022, PTTEP Group has over 50 projects with domestic and international operations in 15 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), the Federation of Malaya (Malaysia), the Socialist Republic of Vietnam (Vietnam), and the Republic of Indonesia (Indonesia). In Q3/2022, the average sales volume from projects in Thailand is 302,100 BOED, accounting for 63% of total sales volume. Average sales volume from other countries in this region is 101,000 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	This onshore project is producing natural gas, liquefied petroleum gas (LPG) and crude oil. Project is under execution per its approved long-term plan and continuously drilling additional production wells with exploration drilling plan to maintain its production level. The environmental impact assessments were also undertaken.

Projects	Participation Interest	Operator	Activities
2. Bongkot	66.67%	PTTEP	This offshore project is producing natural gas and condensate. On April 23, 2022, Bongkot Block 15 concession has ended and operatorship has been transferred to PTTEP Energy Development Company Limited (PTTEP ED), under G2/61 project. For Bongkot Block 16 and Block 17, maintained production until end of concession on March 7, 2023.
3. Arthit	80%	PTTEP	This offshore project is producing natural gas and condensate with average natural gas sales volume in Q3/2022 was approx. 292 MMSCFD and average condensate sales volume was approx. 12,491 BPD.
4. Contract 4	60%	Chevron	This offshore project is producing natural gas, condensate, and crude oil. The project is able to deliver production volumes as nominated from the buyer.
5. G1/61 (Erawan field)	60%	PTTEP	This offshore project is producing natural gas, condensate, and crude oil. The Project currently produces gas at 210 MMSCFD. In addition, drilling activities have started since July 2022 and new wellhead platforms are being installed per plan of total 8 wellhead platforms in this year.
6. G2/61 (Bongkot field)	100%	PTTEP	This offshore project is producing natural gas, condensate. Currently, the operation is under a Production Sharing Contract in G2/61 Area A. The drilling activities and wellhead platform installations are ongoing.
7. Malaysia-Thailand Joint Development Area (MTJDA)	50%	CPOC	The Project was granted the rights to extend a 10-year production period until 2039, as well as securing an additional gas volume of at least 30 MMSCFD until 2025 to support Thailand's gas demand.
Projects in Myanmar			
Production Phase			
8. Zawtika	80%	PTTEP	This offshore natural gas field is able to deliver sales and production as per obligations. Currently executing development of Phase 1D in order to maintain production level under the contract and in the process of installing wellhead platform. For the Leakage situation at the onshore natural gas pipeline that resulted in temporary suspension of gas delivery to Thailand for 2 weeks, the company has completed the repairment and already resumed the normalcy of gas delivery to Thailand.
9. Yadana	37.1%	PTTEP	The Project is offshore gas producing project. On July 20, 2022, PTTEPI became a new operator of the Project. The operatorship transfer process was completed according to plan.
Exploration Phase			
10. Myanmar M3	100%	PTTEP	The Project is in the process of awaiting development.

