



Executive Summary

In Q3/2024, the average Dubai crude oil price was 78.5 USD/barrel, down from the previous quarter's average of 85.3 USD/barrel. This decline was attributed to reduced crude oil demand from concerns over slower-than-expected economic growth in China. In addition, both the International Energy Agency (IEA) and OPEC have revised down their forecasts for 2024 crude oil demand growth. Despite the European Central Bank (ECB) and the U.S. Federal Reserve (Fed) beginning to lower policy interest rates, and China's continued economic stimulus through monetary and fiscal measures, which should have a positive impact on crude oil demand and price in Q4/2024, the major market concerns remain the slower pace of China's economic growth, coupled with high interest rates in Western countries, that could affect global economic growth in the long run. Additionally, seasonal factors are also expected to weaken demand in Q4/2024. On the supply side, a tighter crude oil supply conditions are anticipated in Q4/2024 due to increasing geopolitical tensions in the Middle East. Moreover, OPEC+ members have agreed to extend production cuts only until November 2024 and may gradually increase production based on market demand. PTTEP forecasts that Dubai crude oil prices in Q4/2024 will fluctuate between 75-85 USD/barrel (Source: PTTEP). Key factors to watch include the geopolitical situation between Israel and Iran, U.S. presidential election, and OPEC+ crude oil supply dynamics, which could affect overall crude oil supply. Additionally, developments in the Russia-Ukraine conflict and economic growth projections for the U.S., China, and India will significantly influence crude oil demand.

Significant developments were reported in core E&P business during Q3/2024. The field development plan of Abu Dhabi Offshore 2 Project which is located in the northwest offshore of Abu Dhabi was approved by the Government in September 2024. Final Investment Decision (FID) for this project is expected in 2028. In addition, PTTEP has entered into a Sale and Purchase Agreement (SPA) to sell its entire participation interest of 16.67% in Mexico Block 29 (2.4) Project, in Mexico, to REPSOL EXPLORACIÓN MÉXICO, S.A. DE C.V. The completion of this transaction is expected by the end of 2024, subject to the fulfilment of conditions prescribed in the SPA. On the new business for energy transition, Xplor Ventures Company was established to invest in the form of Corporate Venture Capital (CVC), focusing on Future Energy, Decarbonization, and technologies that can enhance the exploration and production (E&P) business (E&P Deep Tech). In the past quarter, the company participated in a Series D funding round for a fusion energy technology development project in Washington, USA. The goal is to foster collaboration in studying new energy sources and create opportunities for new business development for PTTEP in the future.

For Q3/2024 financial results, PTTEP reported a decline in net profits and profits from normal operation, compared to Q2/2024, driven a 6% drop in sales volume to 475,078 BOED, mainly due to the annual maintenance shutdown at G2/61, Arthit, Contract 4, G1/61 Project, despite increased crude oil sales from the Malaysia Block K Project. However, the average selling price increased slightly by 0.1% to 47.07 USD/BOE, attributed to higher gas selling prices. In addition, PTTEP has reported a unit cost for Q3/2024 at 31.91 USD/BOE. In terms of PTTEP's financial position as at the end of Q3/2024, total assets of 27,309 MMUSD and total liabilities of 12,134 MMUSD, of which 3,780 MMUSD was interest-bearing debt, were reported. The total shareholders' equity was 15,175 MMUSD, resulting in an interest-bearing debt-to-equity ratio of 0.25 times, in line with the company's financial policy.

Table of key financial results

(Unit: Million US Dollar)	Q2 2024	Q3 2024	Q3 2023	Inc. (Dec.) QoQ	Inc. (Dec.) YoY	9M 2024	9M 2023	Inc. (Dec.) YTD
Total Revenues	2,412	2,307	2,292	-105	+15	6,912	6,646	+266
Revenue from sales *	2,257	2,133	2,193	-124	-60	6,484	6,310	+174
EBITDA **	1,776	1,565	1,651	-211	-86	4,909	4,772	+137
Profit for the period	653	511	514	-142	-3	1,688	1,694	-6
Basic earnings per share (Unit: US Dollar)	0.17	0.13	0.13	-0.04	-	0.43	0.41	+0.02
Profit (Loss) from normal operation	667	520	539	-147	-19	1,731	1,717	+14
Profit (Loss) from non-operating items	(14)	(9)	(25)	+5	+16	(43)	(23)	-20

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

** EBITDA excluded asset write-offs of petroleum retention lease AC/RL12 (Oliver) during Q2/2024 and Mexico block 29 (2.4) Project during Q3/2024.



Economic Overview in the third quarter of 2024

Crude Oil Price

In Q3/2024, the average price of Dubai crude oil was 78.5 USD/barrel, down from 85.3 USD/barrel in the previous quarter. In July 2024, the average price rose to 83.8 USD/barrel, an increase from June, reflecting increased demand during the Western summer driving season, particularly in the United States. Reports indicated a steady decline in U.S. commercial crude oil inventories and a slowdown in inflation rates, which led the market to expect the interest rates cut by the U.S. Federal Reserve (Fed) within this year, bolstering demand growth forecasts. Meanwhile, OPEC+ continued its voluntary production cuts; however, member countries like Iraq, Kazakhstan, Nigeria, and the United Arab Emirates were still producing above their allocated quotas.

During August 2024, the average price of Dubai crude oil fell to 77.6 USD/barrel, largely due to concerns over China's economic growth, where various economic indicators suggested slower-than-expected growth in China, leading to reduced crude oil imports for refining and consumption. Additionally, sustained high-interest policies in Western countries began to dampen crude oil demand. In response to these trends, both the International Energy Agency (IEA) and OPEC revised their 2024 crude oil demand growth forecasts downward.

The average price of Dubai crude oil continued to decline in September 2024, reaching 73.5 USD/barrel. The Fed cut its policy interest rate by 0.5% as inflation trends approached target levels, indicating further rate cuts to support economic stability. However, both the IEA and OPEC once again lowered their crude oil demand growth forecasts due to ongoing concerns over China's economy. In the last week of September, the People's Bank of China (PBOC) announced the accommodative monetary policies aimed at stimulating further economic growth. Meanwhile, OPEC+ extended its voluntary production cuts through the end of November 2024, however, but crude oil prices experienced only limited increases.

Liquefied Natural Gas (LNG) Price

In Q3/2024, Asian Spot LNG prices rose from an average of 9.30 USD/MMBTU in Q1/2024 and 11.25 USD/MMBTU in Q2/2024 to 13.00 USD/MMBTU. Several supply-side factors contributed to this increase, including the planned maintenance closure of the Gorgon LNG export terminal in Australia, the shutdown of the Freeport LNG terminal in the United States due to Hurricane Beryl, an emergency shutdown of the Ichthys LNG export terminal in Australia, and the delayed LNG exports from the MLNG Tiga production plant in Malaysia due to operational issues. Additionally, ongoing conflicts in the Middle East along with international political tensions between Russia, the United States, and European nations, heightened concerns about supply security. On the demand side, higher average temperatures in Asia and Europe led to increased LNG consumption. However, European countries maintained high levels of LNG reserves, and both Asian and European nations switched to greater use of coal, nuclear energy, and other alternative energy sources, which helped mitigate the rise in LNG prices. In Q3/2024, the average LNG price was 12.16 USD/MMBTU in July, 13.71 USD/MMBTU in August, and 13.22 USD/MMBTU in September.

Thailand's Energy Demand

According to the Energy Policy and Planning Office (EPPO) of the Ministry of Energy, domestic energy consumption in July 2024 reached approximately 2 million barrels of oil equivalent per day (MMBOED), marking a 0.5% increase compared to the same period in 2023. The key factors driving this growth include significantly higher use of natural gas, LNG, and hydropower, to replace coal in electricity generation. These shifts align with the country's power development plan and aim to address the rising domestic energy demand.

Exchange Rates (Thai Baht against US Dollar)

At the end of Q3/2024, the Thai Baht (THB) appreciated against the U.S. Dollar (USD), from 36.85 at the end of Q2/2024 to 32.29 at the end of Q3/2024, a notable appreciation of 12.37%. This movement was primarily driven by the Fed's decision to cut its policy interest rate by 0.50% in September. Additionally, Thailand's tourism sector continued to recover, and export growth exceeded expectations, enhancing consumer purchasing power. Furthermore, capital inflows into the Thai equity market, bolstered by the issuance of the Vayupak Fund to both retail and institutional investors, further supported the appreciation of THB during this quarter.



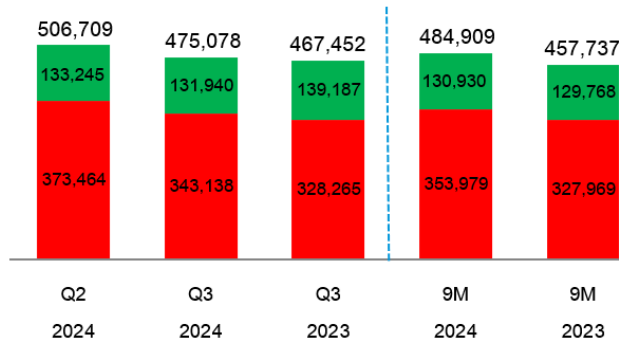
Financial Performance

Average Sales Volume and Selling Price

Unit: Barrels of Oil Equivalent per Day

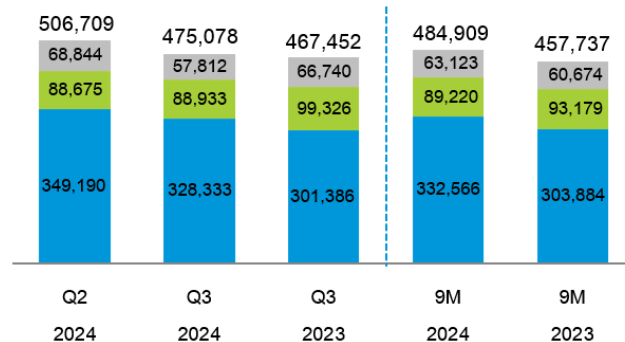
By Product Type

■ Gas ■ Liquid



By Geographical Region

■ Thailand ■ Other Southeast Asia ■ Rest of the World



Average selling price and Dubai crude oil price (Unit : US Dollar)	Q2 2024	Q3 2024	Q3 2023	Inc. (Dec.) QoQ	Inc. (Dec.) YoY	9M 2024	9M 2023	Inc. (Dec.) YTD
Average selling price (/BOE)	47.01	47.07	48.62	+0.06	-1.55	47.11	48.14	-1.03
Liquid price (/BOE)	81.15	76.91	81.89	-4.24	-4.98	79.14	78.10	+1.04
Gas price (/MMBTU)	5.80	5.93	5.75	+0.13	+0.18	5.88	6.05	-0.17
Average Dubai crude oil price (/BBL)	85.34	78.48	86.63	-6.86	-8.15	81.61	81.53	+0.08

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

For the Third quarter of 2024 compared with the Second quarter of 2024

In Q3/2024, the average sales volume of PTTEP and its subsidiaries (the “Group”) decreased to 475,078 barrels of oil equivalent per day (BOED) or 6% when compared with Q2/2024 of 506,709 BOED, primarily from lower natural gas sales volume due to maintenance shutdown in this quarter of Arthit, Contract 4 G1/61 and G2/61 Projects, offset with higher crude sales volume of Malaysia Block K Project. However, the average selling price slightly increased.

