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ขับเคลื่อนทุกชีวิตด้วยพลังแห่งอนาคต

MANAGEMENT DISCUSSION & ANALYSIS 3Q2022



Management's Discussion and Analysis (MD&A) and operating result for the three-month and nine-month periods ended 30 September 2022

Executive Summary

Unit : Million Baht	3Q2021	2Q2022	3Q2022	%Inc. (Dec.)		9M2021	9M2022	% Inc. (Dec.)
				YoY	QoQ			
Sales Revenue	558,888	926,954	884,610	58.3%	(4.6%)	1,569,981	2,570,029	63.7%
EBITDA	110,522	182,768	92,277	(16.5%)	(49.5%)	326,685	417,746	27.9%
Net Profit	23,653	38,848	8,884	(62.4%)	(77.1%)	80,819	73,303	(9.3%)
Earnings per share (Baht/share)	0.82	1.37	0.31	(62.2%)	(77.4%)	2.82	2.57	(8.9%)
Average Dubai Price (US\$/barrel)	71.7	108.1	96.9	35.1%	(10.4%)	66.2	100.2	51.4%

In the third quarter of 2022 (3Q2022), PTT and its subsidiaries reported Earnings before Interest, Tax, Depreciation and Amortization (EBITDA) in an amount of Baht 92,277 million decreased by Baht 18,245 million or 16.5% from the third quarter of 2021 (3Q2021) of Baht 110,522 million mainly from Petrochemical and Refining business as Petrochemical business's performance decreased from lower most of product spreads of both Olefins and Aromatics together with lower sales volume from planned maintenance shutdown of petrochemical plants in 3Q2022. Refining business's performance also decreased due to higher stock loss as PTT Group's stock loss increased approximately Baht 36,000 million as crude oil price decreased in 3Q2022. While, Market GRM rose from the rising in most of product spreads and the refining business had higher sales volume. Moreover, Gas business's performance decreased from lower gross profit of Supply and Marketing business (S&M) and NGV business as gas cost significantly increased resulting from higher Pool Gas price following higher volume and price of imported LNG. However, Exploration and Production business's performance rose from the increase in both average selling prices and average sales volume. Net income of PTT and its subsidiaries in 3Q2022 was Baht 8,884 million which decreased by Baht 14,769 million or 62.4% from 3Q2021 at Baht 23,653 million following lower EBITDA as well as higher loss on foreign exchange rate despite higher gain on derivatives. In addition, there was higher loss from the recognition of non-recurring items after tax (PTT's portion) in 3Q2022 mainly from PTT Exploration and Production Public Co., Ltd. (PTTEP)'s impairment loss on assets held-for-sale from PTTEP Brazil Investments in Oil and Gas Exploration and Production Limitada (PTTEP BL) approximately by Baht 2,300 million and PTT's contribution to oil fund during energy crisis by Baht 1,000 million per month for a total of 3 months which has been contributed since September 2022 offset with PTT's discounted benefit from production shortfall approximately Baht 900 million. While, in 3Q2021, there was loss from the recognition of non-recurring items after tax (PTT's portion) mainly from the write-off on obsolete materials and supplies approximately by Baht 700 million from PTT.

In 3Q2022, PTT and its subsidiaries EBITDA in an amount of Baht 92,277 million decreased by Baht 90,491 million or 49.5% from the second quarter of 2022 (2Q2022) at Baht 182,768 million mainly from the decrease in the performance of **Petrochemical and Refining business** as the performance of Refining business dropped since Market GRM declined from the decrease in most of product spreads. Moreover, PTT Group's stock loss increased approximately by Baht 45,000 million as crude oil price significantly decreased. Petrochemical business's performance also decreased from lower product spreads of both Olefins and Aromatics together with lower sales volume from weak demand of downstream products. Moreover, **Gas business's** performance decreased mainly from lower gross profit of S&M as gas cost significantly increased in accordance with higher Pool Gas price together with lower sales volume as aforementioned. In addition, Gas Separation Plant business's gross profit decreased mainly from higher gas cost and lower average selling prices of all products following the petrochemical referenced prices. **Net income of PTT and its subsidiaries in 3Q2022 was Baht 8,884 million decreased by Baht 29,964 million or 77.1% from 2Q2022 at Baht 38,848 million** following lower EBITDA and higher loss on foreign exchange rate despite higher gain on derivatives. In addition, there was higher loss from the recognition of non-recurring items after tax (PTT's portion) in 3Q2022 mainly from PTTEP's impairment loss on assets held-for-sale from PTTEP BL approximately Baht 2,300 million and PTT's contribution to oil fund during energy crisis of Baht 1,000 million per month for a total of 3 months which has been contributed since September 2022 offset with PTT's discounted benefit from production shortfall approximately Baht 900 million. While, in 2Q2022, there was gain on the recognition of non-recurring items after tax (PTT's portion) mainly from PTT's discounted benefit from production shortfall approximately Baht 1,000 million.

For nine-month period ended 30 September 2022 (9M2022), PTT and its subsidiaries reported EBITDA of Baht 417,746 million, increased by Baht 91,061 million or 27.9% compared to the first nine-month of 2021 (9M2021) of Baht 326,685 million. This was mainly from the increase in **Exploration and Production business** performance from higher average selling price and average sales volume. **Petrochemical and Refining business'** performance also increased as Refining business's performance rose from increased Market GRM due to the improve in most of product spreads as well as the increase in sales volume, while PTT Group's stock gain decreased approximately Baht 17,000 million following the decrease in crude oil price in 3Q2022. Whereas, Petrochemical business's performance decreased owing to most of petrochemical product spreads of both Olefins and Aromatics decreased together with the lower of sales volume from planned maintenance shutdown of petrochemical plants in 9M2022 which had more maintenance days compared to 9M2021. In 9M2022, net income of PTT and its subsidiaries was Baht 73,303 million which decreased by Baht 7,516 million or 9.3% from 9M2021 at Baht 80,819 million mainly due to higher loss on derivatives, corporate income taxes, and loss on foreign exchange rate despite higher EBITDA as aforementioned. However, there were loss from recognition of non-recurring items after tax (PTT's portion) mainly from PTTEP's impairment loss on assets held-for-sale from PTTEP BL of approximately Baht 2,300 million and PTT's contribution to oil fund during energy crisis of Baht 1,000 million per month for a total of 3 months which has been contributed since September 2022 offset with PTT's discounted benefit from

production shortfall around Baht 2,500 million. Whereas, in 9M2021 there were gain recognition of non-recurring items after tax (PTT's portion) from PTTEP's gain on bargain purchase in Oman Block 61 approximately by Baht 7,000 million. While, there were PTTEP's partial write-off of exploration and evaluation assets of the exploration project in Brazil approximately by Baht 2,900 million, and PTT Global Chemical Public Co., Ltd. (GC)'s impairment loss on investment in joint venture approximately by Baht 1,500 million.

As of 30 September 2022, PTT and its subsidiaries had the total assets amounting to Baht 3,569,751 million increased by Baht 491,732 million or 16.0% from 31 December 2021 which had total asset amounting to Baht 3,078,019 million mainly from the increase in inventories, trade accounts receivable following the higher product prices and volume together with the increased Property, plant, and equipment (PPE) from higher amount of exploration and production's assets. Whereas, the total liabilities were reported at Baht 1,992,357 million increased by Baht 387,278 million or 24.1% mainly from the increase in long-term loan and bond issuances during the period. In addition, the total shareholders' equity was Baht 1,577,394 million, increased by Baht 104,454 million or 7.1% mainly from the increase in PTT and its subsidiaries' net income of 9M2022 offset with dividend payment from the operating results of the second half of 2021 and the first half of 2022.

Economic Overview in the Third Quarter of 2022

The world economy in 3Q2022 accelerated from 2Q2022, following the return of US economic growth (after contracted throughout the first half of 2022), which mainly driven by the reduction of trade deficit. However, US economy was still pressured by high inflation rate. The Federal Reserves (The Fed) at its September 2022 meeting voted to raise its federal funds rate for the third time in 2022 by 0.75% to 3.00%-3.25%. Meanwhile, Chinese economy recovered from lockdown in 2Q2022 after the number of new infections dropped, together with the implementation of government's economic fiscal stimulus policy and the ongoing accommodative monetary policy. For Euro Area economy, the energy crisis due to Russia and Ukraine tension remained a drag to economic growth (Russia reduced/cut its natural gas supply via Nord Stream pipeline to Europe). The International Monetary Fund (IMF) in October 2022 maintained its global growth forecast for 2022 at 3.2%.

According to S&P Global report of October 2022, global oil demand in 3Q2022 was averaged at 100.9 million barrels per day (MMBD), improving from 2Q2022 at 98.7 MMBD amid summer demand in Europe and the US, and demand recovery in Asia after more opening of international travels. When comparing to 3Q2021 at 98.7 MMBD, global oil demand increased following the demand recovery after many countries relax COVID-19 measures.

Unit: US\$/barrel	3Q2021	2Q2022	3Q2022	% Inc. (Dec.)		9M2021	9M2022	% Inc. (Dec.)
				YoY	QoQ			
Average Dubai Crude Oil Price	71.7	108.1	96.9	35.1%	(10.4%)	66.2	100.2	51.4%
Gasoline Crack Spread	11.8	35.0	13.2	11.9%	(62.3%)	9.6	22.0	>100.0%
Diesel Crack Spread	5.4	43.1	35.2	>100.0%	(18.3%)	5.1	32.6	>100.0%
FO Crack Spread (180 – 3.5%S)	(3.4)	(3.2)	(22.3)	<(100.0%)	<(100.0%)	(4.2)	(11.3)	<(100.0%)
GRM-Singapore Crack	3.8	21.4	7.1	86.8%	(66.8%)	2.5	12.2	>100.0%

Dubai crude oil price in 3Q2022 was averaged at US\$96.9 per barrel, decreasing from 2Q2022 at US\$108.1 per barrel, with supply over demand due to OPEC and its allies (OPEC+) continuously increased their crude production quota during July – September. Moreover, supply from non-OPEC was also increased following an increase of demand. In addition, the Strategic Petroleum Reserves (SPR) was released from the US and International Energy Agency (IEA) members pressured on the price. However, higher Dubai crude oil price when comparing to 3Q2021 at US\$71.7 per barrel was from geopolitical risks between Russia and Ukraine causing oil price to stay at high level.

Petroleum product prices at Singapore spot market

- **Gasoline crack spread** in 3Q2022 was averaged at US\$13.2 per barrel, decreasing from 2Q2022 at US\$35.0 per barrel amid increasing supply following refinery resumption. While high gasoline price pressured on gasoline demand and spread. However, comparing to gasoline crack spread in 3Q2021 at US\$11.8 per barrel, the crack spread in 3Q2022 was higher due to tighter gasoline supply as high diesel price incentivized refinery to shift yield to maximize diesel products.

- **Diesel crack spread** in 3Q2022 was averaged at US\$35.2 per barrel, decreasing from 2Q2022 at US\$43.1 per barrel amid increasing supply following refinery resumption, and higher export volume from China. However, higher diesel crack spread comparing to 3Q2021 at US\$5.4 per barrel was due the tension between Russia and Ukraine which resulted in Russia petroleum products embargo from the European Union, where Russia is the major suppliers of diesel. Low diesel inventory also added support to crack spread.
- **High-Sulfur Fuel Oil 3.5% crack spread (HSFO)** in 3Q2022 was averaged at US\$ -22.3 per barrel, decreasing from 2Q2022 at US\$ -3.2 per barrel and 3Q2021 at US\$ -3.4 per barrel amid higher export volume of HSFO from Russia and Middle East region to Asia region and increase supply from refineries after recent turnaround period as well as decreasing Middle East demand after summer season.

Singapore Gross Refining margin (GRM) in 3Q2022 was averaged at US\$7.1 per barrel, decreasing from 2Q2022 at US\$21.4 per barrel amid increasing supply following refinery resumption as well as increasing supply from China and Russia. However, higher Singapore GRM comparing to 3Q2021 at US\$3.8 per barrel was due to geopolitical concerns amid Russia and Ukraine situation including low inventory of each product.

Unit: US\$/Ton	3Q2021	2Q2022	3Q2022	% Inc. (Dec.)		9M2021	9M2022	% Inc. (Dec.)
				YoY	QoQ			
HDPE: CFR SEA	1,138	1,341	1,104	(3.0%)	(17.7%)	1,158	1,259	8.7%
PP: CFR SEA - Film	1,250	1,351	1,088	(13.0%)	(19.5%)	1,317	1,275	(3.2%)
BZ: FOB Korea	993	1,238	978	(1.5%)	(21.0%)	904	1,097	21.3%
BZ - Naphtha	318	363	264	(17.0%)	(27.3%)	291	274	(5.8%)
PX: CFR Taiwan	919	1,259	1,088	18.4%	(13.6%)	848	1,145	35.0%
PX - Naphtha	243	384	374	53.9%	(2.6%)	235	323	37.4%
Naphtha (MOPJ)	676	875	714	5.6%	(18.4%)	613	822	34.1%

Petrochemical prices of both Olefins and Aromatics in 3Q2022 decreased from 2Q2022, due to weak downstream products demand, plus a decrease in crude oil and naphtha prices.