Projects	Participation Interest	Operator	Activities
Projects in Malaysia			
<i>Production Phase</i>			
11. Malaysia Block K	7.2 - 56%	PTTEP	The Project is oil producing field consisting of Kikeh, Siapak North-Petai (SNP) and Gumusut-Kakap (GK) fields which are located in the offshore Sabah. In Q3 2022, the project completed drilling wells in GK as part of field development phase 3 and planned to drill Kikeh field in Q4/2022.
12. Malaysia SK309 and SK311	42 – 59.5%	PTTEP	The project, which is oil and gas-producing project, located in the shallow water of offshore Sarawak, are in the progress of 4 new infill wells drilling in West Patricia.
13. Malaysia Block H	42 – 56%	PTTEP	Located in the deep-water offshore Sabah, the Project can produce up to capacity at 270 MMSCFD and continuing prospect evaluations and plan for 2 exploration wells in early 2023.
<i>Exploration Phase</i>			
14. Malaysia SK410B	42.5%	PTTEP	The Project, which includes a massive gas discovery in Lang Lebah Field, is currently undergoing field development study to reflect the larger gas discovery volume such as increasing processing plant capacity, managing higher CO ₂ as per GHG aspiration target. Front End Engineering Design (FEED) commenced in July 2022 and the Final Investment Decision is expected to be in 2023. The Project still has several petroleum prospects, which are being studied and completed well operation in Sep 2022, while ongoing post-drill evaluation.
15. Malaysia SK417	80%	PTTEP	The Project discovered natural gas reservoirs in Nangka-1 well and performed a subsurface study on petroleum potential in the nearby area. The project is now planning and preparing to drill one appraisal well to prove all resource potential. 3D Seismic Reprocessing current progress at 50%.
16. Malaysia SK405B	59.5%	PTTEP	The Project discovered crude oil and natural gas reservoirs in Sirung-1 well and is ongoing for pre-development study and study on petroleum potential in the nearby area. Currently, the project is planning and preparing for the drilling of 2 exploration wells in 2022.
17. Malaysia SK438	80%	PTTEP	The Project conducted studies on additional appraisal program and development plan for this field, as well as on new petroleum potential. Currently, the project is planning and preparing for the drilling of 1 exploration well in 2022.
18. Malaysia SK314A	59.5%	PTTEP	The Project is currently planning and preparing for the drilling of 2 exploration wells in 2022.
19. Malaysia PM407	70%	PTTEP	The Project is currently ongoing for geophysical and geotechnical site investigation prior to the exploration drilling activity in Q1/2023.
20. Malaysia PM415	80%	PTTEP	The Project is evaluating the remaining petroleum potential and preparation exploration strategy.
21. Malaysia SB412	60%	PTTEP	The Project is currently preparing for exploration activities, beginning with 3D Seismic reprocessing, and geological and geophysical studies to comprehensively evaluate the project's petroleum potential.

Projects	Participation Interest	Operator	Activities
Projects in Vietnam			
<i>Production Phase</i>			
22. Vietnam 9-2	25%	HV JOC	The Project, which is natural gas and crude oil field, located offshore in the southeast region of Vietnam, has planned to drill 1 development wells in Q4/2022.
23. Vietnam 16-1	28.5%	HL JOC	The Project, which is natural gas and crude oil field, located offshore in the southeast region of Vietnam, has 1 development well ongoing in Q3/2022 and plan to drill 1 development well in Q4/2022.
<i>Exploration Phase</i>			
24. Vietnam B & 48/95 and the Vietnam 52/97	8.5%	Petrovietnam	The Projects are located in the offshore area of Vietnam. Currently, in the negotiation process on commercial terms in order to push forward the Final Investment Decision (FID).

Projects in the Middle East and Africa



Projects	Participation Interest	Operator	Activities
Projects in Sultanate of Oman			
<i>Production Phase</i>			
25. 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 Sultanate of 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.

Projects	Participation Interest	Operator	Activities
26. Oman Block 61	20%	BP	The Project is producing natural gas and condensate resources. Currently, the Project run at full production capacity of natural gas and condensate at 1,500 MMSCFD and 60,000 Barrels per day (BPD), respectively
<i>Exploration Phase</i>			
27. Oman Onshore block 12	20%	TotalEnergies	The Project continues the geological and geophysical studies throughout the year 2022 and plan to drill 2 exploration wells in 2024.
<u>Project in United Arab Emirates</u>			
<i>Exploration Phase</i>			
28. Abu Dhabi Offshore 1	30%	Eni Abu Dhabi	The Project is currently being evaluated for petroleum potential for future exploration.
29. Abu Dhabi Offshore 2	30%	Eni Abu Dhabi	The Project is located in the north-west of Abu Dhabi United Arab Emirates. It has successfully made significant gas discovery, in a deeper zone, of the first exploration well XF-002 total approximately 2.5-3.5 trillion cubic feet (TCF). The gas-bearing reservoirs were tested with excellent flow rates and fast-track development options are currently under evaluation. The Project will continue drilling nearby prospect to further evaluate potential of the block.
30. Abu Dhabi Offshore 3	30%	Eni Abu Dhabi	The Project is currently evaluating petroleum potential for the preparation of exploration well and appraisal well drilling in 2024-2026.
31. Sharjah Onshore Area C	25%	Eni Sharjah	The Project completed the seismic acquisition and in progress of seismic processing.
<u>Projects in Algeria</u>			
<i>Production Phase</i>			
32. Algeria 433a & 416b	30%	GBRS	The Project is located onshore in the eastern part of Algeria with crude oil producing. The project's average production for crude oil in Q3/2022 is at approximately 16,000 BPD. 8 additional infilled wells are in progress for drilling and tie-in for production, and the production will begin in Q4/2022.
33. Algeria Hassi Bir Rekaiz	49%	GHBR	The Project is located onshore in the eastern part of Algeria. The first phase of the Project has started first oil production on June 1, 2022. The project's average production for crude oil in Q3/2022 is at approximately 13,000 BPD. The remaining drilling and construction work of Phase 1 will be completed in Q2/2023. The plan of 2 nd phase to ramp up production capacity to around 50,000-60,000 BPD in 2027 are currently under review. In addition, the Project has changed its operator from PTTEP to Groupment Hassi Bir Rekaiz (GHBR), which is a joint operation between PTTEP and SONATRACH, effective October 1, 2022.