For the Third quarter of 2024 compared with the Third quarter of 2023

When compared the average sales volume of Q3/2024 to Q3/2023 of 467,452 BOED, the average sales volume increased by 2%, primarily from G1/61 Project ramped up the natural gas production in March 2024, together with the increase in participating interest in Yadana Project following the partner's withdrawal in April 2024. Meanwhile, the average selling price decreased by 3% to 47.07 USD/BOE (Q3/2023: 48.62 USD/BOE), primarily due to a decrease of market crude prices while gas prices slightly increased.

For the nine-month period ended September 2024 compared with 2023

The average sales volume for the nine-month period ended September 2024, increased by 6% to 484,909 BOED when compared with the same period of 2023 (the nine-month period ended September 2023: 457,737 BOED). The increase was primarily from G1/61 Project ramped up the natural gas production in March 2024. However, the average selling price decreased by 2% to 47.11 USD/BOE (the nine-month period ended September 2023: 48.14 USD/BOE), primarily from G1/61 Project and G2/61 Project.

Overall Operating Results

For the Third quarter of 2024 compared with the Second quarter of 2024

In Q3/2024, the Group had a net profit of 511 MMUSD, a decrease of 142 MMUSD or 22% from a net profit of 653 MMUSD in Q2/2024, primarily due to a decrease in revenue from sales as well as an increase in operating expenses and exploration expenses. The net profit of 511 MMUSD in Q3/2024 can be separated as following:

The profit from normal operation in Q3/2024 was 520 MMUSD, a decrease of 147 MMUSD, compared with a profit of 667 MMUSD in Q2/2024, was primarily from a decrease in revenue from sales of 124 MMUSD due to lower of the average sales volume of Arthit, Contract 4, G1/61 and G2/61 Projects, offset with Malaysia Block K Project. Meanwhile, operating expenses increased by 58 MMUSD, primarily from higher sales volume of Malaysia Block K Project, along with higher maintenance activities from Arthit, Contract 4 and G1/61 Projects. In addition, exploration expenses increased by 21 MMUSD, primarily from asset write-off after expiration of the exploration period of Sharjah Onshore Area A Project, as well as exploration well write-off of G2/61 Project in this quarter. However, income taxes decreased by 60 MMUSD, mainly from projects in Thailand due to lower profits.

The loss from non-operating items in Q3/2024 was 9 MMUSD. A decrease of 5 MMUSD, compared with a loss of 14 MMUSD in Q2/2024, was primarily from the increase of tax saving related to the functional currency in Malaysia due to appreciation of MYR against USD. In addition, there was asset write-off of Mexico block 29 (2.4) Project of 28 MMUSD in this quarter, offset with asset write-off of petroleum retention lease AC/RL 12 (Oliver) in the previous quarter.

For the Third quarter of 2024 compared with the Third quarter of 2023

In Q3/2024, the Group had a net profit of 511 MMUSD. A decrease of 3 MMUSD or 1% from a net profit of 514 MMUSD in Q3/2023, was primarily from lower revenue from sales, together with higher depreciation, depletion and amortization, offset with a decrease in income taxes, as well as a gain from oil price hedging instruments in this quarter. The net profit of 511 MMUSD in Q3/2024 can be separated as following:

The profit from normal operation in Q3/2024 was 520 MMUSD. A decrease of 19 MMUSD, compared with a profit of 539 MMUSD in Q3/2023, was primarily from a decrease in revenue from sales of 60 MMUSD due to a 3% decrease in average selling price which in line with a decrease in market prices. Meanwhile, depreciation, depletion and amortization increased by 94 MMUSD, primarily from G1/61 Project due to higher sales volume, and Yadana Project due to additional provision of decommissioning costs from the increase in participating interest following the partner's withdrawal. However, income taxes decreased by 135 MMUSD mainly from projects in Thailand and Oman due to lower profits.

The loss from non-operating items in Q3/2024 was 9 MMUSD. A decrease of 16 MMUSD from a loss of 25 MMUSD in Q3/2023, was primarily from the gain on oil price hedging instruments due to a downward trend of forward oil price in this quarter, together with an increase in tax saving related to the functional currency of Malaysia increased due to appreciation of MYR against USD, offset with asset write-off of Mexico block 29 (2.4) Project in this quarter.

For the nine-month period ended September 2024 compared with 2023

For the nine-month period ended September 2024, the Group had net profit of 1,688 MMUSD, a decrease of 6 MMUSD slightly decreased from net profit for the nine-month period ended September 2023 of 1,694 MMUSD. The net profit for the nine-month period ended September 2024 of 1,688 MMUSD can be separated as following:

The profit from normal operation for the nine-month period ended September 2024 was 1,731 MMUSD, an increase of 14 MMUSD from profit for the nine-month period ended September 2023 of 1,717 MMUSD, was primarily from an increase in revenue from sales of 174 MMUSD due to the higher average sales volume from G1/61 Project, offset with a decrease of average selling price. Meanwhile, income taxes decreased by 220 MMUSD mainly from projects in Thailand and Oman due to lower profits. However, depreciation, depletion, and amortization increased by 381 MMUSD, primarily from higher sales volume of G1/61 Project, together with Zawtika Project and S1 Project that had additional completed assets.

The loss from non-operating items for the nine-month period ended September 2024 was 43 MMUSD, an increase of 20 MMUSD from loss for the nine-month period ended September 2023 of 23 MMUSD, was primarily from asset write-offs in this year, including petroleum retention lease AC/RL 12 (Oliver) amounting to 30 MMUSD and Mexico block 29 (2.4) Project amounting to 28 MMUSD. However, the tax saving related to the functional currency of Malaysia changed by 36 MMUSD from the previous year's tax expense due to appreciation of MYR against USD this year.

Operating Results by Segments

Net Profit (loss)	Q2 2024	Q3 2024	Q3 2023	Inc. (Dec.) QoQ	Inc. (Dec.) YoY	9M 2024	9M 2023	Inc. (Dec.) YTD
(Unit: Million US Dollar)								
Exploration and Production	663	590	640	-73	-50	1,825	1,929	-104
Thailand	404	362	375	-42	-13	1,160	1,172	-12
Other Southeast Asia	176	194	187	+18	+7	466	524	-58
Middle East	57	34	59	-23	-25	148	166	-18
Africa	56	23	19	-33	+4	102	72	+30
Others	(30)	(23)	-	+7	-23	(51)	(5)	-46
Other businesses and Corporate	(10)	(79)	(126)	-69	+47	(137)	(235)	+98
Profit for the period	653	511	514	-142	-3	1,688	1,694	-6

For the Third quarter of 2024 compared with the Second quarter of 2024

For Q3/2024, the Group reported a net profit of 511 MMUSD. A decrease of 142 MMUSD from a net profit of 653 MMUSD in Q2/2024, was primarily from a lower net profit of 73 MMUSD from Exploration and Production segment, and a higher net loss of 69 MMUSD from Other business and Corporate segment.

The Exploration and Production segment reported a net profit of 590 MMUSD in Q3/2024. A decrease of 73 MMUSD, compared with a net profit of 663 MMUSD in Q2/2024, was primarily from Thailand which reported a net profit decrease of 42 MMUSD due to the maintenance shutdowns of projects in the Gulf of Thailand, together with Africa reported a net profit decrease of 33 MMUSD from a decrease in revenue from sales due to lower sales volume from Algeria Hassi Bir Rekaiz Project.

Other businesses and Corporate segment reported a net loss of 79 MMUSD in Q3/2024. An increase of 69 MMUSD, compared with a net loss of 10 MMUSD in Q2/2024, was primarily from loss on foreign exchange forward contracts due to appreciation of THB against USD, while there was gain in the previous quarter due to depreciation of THB against USD.

For the Third quarter of 2024 compared with the Third quarter of 2023

In Q3/2024, the Group reported a net profit of 551 MMUSD. A decrease of 3 MMUSD from a net profit of 514 MMUSD in Q3/2023, was primarily from Exploration and Production segment with a lower net profit of 50 MMUSD, while Other businesses and Corporate segment reported a lower net loss of 47 MMUSD.

The Exploration and Production segment reported a net profit of 590 MMUSD in Q3/2024. A decrease of 50 MMUSD, compared with a net profit of 640 MMUSD in Q3/2023, was primarily from the Middle East which reported a decrease in net profit of 25 MMUSD from asset write-off after expiration of the exploration period of Sharjah Onshore Area A Project, as well as a decrease in revenue from sales due to lower sales volume from projects in Oman, together with asset write-off of Mexico block 29 (2.4) Project which is presented under Others segment in this quarter.

Other businesses and Corporate segment reported a net loss of 79 MMUSD in Q3/2024. A decrease of 47 MMUSD, compared with a net loss of 126 MMUSD in Q3/2023, was primarily from gain on oil price hedging instruments due to a downward trend of forward oil price in this quarter.