- **Olefins:** High Density Polyethylene (HDPE) and Polypropylene (PP) prices fell from 2Q2022, due to weak demand for downstream products, entering the monsoon season, weakening of many Asian currencies against the US dollar which resulted in higher costs, as well as new supply in the region. In addition, the persistent weak demand from Western countries, Middle East and mainland China have prompted more suppliers to redirect sales shipments to Southeast Asia which pressured on the prices.
- **Aromatics:** Benzene (BZ) price decreased from 2Q2022 following a significantly decrease in crude oil and naphtha prices and the close of arbitrage window from Asia to the US. BZ spread over naphtha also decreased from a slowdown in downstream market both inside and outside Asia according to squeezed margins. Moreover, styrene monomer (SM) producers have cut their operating rate due to lower SM demand

and higher production costs (i.e. utility cost), resulted in uneconomical production. Paraxylene (PX) price decreased from 2Q2022 following a significantly decrease in crude oil and naphtha prices. PX spread over naphtha also decreased resulted from a decline in demand for PX as a feedstock in gasoline blending, as well as a slowdown in China downstream market for both Purified terephthalic acid (PTA) due to the continuing low margin, and polyester due to high inventory level, amid an effort of Asian PX producers to control the operating rates in order to maintain their margins.

Comparing to the same period last year, most of petrochemical prices of Olefins and Aromatics decreased, following a declining demand, especially in China that still maintains its strict zero-COVID policy, amid market concerns over the risk of global recession. Meanwhile, PX price and PX spread over naphtha increased, supported by a significant increase in Mix-Xylene feedstock price from the sharp rise in crude oil and naphtha prices.

Thai economy in 3Q2022 continued to recover from 2Q2022, as tourism sector recovered significantly on the back of the cancellation of “Thailand Pass” registration since 1 July 2022. Additionally, private consumption and private investment continued to expand because of further easing lockdown restrictions which made various economic activities gradually returned closer to a normal life, despite of pressures from high inflation rate and Bank of Thailand's interest rate hikes. While, merchandise exports grew at a slower rate. Besides, due to the decreasing fiscal budget, government spending was more specific. The Bank of Thailand in September 2022 maintained Thai economic forecast for 2022 at 3.3%, equivalently to its previous estimate in June 2022.

Non-recurring Items in the Third Quarter of 2022 until Present

Summary of non-recurring items in the third quarter of 2022 until present are as follows:

July 2022

- **GC:** On 4 July, GC's Board of Directors has the resolution approved GC to accept the entire business transfer of GC Glycol Co., Ltd. (Glycol) and GC Styrenics Co., Ltd. (GCS). The acquisition was effective legally on 1 July 2022 and GC will further proceed with the dissolution of Glycol and GCS. The group business restructuring will better support GC's long-term strategy including the business expansion internationally, sales and development of High Value Products, enhancing the GC's governance efficiency of group of companies both domestically and internationally, and also support GC's Sustainability strategy.
- **PTT:** On 11 July, PTT's Board of Directors passed a resolution for PTT's gas business to specifically support the Oil Fuel Fund for the amount of Baht 1,000 million per month for 3 months within the year of 2022 in the total amount of Baht 3,000 million. PTT aims to support the oil fuel fund to stabilize the energy prices in Thailand during the period of fluctuating global energy prices.
- **PTTEP:** On 15 July, PTTEP has dissolved an inactive subsidiary, namely PTTEP FLNG Holding Co., Ltd. (PTTEP FH) in order to improve operational efficiency and minimize administrative costs. This transaction has no impact to PTTEP's operations.
- **PTT:** On 21 July, PTT's Board of Directors approved the establishment of Innobic Nutrition Co., Ltd. (INNT) which is 100% owned by Innobic LL holding Co., Ltd. (INBL), with the registered capital of Baht 100 million. The objective of the company establishment is to conduct Nutrition business including the Nutraceutical, which offer dietary supplements for general wellness that focuses on the suitable nutrition for each individual group by age, gender, or their nutritional needs as well as for specific prevention and the Medical Nutrition, which provide the nutritional needs for patients that will be developed for both general and specific patients. INNT is completed its registration in September 2022.
- **PTT:** On 22 July, PTT Global LNG Co., Ltd. (PTTGL) has signed the sale and purchase agreement of LNG with Corpus Christi Liquefaction LLC (CCL), which is a wholly-owned subsidiary of Cheniere Energy Inc (the energy company in US) in the amount of 1 million tons per year for a period of 20 years, starting its first delivery in 2026 onwards. The signing of this long-term LNG purchase agreement was in according with the Board's resolution of National Energy Policy (NEPC) which approved PTT to procure for the additional 1 million tons per annum of LNG, from current long-term LNG contracts of 5.2 million tons per annum, in order to increase country's energy security.

August 2022

- **PTTEP:** On 1 August, PTTEP MENA Limited (PTTEP MENA), a wholly-owned subsidiary of PTTEP, and Eni Abu Dhabi B.V. (Eni), the partner, have successfully made another significant gas discovery, in a deeper zone, of the first exploration well XF-002 in Abu Dhabi Offshore 2 Project, located in the north-west of Abu Dhabi, United Arab Emirates. The XF-002 exploration well discovered significant raw gas with 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.
- **PTTEP:** On 1 August, PTTEP International Limited (PTTEPI), Yangon Branch, a wholly-owned subsidiary of PTTEP, informed that there was a leakage at the Zawtika's onshore pipeline, resulted in the gas pressure drop. To ensure operational safety, PTTEPI has promptly isolated the gas pipeline and temporarily suspended gas delivery from the Zawtika Project to Thailand. PTTEPI accelerated the pipeline repairment which completed and resumed the normalcy of gas delivery to Thailand on 14 August.
- **PTT:** On 2 August, PTT International Holdings Limited (PTTIH) (a wholly owned subsidiary of PTT) has entered into a Share Purchase Agreement of its entire investment, being 100% of the total issued shares, in PTT Mining Limited (PTTML) with PT Astrindo Nusantara Infrastruktur Tbk (Astrindo), a listed company in Indonesia Stock Exchange, or its affiliate, on 1 August 2022 with a purchase price of approximately US\$ 471 million. The transaction is expected to be completed within the fourth quarter of 2022. This transaction will divest all of PTT's investment in the coal business which is aligned with PTT's strategy towards sustainability and clean energy.
- **PTTEP:** On 4 August, Malaysia-Thailand Joint Authority, an authority established under the Agreement between the Government of Malaysia and the Government of the Kingdom of Thailand, has concluded the annexation of Production Sharing Contract (PSC) of the Malaysia-Thailand Joint Development Area (MTJDA) with PTTEPI, a wholly-owned subsidiary of PTTEP, and PETRONAS Carigali (JDA) Limited (PC JDA), a subsidiary of PETRONAS Carigali Sdn Bhd. The annexation, which has been duly approved by the government of Thailand and Malaysia, attains the rights to an additional area for exploration and production (Open Area) and a 10-year production period extension until 2039, as well as securing an additional gas volume of at least 30 MMSCFD until 2025 to satisfy Thailand's gas demand.
- **OR:** On 8 August, OR's Management Committee (ORMC) resolved to approve Modulus Venture Co., Ltd. (Modulus), a wholly-owned subsidiary of OR, to invest by purchasing existing and newly issued common shares of Dusit Foods Co., Ltd. (DF), a subsidiary of Dusit Thai Public Co., Ltd. (DUSIT), with a total investment amount not exceeding Baht 299.6 million. After such investment, Modulus will hold 25%, and DUSIT will hold 75% of all common shares issued by DF. DF is a company that invests in food business throughout the supply chain

focusing on high-growth food businesses and linking food businesses within the group, including the Dusit Thani College and Dusit Hotels & Resorts of the DUSIT group.

- **PTT:** On 17 August, the Energy Regulatory Commission (ERC) has approved the criteria of natural gas tariff for natural gas transportation licensee through pipeline which consist of two components; the Demand Charge (Td) for the period of 2022-2026 and Commodity Charge (Tc) for year 2022 according to new natural gas pricing structure from the resolution of National Energy Policy Council (NEPC)'s meeting on 4 August 2021. The revised gas pipeline tariff rates are effective since August 2022.
- **GPSC:** On 23 August, GPSC's Board of directors has approved the establishment of two new subsidiaries; Eurus Plus Co., Ltd. (EurusPlus) and Boree Plus Co., Ltd. (BoreePlus) which is 100% owned, with the registered capital of Baht 3.5 million for each company. The objective of the company establishment is to study the possibility and support the investment plan for renewable energy.
- **PTT:** On 29 August, the Extraordinary General Meeting of Shareholders of PTT Energy Solutions Co., Ltd. (PTTES) approved the dissolution of PTTES. PTTES is the subsidiary in which PTT holds 40% together with TOP, GC, and IRPC which hold equally at 20%. The registration of dissolution is expected to be completed in December 2022. The dissolution of PTTES is aligned with PTT group's business restructuring policy and does not affect PTT group's business operations.
- **PTTEP:** On 31 August, PTTEP Netherlands Holding Coöperatie U.A. (PTTEP NH) and PTTEP Brazil Investment B.V. (PTTEP BI), subsidiaries of PTTEP, have entered into a Sale and Purchase Agreement (SPA) to sell PTTEP Brazil Investments in Oil and Gas Exploration and Production Limitada (PTTEP BL), which are registered in the Federative Republic of Brazil (Brazil), altogether with all obligations to Ubuntu Engenharia e Serviços Ltda. PTTEP BL is holding 25% interest in the Barreirinhas AP1 Project and 20% interest in the Brazil BM-ES-23 Project. Completion of the sale is expected by this year end subject to the conditions prescribed in the SPA. The Barreirinhas AP1 Project and the Brazil BM-ES-23 Project are in exploration phase and are located offshore of Brazil. This divestment marks the withdrawal of all PTTEP's investment in Brazil as part of portfolio rationalization which aligned with the company's strategy.

September 2022

- **PTT:** On 15 September, PTT's Board of Directors has approved a resolution of interim dividend payment for the first six-month performance of year 2022 to PTT's shareholders at the rate of Baht 1.30 per share, totaling approximately Baht 37,132 million, or 58% of the consolidated net income. The Record Date to entitle rightful shareholders who may receive the interim dividend was on 29 September 2022. The payment of the interim dividend was made on 12 October 2022.

- PTT: On 16 September, to support Thai people on energy prices, PTT has extended the cap of NGV retail price for the taxi in Bangkok Metropolitan Area. The NGV retail price for taxi has capped at 13.62 Baht/kg. until 15 December 2022 and increased the NGV retail price for general cars for 1 Baht/kg. from capped at 15.59 Baht/kg. to 16.59 Baht/kg since 16 September onwards. Also, PTT has extended the period of LPG's discount for low-income household who sell food or operate food stalls thru the State Welfare Card by Baht 100 per person per month until 31 December 2022.
- GPSC: On 26 September, Global Renewable Synergy Co., Ltd. (GRSC), a wholly-owned subsidiary of GPSC, has completed the conditions precedent of the Share Purchase Agreement, and holds 25% of the total shareholder in CI Changfang Limited and CI Xidao Limited which are the investment of offshore wind power project in Taiwan with the total investment of approximately US\$ 500 million.
- GPSC: On 27 September, Board of Directors approved the dissolution of two subsidiaries of GPSC, namely GPSC International Holdings Limited (GPSCIH), a wholly owned subsidiary of GPSC, which was established in Hong Kong as a holding company to support overseas investment, and Glow Energy Myanmar Co., Ltd. (GE Myanmar), a subsidiary of GPSC in which the Company collectively holds 99.83% through Glow Co., Ltd. GE Myanmar is a holding company which was established in the Republic of the Union of Myanmar. The dissolution of GPSCIH and GE Myanmar aims to minimize administrative costs which has no impact to the company's strategic plan to support investment expansion abroad.
- GC: On 30 September, the Board of Directors of GC Marketing Solutions Co., Ltd. (GCM), a wholly own subsidiary of the Company, approved to purchase additional 33% of the ordinary share of PT GCM Marketing Solutions Indonesia from PT. Cipta Aneka Air. After the transaction is completed, GCM will hold 100% in PT GCM Marketing Solutions Indonesia, increased from 67%.