Projects	Participation Interest	Operator	Activities
Project in Mozambique			
<i>Development Phase</i>			
34. Mozambique Area 1	8.5%	TotalEnergies	The Project, which is a large LNG project located in offshore Mozambique, is currently in the development phase. The project has commenced foundation work for onshore LNG facilities, temporary Beach Landing, subsea pipeline dredging, and construction of security infrastructures. The project finance loan was completed, and the first debt drawdown had been achieved. However, since April 2021, the operator has decided to announce the cessation of construction due to Force Majeure from the unrest occurring near the project site. Currently, military forces have taken control of key areas surrounding the project site, but there is still unrest outside the control area. The operator has been closely monitoring the situation and is in the process of considering plans to return to the project area.
Project in Angola			
<i>Development Phase</i>			
35. Block 17/06	2.5%	TotalEnergies	The Project is located offshore western of Angola. The FID for the eastern was approved on July 28, 2022 with extend production period until 2045. The first oil production is expected by the end of 2024, with the expected production capacity of 30,000 BPD (100% interest). The development plan for the western area is still being studied, with expected FID in 2024.

Projects in Australia

Projects	Participation Interest	Operator	Activities
Projects in Australia			
<i>Exploration Phase</i>			
36. PTTEP Australasia	90 - 100%	PTTEP	This Project, which is located in the Commonwealth of Australia and has 6 permits, are currently in progress to define the proper direction of the project in order to increase the opportunity for development. With regards to a claim made against PTTEP AAA in the Federal Court of Australia seeking damages on behalf of a group of Indonesian seaweed farmers (Class Action) for compensation relating to the Montara oil spill incident in 2009, PTTEP AAA has been performing all court requirements and be prepared for the appeal. On December 13, 2021, PTTEP AAA has exercised its right to file an appeal. Presently, the legal process is still in progress and no provision is set for this case.

Projects in the Americas



Projects	Participation Interest	Operator	Activities
Projects in Canada			
<i>Exploration Phase</i>			
37. Mariana Oil Sands	100%	PTTEP	The Project, which is located in Alberta, Canada, is underway for reclamation activities according to government's conditions.
Project in Mexico			
<i>Exploration Phase</i>			
38. Mexico block 12 (2.4)	20%	PC Carigali Mexico	The Project, which is located in the Mexican Ridges, west of the Gulf of Mexico, is currently evaluating the petroleum potential.
39. Mexico block 29 (2.4)	16.67%	Repsol Exploracion Mexico	The Project, which is located in the Campeche basin, is now undergoing a pre-development study.
Project in Brazil			
<i>Exploration Phase</i>			
40. Barreirinhas AP1 and Brazil BM-ES-23	25% 20%	Shell Brasil / Petrobras	This project is a joint venture in Brazil. On August 31, 2022, the Company entered into a purchase and sale agreement for all investments in PTTEP Brazil Investments in Oil and Gas Exploration and Production Limitada (PTTEP BL), a subsidiary of PTTEP. Following the completion of the divestment, all PTTEP's investment in Brazil will be withdrawn.