For the nine-month period ended September 2024 compared with 2023

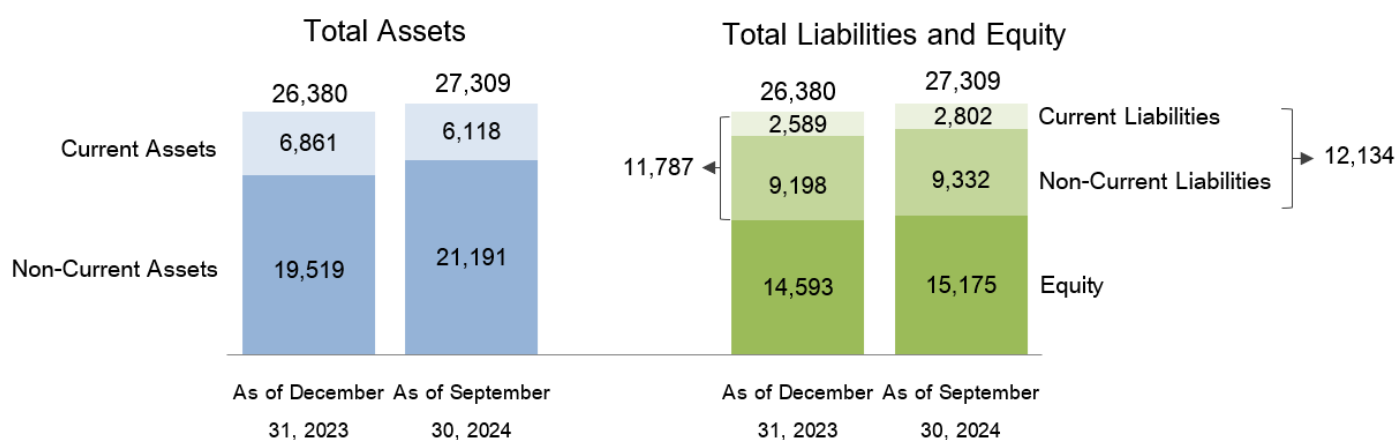
For the nine-month period ended September 2024, the Group reported a net profit of 1,688 MMUSD. A decrease of 6 MMUSD, compared with a net profit for the nine-month period ended September 2023 of 1,694 MMUSD, was primarily from a lower net profit of 104 MMUSD from Exploration and Production segment, while there was a lower net loss of 98 MMUSD from Other businesses and Corporate segment.

Exploration and Production segment reported a net profit for the nine-month period ended September 2024 of 1,825 MMUSD. A decrease of 104 MMUSD, compared with a net profit for the nine-month period ended September 2023 of 1,929 MMUSD, was primarily from Other Southeast Asia with a decrease in net profit of 58 MMUSD mainly from Zawtika Project due to lower sales volume, and higher depreciation, depletion, and amortization from the additional completed assets. In addition, Others reported an increase in net loss of 46 MMUSD primarily from asset write-offs this year, including petroleum retention lease AC/RL12 (Oliver) and Mexico block 29 (2.4) Project. However, Africa reported an increase in net profit of 30 MMUSD from higher revenue from sales due to higher sales volume from Algeria Hassi Bir Rekaiz Project.

Other businesses and Corporate segment reported a net loss for the nine-month period ended September 2024 of 137 MMUSD. A decrease of 98 MMUSD, compared with a net loss for the nine-month period ended September 2023 of 235 MMUSD, was primarily from an increase in interest income due to the higher cash balances, and interest income from long-term loans to related parties.

Financial Position

Unit: Million US Dollar



Assets

As at 30 September 2024, the Group had total assets of 27,309 MMUSD, an increase of 929 MMUSD from total assets as at 31 December 2023 of 26,380 MMUSD was primarily due to;

- (1) Current assets, which were primarily comprised of cash and cash equivalents, trade and other current receivables and inventories, decreased by 743 MMUSD, primarily from lower trade and other current receivables of 738 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, exploration and evaluation assets, goodwill, and right-of-use assets, increased by 1,672 MMUSD, primarily arising from additional investments in G1/61 Project and G2/61 Project, together with investments in Seagreen Offshore Wind Farm Project and Ghasha Concession Project.

Liabilities

As at 30 September 2024, the Group had total liabilities of 12,134 MMUSD, an increase of 347 MMUSD from total liabilities as at 31 December 2023 of 11,787 MMUSD was primarily due to;

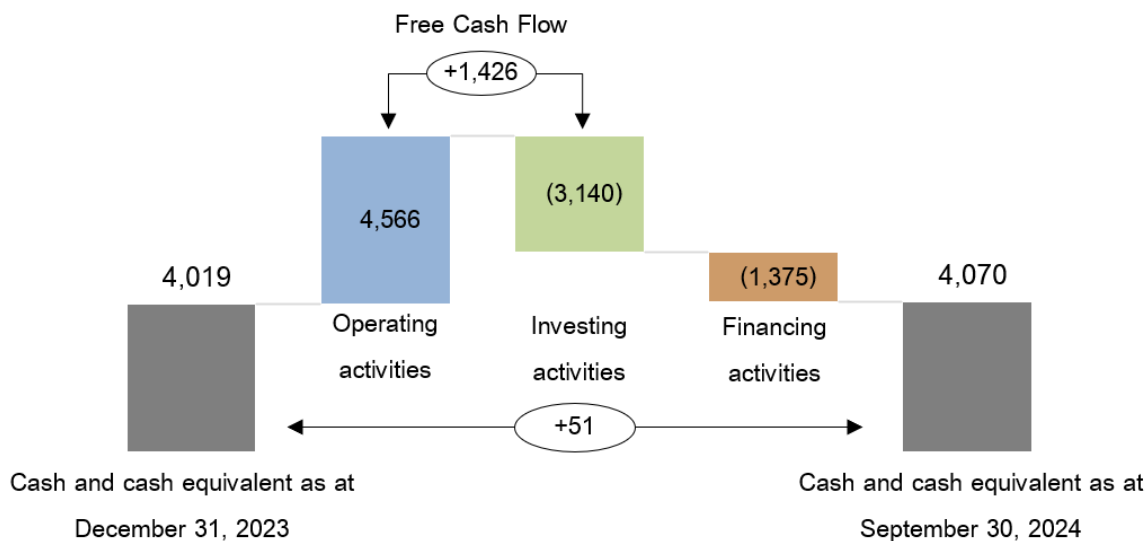
- (1) Current liabilities, which were primarily comprised of trade and other current payables and corporate income tax payable, increased by 213 MMUSD, primarily from higher trade and other current payables.
- (2) Non-current liabilities, which were primarily comprised of non-current provision for decommissioning costs, debentures, deferred tax liabilities and lease liabilities, increased by 134 MMUSD, primarily due to higher provision for decommissioning costs from additional provision recognized from the increase in participating interest in Yadana Project following the partner's withdrawal.

Equity

As at 30 September 2024, the Group had equity of 15,175 MMUSD, an increase of 582 MMUSD from equity as at 31 December 2023 of 14,593 MMUSD was primarily due to the net profit for the nine-month period ended 2024, offset with the dividend payments in April and August 2024. The equity included non-controlling interests of 8 MMUSD from the group of AI and Robotics Ventures Company Limited.

Cash Flows

Unit: Million US Dollar



As at 30 September 2024, the Group had cash and cash equivalents of 4,070 MMUSD, an increase of 51 MMUSD when compared with cash and cash equivalents as at 31 December 2023 of 4,019 MMUSD.

Net cash flows provided by operating activities of 4,566 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 paid for expenses and income taxes.

Net cash flows used in investing activities of 3,140 MMUSD, primarily from additional capital expenditures in exploration and production assets, mainly from G1/61, G2/61, S1 and Zawtika Projects, together with cash paid for investing in Seagreen Offshore Wind Farm Project and Ghasha Concession Project.

Net cash flows used in financing activities of 1,375 MMUSD, primarily came from dividend payments for the second half of 2023 and the first half of 2024, as well as payments for lease liabilities and interests during the nine-month period of 2024.

Key Financial Ratios

	Q2 2024	Q3 2024	Q3 2023	9M 2024	9M 2023
Profitability Ratio (%)					
EBITDA margin *	77.28	72.00	74.24	74.44	74.46
Return on equity	15.07	15.05	15.55	15.05	15.55
Net profit margin	23.65	23.58	22.51	23.58	22.51
Leverage Ratio (Times)					
Interest-bearing Debt to equity	0.24	0.25	0.26	0.25	0.26
Interest-bearing Debt to EBITDA *	0.55	0.56	0.59	0.56	0.59

* EBITDA excluded asset write-offs of petroleum retention lease AC/RL12 (Oliver) during Q2/2024 and Mexico block 29 (2.4) Project during Q3/2024.