October 2022

- PTT: On 5 October, the Board of Directors of Siam Management Holding Co., Ltd. (SMH) (a wholly owned subsidiary of PTT), approved the establishment of Global Multimodal Logistics Co., Ltd. (GML) which is 100% owned by SMH, with the registered capital of Baht 230 million. The objective of the company's establishment is to operate a logistic business with a focus on creating connectivity all of Thailand's transportation system and also seamlessly connecting the international transportation network. This will help entrepreneurs increase their market competitiveness as well as reduce their logistic costs. The key services consists of freight services (by rail, sea, land, air), cold chain management, property management and asset rental (related to logistic business). The establishment of GML aims to support national policy under the 13th National Economic and Social Development Plan and PTT's New S-Curve strategy in logistics and infrastructure business.

- **TOP:** On 21 October, as TOP has proceeded to allocate the newly issued ordinary shares of the company to the general public (Public Offering), including existing shareholders of the company who will receive the allocation of the ordinary shares in proportion to their shareholding according to the date of determining the list of shareholders of the company (Record Date), who are eligible to be allocated the newly issued ordinary shares, totaling 192,307,693 shares and the over-allotment of the shares amounting to 22,645,578 shares that InnovestX Securities Co., Ltd. (formerly, SCB Securities Co., Ltd.) as the over-allotment agent had borrowed 22,645,578 over-allotment shares from PTT, the shareholder of TOP. The Over-allotment Agent had to procure the same number of shares by purchasing the Company's ordinary shares traded on the SET or exercising its right to purchase the newly-issued ordinary shares that the Company has allocated for such exercise of rights, in total of 22,645,578 shares, within 30 days for the purpose of returning them to PTT. The period to procure and return shares was ended on 21 October 2022.
- **PTTEP:** on 26 October, PTTEP MENA has signed Farm-in/Farm-out Agreement to acquire 25% stake in the Sharjah Onshore Area A Project from Eni Sharjah B.V. ("ENI"). The acquisition will be completed after fulfilling all conditions in the said agreement and obtaining all necessary government approvals with an expected completion date within 2022. Sharjah Onshore Area A Project is an onshore gas project in the exploration phase, situated in the central part of Sharjah Emirate, covering area approximately 437 square kilometers. The transaction aligns with PTTEP's strategy, focusing on prolific area in the Middle East.
- **TOP:** On 28 October, the Over-allotment Agent has expressed its intention to exercise its right to purchase 1,500,000 newly issued ordinary shares from TOP on 21 October. The Company has allocated such newly issued ordinary, and registered a change in the paid-up capital with the Ministry of Commerce. As a result, the Company's paid-up capital is currently Baht 22,338,355,660 with a total of 2,233,835,566 issued shares at the par value of Baht 10 per share.
- **PTT:** On 28 October, PTT has been notified by TOP that TOP has issued and offered 1,500,000 newly issued ordinary shares to the Over-allotment Agent to return to PTT, and the Over-allotment Agent has delivered 22,645,578 shares of TOP to PTT. The TOP's ordinary shares held by PTT is totaling 1,005,920,239 shares or equivalent to 45% of TOP's total outstanding ordinary shares.

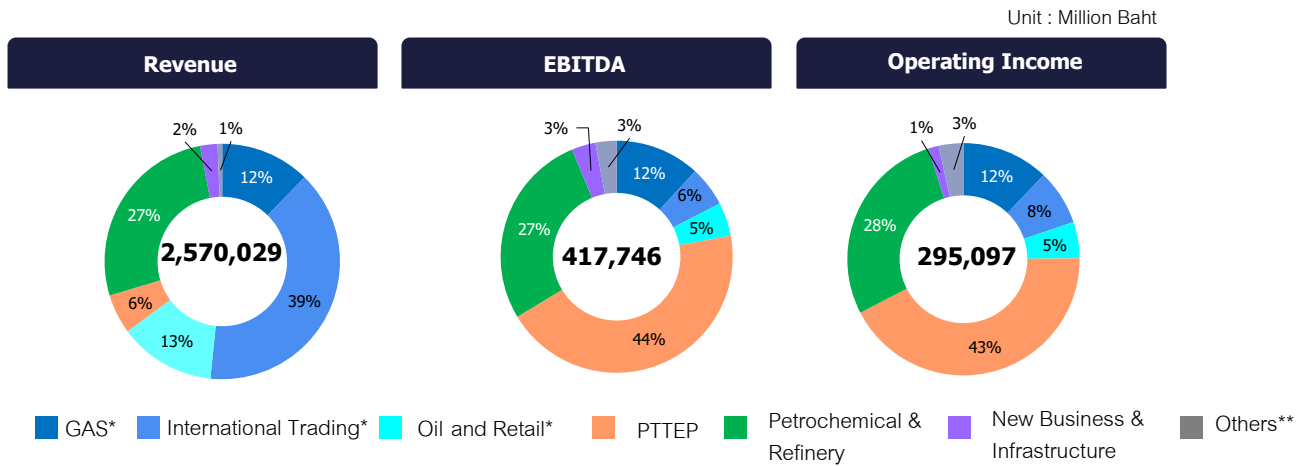
Financial Results of PTT Group by Business

Financial performance of 3Q2022 compared with 3Q2021 and 2Q2022 as well as 9M2022 compared with 9M2021 are summarized as follows:

Unit : Million Baht	3Q2021	2Q2022	3Q2022	% Inc. (Dec.)		9M2021	9M2022	% Inc. (Dec.)
				YoY	QoQ			
Sales revenue	558,888	926,954	884,610	58.3%	(4.6%)	1,569,981	2,570,029	63.7%
: Exploration & Production	58,295	83,088	88,503	51.8%	6.5%	155,879	239,740	53.8%
: Gas	115,933	174,573	199,251	71.9%	14.1%	331,574	543,040	63.8%
: Coal	4,947	11,683	9,190	85.8%	(21.3%)	11,209	25,524	>100.0%
: Oil & Retail	117,274	212,025	195,156	66.4%	(8.0%)	355,630	585,090	64.5%
: International trading	287,583	624,296	623,448	>100.0%	(0.1%)	768,488	1,730,729	>100.0%
: Petrochemical & Refining	254,978	429,350	382,621	50.1%	(10.9%)	727,232	1,173,219	61.3%
: New Business & Infrastructure	19,438	33,580	42,915	>100.0%	27.8%	56,999	105,449	85.0%
: Others	938	991	1,008	7.5%	1.7%	2,669	2,974	11.4%
EBITDA	110,522	182,768	92,277	(16.5%)	(49.5%)	326,685	417,746	27.9%
: Exploration & Production	42,961	63,656	67,615	57.4%	6.2%	116,946	184,736	58.0%
: Gas	23,388	22,892	6,926	(70.4%)	(69.7%)	67,297	49,338	(26.7%)
: Coal	2,051	7,304	4,997	>100.0%	(31.6%)	4,215	14,137	>100.0%
: Oil & Retail	4,158	10,152	2,787	(33.0%)	(72.5%)	16,294	19,625	20.4%
: International trading								
- Excluding effect of FX and derivatives	3,409	6,389	1,348	(60.5%)	(78.9%)	10,794	23,362	>100.0%
- Including effect of FX and derivatives	1,942	3,785	4,097	>100.0%	8.2%	3,987	9,101	>100.0%
: Petrochemical & Refining	30,260	69,713	(556)	<(100.0%)	<(100.0%)	97,160	114,319	17.7%
: New Business & Infrastructure	5,178	4,409	6,609	27.6%	49.9%	16,495	13,945	(15.5%)
: Others	(868)	(705)	(680)	21.7%	3.5%	(2,224)	(1,856)	16.5%
Depreciation and amortization expenses	39,295	40,313	45,191	15.0%	12.1%	112,939	122,649	8.6%
Operating income (loss)	71,227	142,455	47,086	(33.9%)	(66.9%)	213,746	295,097	38.1%
: Exploration & Production	23,060	44,267	44,703	93.9%	1.0%	60,864	125,401	>100.0%
: Gas	18,695	18,371	2,267	(87.9%)	(87.7%)	53,357	35,727	(33.0%)
: Coal	1,617	6,664	4,252	>100.0%	(36.2%)	3,147	12,306	>100.0%
: Oil & Retail	2,673	8,591	1,167	(56.3%)	(86.4%)	11,960	14,935	24.9%
: International trading								
- Excluding effect of FX and derivatives	3,357	6,256	938	(72.1%)	(85.0%)	10,644	22,696	>100.0%
- Including effect of FX and derivatives	1,890	3,652	3,687	95.1%	1.0%	3,837	8,435	>100.0%
: Petrochemical & Refining	20,403	58,865	(11,541)	<(100.0%)	<(100.0%)	68,126	81,781	20.0%
: New Business & Infrastructure	2,420	1,302	2,863	18.3%	>100.0%	8,500	4,308	(49.3%)
: Others	(983)	(819)	(794)	19.2%	3.1%	(2,560)	(2,197)	14.2%
Share of net income from investments in joint ventures and associates	2,233	2,498	156	(93.0%)	(93.8%)	7,073	4,603	(34.9%)
Loss on impairment of assets	876	493	3,646	>100.0%	>100.0%	4,036	4,134	2.4%
Gain (loss) on derivatives	(11,768)	(34,505)	13,072	>100.0%	>100.0%	(31,786)	(70,412)	<(100.0%)
Gain (loss) on foreign exchange	(6,405)	(13,021)	(19,850)	<(100.0%)	(52.4%)	(11,608)	(27,159)	<(100.0%)
EBIT	55,729	97,679	37,236	(33.2%)	(61.9%)	182,802	200,938	9.9%
Finance costs	7,470	9,150	10,141	35.8%	10.8%	21,010	26,736	27.3%
Income taxes	15,408	34,850	16,385	6.3%	(53.0%)	47,942	73,110	52.5%
Net income	23,653	38,848	8,884	(62.4%)	(77.1%)	80,819	73,303	(9.3%)
Earnings per share (Baht/share)	0.82	1.37	0.31	(62.2%)	(77.4%)	2.82	2.57	(8.9%)

Segmentation Performance of PTT Group

The details of revenue, EBITDA and operating income by segmentation of 9M2022 are as follows;



* Including PTT own operation and PTT's affiliates **Including coal and others.

1. Upstream Petroleum and Gas Business Group

Petroleum Exploration and Production Business: PTT Exploration and Production Public Co., Ltd. (PTTEP)

	3Q2021	2Q2022	3Q2022	%Inc.(Dec.)		9M2021	9M2022	%Inc.(Dec.)
				YoY	QoQ			
Average selling price (US\$/BOE)	44.3	55.6	53.7	21.2%	(3.4%)	42.3	53.6	26.7%
Average sales volume (BOED)	417,167	465,459	478,323	14.7%	2.8%	414,516	457,237	10.3%

Third quarter of 2022 compared with Third quarter of 2021

In 3Q2022, sales revenue of PTTEP was Baht 88,503 million, increasing by Baht 30,208 million or 51.8% from 3Q2021 as the average selling price increased by 21.2% from US\$ 44.3 per BOE in 3Q2021 to US\$ 53.7 per BOE in 3Q2022 as well as the average sales volume increased by 14.7% from 417,167 BOED in 3Q2021 to 478,323 BOED in 3Q2022 primarily from first production of G1/61 Project since April 2022 together with Oman Block 61 Project due to higher gas sales volume and MTJDA Project due to lower maintenance shutdown, together with higher gas nomination from buyer.

EBITDA in 3Q2022 was Baht 67,615 million, increasing by Baht 24,654 million or 57.4% from 3Q2021 mainly due to an increase in sales revenue as aforementioned. On the other hand, operating expenses increased primarily from first production of G1/61 Project and G2/61 Project, caused the operating income in 3Q2022 amounting to Baht 44,703 million, increasing by Baht 21,643 million or 93.9% from 3Q2021.

The overall performance of Exploration and Production business increased following the increase in operating income as aforementioned. In addition, there was gain on financial instruments in 3Q2022 amounting to Baht 5,567 million mostly from oil price hedging instruments due to a downward trend of forward oil price, while in 3Q2021 there was loss amounting to Baht 165 million from an upward trend of forward oil price. However, in 3Q2022, there was an increase in income taxes by Baht 6,260 million following improved performance together with the impairment loss on assets held-for-sale of PTTEP BL amounting to Baht 3,517 million as part of portfolio rationalization to withdraw all investment in Brazil.

Third quarter of 2022 compared with Second quarter of 2022

In 3Q2022, sales revenue of PTTEP was Baht 88,503 million, increasing by Baht 5,415 million or 6.5% from 2Q2022 as the average sales volume increased by 2.8% from 465,459 BOED in 2Q2022 to 478,323 BOED in 3Q2022 primarily from Malaysia-Thailand Joint Development Area Project (MTJDA Project) from less maintenance shutdown and higher gas nomination from buyer, together with first production of G1/61 Project since April 2022 offset with Bongkot Project's lower gas sales volume due to more maintenance shutdown. However, the average selling price decreased by 3.4% from US\$ 55.6 per BOE in 2Q2022 to US\$ 53.7 per BOE in 3Q2022.