Beyond E&P Business Updates

AI and Robotics Ventures Company Limited (ARV) has made progress as follows;

- 1) ARV and Aeronautical Radio of Thailand (AEROTHAI) signed a MOU on July 27, 2022, to develop and test data connection between ARV's UAS flight operations and fleet management system and AEROTHAI's unmanned aircraft system traffic management system (UTM). This better data connection will enhance flexibility and security of air traffic control and management. Wangchan Valley is designated as a developing and testing area, where the technology can be deployed to other domestic and international locations.
- 2) The Varuna business unit developed a partnership with Easy Rice Company to enhance the value chain of Thai rice industry by applying AI and farmer-to-consumer platform technology called Varuna Analytics for crop health monitoring, growth stage monitoring and yield prediction. Easy Rice will provide with the post-harvest quality checking equipment. This value addition is in line with the Agri-tech concept of both companies.
- 3) The Cariva business unit signed a MOU with Dhipaya Insurance Company on September 6, 2022, to jointly foster for developing health platform including AI symptom Checker, Telemedicine as well as insurance premium calculation. Furthermore, they collaborate on testing of health kiosk, home care solution and metaverse development for mental health insurance. These will provide customers with an end-to-end health tech product connecting health insurance products and healthy lifestyle.

Gas to Power Project has made progress as follows;

An exclusive right to develop the integrated Domestic Gas to Power Project has been received from Myanmar Government since the end of 2020. The project is currently on the preparation process. Although the situation in Myanmar has impacted on the project progress, there are some activities that can be proceed such as site survey and draft of power purchase agreement (PPA).

Other Updates

For decarbonization, we have made progress as follows;

- PTTEP achieved GHG emissions reduction in accumulation from Jan to Sep 2022 by 124,167 tonnes of CO₂ equivalent. PTTEP has also initiated Thailand's first Carbon Capture and Storage (CCS) project at the Arthit offshore gas field with expectation to commence the CCS operations by 2026. Additionally, the Company has initiated CCS feasibility studies in other operational areas to support the EP Net Zero 2050 commitment.
- PTTEP foresees an opportunity to support greenhouse gas offsetting to absorb carbon dioxide from the atmosphere under blue carbon initiatives, such as mangrove reforestation. PTTEP aims for 45,000 rais mangrove reforestation by 2030. As of Q3/2022, PTTEP obtained an approval of mangrove areas of 4,000 rais from the Department of Marine and Coastal Resources (DMCR). Additionally, PTTEP is conducting a pilot-scale seagrass plantation study in Koh Tean, Surat Thani province, with an implementation plan for 50-rai seagrass plantation in Koh Samui by 2023. Apart of that, PTTEP is supporting a research study with Chulalongkorn University to absorb carbon dioxide from seaweeds, seashells, and coral reefs in Thailand.



Business Outlook

Oil Price Outlook

The rising inflation across the world driven by high energy and food prices have gained central banks attention to raise their policy interest rates. In U.S., the interest rate was 0.25 percent in early 2022 and was raised rapidly to 3.25 percent in September by Fed. Based on recent projection, Fed signals the interest rate could be hike up to 4.25-4.50 percent by end 2022 which could hammer economic growth, and further strengthen U.S. dollar. These will subsequently create more negative impact to oil demand, market sentiments and prices throughout rest of the year. The only upside potential is coming from gas to oil switching around 500,000 BPD in the coming winter due to high gas prices and energy supply shortage.

Following ongoing Russia-Ukraine war, EU has agreed to cut Russia crude import into Europe and impose price cap on Russia crude effective from December 2022 onward leading to Russia's attempt to pivot more export into Asia instead. However, Russia crude production still could drop from 10 to 9 MMBPD by end 2022 due to challenges about re-routing and infrastructure constraint. Moreover, U.S. production in December 2022 is revised down to only 12.3 MMBPD below earlier forecast at 13 MMBPD mainly due to shortages of equipment and manpower.

In addition, OPEC+ key producer Saudi Arabia have stated that they are ready to step-in and help stabilize price formation. There is high probability that OPEC+ will continue to maintain their production around 39 MMBPD and cut production 1-2 MMBPD onwards, if required. The oil market balance shall have a small surplus which led to Dubai price forecast around 90 - 100 USD/barrel in Q4/2022. However, many uncertainties still exist namely Russia-Ukraine war progression, potential Iran sanction lifted, monetary policies, political instability in Iraq and Libya, and strategic reserves release.