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)
- Interest-bearing Debt to equity = Interest-bearing Debt to equity
- Interest-bearing Debt to EBITDA = Average Interest-bearing Debt to profit before deduction of interest, tax and depreciation for the past 12 months



Strategies and Business Management

Strategies

PTTEP operates under the concept of “From We to World” and with support to United Nations Sustainable Development Goals (UN SDGs) in order to become a “Sustainable Organization” that takes a conscious consideration of all stakeholders’ interests. PTTEP, therefore, focuses on delivering secure, affordable, and sustainable energy especially in an on-going global energy crisis and energy transition, through the three strategy pillars as follows:

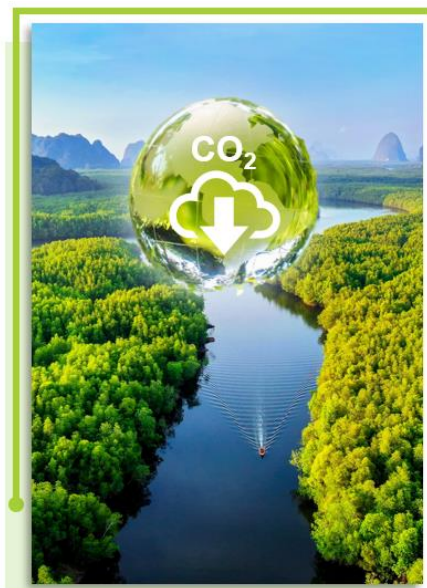


Drive Value

- Strengthen E&P businesses and ensure Thailand energy security, supporting domestic natural gas demand in particular
 - Maximize natural gas and crude oil production from existing projects
 - Expedite development of new projects under development phase
 - Accelerate monetization from recent petroleum discovery projects
- Enhance competitiveness of unit cost
- Expand gas-weighted portfolio and LNG, especially in upstream and midstream

Decarbonize

- Manage lower carbon E&P portfolio to reach Net Zero Greenhouse Gas Emissions target by 2050. This target covers both the direct emissions (Scope 1) and indirect emissions from energy usage (Scope 2) in the exploration and production businesses under PTTEP’s operational control. PTTEP has also set up the interim targets to reduce greenhouse gas emissions intensity at least 30% within 2030 and 50% within 2040 from 2020 base year
- Execute greenhouse gas (GHG) emissions reduction plan by leveraging relevant technology application
- Maximize the use of renewables and explore clean future energy application in operational areas
- 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 ecosystems under Ocean for Life strategy



Diversify

- Scale up AI and Robotics Ventures (ARV) businesses
- Explore renewable energy opportunities
- Explore the businesses in relation to Carbon Capture, Utilization, and Storage (CCUS), hydrogen, and future energy

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 all stakeholders, and to support business directions. The implementation and progress can be summarized as follows:

1 Good Corporate Governance Principles

To support sustainable growth of the Company, PTTEP is committed to conduct its business with transparency and efficiency, 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 progresses are as follows:

- Revisit the Governance, Risk Management, and Compliance (GRC) targets and workplan to ensure an integrated approach to GRC both at the organizational level and within each GRC unit, in accordance with the core strategies of Smart Assurance and Mindful GRC. The focus is on achieving the defined GRC objectives, leveraging effective digital technology, and cultivating a mindset among all employees to enhance awareness and implement GRC practices in their daily work. This includes extending the best GRC practices to PTTEP's stakeholders and other interested organizations.
- Enhance the GRC Operating Model Framework to provide clearer guidelines for the oversight, management, monitoring, and reporting of GRC activities across PTTEP's domestic and international projects, as well as its subsidiaries. The framework will also be designed to support new businesses and future projects of the company.
- Conduct Stakeholder Engagement Survey to collect feedback and stakeholders' view on PTTEP's GRC activities. The survey results will be analyzed for further development of effective strategies for GRC operations.
- Continuously improve the GRC One Digital System by exploring the feasibility of data linkage between GRC units, internal departments, and external sources to optimize data utilization and effectiveness.
- Continuously promote a GRC culture through communication and various activities to ensure that executives and employees, both in Thailand and overseas, are aware of, understand, and integrate GRC principles into their work. This is conveyed through various campaigns such as the 'GRC is in You' roadshow at headquarters and across domestic and international projects, GRC training courses, and communication on potential GRC-related issues. Additionally, effective GRC practices are promoted to external communities.
- Establish a whistleblowing channel that allows both internal and external individuals to report misconduct, legal non-compliance, or violations to PTTEP regulations through the company's whistleblowing system.

In terms of **Procurement Management**, PTTEP has consistently reviewed and improved its procurement processes, adhering to the principles of transparency, efficiency, and auditability. These processes comply with the Public Procurement and Supplies Management Act B.E. 2560 and have been endorsed by the Government Procurement Policy Board, for strict implementation in PTTEP's procurement activities. In addition, key internal controls are in place, including the establishment of Procurement Committee comprising of at least 9 members who are experts with experience from relevant functions in PTTEP, such as Engineering and Operation, Logistics and Supply Chain, Finance and Accounting, Strategy and Corporate Management, and Legal Division. This committee is responsible for screening and approving PTTEP procurement projects through unanimous vote from a quorum of at least 5 members, in accordance with the contract value criteria and authority specified in PTTEP's Procurement Regulation.

In its approach to **Stakeholder Management**, PTTEP has identified three strategic areas aligned with international standards: 1) **Trust** – building confidence and trust in both petroleum exploration and production (E&P) and other new businesses (Beyond E&P) of the company; 2) **Synergy** – creating integrated networks and extending collaboration with stakeholders effectively; and 3) **Commitment** – fostering stakeholder engagement and participation to achieve the organization's goals. PTTEP employs these strategies to manage and engage with all 8 defined stakeholder groups which are (1) Government Agencies and Regulators; (2) Suppliers/Contractors; (3) Customers; (4) Employees and Directors; (5) Shareholders and Financial Institutions; (6) Business Partners and Joint Ventures; (7) Communities and Society; and (8) Media. During Q3/2024, PTTEP conducted a stakeholder engagement survey to establish a baseline database, which is currently under review. Additionally, the company has developed a

digitally integrated stakeholder management system to ensure that efficient and systematic engagement with all stakeholder groups. PTTEP firmly believes that effective stakeholder management is integral for driving the company's operations toward its goals.

Regarding human rights, PTTEP has established and implemented its **Human Rights Policy and Management System** in accordance with international standards to prevent human rights violations from its business operations. The company conducts an annual human rights risk assessment, covering 100% of its operational assets and joint ventures. In Q3/2024, PTTEP is in the process of identifying scopes for a socio-economic study, including human rights, for its projects in the Republic of the Union of Myanmar, a conflict-affected region. The primary objective is to assess both the positive and negative impacts on the livelihoods of communities surrounding PTTEP's operational areas, considering both economic and social dimensions. It will also evaluate the effectiveness of the company's current social development projects. Additionally, the study seeks to understand the needs of these communities to identify opportunities for future social development projects that more sustainably address their needs.

In terms of **Safety, Security, Health and Environment Management System (SSHE MS)**, as of Q3/2024, PTTEP reported a Lost Time Injury Frequency (LTIF) of 0.25 incident per 1 million man-hours, and a Total Recordable Incident Rate (TRIR) of 0.67 incident per 1 million man-hours, which is below the industry average. PTTEP remains committed to enhancing safety awareness among its workforce through initiatives addressing human factors, contractor management, and lessons learnt from the causes of past incidents.

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

The key initiatives implemented to create long-term value for stakeholders can be summarized as follows:

- **Circular Model for E&P:** PTTEP's work processes are designed and managed to increase the reuse and recycling of resources, with a goal of reusing at least 50% of the main structures of wellhead platforms while ensuring safe, and efficient functionality. In 2024, PTTEP plans to reuse the topsides of two wellhead platforms (WHP) in the G2/61 Project. The modification process has been completed as scheduled, and installation of these topsides is set in Q4/2024. Additionally, PTTEP aims to reuse existing WHP jackets in the G1/61 Project, which is currently in the Front-End Engineering Design (FEED) phase and undergoing an economic feasibility assessment. The assessment is expected to be completed by 2024, with installation planned for 2026.
- **Ocean for Life:** Given that most of PTTEP's core operations are conducted offshore, the company prioritizes the conservation, restoration, and maintaining natural resources and marine ecosystems to support economic growth and enhance the quality of life for nearshore communities. This commitment reflects the company's long-term targets of (1) achieving a net positive impact on ocean biodiversity and ecosystem services (BES) value across all offshore activities and (2) increasing the income of targeted communities by 50%, by the year 2030, compared to the income levels prior to the initiatives. The performance of this initiative is structured into three workstreams as follows:
 - 1) **Sustainable Ocean-Friendly Operations:** This workstream focuses on ensuring safety and minimizing environmental impacts in the areas where PTTEP operates. In Q3/2024, PTTEP, in collaboration with the Department of Fisheries, conducted an environmental baseline study to identify potential areas for deploying artificial reefs using petroleum platform jackets as marine habitats in the Gulf of Thailand. The environmental baseline survey has been completed and will be used to evaluate and select suitable areas in accordance with regulatory requirements and local stakeholder acceptance. This study will aid in the permit application process for deploying artificial reefs, aiming to conserve, restore, and maintain the balance of marine resources and biodiversity in both coastal and offshore areas.
 - 2) **Sustainable Ocean Health and Blue Carbon Solutions:** This workstream focuses on the tangible conservation and restoration of marine resources, as well as the sequestration of carbon dioxide through blue carbon initiatives. In Q3/2024, PTTEP is enhancing the project's effectiveness by extending the installation of underwater cameras to the G1/61 Project, with completion expected by the year 2025. This initiative aims to demonstrate the biodiversity and abundance around its offshore petroleum platforms through software upgrades that improve accuracy and enhance the identification of fish species under the platform jackets. Additionally, PTTEP has been monitoring coral bleaching

and assessing biodiversity in the coral reefs at Koh Mannai, Rayong Province, for the third consecutive year, in collaboration with the Faculty of Fisheries at Kasetsart University and AI and Robotics Ventures Company Limited (ARV). The data from this study will serve as a baseline to support the development of monitoring plans for coral bleaching and biodiversity assessments, as well as restoration strategies, in collaboration with government agencies.

- 3) Sustainable Community around the Ocean: PTTEP carries out corporate social responsibility projects with stakeholders in areas surrounding its offshore operational sites and has expanded these efforts to 17 provinces around the Gulf of Thailand to support ocean biodiversity and ecosystem services (BES) value. From early 2024 through Q3/2024, PTTEP has made significant progress in promoting the aquaculture of juvenile aquatic animals, resulting in the release of over 5,544 million juvenile aquatic animals back into their natural habitats. PTTEP has also installed 23 fish habitats in coastal conservation zones, covering a total of 11.8 square kilometers of marine conservation areas. The company has organized 10 conservation network activities, engaging an accumulated total of 1,360 participants in conservation efforts. Furthermore, PTTEP has established a learning center for the development of sea products in Baan Phraek Mueang, Nakhon Si Thammarat Province, under its sea product development project. This center is the first facility established by PTTEP dedicated to producing sealed processed seafood products, developed in collaboration with the local community and certified by the Food and Drug Administration (FDA).