EBITDA in 3Q2022 was Baht 67,615 million, increasing by Baht 3,959 million or 6.2% from 2Q2022 mainly due to an increase in sales revenue as aforementioned. However, depreciation, depletion and amortization increased primarily from Bongkot Project, together with G1/61 Project from higher sales volume and S1 Project's additional completed assets. Meanwhile, the exploration expenses increased primarily from the write-off of assets of project in Australia. As a result, the operating income in 3Q2022 was Baht 44,703 million, increasing by Baht 436 million or 1.0% from 2Q2022.

The overall performance of Exploration and Production business increased from an increase in operating income as aforementioned. In addition, gain on financial instruments increased by Baht 5,250 million mostly from oil price hedging instruments due to a downward trend of forward oil price as well as income taxes decreased by Baht 4,037 million primarily from projects in Thailand in accordance with lower profit and Malaysia Project from a recognition of tax benefit on investment. However, in 3Q2022, there was impairment loss on assets held-for-sale amounting to Baht 3,517 million as aforementioned while there was no such transaction in 2Q2022.

First nine-month of 2022 compared with First nine-month of 2021

In 9M2022, sales revenue of PTTEP was Baht 239,740 million, increasing by Baht 83,861 million or 53.8% from 9M2021 as the average selling price increased by 26.7% from US\$ 42.3 per BOE in 9M2021 to US\$ 53.6 per BOE in 9M2022. Moreover, the average sales volume increased by 10.3% from 414,516 BOED in 9M2021 to 457,237 BOED in 9M2022 primarily from the acquisition of Oman Block 61 Project in March 2021 and first production of G1/61 Project since April 2022.

EBITDA in 9M2022 was Baht 184,736 million, increasing by Baht 67,790 million or 58.0% from 9M2021 mainly due to an increase in sales revenue as aforementioned. On the other hand, operating expenses increased primarily from first production of G1/61 Project, G2/61 Project, and Malaysia Project. Moreover, petroleum royalties increased mainly from higher revenue from sales in Thailand and Malaysia. As a result, the operating income in 9M2022 was Baht 125,401 million, increasing by Baht 64,537 million or more than 100.0% from 9M2021.

The overall performance of Exploration and Production business increased following the increase in operating income as aforementioned, despite income taxes increased by Baht 27,875 million following improved performance. In addition, there was impairment loss on assets held-for-sale amounting to Baht 3,517 million as aforementioned. While, in 9M2021 there was a gain from a bargain purchase of Oman Block 61 Project amounting to Baht 10,772 million offset with a partial write-off of exploration and evaluation assets of the exploration project in Brazil amounting to Baht 4,454 million.

Gas Business Group

The details of all product sales volume from GSPs are as follows:

Unit: Ton	3Q2021	2Q2022	3Q2022	% Inc.(Dec.)		9M2021	9M2022	% Inc.(Dec.)
				YoY	QoQ			
LPG	815,058	824,942	834,689	2.4%	1.2%	2,345,915	2,467,555	5.2%
Ethane	520,591	387,054	427,589	(17.9%)	10.5%	1,668,325	1,301,214	(22.0%)
Propane	205,175	338,995	354,517	72.8%	4.6%	751,576	955,680	27.2%
NGL	144,541	136,621	110,890	(23.3%)	(18.8%)	473,391	380,549	(19.6%)
Pentane	8,929	12,732	11,500	28.8%	(9.7%)	31,617	37,614	19.0%
Total	1,694,294	1,700,344	1,739,185	2.6%	2.3%	5,270,824	5,142,612	(2.4%)

The details of reference product prices of GSPs are as follows:

Unit: US\$ per Ton	3Q2021	2Q2022	3Q2022	% Inc.(Dec.)		9M2021	9M2022	% Inc.(Dec.)
				YoY	QoQ			
LPG ^{1/}	648	852	677	4.5%	(20.5%)	583	777	33.3%
LDPE ^{2/}	1,398	1,658	1,300	(7.0%)	(21.6%)	1,490	1,533	2.9%
LLDPE ^{2/}	1,185	1,383	1,100	(7.2%)	(20.5%)	1,172	1,276	8.9%
HDPE ^{2/}	1,138	1,341	1,104	(3.0%)	(17.7%)	1,158	1,259	8.7%
Propane ^{1/}	648	847	682	5.2%	(19.5%)	590	777	31.7%

Note: ^{1/} Global Gas Price (Contract Price Saudi Aramco) as a reference for selling prices of petrochemical customers, LPG calculated from the proportion of Propane and Butane by 50:50

^{2/} South East Asia - Spot Price

Third quarter of 2022 compared with Third quarter of 2021

In 3Q2022, gas business reported sales revenue of Baht 199,251 million, increasing by Baht 83,318 million or 71.9% from 3Q2021. This resulted mainly from the increase in sales revenue of S&M business following the increase in average selling prices as a result of the surge in Pool Gas price mainly from higher volume and price of imported LNG as well as the average selling prices for industrial customers that increased from the higher fuel oil referenced prices. However, the average sales volume (calculated at heating value of 1,000 BTU per cubic feet) decreased by 119 MMSCFD or 2.8% from 4,224 MMSCFD in 3Q2021 to 4,105 MMSCFD in 3Q2022 mainly from lower supply of gulf gas during the transition of operator for G1/61 concession and the maintenance shutdown of some production fields in this quarter resulted in the adjustment of fuel management plan of Electricity Generating Authority of Thailand (EGAT) by calling the higher electricity generation from hydropower plants following the higher water level in 2022. Moreover, some power plants of EGAT and Independent Power Producer (IPP) have operated with fuel oil and diesel instead of natural gas. In addition, sales volume to GSP decreased following turndown of GSP's production to in line with lower supply of gulf gas.

The sales revenue of GSP business increased following the higher average selling prices of almost products in accordance with the higher petrochemical referenced prices. Moreover, GSP's sale volume (including NGL derived from Dew Point Control units) increased from 1,694,294 tons in 3Q2021 to 1,739,185 tons in 3Q2022 or 2.6% mainly from Propane products as there was maintenance shutdown of petrochemical customers in 3Q2021.

In addition, sales revenue of Transmission pipeline business (TM) also decreased mainly from lower gas volume following the decrease in overall gas demand as well as revised gas pipeline tariff rates which the Energy Regulatory Commission (ERC) has approved the criteria of natural gas tariff for natural gas transportation licensee through pipeline for two components; the Demand Charge (Td) in the period of 2022-2026 and Commodity Charge (Tc) for year 2022 according to new natural gas pricing structure. The revised gas pipeline tariff rates were effective since August 2022.

In 3Q2022, EBITDA of gas business was reported at Baht 6,926 million, decreasing by Baht 16,462 million or 70.4%. The operating income was reported at Baht 2,267 million, decreasing by Baht 16,428 million or 87.9%. This was mainly from lower gross profit of S&M business primarily from industrial customers as the gas cost increased in the higher extent compared to the increased in average selling prices. The natural gas cost increased following the increase of Pool Gas price mainly due to higher volume and price of imported LNG together with incremental cost according to EPP policy. In addition, there is the dropped in overall sales volume. However, in 3Q2022, there was the shortfall discount and the compensation from the gas producers approximately Baht 1,100 million mainly from Yetagun field. Moreover, NGV's loss increased from the higher gas cost following the increase in gas cost as aforementioned together with NGV retail price has capped for the taxi in Bangkok Metropolitan Area (NGV for the same breath project) at 13.62 Baht/kg. from 1 November 2021 to 15 December 2022, and the NGV retail price for other vehicles have capped at 15.59 Baht/kg. from 16 November

2021 to 15 September 2022 and the price increased by Baht 1 per kg. to Baht 16.59 per kg. for general customers from 16 September 2022 onwards to easing Thai people's cost of energy price. Besides, gross profit of GSP business dropped from higher natural gas cost in line with higher gulf gas price despite higher average selling price and higher sales volume.

Third quarter of 2022 compared with Second quarter of 2022

In 3Q2022, gas business reported sales revenue of Baht 199,251 million, increasing by Baht 24,678 million or 14.1% from 2Q2022. This resulted mainly from sales revenue of S&M business increased following the higher average selling prices as a result of higher Pool Gas price, despite the average sales volume (calculated at heating value of 1,000 BTU per cubic feet) decreased by 224 MMSCFD or 5.2% from 4,329 MMSCFD in 2Q2022 to 4,105 MMSCFD in 3Q2022 mainly from lower supply of gulf gas and maintenance shutdown of some production fields resulted in the adjustment of fuel management plan of power plant customers as aforementioned. In addition, in 3Q2022 hydropower plants discharged more electricity from seasonal factor.

Sales revenue of GSP business decreased from lower average selling prices of all products following the petrochemical referenced prices. Despite, GSP's sales volume (including NGL derived from Dew Point Control units) increased from 1,700,344 tons in 2Q2022 to 1,739,185 tons in 3Q2022 or 2.3% mainly from Ethane and Propane following higher demand of petrochemical customers. In addition, there was major planned maintenance shutdown of Ethane (ESP) in 2Q2022.

In addition, sales revenue of TM business decreased mainly from lower gas volume as well as revised gas pipeline tariff as aforementioned.

In 3Q2022, EBITDA of gas business was reported at Baht 6,926 million, decreasing by Baht 15,966 million or 69.7%. The operating income was reported at Baht 2,267 million, decreasing by Baht 16,104 million or 87.7%. This was mainly from the lower gross profit of S&M business primarily from industrial customers which had higher gas cost following higher Pool gas price as mentioned, as well as the lower of overall gas sales volume. In addition, shortfall discount and compensation from the gas producer in 2Q2022 was approximately Baht 1,200 million mainly from the end of concession of Erawan field, while in 3Q2022 the discount was approximately Baht 1,100 million mainly from Yetagun field. In addition, gross profit of GSP business dropped from higher natural gas cost in line with higher gulf gas price and lower average selling prices of all products in accordance with the referenced product prices despite the increase in sales volume. Moreover, NGV's loss increased from higher gas cost in line with Pool gas prices. While there was the capped of NGV retail price which had been uplifted by Baht 1 per kg. for general customers to be at Baht 16.59 per kg. since 16 September 2022 onwards.

First nine-month of 2022 compared with First nine-month of 2021

In 9M2022, gas business reported sales revenue of Baht 543,040 million, increasing by Baht 211,466 million or 63.8%. This resulted mainly from S&M business, the sales revenue of S&M business increased due to the higher average selling prices following Pool Gas price. In addition, the average selling prices for industrial customers increased from the higher average fuel oil referenced prices. However, average sales volume (calculated at heating value of 1,000 BTU per cubic feet) decreased by 246 MMSCFD or 5.4% from 4,532 MMSCFD in 9M2021 to 4,286 MMSCFD in 9M2022 mainly from lower supply of gulf gas and maintenance shutdown of some production fields resulted in the adjustment of fuel management plan of power plant customers as aforementioned. In addition, sales volume to GSP decreased following the turndown of GSP's production to in line with lower output of gulf gas.

Sales revenue of GSP business rose due to the higher average selling prices of all products in accordance with the higher petrochemical referenced prices. However, there was a decrease in sales volume (including NGL derived from Dew Point Control units) of all products from 5,270,824 tons in 9M2021 to 5,142,612 tons in 9M2022 or decreased by 2.4%, mainly from Ethane due to planned maintenance shutdown and turndown of GSP's production to in line with lower supply of gulf gas.

In addition, sales revenue of TM business decreased mainly from lower gas volume as well as revised gas pipeline tariff as aforementioned.

In 9M2022, EBITDA of gas business was reported at Baht 49,338 million, decreasing by Baht 17,959 million or 26.7%. The operating income was reported at Baht 35,727 million, decreasing by Baht 17,630 million or 33.3%. This was mainly from industrial customers as the gas cost increased in the higher extent compared to the increased in average selling prices. The gas cost increased from higher Pool Gas price following higher volume and price of imported LNG together with the incremental cost from the EPP policy, resulting in the decrease in gross margin of S&M. In addition, sales volume of S&M decreased while in 9M2022 there was the shortfall discount and compensation from the gas producers from Erawan and Yetagun field. In addition, performance of NGV business also decreased from higher gas cost together with the capped NGV retail price as aforementioned.

However, gross profit of GSP business rose from higher average selling prices of all products in accordance with the referenced prices despite the decrease in sales volume and higher gas cost in line with higher gulf gas price.