LNG Price Outlook

Russia – Ukraine conflict continues to be the main factor that affects the Asian Spot LNG price in Q4 this year, coupled with winter demand for heating in Europe and Northeast Asia. The situation could be exacerbated following the leaks in both the Nord Stream 1 and Nord Stream 2 pipelines in late September, which could result in zero gas flow to Europe and lead to higher LNG demand. It is expected that Asian Spot LNG price will remain in a high level in Q4.

It is forecasted that total production capacity of existing and upcoming LNG projects in 2022 will grow by 25 MTPA to 420 MTPA from 2021 (approximately 6 percent), while demand for LNG is anticipated to be around 397 MTPA (Source: FGE as of September 2022). The average 2022 Asian Spot LNG price is expected to be around 40-53 USD/MMBTU (Source: FGE, Wood Mackenzie as of September 2022).

Thai Economy and Foreign Exchange Outlook

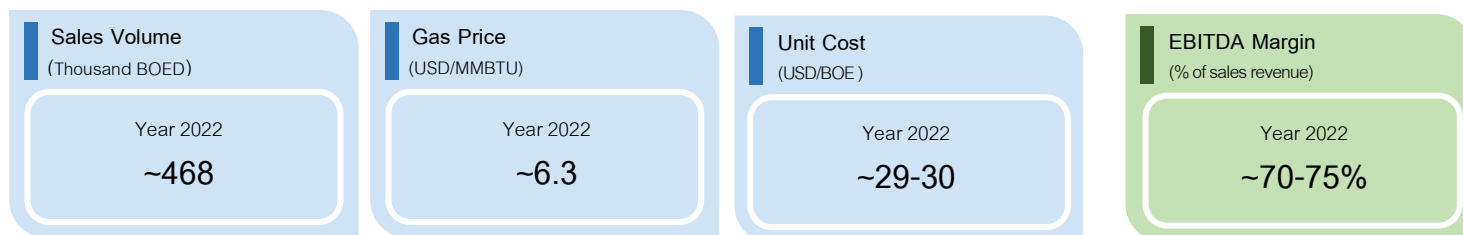
At the end of Q3/2022, The Bank of Thailand (BOT) forecasted Thailand's 2022 economic growth at 3.3 percent and saw potential upward revision due to strong tourism numbers from countries reopening worldwide. The drastically decreased severity of Covid-19, its effective containment, and strong private consumption numbers contributed to this growth forecast. Inflation in Thailand is expected to remain high but should begin to decrease as BOT continues to hike the policy rate.

For 2022, the Thai Baht is expected to continue to be volatile and may depreciate further in the short-term due to aggressive Federal Reserve rate hikes to combat inflation which remained at 8.3 percent in August 2022. However, in the longer-term, the Baht should appreciate in-line with BOT's additional rate hikes, which markets expect in 2022 at 1.25 percent and 2023 at 1.50 percent, and in-line with the general economic recovery of Thailand driven mainly by tourism.

PTTEP has adopted the natural hedge method to manage FX risks of revenues from petroleum products and major expenses which are in the same currency. Remaining FX risk exposures from non-USD revenues and expenses are managed by utilizing financial hedging instruments such as forwards and cross currency swaps. Moreover, interest rate volatility does not materially impact the Company's financial performance as 83 percent of total interest-bearing debt is fixed rate.

PTTEP's performance outlook for the year 2022

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 2022 of 97 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 2022 to be approximately 468,000 barrels of oil equivalent per day. The sales volume growth in 2022, compared to the previous year was mainly driven by the operatorship transfer and start of petroleum production of G1/61 Project (Erawan), as well as the first oil production of Algeria Hassi Bir Rekaiz Project. Moreover, this year marks the first full year realization of sales volume from Malaysia Block H and Oman Block 61 Project.

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 2022 is estimated at approximately 6.3 USD/MMBTU, higher than the previous year, reflecting the lag time adjustment of gas price in accordance with a continuous increase in global crude price.
- Outstanding volume of oil price hedging as at the end of the third quarter, to be settled in the fourth quarter of 2022 and 2023, was approximately 5.05 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 2022, PTTEP expects to be able to maintain unit cost in the range of 29-30 USD/BOE, higher than the reported unit cost of 2021 mainly from an increase in royalty expense per unit following a rise in average selling price. The operating expense per unit also increased from petroleum development and production of G1/61 Project, which PTTEP has assumed the operatorship under Petroleum Sharing Contract, starting from Q2/2022.