3 Finance

PTTEP prioritizes effective financial management by maintaining financial discipline and a robust capital structure, while efficiently allocating funds to deliver appropriate returns to shareholders. As of the end of Q3/2024, the company's interest-bearing debt-to-equity ratio was at 0.25 times, consistent with its financial policy. Additionally, PTTEP has maintained its credit rating, as assessed by credit rating agencies, at BBB+ by S&P Global Ratings and Fitch Ratings, and Baa1 by Moody's Investor Service.

On August 28, 2024, PTTEP paid an interim dividend for the first six months of 2024 at a rate of 4.50 THB per share, amounting to a total of 494 million USD. Following this dividend payout, PTTEP continues to maintain a strong financial position, to withstand oil price volatility and global economic fluctuations. The company also retains solid liquidity, allowing it to manage its financial needs efficiently and support planned operations, including new business investments to facilitate the Energy Transition in accordance with its strategies.

In terms of foreign exchange (FX) and interest rate risk management, PTTEP adopts the natural hedge approach for petroleum sales revenues and major expenses that are in the same currency. For revenues and expenses denominated in currencies other than USD, PTTEP utilizes financial hedging instruments such as forwards and swaps to mitigate the impact of exchange rate fluctuations on its financial performance. Regarding interest rate movements, PTTEP manages interest rate volatility effectively as all its interest-bearing debt is in fixed rate, ensuring minimal impact on the company's interest expenses. Nevertheless, PTTEP is currently considering managing its outstanding debt following the anticipated decline in market interest rates.

4 Research and Development (R&D) of Technology

PTTEP promotes research, development, technology application, and innovation. As of Q3/2024, the company is engaged in 54 ongoing R&D projects, with significant progress made in key projects as follows:

- The development of technology for removing contaminants from condensate is currently under development and undergoing testing. These innovations are designed to improve efficiency and reduce costs. Examples include improved methods for measuring contaminants in condensate and equipment for separating water from oil.
- The development of technology to support petroleum facility decommissioning such as:

- The Intelligent Sampling Pig (MERIns), used for collecting surface samples from pipelines, is currently being deployed in the decommissioning of subsea pipelines in the Gulf of Thailand. Ongoing development is underway to improve the tool's efficiency and adapt it for use with various pipeline sizes across all PTTEP production sites.
- The construction of a testing facility for developing production well plugging and abandonment methods using thermite reactions is underway at the PTTEP Rapid Scaled-up Center (RASC) in Rayong. Prototype testing will begin once the facility is completed, with preparations for pilot testing at PTTEP's production sites to follow.
- The development of an autonomous wellhead operator robot, designed to perform operational tasks at wellhead platforms, is currently in the prototype testing phase at the Arthit offshore petroleum production site. In addition, prototype testing of a delivery drone for equipment transport has been successfully completed and is currently being considered for deployment at the North Bongkot offshore petroleum production site in Q4/2024.
- The development of surface coating technology for carbon steel and stainless steel with diamond-like carbon material aims to extend the useful life of the equipment. The coating machine prototype has been successfully developed and will undergo performance evaluations. In 2024, trials are scheduled to coat the surfaces of equipment used in petroleum production processes that are prone to corrosion and erosion.
- The development of technology aimed at reducing greenhouse gas emissions includes:
 - The development of low heating value flare tip to reduce greenhouse gas emissions is currently undergoing pilot testing at the G2/61 field and is expected to complete in 2024. A feasibility study is also underway for its potential deployment at other petroleum production fields.
 - The project to convert carbon dioxide into minerals for strengthening artificial reefs in marine resource restoration has completed its preliminary study, with initial test results showing no adverse environmental impacts. Surveys of the target area and public hearings with stakeholders have also been completed. A prototype for curing concrete artificial reefs with carbon dioxide is currently being tested, and permission to conduct sea trials is being sought from the Royal Thai Navy, the Department of Coastal Resources, and the Marine Department. Plans are also underway to study and monitor the reefs after their placement in the sea.
 - The testing of carbon dioxide capture technology from exhaust stacks of internal combustion engines used in petroleum operations has completed its preliminary feasibility studies for potential deployment at PTTEP's production sites. Further studies are underway to explore potential utilization of the captured carbon dioxide.
 - For the development of direct air capture (DAC) technology, the installation of the DAC prototype is currently in progress at the PTTEP Rapid Scaled-up Center (RASC) in Rayong. In parallel, a solid sorbent for DAC technology is also under development.
- The development of Green Energy Technology Playground (GETP) project is currently ongoing for the construction and installation of the system and equipment integration for green hydrogen production from solar power.
- The flare gas conversion to Carbon Nanotubes project is currently under the Front-End Engineering Design (FEED) phase for a pilot carbon nanotube production unit, which is expected to complete by 2024. Studies are also being conducted to explore opportunities for scaling up the production technology and utilizing the produced carbon nanotubes for commercial purposes.

PTTEP's strong commitment and outstanding performance have been acknowledged by both domestic and international organizations, as demonstrated by the awards received in Q3/2024, including the following:

- The Sustainability Award 2024 in the "Sustainability Initiative of the Year" category was awarded for the 'Ocean for Life' (Sustainable Community Around the Ocean) project. This award is organized by the Business Intelligence Group, an internationally recognized independent organization based in the United States, to promote companies that prioritize sustainable business practices, balanced growth, good corporate governance, stakeholder responsibility, and social and environmental impact.

- NIA Award 2024 for Outstanding Innovative Organization, awarded by the National Innovation Agency (NIA). This award recognizes public and private organizations that leverage knowledge, technology, and creativity to generate value and foster sustainable growth. The evaluation is based on various aspects, including strategic vision, processes, and organizational structure, in alignment with the Innovative Organization Model (IOM).

PTTEP takes great pride in receiving these recognitions, which serve as motivation for us to continue conducting our business with efficiency, transparency, accountability, and consideration for all stakeholders, in order to achieve our vision of becoming the "Energy Partner of Choice".



Operational Highlights

Drive Value

As of Q3/2024, PTTEP Group has the E&P operations across over 50 domestic and international projects, spanning 12 countries. The key projects' highlights are as follows:

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). During Q3/2024, the average sales volume from Thai projects was 328,333 barrels of oil equivalent per day (BOED), representing 69% of the total sales volume. Meanwhile, the average sales volume from other countries in this region amounted to 88,933 BOED, making up 19% of the total sales volume.



Projects	Participation Interest	Operator	Progress in Q3/2024 (Q3)
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 development wells drilling to maintain its planned production level. The environmental impact assessments are also undertaken in both existing and new production areas. In Q3, the average crude oil production was 26,254 BPD.

Projects	Participation Interest	Operator	Progress in Q3/2024 (Q3)
2. Arthit	80%	PTTEP	The project is producing natural gas and condensate. In Q3, the average natural gas and condensate production was 254 MMSCFD and 12,559 BPD respectively.
3. Contract 4	60%	Chevron	The project is producing natural gas and condensate. In Q3, the average natural gas and condensate production was 373 MMSCFD and 13,364 BPD respectively. The project continued additional development wells drilling, with the aim 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 Q3, the average crude oil and natural gas production was 10,359 BPD and 50 MMSCFD respectively.
5. G12/48	66.67%	PTTEP	The project is producing natural gas and condensate, located offshore in the Gulf of Thailand. On 1 September 2023, the company entered into a Sale and Purchase Agreement (SPA) to acquire additional participation interest of 33.3333% from TotalEnergies EP Thailand, resulting in PTTEP's interest increasing to 100% after the completion of SPA, which is anticipated to complete in 2024. In Q3, the average natural gas production was 7 MMSCFD.
6. G1/61 (Erawan)	60%	PTTEP	The project is producing natural gas, condensate, and crude oil. The daily gas production has been increased from 400 to 800 MMSCFD since 20 March 2024, with continued investment for additional wellhead platforms installation and production well drillings. In Q3, the average natural gas and condensate production was 779 MMSCFD and 26,438 BPD respectively.
7. G2/61 (Bongkot)	100%	PTTEP	The project is producing natural gas and condensate. In Q3, the average natural gas and condensate production was 699 MMSCFD and 19,901 BPD respectively, and also continued the construction and installation of production platforms and development well drilling.
8. Malaysia-Thailand Joint Development Area (MTJDA)	50%	CPOC	The project is producing natural gas and condensate. In Q3, the average natural gas and condensate production was 292 MMSCFD and 10,033 BPD respectively. The production wells are continuously drilled to sustain production levels. The project is currently in the process of planning for exploration and development wells drilling in preparation for the development of next phase.
Exploration Phase			
9. G1/65	100%	PTTEP	The project is located in the northern Gulf of Thailand. On 1 June 2023, PTTEP Group signed the Production Sharing Contract (PSC), with a 6-year exploration and 20-year production period. The project's annual work program and budget was approved by the Department of Mineral Fuels and will drill the first exploration well will be drilled in 2025.
10. G3/65	100%	PTTEP	The project is located in the southern Gulf of Thailand. On 1 June 2023, PTTEP Group signed the PSC, with 6-year exploration and 20-year production period. The project's annual work program and budget was approved by the Department of Mineral Fuels and the first exploration well will be drilled in 2025.