Coal Business

	3Q2021	2Q2022	3Q2022	%Inc. (Dec.)		9M2021	9M2022	%Inc. (Dec.)
				YoY	QoQ			
Newcastle index price (US\$ per ton)	167.5	376.8	420.7	>100.0%	11.7%	121.7	353.8	>100.0%
Average selling price (US\$ per ton)	88.6	195.2	152.5	72.1%	(21.9%)	78.0	152.8	95.9%
Cash cost (US\$ per ton)	51.1	65.4	81.0	58.5%	23.9%	48.8	69.4	42.2%
Sales volume (million tons)	1.6	1.7	1.6	-	(5.9%)	4.4	4.7	6.8 %

Third quarter of 2022 compared with Third quarter of 2021

In 3Q2022, sales revenue of Coal business was Baht 9,190 million, increasing by Baht 4,243 million or 85.8% compared with 3Q2021 mainly due to the increase in average selling price by US\$ 63.9 per ton or more than 72.1% from US\$ 88.6 per ton in 3Q2021 to US\$ 152.5 per ton in 3Q2022 following the increase in Newcastle referenced price which increase more than 100.0% due to an increasing demand mainly from less concern on supply side from Russia and Ukraine situation as well as many countries reduce and stop the import of Russian coal, therefore, more demand for coal from Australia. In addition, the supply from Australia was unable to increase production to match with the increasing demand due to limitations in production especially from the heavy rains while sales volume was close to 3Q2021 at 1.6 million tons follow the annual production plan of 6 million tons per year.

EBITDA in 3Q2022 was Baht 4,997 million, increasing by Baht 2,946 million or more than 100.0% from 3Q2021 mainly from higher gross profit due to higher average selling price as aforementioned despite higher mining cost following higher prices of coal and gasoil. Furthermore, in 3Q2022, the Indonesian government has raised the royalty rate since September 2022, causing the increase in royalty expenses. The operating income was Baht 4,252 million in 3Q2022, increasing by Baht 2,635 million or more than 100.0% mainly from the increase in EBITDA. Consequently, the overall performance of Coal business improved.

Third quarter of 2022 compared with Second quarter of 2022

In 3Q2022, sales revenue of Coal business was Baht 9,190 million, decreasing by Baht 2,493 million or 21.3% compared with 2Q2022 mainly due to the decrease in average selling price by US\$ 42.7 per ton or 21.9% from US\$ 195.2 per ton in 2Q2022 to US\$ 152.5 per ton in 3Q2022 despite the increase in Newcastle referenced price due to the decrease in sale revenue portion of index-linked sales. In addition, sales volume decreased by 0.1 million tons or 5.9% from 1.7 million tons in 2Q2022 to 1.6 million tons in 3Q2022, mainly due to the heavy rains causing the production volume to be less than planned.

EBITDA in 3Q2022 was Baht 4,997 million, decreasing by Baht 2,307 million or 31.6 % mainly from lower gross margin following lower average selling price and sales volume as aforementioned, together with higher mining cost following higher coal price. Operating income was Baht 4,252 million in 3Q2022, decreasing by Baht 2,412 million or 36.2% in accordance with the decrease in EBITDA. As a result, Coal business's overall performance was dropped. Although, there was impairment loss on coal mine project in Madagascar amounting to Baht 480 million in 2Q2022 while there was no such transaction in 3Q2022.

First nine-month of 2022 compared with First nine-month of 2021

In 9M2022, sales revenue of coal business was Baht 25,524 million, increasing by Baht 14,315 million or more than 100.0% compared with 9M2021 mainly due to the increase in average selling price by US\$ 74.8 per ton or 95.9% from US\$ 78.0 per ton in 9M2021 to US\$ 152.8 per ton in 9M2022 following the increase in referenced Newcastle price which increase more than 100.0%. In addition, sales volume increased by 0.3 million ton or 6.8% from 4.4 million tons in 9M2021 to 4.7 million tons in 9M2022 due to higher production plan from higher demand.

EBITDA in 9M2022 was Baht 14,137 million, increasing by Baht 9,922 million or more than 100.0% from 9M2021 mainly due to the increase in gross profit following higher average selling price and sales volume despite higher mining cost following higher coal and gasoil prices as aforementioned. Operating income in 9M2022 was Baht 12,306 million, increasing by Baht 9,159 million or more than 100.0% in accordance with the increase in EBITDA, resulting in an increase in overall performance even though there was impairment loss on coal mine project in Madagascar amounting to Baht 480 million, while in 9M2021 there was no such transaction.

2. Downstream Petroleum Business Group

Oil and Retail Business Group

	3Q2021	2Q2022	3Q2022	%Inc. (Dec.)		9M2021	9M2022	%Inc. (Dec.)
				YoY	QoQ			
Average Sales Volume* (Unit: Million Liter)	5,217	6,859	6,284	20.5%	(8.4%)	16,669	19,867	19.2%
Average Selling Prices (Unit: US\$ per barrel)								
Gasoline	83.4	143.0	110.1	32.0%	(23.0%)	75.8	122.2	61.2%
Aviation	77.0	147.2	129.3	67.9%	(12.2%)	70.6	129.4	83.3%
Diesel	77.1	151.2	132.1	71.3%	(12.6%)	71.3	132.8	86.3%

*The average sales volume of domestic oil segment only

Third quarter of 2022 compared with Third quarter of 2021

In 3Q2022, sales revenue of Oil and retail business group was Baht 195,156 million, increasing by Baht 77,882 million or 66.4% from 3Q2021 due to higher average selling price compared to 3Q2021 which was in line with the rising of global oil price. Additionally, sales volume increased by 1,067 million liters or 20.5% from 5,217 million liters or equivalent to 356,681 barrels per day in 3Q2021 to 6,284 million liters or equivalent to 429,630 barrels per day in 3Q2022, mainly from the increase of sales volume of diesel, aviation, and gasoline following the economic recovery from the relaxation of COVID-19 control measures. Non-oil business' revenue increased mostly from higher sales volume as expanding food and beverage business's network.

In 3Q2022, EBITDA was Baht 2,787 million, decreasing from 3Q2021 by Baht 1,371 million or 33.0% due to lower Oil business group's gross margin, as a result of lower overall average gross margin per liter, mainly in gasoline and diesel following the increased cost. Additionally, net operating expenses increased, mainly in variable expenses according to increasing sales volume such as transportation expenses, depot service fees, and aircraft refueling fees, etc. While Non-oil business' gross margin increased in line with higher sales and services revenue. The operating income in 3Q2022 was Baht 1,167 million, decreasing by Baht 1,506 million or 56.3% in according with lower EBITDA. As a result, the overall performance of Oil and retail business declined.

Third quarter of 2022 compared with Second quarter of 2022

In 3Q2022, sales revenue of Oil and retail business group was Baht 195,156 million, decreasing by Baht 16,869 million or 8.0% from 2Q2022 due to lower global oil price. In addition, overall sales volume decreased by 575 million liters or 8.4% from 6,859 million liters or equivalent to 474,096 barrels per day in 2Q2022 to 6,284 million liters or equivalent to 429,630 barrels per day in 3Q2022 mostly from the decrease of sales volume of diesel due to lower demand during the monsoon season. Non-oil business' revenue was close to last quarter. Sales revenue from Food and Beverage business increased due to increased sales volume, while other Non-oil business's sales revenue decreased mainly from convenient stores' average sales revenue per store per day slightly decreased due to the flooding situation in many areas.

In 3Q2022, EBITDA was Baht 2,787 million, decreasing by Baht 7,365 million or 72.5% from 2Q2022 from the lower of Oil business's overall average gross margin per liter decreased which was mainly from diesel and gasoline due to higher average cost as well as sales volume decreased. Non-oil business' EBITDA decreased in line with the decrease of Other Non-oil business' sales and services revenue. The operating income in 3Q2022 was Baht 1,167 million, decreasing by Baht 7,424 million or 86.4% from previous quarter, in accordance with lower EBITDA. As a result, the overall performance of Oil and retail business declined.

First nine-month of 2022 compared with First nine-month of 2021

In 9M2022, sales revenue of Oil and retail business group was Baht 585,090 million, increasing by Baht 229,460 million or 64.5% from 9M2021 mostly due to higher average selling price following higher average global oil price. In addition, the overall sales volume increased by 3,198 million liters or 19.2% from 16,669 million liters or equivalent to 384,055 barrels per day in 9M2021 to 19,867 million liters or equivalent to 457,737 barrels per day in 9M2022 as a result of the relaxation of COVID-19 control measures which led to economic recovery. Sales volume increased, mostly in diesel and fuel oil from the rising natural gas price situation causing power plants to switch to use the alternative fuels, including aviation which air-travels were higher in volume after further relaxation of COVID-19 control measures from 1 July 2022. Non-oil business' revenue increased from the increasing sales volume which resulted from expanding food and beverage stores network.

EBITDA in 9M2022 was Baht 19,625 million, increasing from 9M2021 by Baht 3,331 million or 20.4% from increasing gross margin according to overall sales volume increased, although average gross margin per liter slightly decreased. Non-oil business' gross margin increased in line with higher sales and services revenue. The operating income in 9M2022 was Baht 14,935 million, increasing by Baht 2,975 million or 24.9% in line with higher EBITDA. As a result, the overall performance of Oil and retail business has improved.

International Trading Business Group

Unit : Million Liter	3Q2021	2Q2022	3Q2022	%Inc. (Dec.)		9M2021	9M2022	%Inc. (Dec.)
				YoY	QoQ			
Average sales volume	16,906	28,526	40,064	>100.0%	40.4%	54,052	104,825	93.9%

Third quarter of 2022 compared with Third quarter of 2021

In 3Q2022, sales revenue of International Trading business was Baht 623,448 million, increased by Baht 335,865 million or more than 100.0% from 3Q2021 due to the increase in product selling price following the rise in global oil price as well as the increase in sales volume by 23,158 million liters or over 100.0% from 16,906 million liters or equivalent to 1,155,845 barrels per day in 3Q2021 to 40,064 million liters or equivalent to 2,739,133 barrels per day in 3Q2022, mainly from higher volume of crude imports for domestic refineries following the higher demand along with LNG import to fulfill lower supply of gulf gas during transition of concession's operator and LPG imports as a result of higher demand from domestic fuel customer as well as higher volume of crude and refined products out-out trading following the economic activities recovery from the reopening of the countries in many regions around the world.

EBITDA, adjusted by the impact from foreign exchange rate and derivatives, in 3Q2022 was Baht 4,097 million, increased by Baht 2,155 million or more than 100.0% mainly from higher sales revenue and sales volume as aforementioned together with higher margin per unit of crude and refined products in 3Q2022 due to higher product spreads from cross-regional trade at the right moment with the use of excellent risks management. The operating income, adjusted by the impact from foreign exchange rate and derivatives in 3Q2022 was Baht 3,687 million, increased by Baht 1,797 million or 95.1%.

Third quarter of 2022 compared with Second quarter of 2022

Sales revenue of International Trading business in 3Q2022 was Baht 623,448 million, decreased by Baht 848 million or 0.1% from 2Q2022 due to the lower product selling price following the decrease in global oil price amid market concerns over the risk of global recession, although sales volume increased by 11,538 million liters or 40.4% from 28,526 million liters or equivalent to 1,971,724 barrels per day in 2Q2022 to 40,064 million liters or equivalent to 2,739,133 barrels per day in 3Q2022 mainly from the higher volume of refined products out-out tradings as well as LNG import to fulfill lower supply of gulf gas and LPG imports as a result of higher domestic demand as aforementioned.

EBITDA, adjusted by the impact from foreign exchange rate and derivatives, in 3Q2022 was Baht 4,097 million, increased by Baht 312 million or 8.2% mainly from higher margin per unit of crude and refined products due to higher product spreads in 3Q2022, while the decrease in spreads of domestic condensate following the decreased in oil

referenced price formula. The operating income, adjusted by the impact from foreign exchange rate and derivatives, in 3Q2022 was Baht 3,687 million, increased by Baht 35 million or more than 1.0%

First nine-month of 2022 compared with First nine-month of 2021

Sales revenue of International Trading business in 9M2022 was Baht 1,730,729 million, increased by Baht 962,241 million or more than 100.0% from 9M2021 due to higher product selling price as aforementioned. Sales volume increased by 50,773 million liters or 93.9% from 54,052 million liters or equivalent to 1,245,362 barrels per day in 9M2021 to 104,825 million liters or equivalent to 2,415,176 barrels per day in 9M2022 mainly from the higher volume of LNG import to fulfill lower supply of gulf gas and LPG imports as a result of higher demand from domestic fuel customer as well as higher volume of crude imports for domestic refineries together with higher volume of crude and refined product out-out tradings as a result of the economic activities recovery from the reopening of many countries as aforementioned.

EBITDA, adjusted by the impact from foreign exchange rate and derivatives, in 9M2022 was Baht 9,101 million, increased by Baht 5,114 million or more than 100.0% mainly from higher sales revenue and sales volume as aforementioned. In addition, margin per unit of crude and refined product increased due to higher product spreads. Moreover, spreads of crude and domestic condensate increased following oil price formula. The operating income, adjusted by the impact from foreign exchange rate and derivatives in 9M2022 was Baht 8,435 million, increased by Baht 4,598 million or more than 100.0%.