Projects	Participation Interest	Operator	Progress in Q3/2024 (Q3)
Projects in Myanmar			
<i>Production Phase</i>			
11. Zawtika	80%	PTTEP	The project is producing natural gas, located in the Gulf of Moattama. In Q3, the average natural gas production was 304 MMSCFD. The development plan is currently well on track, with the completion of Phase 1D development wells drilling and is in the process of Phase 1E wellhead platforms construction to maintain the production level.
12. Yadana	62.963%	PTTEP	The project is producing natural gas, located in the Gulf of Moattama. The partner had decided to withdraw its investment in the project resulting in the change of PTTEP's participating interest from 37.0842% to 62.9630%, effective from 1 April 2024. In Q3, the average natural gas production was 425 MMSCFD.
<i>Exploration Phase</i>			
13. Myanmar M3	100%	PTTEP	The project is located offshore in the Gulf of Moattama and is currently pending for the development.
Projects in Malaysia			
<i>Production Phase</i>			
14. Malaysia Block K	7.2 - 56%	PTTEP	The project is crude oil and natural gas producing field located in the deep water, offshore Sabah, consisting of Kikeh, Siakap North-Petai (SNP), and Gumusut-Kakap (GK) fields. In Q3, the average crude oil and natural gas production was 14,848 BPD and 10 MMSCFD respectively.
15. Malaysia SK309 and SK311	42 – 59.5%	PTTEP	The projects are crude oil, condensate, and natural gas producing fields located in the shallow water, offshore Sarawak. In Q3, the average crude oil and condensate production was 15,000 BPD and natural gas production was 180 MMSCFD.
16. Malaysia Block H	42 – 56%	PTTEP	The project is natural gas producing field located in the deep-water, offshore Sabah. In Q3, the average natural gas production was 260 MMSCFD. The additional two exploration wells are planned to be drilled as per minimum work commitment in 2025.
<i>Exploration Phase</i>			
17. Malaysia SK410B	42.5%	PTTEP	The project is located offshore Sarawak. In 2023, the Front-End Engineering Design (FEED) at Lang Lebah field was completed and currently under tendering process of construction contracts.
18. Malaysia SK417	80%	PTTEP	The project is located in shallow water, offshore Sarawak. After the successful discovery at exploration wells of Dokong-1 and Nangka-1, it is currently preparing for one exploration well according to the minimum work commitment, which is expected to be drilled in 2025.
19. Malaysia SK405B	49.5%	PTTEP	The project is located in shallow water, offshore Sarawak. The field's petroleum potential has been discovered, and a development plan will further be established, which is expected to be completed within 2025.
20. Malaysia SK438	80%	PTTEP	The project is located in shallow water, offshore Sarawak. The massive, sweet gas sandstone reservoirs were discovered with thickness up to 200 meters, considered as another sizable field of

Projects	Participation Interest	Operator	Progress in Q3/2024 (Q3)
			PTTEP in Malaysia, following the earlier achievement at the Lang Lebah field. Another exploration well will be drilled in 2025, according to the minimum work commitment.
21. Malaysia SK314A	59.5%	PTTEP	The project is located in shallow water, offshore Sarawak. In Q3, the evaluation for remaining petroleum potential is in progress to plan for further exploration campaign. Two more exploration wells will be drilled in 2026, according to the minimum work commitment.
22. Malaysia PM407	55%	PTTEP	The project is located in shallow water, offshore Peninsular. The project completed the remaining petroleum potential evaluation with no discovered prospect that can be commercially developed. The relinquishment to the government was already completed.
23. Malaysia SB412	60%	PTTEP	The project is in shallow and deep water, offshore Sabah. In Q3, the project completed the activities to fulfil minimum work commitment. In addition, there is a plan for further petroleum potential evaluation to consider proceeding into Phase 2 of the exploration period.
24. Malaysia SK325	32.5%	PCSB	The project is located in shallow water, offshore Sarawak. In Q3, the project is in the preparation process for the geophysical study, 3D seismic data acquisition and evaluating petroleum potential to further drill the committed exploration wells in 2026.

Projects in Vietnam

Production Phase

25. Vietnam 9-2	25%	HV JOC	The project is producing crude oil and natural gas, located offshore southeast of Vietnam. In Q3, the average crude oil and natural gas production was 4,348 BPD and 7 MMSCFD respectively. The project is currently seeking for petroleum contract extension for another 5 years, which is expected to conclude in 2024.
26. Vietnam 16-1	28.5%	HL JOC	The project is producing crude oil and natural gas, located offshore southeast of Vietnam. In Q3, the average crude oil and natural gas production was 9,853 BPD and 3 MMSCFD respectively. The project is currently seeking for petroleum contract extension for another 5 years, which is expected to conclude in 2024.

Exploration Phase

27. Vietnam B & 48/95 and the Vietnam 52/97	8.5% 7%	Vietnam Oil and Gas Group	The projects are located offshore Vietnam. On 17 May 2024, Final Investment Decision (FID) was approved, with first production expected in late 2026. The production, combining the production from Vietnam B & 48/95 & Vietnam 52/97 Project, will gradually ramp up to 490 MMSCFD.
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Projects in the Middle East and Africa



Projects	Participation Interest	Operator	Progress in Q3/2024 (Q3)
Projects in Sultanate of Oman (Oman)			
<i>Production Phase and Midstream</i>			
28. Oman Block 6 (PDO) and Oman Block 53	2%/1%	Petroleum Development Oman / Occidental	Oman Block 6 is the largest onshore oil producing asset in Oman, and Oman Block 53 is a sizable producing onshore oil field located in the southern Oman. In Q3, the average crude oil production was 474,307 BPD.
29. Oman Block 61	20%	BP	The project is producing natural gas and condensate. In Q3, the average natural gas and condensate production was 1,524 MMSCFD and 40,195 BPD respectively.
30. Oman LNG	2%	OLNG	Oman LNG is a liquefied natural gas (LNG) processing plant located near Sur, Oman. In 2023, PTTEP Group entered into a Shareholder Agreement to extend contract period for 10 years until December 2034.
<i>Exploration Phase</i>			
31. Oman Onshore Block 12	20%	TotalEnergies	The project is located in central Oman. The project completed 2 exploration wells. Currently, the geological and geophysical studies is underway.

Projects	Participation Interest	Operator	Progress in Q3/2024 (Q3)
Project in United Arab Emirates (UAE)			
<i>Development Phase</i>			
32. Ghasha Concession	10%	ADNOC	The project is located in the northwest offshore of Abu Dhabi, which is a sizable natural gas field. PTTEP Group acquired 10% stake, effective from 11 June 2024. Currently, the project is in development phase, with the first gas production expected in 2025.
<i>Exploration Phase</i>			
33. Abu Dhabi Offshore 1	30%	Eni	The project is located in the northwest offshore of Abu Dhabi. Currently, the project is in process of geological and geophysical study for petroleum potential assessment.
34. Abu Dhabi Offshore 2	30%	Eni	The project is located in the northwest offshore of Abu Dhabi. In 2022, the project has successfully made a significant gas discovery, in a deeper zone, of the exploration well XF-0 0 2 . The field development plan was approved by the Government in September 2024, and Final Investment Decision (FID) is expected in 2025.
35. Abu Dhabi Offshore 3	30%	Eni	The project is located in the northwest offshore of Abu Dhabi. Currently, it is in progress of geological study and further evaluation of petroleum potential for the preparation of appraisal and exploration wells drilling which is planned in 2025-2026.
36. Sharjah Onshore Area A	25%	Eni	The project is located onshore in the central part of Sharjah. In Q3, project area was relinquished to the Government.
37. Sharjah Onshore Area C	25%	Eni	The project is located in the central part of Sharjah. Currently, the project is in progress of petroleum potential evaluation.
Projects in People's Democratic Republic of Algeria (Algeria)			
<i>Production Phase</i>			
38. Algeria 433a & 416b	35%	GBRS	The project is producing crude oil, located onshore in the eastern part of Algeria. In Q3, the average crude oil production was 14,304 BPD.
39. Algeria Hassi Bir Rekaiz	49%	GHBR	The project is located onshore in the eastern part of Algeria. In Q3, the project maintained crude oil production after crude oil production ramp up to 17,000 barrels per day since August 2023. Moreover, it is currently conducting the study and plan for the 2 nd phase development to increase production to 30,000 and 60,000 BPD by the end of 2027 and 2030 respectively.
Project in Republic of Mozambique (Mozambique)			
<i>Development Phase</i>			
40. Mozambique Area 1	8.5%	TotalEnergies	The project is a large liquefied natural gas (LNG) project located in offshore Mozambique. From April 2021, all construction activities were suspended due to Force Majeure declaration, resulting from unrest situations near the project site. Currently, the site re-access preparation is underway for further construction resumption.

Projects in Australia

Projects	Participation Interest	Operator	Progress in Q3/2024 (Q3)
Projects in Commonwealth of Australia (Australia)			
<i>Exploration Phase</i>			
41. PTTEP Australasia	100%	PTTEP	In 2023, PTTEP relinquished Tenacious field (AC/RL4), transferred its entire interests in Katandra field (AC/RL10), and fully divested its total interests in Cash Maple (AC/RL7) field. The only field left is Oliver (AC/RL12), which is under the process of relinquishment to the Government.

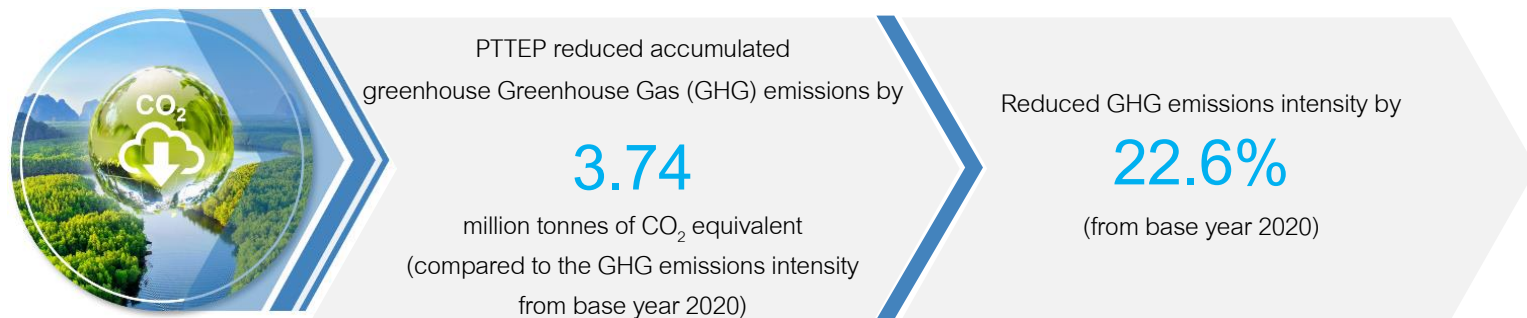
Projects in the Americas



Project in United Mexican States (Mexico)			
<i>Exploration Phase</i>			
42. Mexico Block 12 (2.4)	20%	Petronas	The project is located in the Mexican Ridges, western Gulf of Mexico. The exploration well drilling was completed according to work commitment under the concession, with no petroleum potential confirmed. Currently, it is under the process of relinquishment to the Government.
43. Mexico Block 29 (2.4)	16.67%	Repsol	The project is located in the Campeche basin, southern Gulf of Mexico. On 17 September 2024, PTTEP has entered into a Sale and Purchase Agreement (SPA) to sell its entire participation interest to REPSOL EXPLORACIÓN MÉXICO, S.A. DE C.V. The completion of this transaction is expected by the end of 2024, subject to the fulfilment of conditions prescribed in the SPA.

Decarbonize

For our decarbonization efforts, we have made progress as of Q3/2024 as follows:



The company achieved GHG emission reduction (**Reduce**) by optimizing its E&P portfolio and implementing appropriate well management practices. Additionally, PTTEP is continuously implementing greenhouse gas reduction projects and promoting various emission reduction initiatives. In Q3/2024, the progress includes the following:

<p>Carbon Capture and Storage (CCS)</p>	<p>PTTEP plans to develop a carbon capture and storage (CCS) project at the Arthit natural gas field in the Gulf of Thailand. The Front-End Engineering Design (FEED) has been completed, and various agreements are being prepared in anticipation of the Final Investment Decision (FID) by the end of 2024. Following the investment decision, the project is expected to take approximately 3 years before the first carbon injection. The expected full storage capacity ranges from 0.7 and 1 million tonnes of CO₂ equivalent per year.</p>
<p>GHG Reduction Initiatives</p>	<p>PTTEP is committed to reducing GHG emissions from its operations. From Q1/2024 to Q3/2024, PTTEP has initiated 8 additional GHG reduction projects, such as the 'Membrane Replacement for Enhancing Hydrocarbon Separation and Reducing Flaring' at the Arthit Project, the 'Fuel Gas Optimization in Turbo Compressors' at the Yadana Project, and the 'Low BTU Flare Installation' at the G2/61 Project. These newly implemented reduction initiatives are expected to reduce GHG emissions by approximately 77,000 tonnes of CO₂ equivalent in 2024, on top of the currently implemented emissions reduction activities.</p>

On the GHG offsetting initiatives (**Offset**) to absorb GHG from the atmosphere. The progresses as of Q3/2024 are as follows:

<p>Mangrove Forestation</p>	<p>PTTEP is preparing to launch an additional mangrove reforestation project covering 1,000 rai of land as part of its 2024 workplan, with the reforestation process expected to begin in Q4/2024. Additionally, the mangrove reforestation project covering 4,007.15 rai of land has been successfully registered under the Thailand Voluntary Emission Reduction Program (T-VER) with the Thailand Greenhouse Gas Management Organization (Public Organization) or TGO.</p>
<p>Land Forestation</p>	<p>PTTEP has collaborated with various networking organizations, including:</p> <p><u>Royal Forest Department (RDF):</u> PTTEP plans to begin reforestation covering 8,410 rai of land in Q4/2024, as part of the total 17,503 rai of land additionally granted for reforestation. The Company is also supporting the conservation and restoration of the 'Baan Khong Ta Bang' community forest in Phetchaburi province, covering 1,397 rai of land, and is currently considering joining additional forest maintenance projects in the RDF's community forests areas.</p> <p><u>National Parks, Wildlife, and Plant Conservation:</u> PTTEP has been granted an additional 580 rai of land in Q3/2024, with reforestation set to begin in Q4/2024. For the areas approved in 2023, the</p>

Company is currently in the process of registering 5,530 rai of land for reforestation under the T-VER Program with TGO.

Mae Fah Luang Foundation under Royal Patronage (MFLF): PTTEP has continuously worked on conserving and restoring community forests covering 20,000 rai of land under the RFD, in collaboration with the MFLF. Furthermore, in Q3/2024, PTTEP was granted an additional 60,000 rai of land for community forest conservation and restoration through a second-phase contract with the MFLF.

Study on GHG Reduction, Absorption, and Sequestration from Agricultural Sector

PTTEP has completed a study on the potential for GHG reduction, absorption, and sequestration in the agricultural sector through rubber plantation management in accordance with Forest Stewardship Council (FSC) standards. Additionally, the Company is currently exploring opportunities for a rubber plantation project aimed at generating carbon credits in potential areas, with a pilot project expected to launch by 2025.

Diversify

Beyond E&P Business - AI and Robotics Ventures Business (ARV)



AI and Robotics Ventures Company Limited (ARV) is PTTEP's subsidiary set up to focus on developing deep technologies in Artificial Intelligence (AI) and robotics to unlock opportunities and drive business growth. Its operations are divided into two main areas: 1) **ARV-Core**, which is responsible for the research and development of products and solutions aimed at creating new business opportunities, while also fostering and supporting subsidiaries to ensure their rapid and efficient growth, and 2) **Startups**, which ARV has spun off into separate legal entities dedicated to the further commercialization and development of their specific deep-tech domains. Key business highlights for Q3/2024 are as follows:

ROVULA

ROVULA

Specialized startup in intelligent underwater inspection, maintenance, and repair

ROVULA has deployed XGateway, an unmanned surface vehicle, to conduct a nearshore hydrographic survey for bathymetric mapping along the Eastern Economic Corridor (EEC) coastline. The survey covers coastal areas across three provinces: Chachoengsao, Chonburi, and Rayong, spanning a total of 324 square kilometers. The project commenced in September and is anticipated to take approximately five months to complete.

SKYLLER

SKYLLER

Specialized startup in the inspection of critical infrastructures through robotics and artificial intelligence

SKYLLER has provided methane gas emission detection and monitoring services for offshore petroleum platforms in the Thailand-Malaysia Joint Development Area. The operation utilized drones equipped with methane and carbon dioxide sensors, thermal imaging cameras and satellite imagery data to measure gas emissions and assess flare efficiency. With these technologies, SKYLLER can accurately detect and report areas of gas emissions, enabling asset owners to address these issues with precision and efficiency. The success of this project paves the way for SKYLLER to expand its services into the rapidly growing greenhouse gas management market, particularly in the Oil and Gas industry.

VARUNA

VARUNA

Startup focusing on Nature-based Carbon Technology

VARUNA has implemented Drone Plantation technology, which autonomously disperses seeds in targeted areas for reforestation efforts in Laos. Currently, this service covers over 1,000 rai, with plans to expand to 1,300 rai by November 2024. Additionally, VARUNA has provided training on the Smart Forest Platform, a comprehensive forest management system for carbon credit projects, to local authorities in Laos. Trials have also been conducted in real project areas to assess changes in forest conditions, monitor tree growth, and identify factors affecting the forest ecosystem.

CARIVA

CARIVA

Startup dedicated to personalized digital health solutions and Medical AI

CARIVA has developed medical AI products, including Lab Interpretation, an AI system that analyzes and interprets laboratory test results to provide disease-related information and recommend relevant further tests, and Automatic Speech Recognition (ASR), an AI system that converts doctors' voice commands into text to enhance the efficiency of treatment orders and medication prescriptions. Both products have been implemented in 10 leading private and public hospitals in Thailand. Furthermore, CARIVA has introduced the Medicart, an intelligent medication cart that seamlessly integrates with Hospital Information Systems. Currently, 15 units are in commercial use in the wards of top private hospitals.

bedrock®

BEDROCK

Startup empowering transformation and success with location intelligence

BEDROCK has successfully developed and tested the 'MorAnamai' system for Subdistrict Health Promoting Hospitals (SHPH). This centralized system manages community health information and provides real-time health data for local residents by integrating geospatial technology with health and medical solutions from Cariva Thailand (CARIVA), including basic health monitoring devices and an AI symptom checking system. It allows staff to manage primary health data more conveniently, enhances work efficiency, and improves access to healthcare. BEDROCK has begun installing the system at SHPH in Roi Et Province, aiming to complete 101 installations by the end of 2024, with plans to expand nationwide to over 9,800 SHPH in the future.

Other Updates on Beyond E&P Businesses

HyDuqm Project



In Q4/2023, FutureTech Energy Ventures Co., Ltd., a subsidiary of PTTEP, along with its partners, was awarded a concession block to develop a green hydrogen production project in Oman. This concession grants the right to fully develop the integrated green hydrogen production project in Concession Block Z1-02 for a period

of 47 years. The project details are as follows:

Areas and Location: The project covers an area of 340 square kilometers in Duqm province, located in eastern Oman.

Partners: POSCO Holdings, Samsung Engineering Co., Ltd., Korea East-West Power Co., Ltd., and MESCAT Middle East DMCC (a subsidiary of ENGIE Group)

Expected Production Capacity: The project is expected to produce approximately 220,000 tons of green hydrogen per year, generated from 5 gigawatts (GW) of installed renewable energy from solar and wind. The majority of the green hydrogen production output will be converted into green ammonia, with a capacity of 1.2 million tons per year, for export to South Korea.

Progress: The project is currently in the phase of wind and solar potential assessment, as well as conducting a feasibility study to determine the amount of required capital expenditure and economic return before proceeding to the engineering design phase in 2025, with the first production of green hydrogen anticipated in 2030.



Seagreen Offshore Wind Farm Project



In December 2023, the company signed a Share Purchase Agreement (SPA) to acquire 50% share capital in TotalEnergies Renewables Seagreen HoldCo Ltd or TERSH (currently renamed Renewable Energy Seagreen HoldCo Limited or RESH) for a total estimated consideration of approximately GBP 522 million (approximately USD 689 million equivalent). The transaction was completed on 31 May 2024, with PTTEP

Group holding an indirect interest of 25.5% in the Seagreen Offshore Wind Farm project through its shareholding in RESH. The project details are as follows:

Location: North Sea, 27 kilometers off the coast of Scotland, United Kingdom

Partners: SSE Renewables Services (UK) Ltd (as the operator) and TotalEnergies Renewables UK Ltd

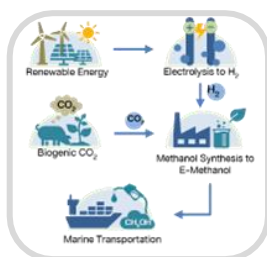
Production Capacity: Approximately 1.1 gigawatts (114 wind turbines), which is the largest wind farm in Scotland.