Petrochemical and Refinery Business Group

Unit: US\$ per barrel	3Q2021	2Q2022	3Q2022	%Inc. (Dec.)		9M2021	9M2022	%Inc. (Dec.)
				YoY	QoQ			
Market GRM	2.1	21.3	6.8	>100.0%	(68.1%)	1.8	11.4	>100.0%
Inventory gain (loss) excl. NRV	3.3	5.3	(7.9)	<(100.0%)	<(100.0%)	3.9	2.6	(33.3%)
Hedging gain (loss)	(2.2)	(13.4)	0.5	>100.0%	>100.0%	(0.8)	(6.9)	<(100.0%)
Accounting GRM	3.2	13.2	(0.6)	<(100.0%)	<(100.0%)	4.9	7.1	44.9%
Refinery Utilization rate (%)	87.5%	102.0%	97.7%	10.2%	(4.3%)	93.0%	104.4%	11.4%

*From 3 Refineries: TOP, GC and IRPC

Unit : US\$ per Ton	3Q2021	2Q2022	3Q2022	%Inc. (Dec.)		9M2021	9M2022	%Inc. (Dec.)
				YoY	QoQ			
Olefins								
Naphtha (MOPJ)	676	875	714	5.6%	(18.4%)	613	822	34.1%
HDPE	1,138	1,341	1,104	(3.0%)	(17.7%)	1,158	1,259	8.7%
LDPE	1,398	1,658	1,300	(7.0%)	(21.6%)	1,490	1,533	2.9%
LLDPE	1,185	1,383	1,100	(7.2%)	(20.5%)	1,172	1,276	8.9%
PP	1,250	1,351	1,088	(13.0%)	(19.5%)	1,317	1,275	(3.2%)
Aromatics								
Condensate	616	933	820	33.1%	(12.1%)	567	863	52.2%
PX (TW)	919	1,259	1,088	18.4%	(13.6%)	848	1,145	35.0%
PX (TW) – Condensate	303	326	268	(11.6%)	(17.8%)	281	282	0.4%
BZ	993	1,238	978	(1.5%)	(21.0%)	904	1,097	21.3%
BZ – Condensate	377	305	158	(58.1%)	(48.2%)	337	234	(30.6%)

Third quarter of 2022 compared with Third quarter of 2021

In 3Q2022, sales revenue of petrochemical and refining business was Baht 382,621 million, increasing by Baht 127,643 million or 50.1% primarily due to refinery business mainly from the increase in average selling price following the increase in petroleum product prices. Moreover, PTT Group refineries' utilization rates increased from 87.5% in 3Q2021 to 97.7% in 3Q2022 mainly due to planned maintenance shutdown of refinery plant of GC in 3Q2021 and sales volume increased due to economic recovery as well as easing of COVID-19 control measures.

However, the sales revenue of petrochemical business slightly decreased from Aromatics business due to the decrease in sales volume from planned maintenance shutdown of Aromatics 1 plant of GC in 3Q2022, and production optimization as well as lower selling prices of BZ. Moreover, Olefins business also decreased from the decrease in sales volume due to planned maintenance shutdown of Olefins and HDPE plant of GC and lower utilization rates of IRPC's RDCC plant in 3Q2022 as well as lower selling prices of PE following the global market price.

EBITDA of petrochemical and refining business in 3Q2022 was loss of Baht 556 million decreasing by Baht 30,816 million or more than 100.0% from gain of Baht 30,260 million in 3Q2021. There was operating loss of Baht 11,541 million in 3Q2022, loss increasing by Baht 31,944 million or more than 100.0% when compared to operating income of Baht 20,403 million in 3Q2021 details as follows:

- **Petrochemical performance** decreased mainly from both Olefins business and Aromatics business due to the decrease in product spread and the decrease in sales volume as aforementioned.
- **Refinery performance** also decreased, according to the higher stock loss (There was stock loss of US\$ 7.9 per bbl in 3Q2022 versus gain of US\$ 3.3 per bbl in 3Q2021). Conversely, Market GRM increased from US\$ 2.1 per bbl in 3Q2021 to US\$ 6.8 per bbl in 3Q2022 mainly from the increase in most of all petroleum product spreads and the increase in sales volume following higher demand due to easing of lockdown measures.

The overall performance of petrochemical and refining business in 3Q2022 decreased compared to 3Q2021 due to an increase in operating loss as aforementioned and loss on exchange rates increased despite the increase in gain on derivatives mainly from oil price hedging instruments.

Third quarter of 2022 compared with Second quarter of 2022

In 3Q2022, sales revenue of petrochemical and refining business was Baht 382,621 million, decreasing by Baht 46,729 million or 10.9% primarily due to refinery business mainly from the decrease in average selling price. Moreover, PTT Group refineries' utilization rates decreased from 102.0% in 2Q2022 to 97.7% in 3Q2022 due to planned maintenance shutdown of TOP's Upgrading Unit and IRPC's production optimization and overall sales volume decreased.

In addition, the sales revenue of petrochemical business also decreased mainly from Olefins business as the decrease in sales volume due to soften demand of downstream products. Moreover, there was lower selling price of PE following global market price. The revenue of Aromatics business also decreased due to the production optimization in accordance with market as well as lower selling prices of BZ and PX.

EBITDA of petrochemical and refining business in 3Q2022 were loss of Baht 556 million decreasing by Baht 70,269 million or decreasing more than 100.0% from gain of Baht 69,713 million in 2Q2022. There was operating loss of Baht 11,541 million in 3Q2022, decreasing by Baht 70,406 million or more than 100.0% when compared to operating income of Baht 58,865 million in 2Q2022 details as follows:

- **Refinery performance** decreased, according to the lower Market GRM from US\$ 21.3 per bbl in 2Q2021 to US\$ 6.8 per bbl in 3Q2022 mainly from the decrease in product spreads as the global economy slowdown and the increase in crude premium due to the demand of Middle East crude has risen in order to avoid the use of Russian crude oil. Moreover, there was higher stock loss (There was stock loss of US\$ 7.9 per bbl in 3Q2022 versus gain of US\$ 5.3 per bbl in 2Q2022) as well as the decrease of sales volume as mentioned.
- **Petrochemical performance** also decreased mainly from both Olefins business and Aromatics business due to the decrease in product spread and the decrease in sales volume as aforementioned.

The overall performance of petrochemical and refining business in 3Q2022 was decreased compared with 2Q2022 due to the increase in operating loss as aforementioned and the increase in loss on exchange rates, while there was the increase in gain on derivatives mainly from oil price hedging instruments.

First nine-month of 2022 compared with First nine-month of 2021

In 9M2022, sales revenue of petrochemical and refining business was Baht 1,173,219 million, increasing by Baht 445,987 million or 61.3% primarily due to refinery business mainly from the increase in average selling price. Moreover, PTT Group refineries' utilization rates increased from 93.0% in 9M2021 to 104.4% in 9M2022 due to planned maintenance shutdown of refinery plant of GC in 3Q2021 and production optimization inline with better market condition. Moreover, sales volume increased following economic recovery.

The sales revenue of petrochemical business also increased from Aromatics business due to higher overall selling prices of PX and BZ despite the decrease in sales volume from planned maintenance shutdown of plant Aromatics 1 of GC and production optimization in accordance with market conditions. Olefins business also increased from higher selling prices of PE despite the decrease in sales volume due to planned maintenance shutdown of Olefins and Polymers of GC in 9M2022 which the day of planned maintenance shutdown was greater than in 9M2021.

EBITDA of petrochemical and refining business in 9M2022 was Baht 114,319 million increasing by Baht 17,159 million or 17.7% from Baht 97,160 million in 9M2021. There was operating income of Baht 81,781 million in 9M2022, increasing by Baht 13,655 million or 20.0% when compared to Baht 68,126 million in 9M2021 details as follows:

- **Refinery performance** increased, according to the higher Market GRM from US\$ 1.8 per bbl in 9M2021 to US\$ 11.4 per bbl in 9M2022 mainly from the increase in most of petroleum product spreads as well as an increase of sales volume. However, there was lower stock gain (There was stock gain of US\$ 2.6 per bbl in 9M2022 versus US\$ 3.9 per bbl in 9M2021).

- **Petrochemical performance** decreased mainly from both Olefins business and Aromatics business due to the increase in product prices which increased at lower proportion to the rise in feed cost and sales volume decreased as aforementioned.

The overall performance of petrochemical and refining business in 9M2022 decreased compared with 9M2021 due to loss on derivatives mainly from oil price hedging instruments and loss on exchange rates increased significantly despite an increase in operating income.



3. New Business and Infrastructure Group

	3Q2021	2Q2022	3Q2022	%Inc. (Dec.)		9M2021	9M2022	%Inc. (Dec.)
				YoY	QoQ			
Power sales volume (GWh)	4,659	5,265	5,494	17.9%	4.3%	14,852	15,980	7.6%
Steam sales volume (Thousand tons)	3,865	3,746	3,831	(0.9%)	2.3%	11,349	11,288	(0.5%)

Third quarter of 2022 compared with Third quarter of 2021

In 3Q2022, sales revenue of New Business and Infrastructure group was Baht 42,915 million, increased by Baht 23,477 million or over 100.0% mainly from GPSC due to higher revenue of Small Power Producer (SPP) power plants from higher average electricity and steam selling prices following the higher natural gas price. Moreover, revenue of IPP power plants from Sriracha and Glow IPP also increased due to higher energy payment (EP) revenue from higher electricity volume dispatched to EGAT. In addition, PTTGM's revenue increased mainly from the recognition of the revenue from Lotus pharmaceutical business since April 2022. Besides, in this quarter, it has launched a new generic drug in the US market in September 2022, which is the Lenalidomide. This drug is used to treat a certain type of cancers, such as Leukemia or Lymphoma which is the first generic drug for such cancers that has launched to the market.

EBITDA in 3Q2022 was Baht 6,609 million, increased by Baht 1,431 million or 27.6% and the operating income in 3Q2022 was Baht 2,863 million, increased by Baht 443 million or 18.3%. This was mainly from increased gross profit of PTTGM due to the recognition of revenue from pharmaceutical business as aforementioned, despite a decrease in GPSC's gross profit following a decrease in gross profit of its SPP power plants as natural gas and coal prices have significantly increased, resulting in a decrease of profit margin on electricity sold to the industrial customers. In addition, steam sales volume also slightly decreased as well. As a result, the overall performance of New Business and Infrastructure group decreased mainly from the softening of GPSC's performance together with higher finance costs and income tax of pharmaceutical business.

Third quarter of 2022 compared with Second quarter of 2022

In 3Q2022, sales revenue of New Business and Infrastructure group was Baht 42,915 million, increased by Baht 9,335 million or 27.8% mainly from GPSC following an increase in revenue of SPP power plants from higher average electricity and steam selling prices according to higher natural gas prices. Moreover, EP revenue of IPP power plants also increased following an increase in electricity dispatched to EGAT, despite a decrease in availability payment (AP) revenue due to the planned and unplanned maintenance outages. Moreover, PTTGM recognized higher revenue from pharmaceutical business as new product has been launched in market as mentioned.

EBITDA in 3Q2022 was Baht 6,609 million, increased by Baht 2,200 million or 49.9% mainly from higher gross profit of PTTGM due to higher recognition of revenue from pharmaceutical business, despite lower gross profit of GPSC due to the significant increase in natural gas and coal costs of SPP power plants, resulting in a decrease of profit margin on electricity sold to the industrial customers. Meanwhile, total electricity sales volume slightly increased. In this regard, the operating income in 3Q2022 was Baht 2,863 million, increased by Baht 1,561 million or over 100.0%. The overall performance of New Business and Infrastructure group increased mainly from PTTGM's higher performance in accordance with higher EBITDA as aforementioned, despite a decrease in GPSC's performance. However, GPSC recognized higher share of profit from associates and joint ventures, especially from Xayaburi Power Plant (XPCL) following higher water level during rainy season.

First nine-month of 2022 compared with First nine-month of 2021

In 9M2022, sales revenue of New Business and Infrastructure group was Baht 105,449 million, increased by Baht 48,450 million or 85.0%. This was mainly from GPSC due to higher electricity and steam selling prices of SPP power plants, resulted from higher natural gas prices. Moreover, EP revenue of IPP power plants also increased from higher electricity dispatches to EGAT and fuel costs as aforementioned. Besides, the AP revenue of IPP power plants increased due to lower planned and unplanned maintenance outages. In addition, PTTGM began to recognize the revenue from Lotus pharmaceutical business since April 2022.