Progress: In Q3, the project's electricity production met the target (commercial production started in October 2023).

This investment is a significant milestone for PTTEP in expanding its investments into the high-growth clean energy sector, particularly in a country with supportive policies for the offshore wind industry. The investment carries low risk, as the project is already operational, generating stable cash flows, and aligns with the company's strategy for the Energy Transition Business. PTTEP also leverages its offshore project management expertise and strengthens its partnerships from its petroleum exploration and production business. Additionally, PTTEP has signed a Memorandum of Understanding (MoU) with TotalEnergies SE to expand collaboration on other offshore wind energy projects and share industry experiences and knowledge for future operations.

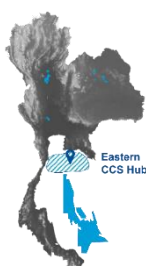
Other Updates on Beyond E&P Businesses (Continued)

Green e-methanol Project



In Q2/2022, 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 alternate fuel to reduce greenhouse gas emissions in various industries, including the maritime sector, 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 methanol powered vessels. Currently, PTTEP is executing commercial feasibility study prior to proceed for FEED engineering.

Carbon Capture and Storage (CCS) Project



In Q1/2024, PTTEP, in collaboration with the Thai Department of Mineral Fuels (DMF), the Japan Organization for Metals and Energy Security (JOGMEC), and INPEX Corporation is advancing a joint study on carbon storage potential in the Northern Gulf of Thailand, which will lay the technical foundation for future Carbon Capture and Storage (CCS) hub project development in the Eastern Economic Corridor (EEC). In Q3/2024, Technical activities, including seismic reprocessing, were commenced in conjunction with preparations for various technical undertakings and the assessment of regulatory constraints, to support the 2025 workplan within the framework of this collaboration.

In Q4/2023, PTTEP, in collaboration with flagship companies of the PTT Group, issued a comprehensive whitepaper outlining the progress of the Eastern Thailand Carbon Capture and Storage (CCS) Hub. The document presented a range of policy options, recommendations, and socio-economic benefits, which were submitted to the relevant government agencies. In Q3/2024, PTTEP, together with PTT Group flagship companies, engaged with key regulatory bodies to discuss regulatory challenges and constraints, while also seeking their guidance and recommendations on the development of the CCS project in Thailand.



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 rai 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 been supplying the electricity to S1 Project since 29 June 2023 and currently continues to generate electricity as planned.

Xplor Ventures

Xplor Ventures Company was established to invest in the form of Corporate Venture Capital (CVC), focusing on Future Energy, Decarbonization, and technologies that can enhance the exploration and production (E&P) business (E&P Deep Tech). In the past quarter, the company participated in a Series D funding round for a fusion energy technology development project in Washington, USA. The goal is to foster collaboration in studying new energy sources and create opportunities for new business development for PTTEP in the future.





Business Outlook

Oil Price Outlook

In terms of **crude oil demand**, the European Central Bank (ECB) and the U.S. Federal Reserve (Fed) began cutting policy interest rates in September, marking their first reduction. Meanwhile, China continues to boost its economy with monetary and fiscal stimulus measures, which is expected to raise crude oil demand in Q4/2024. However, the IEA has revised down its global oil demand growth forecast for 2024 from 1.1 million barrels per day to 0.9 million barrels per day, citing China's ongoing economic slowdown and lingering impact of high interest rates in Western countries. Despite recent rate cuts, these rates remain elevated enough to potentially hinder long-term economic growth. Additionally, seasonal factors are expected to weaken oil demand in the fourth quarter.

On the supply side, crude oil availability is expected to tighten further in Q4/2024 as OPEC+ members have agreed to extend production cuts until November 2024 and may gradually increase production based on market conditions. At the same time, non-OPEC+ countries, including the United States, Canada, Brazil, and Guyana have increased their oil production. Analysts anticipate that oil prices will largely depend on OPEC+'s production policies and geopolitical tensions in the Middle East, especially the escalating conflict between Israel and Hezbollah in Lebanon, as well as Iran, which are major global crude oil producers and exporters.

Key factors to watch include: 1) Economic growth trends in the U.S., China, and India; 2) Changes in crude oil reserves following OPEC+'s extension of voluntary production cuts, amounting to 2.2 million barrels per day until the end of November 2024; 3) Geopolitical tensions in the Middle East region, including crude oil supplies in the region; 4) The ongoing Russia-Ukraine war, which continues to disrupt certain oil supplies; and 5) The U.S. presidential election and its potential impact on foreign policy and domestic oil production strategies.

In summary, PTTEP forecasts that in Q4/2024, **crude oil supply and demand will remain balanced**, with key factors including economic uncertainties, OPEC+ production control, and geopolitical tensions in the Middle East. As a result, **Dubai crude oil prices are expected to fluctuate within a range of 75 to 85 USD/barrel**.

LNG Market Outlook

On the demand side, LNG demand in Q4/2024 is expected to increase, especially in European and East Asian countries, as they build up reserves for the winter season. Total demand is projected to grow by approximately 5 MTPA, bringing a total demand to 412 MTPA, or a 1.3% increase compared to 2023 (Source: FGE).

On the supply side, total production capacity from both existing and new LNG projects is expected to grow by approximately 8 MTPA, bringing total production to 413 MTPA, a 2% increase from 2023 (Source: FGE).

Key factors to monitor for the LNG market in Q4/2024 include weather conditions, natural gas inventory levels in Europe and Asia, and the pace of China's economic recovery. Additional concerns include the economic outlook in Europe and the U.S., interest rate cuts by central banks to manage inflation, geopolitical conflicts in the Middle East, and tensions among major powers such as Russia, China, and the U.S. Additionally, the U.S. presidential election in November may also bring changes in energy policy, international trade, and the global economic landscape, potentially impacting LNG price trends worldwide.

In summary, PTTEP expects **global LNG supply and demand will balance in Q4/2024**, with the average Asian Spot LNG price projected to range between 14–15 USD/MMBTU, leading to an **average price of 12 USD/MMBTU for the full year 2024** (Source: Woodmac, Platts, and FGE).

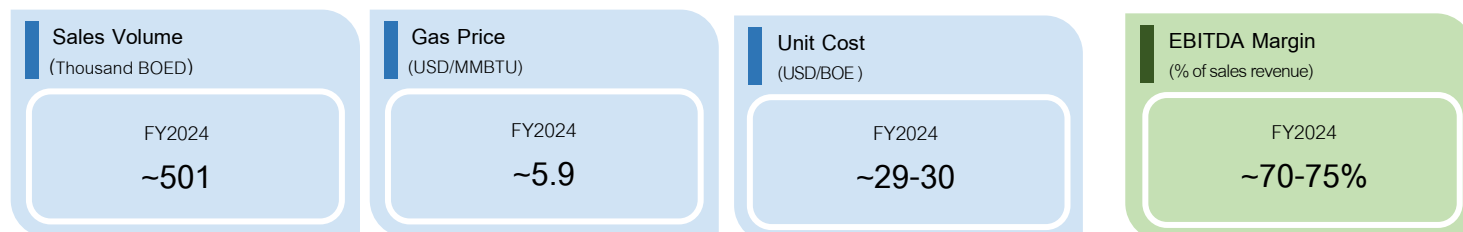
Thai Economy and Foreign Exchange Outlook

The Bank of Thailand expects the Thai economy to expand by 2.6% in 2024, primarily supported by sustained growth in the service and tourism sectors. Additionally, export performance is expected to surpass earlier forecasts, while government spending is anticipated to accelerate toward the end of the 2024 fiscal year. Inflation, however, is expected to decrease from previous estimates, aligning with current economic conditions, but is projected to gradually return to the target range by the end of 2024. On 16 October 2024, the Bank of Thailand decided to lower the policy interest rate by 0.25%, deeming this level appropriate given the current economic and inflation conditions.

Regarding the THB exchange rate against the USD in 2024, the THB is expected to appreciate in Q4/2024, driven by market expectations of a 0.5% rate cut by the Fed in Q4/2024, with an additional 1% reduction expected in 2025. Thailand's economic growth will also be supported by political stability and the continued recovery of the tourism sector, driven by the high season in Q4/2024. The THB is likely to strengthen in line with other regional currencies.

PTTEP's performance outlook for the year 2024

Sales volumes, gas price and unit cost are the primary factors that impact PTTEP's performance. The company has continuously monitored and adjusted the assumptions to reflect the current situation and to align with the evolving operational plans and industry dynamics. The summarized performance outlook for the year 2024 is 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 for FY2024 of 75-80 USD/Barrel.

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

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

Sales Volume:

The average sales volume for the full year 2024 is projected to be approximately 501,000 barrels of oil equivalent per day (BOED), representing an increase compared to the previous year. This growth is largely driven by higher sales volume from Thailand, due to the achievement in G1/61 (Erawan) Project's production ramp-up to 800 MMSCFD on 20 March 2024, which is ahead of schedule. Additionally, sales volume has increased following a partner's withdrawal from the Yadana Project, resulting in the increased participating interest.

Selling Price:

- PTTEP's gas price formulas are partially linked to oil prices, with reference to average historical prices spanning from the past 6 to 24 months. The estimated average gas price for the full year 2024 is approximately 5.9 USD/MMBTU, slightly lower than the previous year.
- PTTEP's liquid prices will fluctuate in accordance with global crude prices.
- The company has entered into oil price hedging contracts, with an outstanding volume of 1 million barrels as at the end of Q3/2024. PTTEP consistently monitors the movement of crude oil price market and retains the flexibility to adjust its hedging plan accordingly.

Unit Cost:

For the full year 2024, PTTEP expects the unit cost to be higher compared to the reported unit cost in 2023. This increase is primarily attributed to higher depreciation and higher operating expense per unit resulted from the production ramp-up of G1/61 (Erawan) Project. Additionally, there was a rise in oil field service costs due to increasing demand for drilling rigs. As a result, the unit cost is expected to be in the range of 29 – 30 USD/BOE in 2024.