EBITDA in 9M2022 was Baht 13,945 million, decreased by Baht 2,550 million or 15.5% mainly from lower gross profit of GPSC. This was due to the lower gross profit of SPP power plants from the significant increased in natural gas and coal prices, resulting in a lower of profit margin on electricity sold to the industrial customers. In this regard, operating income in 9M2022 was Baht 4,308 million, decreased by Baht 4,192 million or 49.3% in accordance with lower EBITDA. As a result, the overall performance of New Business and Infrastructure group decreased mainly from lower performance of GPSC.

Overall Performance of PTT and its Subsidiaries

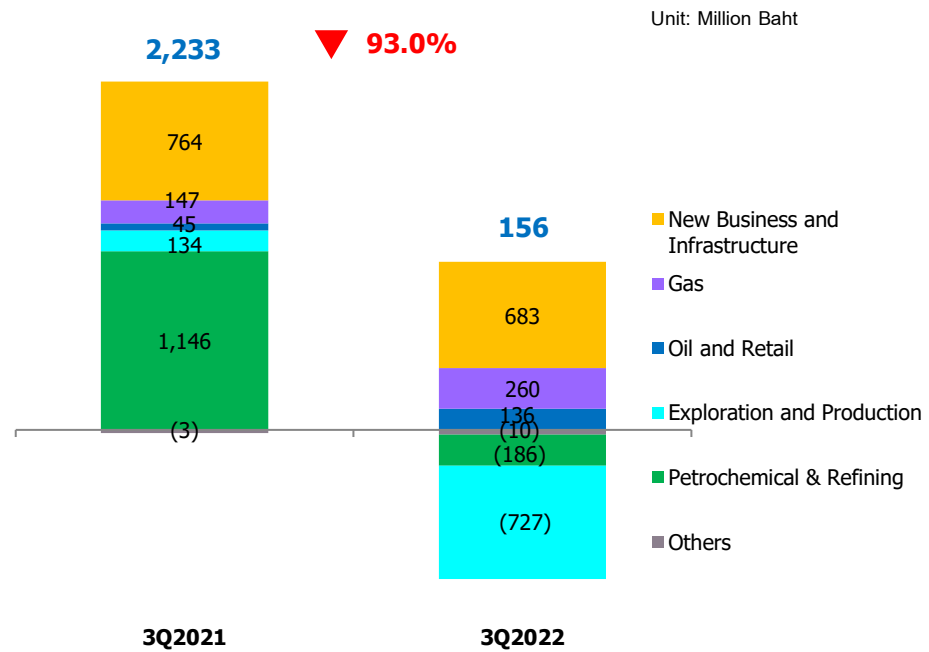
Third quarter of 2022 compared with Third quarter of 2021

In 3Q2022, sales revenue of PTT and its subsidiaries was reported at Baht 884,610 million increased from 3Q2021 by Baht 325,722 million or 58.3% from all businesses. Sales revenue of International Trading business, Petrochemical and Refining business, Oil and retail business, and Exploration and Production business increased due to higher average selling prices following the rise in global product prices as well as higher overall sales volume according to the recovery of economic activities from the easing of COVID-19 restrictions. In addition, sales revenue of Gas business increased mainly from S&M following the higher pool gas price and reference product price, although sales volume dropped compared to the same period last year regarding to the lower supply of gulf gas during the transition of operator for G1/61 concession and due to the maintenance shutdown of some production fields in 3Q2022.

EBITDA in 3Q2022 was Baht 92,277 million, decreased by Baht 18,245 million or 16.5% mainly from Petrochemical and Refining business. Petrochemical business's performance decreased from lower most of product spreads of both Olefins and Aromatics together with lower sales volume from planned maintenance shutdown of petrochemical plants in 3Q2022. Refining business's performance also decreased due to higher stock loss. PTT Group's stock loss increased approximately Baht 36,000 million as crude oil price decreased in 3Q2022, while market GRM rose from US\$ 2.1 per bbl in 3Q2021 to US\$ 6.8 per bbl in 3Q2022 from the rising in most of product spreads and the refining business had higher sales volume. Moreover, Gas business's performance decreased from lower gross profit of S&M and NGV business as gas cost significantly increased as a result of higher pool gas price following higher volume and higher price of imported LNG. However, Exploration and Production business's performance rose from the increase in both average selling prices and average sales volume.

The depreciation and amortization expenses of 3Q2022 were Baht 45,191 million, increased by Baht 5,896 million or 15.0% mainly from PTTEP as the average sales volume increased from first production of G1/61 and G2/61 projects since April 2022 and Malaysia project as well as GC as from an acquisition of Allnex in 4Q2021 and PTTGM mainly from investment in pharmaceutical business.

Share of profit from investments in joint ventures and associates



In 3Q2022, the share of profit from investments in joint ventures and associates was Baht 156 million, decreased by Baht 2,077 million from 3Q2021. This was primarily from lower performance of joint ventures in Petrochemical and Refining business mainly from HMC Polymers Co., Ltd. (HMC) and PT Chandra Asri Petrochemical Tbk (CAP) due to lower product to feed as well as share of profit from investments in joint venture in Exploration and Production business mainly from APICO LLC due to exploration wells written off in Thailand.

In 3Q2022, gain on derivatives was Baht 13,072 million, gain increased by Baht 24,840 million or over 100.0% mainly from oil and commodity price hedging instruments due to downward trend of forward oil price primarily from TOP, PTTT, PTTEP, and PTT.

There was loss on foreign exchange rate in 3Q2022 by Baht 19,850 million, loss increased by Baht 13,445 million or more than 100.0% mainly from loss on US currency loans and accounts payable as a result of Baht depreciation. (Thai Baht depreciation in 3Q2022 closed of Baht 2.61 per US Dollar, Thai Baht depreciation in 3Q2021 closed of Baht 1.87 per US Dollar).

Finance costs was Baht 10,141 million in 3Q2022 increased by Baht 2,671 million or 35.8% mainly from bond issuance of GC, PTTEP, and PTT as well as the increase in PTT's loan from financial institution.

In 3Q2022, there were recognition of non-recurring items (PTT's portion) after tax mainly from PTTEP's impairment loss on assets held-for-sale from PTTEP BL approximately by Baht 2,300 million and PTT's contribution to oil fund during economic crisis by Baht 1,000 million per month for a total of 3 months which has been contributed since September 2022 offset with PTT's discounted benefit from production shortfall approximately Baht 900 million. While, in

3Q2021, there were recognition of non-recurring items after tax (PTT's portion) mainly from the write-off on obsolete materials and supplies approximately by Baht 700 million from PTT.

The corporate income taxes in 3Q2022 was Baht 16,386 million, increased by Baht 978 million or 6.3% mainly from PTTEP following its higher profit while corporate income taxes of PTT and P&R business decreased in line with lower performance.

As aforementioned, this was resulted in PTT Group's net profit in 3Q2022 amounting to Baht 8,884 million, decreased by Baht 14,769 million or 62.4% from the net profit amounting to Baht 23,653 million in 3Q2021.

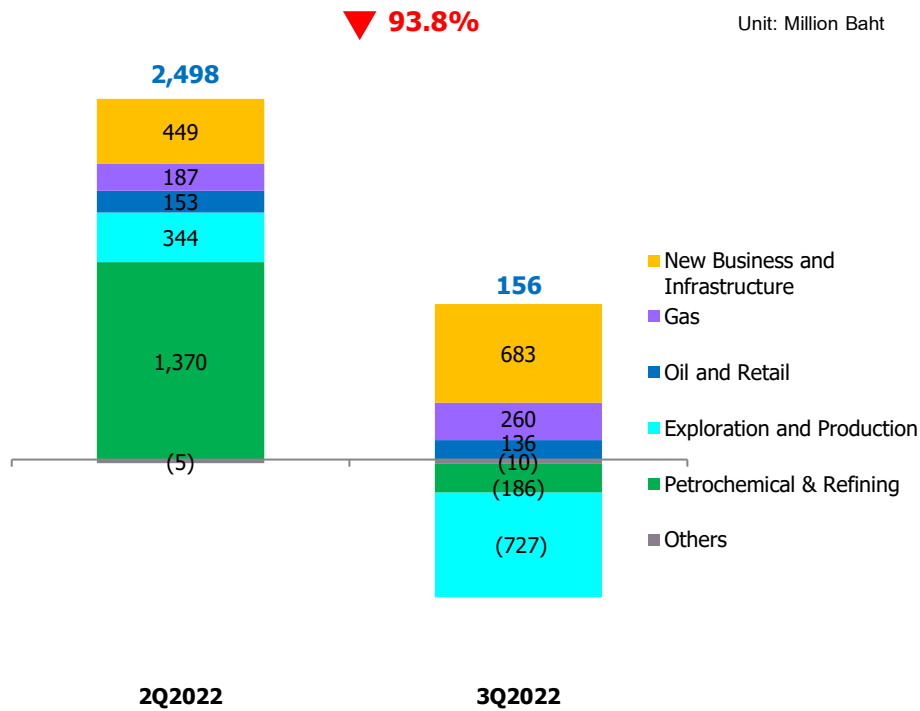
Third quarter of 2022 compared with Second quarter of 2022

In 3Q2022, PTT and its subsidiaries' sales revenue was reported at Baht 884,610 million decreased from 2Q2022 by Baht 42,344 million or 4.6%. This was mainly due to the lower sales revenue of Petrochemical and Refining business and Oil and retail business from the lower average selling price in accordance with the decrease in global petroleum and petrochemical prices as well as the decrease of overall sales volume from maintenance shutdown of domestic refinery and petrochemical plants and the decrease in domestic oil demand in the monsoon season. However, Gas business's revenue increased from S&M as average selling price increased following the pool gas price from higher volume and prices of imported LNG, despite the sales volume decreased compared to previous quarter mainly from the lower supply from gulf gas as aforementioned.

EBITDA in 3Q2022 was Baht 92,277 million, decreased by Baht 90,491 million or 49.5% mainly from the decrease in the performance of Petrochemical and Refining business. The performance of Refining business dropped since Market GRM decreased from US\$ 21.3 per bbl in 2Q2022 to US\$ 6.8 per bbl in 3Q2022 from the decrease in most of all product spreads. Moreover, PTT Group's stock loss increased approximately by Baht 45,000 million as crude oil price significantly decreased. Petrochemical business's performance also decreased from lower product spreads of both Olefins and Aromatics together with lower sales volume from weak demand of downstream products. Moreover, Gas business's performance decreased mainly from lower gross profit of S&M as gas cost significantly increased in accordance with higher pool gas price together with lower sales volume. In addition, Gas Separation Plant business (GSP)'s gross profit decreased mainly from higher gas cost and lower average selling prices of all products following the petrochemical referenced prices.

The depreciation and amortization expenses in 3Q2022 were Baht 45,191 million, increased by Baht 4,878 million or 12.1% primarily from PTTEP due to higher sales volume of Bongkot Project and G1/61 Project together with the additional completed assets of S1 Project, as well as PTTGM from the investment in pharmaceutical business.

Share of profit from investments in joint ventures and associates



In 3Q2022, the share of profit from investments in joint ventures and associates was Baht 156 million, decreased by Baht 2,342 million or 93.8% mainly from the lower performance of joint ventures in Petrochemical and Refining business mainly from AGC Vinythai Public Co., Ltd. (“AVT”) as the selling prices of its product was decreased. Moreover, the share of profit from investments in joint ventures in Exploration and Production business also decreased from APICO LLC due to the write-off of exploration wells in Thailand.

In 3Q2022, there was gain on derivatives amounting to Baht 13,072 million, gain increased by Baht 47,577 million or over 100.0% mainly from TOP, GC, PTTT, and IRPC due to a downward trend of forward oil price compared to the previous quarter.

In 3Q2022, loss on foreign exchange was Baht 19,850 million, loss increased by Baht 6,829 million or 52.4% mainly from loss on US dollar loans and accounts payable as a result of Baht depreciation in this quarter compared to the previous quarter (Thai Baht depreciation in 3Q2022 closed of Baht 2.61 per US Dollar, Thai Baht appreciation in 2Q2022 closed of Baht 2.00 per US Dollar).

Finance costs was Baht 10,141 million in 3Q2022 increased by Baht 991 million or 10.8% from 2Q2022 mainly from the issuance of GC’s corporate bond as well as the increase in PTT’s loan from financial institution.

In 3Q2022, there were the recognition of non-recurring items after tax (PTT’s portion) mainly from PTTEP’s impairment loss on assets held-for-sale from PTTEP BL approximately Baht 2,300 million and PTT’s contribution to oil fund during economic crisis of Baht 1,000 million per month for a total of 3 months which has been contributed since September 2022 offset with PTT’s discounted benefit from production shortfall approximately Baht 900 million. Meanwhile, in 2Q2022,

there was the recognition of non-recurring items after tax (PTT's portion) from PTT's discounted benefit from production shortfall approximately Baht 1,000 million offset with PTTGM's impairment loss on coal mine project in Madagascar approximately Baht 400 million.

The corporate income taxes in 3Q2022 was Baht 16,385 million, decreased by Baht 18,466 million or 53.0% result primarily from lower performance of PTT and its subsidiaries. Moreover, in 2Q2022, there was TOP's income tax from sale of the investment in GPSC approximately Baht 2,100 million.

As aforementioned, this was resulted in PTT and its subsidiaries' net profit in this quarter amounting to Baht 8,884 million decreased by Baht 29,964 million or 77.1% from net profit of Baht 38,848 million in 2Q2022.

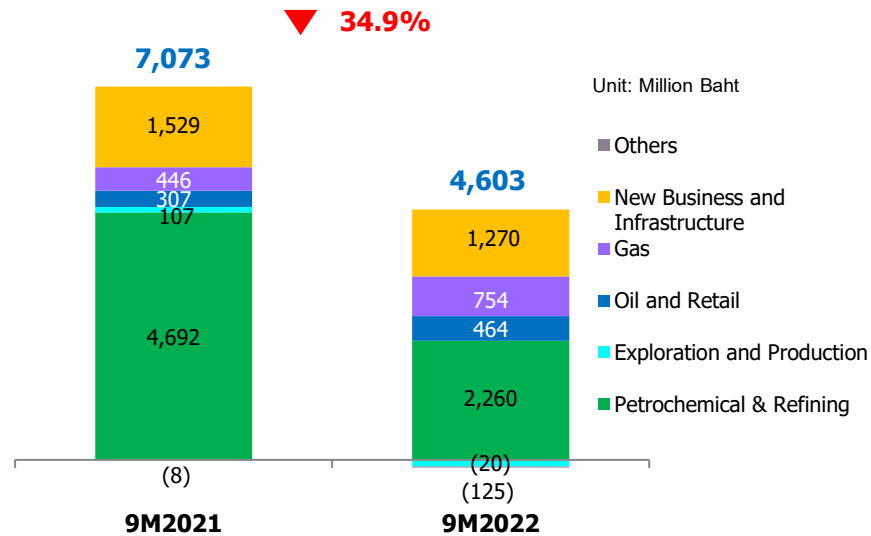
First nine-month of 2022 compared with First nine-month of 2021

In 9M2022, sales revenue of PTT and its subsidiaries was reported at Baht 2,570,029 million increased from 9M2021 by Baht 1,000,048 million or 63.7% from all businesses. Sales revenue of International Trading business, Petrochemical and Refining business, Oil and retail business, and Exploration and Production business increased due to higher average selling prices and sales volume according to the recovery of economic activities as aforementioned. Moreover, sales revenue of Gas business increased following pool gas price and product referenced prices, while gas's sales volume decreased compared to the same period of last year mainly due to the lower gas supply from gulf gas fields during the transition period of the concession's operator.

EBITDA in 9M2022 was Baht 417,746 million, increased by Baht 91,061 million or 27.9%. This was mainly from the increase in Exploration and Production business performance from higher average selling price and average sales volume. Petrochemical and Refining business's performance also increased. Refining business's performance rose as Market GRM increased from US\$ 1.8 per bbl in 9M2021 to US\$ 11.4 per bbl in 9M2022 due to the improve in most of product spreads as well as the increase in sales volume, while PTT Group's stock gain decreased approximately Baht 17,000 million following the decrease in crude oil price in 3Q2022. Whereas, Petrochemical business's performance decreased owing to the lower in most of petrochemical product spreads of both Olefins and Aromatics and lower sales volume from planned maintenance shutdown in 9M2022.

The depreciation and amortization expenses of 9M2022 were Baht 122,649 million, increased by Baht 9,710 million or 8.6% mainly from GC as a result of acquisition of Allnex in 4Q2021 and PTTGM mainly from the investment in the pharmaceutical business.

Share of profit from investments in joint ventures and associates



In 9M2022, the share of profit from investments in joint ventures and associates was Baht 4,603 million, decreased by Baht 2,470 million or 34.9%. This was primarily from lower performance of joint venture in Petrochemical and Refining business due to lower product to feed.

In 9M2022, loss on derivatives increased by Baht 38,626 million, from loss on derivatives of Baht 31,786 million in 9M2021 to loss on derivatives of Baht 70,412 million in 9M2022 mainly from loss on oil price hedging instruments from GC, TOP, PTTT, and IRPC.

Loss on foreign exchange rate increased by Baht 15,551 million from loss Baht 11,608 million in 9M2021 to loss Baht 27,159 million in 9M2022 mainly due to loss on US currency loans and accounts payable as Baht depreciation at the end of quarter compared to the same period last year. (Thai Baht depreciation in 9M2022 closed of Baht 4.48 per US Dollar, while Thai Baht depreciation in 9M2021 closed of Baht 3.88 per US Dollar).

Finance costs was Baht 26,736 million in 9M2022 increased by Baht 5,726 million from Baht 21,010 million in 9M2021 mainly from corporate bond issuance of GC, PTTEP, and PTT as well as an increase in PTT's loan from financial institution.

In 9M2022, there were loss recognition of non-recurring items after tax (PTT's portion) mainly from PTTEP's impairment loss on assets held-for-sale from PTTEP BL approximately Baht 2,300 million and PTTGM's loss on impairment loss on coal mine project in Madagascar around Baht 400 million together with PTT's contribution to oil fund in economic crisis Baht 1,000 million per month for a total of 3 months which has been contributed since September 2022 net off PTT's discounted benefit from production shortfall around Baht 2,500 million and GPSC's gain on Ichinoseki Solar Power 1 GK divestment approximately Baht 350 million. Whereas, in 9M2021 there were gain recognition of non-recurring items after tax (PTT's portion) from PTTEP's gain on bargain purchase in Oman Block 61 approximately by Baht 7,000 million.

Meanwhile, there were PTTEP's partial write-off of exploration and evaluation assets of the exploration project in Brazil approximately by Baht 2,900 million, GC's impairment loss on investment in joint venture approximately by Baht 1,500 million and PTT's write-off on obsolete materials and supplies approximately by Baht 800 million.

The corporate income taxes in 9M2022 was Baht 73,110 million, increased by Baht 25,168 million or 52.5% mainly from higher performance of PTTEP and TOP. Moreover, there was TOP's income tax from sale of the investment in GPSC, while corporate income taxes of GC and PTT decreased in line with lower performance.

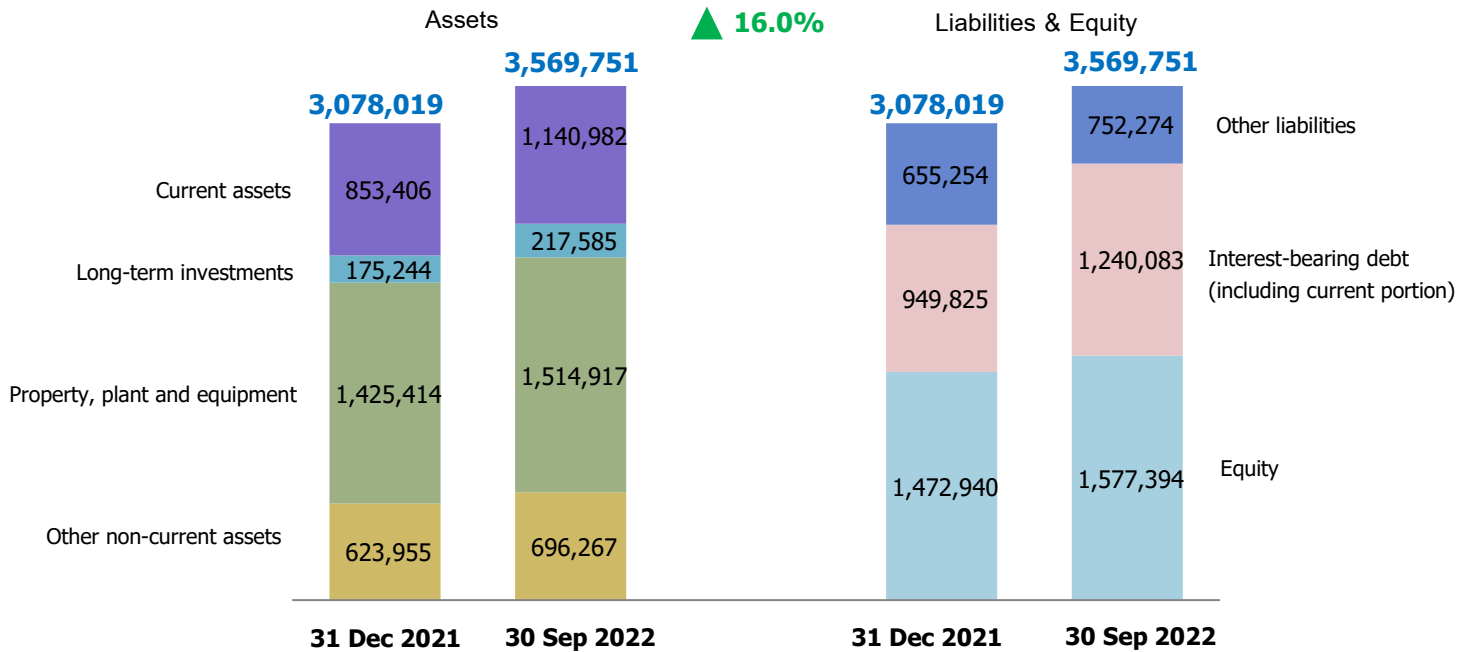
As aforementioned, this was resulted in PTT Group's net profit in 9M2022 amounting to Baht 73,303 million, decreased by Baht 7,516 million or 9.3% from the net profit amounting to Baht 80,819 million in 9M2021.



The Analysis of PTT Group Consolidated Financial Position

As of 30 September 2022 compared with 31 December 2021

Unit: Million Baht



Assets

As of 30 September 2022, total assets of PTT Group were Baht 3,569,751 million, increasing by Baht 491,732 million or 16.0% compared with 31 December 2021 mainly from following:

: Current assets increased by 287,576 million or 33.7% mainly from the following:

- Inventories increased by Baht 101,623 million due to overall higher prices and inventory level from TOP, OR, PTT, GC and IRPC.
- Trade accounts receivables increased by Baht 64,565 million mainly from overall higher average selling prices and sales volume from Gas business, as well as the extension of repayment period for EGAT of PTT, higher product price following market price of GPSC, OR, GC and acquisition of PTTGM's pharmaceutical business.
- Cash and cash equivalents and current investments decreased by Baht 23,448 million mainly from the decrease in short-term investment due to the matured short-term investments of OR and GC.

: Long-term investments increased by Baht 42,341 million or 24.2% from the increased investment in associates mainly from GPSC's investment in CI Changfang and CI Xidao, the purchasing additional shares in Vinythai (VNT) of GC as well as the acquisition of pharmaceutical business and long-term investments in financial assets in Contemporary Amperex Technology Co., Ltd. (CATL) of PTTGM.

: Property, plant, and equipment (PPE) increased by Baht 89,503 million or 6.3% mainly from PTTEP's exploration and evaluation assets of G1/61 Project and G2/61 Project and TOP's additional construction in progress of Clean Fuel Project (CFP).

: Other non-current assets increased by Baht 72,312 million or 11.6% mainly from PTTEP's right-of-use assets of G1/61 Project and G2/61 Project as well as goodwill and intangible assets from the acquisition of PTTGM's pharmaceutical business.

Liabilities

As of 30 September 2022, PTT Group had total liabilities of Baht 1,992,357 million, increasing by Baht 387,278 million or 24.1% from 31 December 2021, mainly from the following:

: Other liabilities increased by Baht 97,020 million or 14.8% mainly from the increase in trade accounts payables due to the increase in purchasing volume and prices mainly from PTT as well as the increase in provision for decommissioning costs of G1/61 Project and G2/61 Project of PTTEP and the increase in commodity derivatives primarily from PTTT.

: Interest-bearing debt increased by Baht 290,258 million or 30.6% due to the increase in long-term loans and bond by Baht 163,364 million mainly from GC PTT and the increase in short-term loans by Baht 97,796 million mainly from TOP, GC, and IRPC.

Equity

As of 30 September 2022, PTT Group had total shareholders' equity of Baht 1,577,394 million, increasing by Baht 104,454 million or 7.1% from 31 December 2021 as PTT Group reported the 9 months in 2022 net income amounting to Baht 73,303 million offset with dividend payment from the operating results of the second half of 2021 and the first half of 2022. Additionally, non-controlling interests increased by Baht 36,056 million mainly from higher net income of subsidiaries.

Liquidity

For the 9-month ended 30 September 2022, PTT Group had net increase in cash and cash equivalents amounting to Baht 9,636 million. There was cash and cash equivalents at the beginning of the period of Baht 312,730 million. As a result, cash and cash equivalents at the end of the period was Baht 322,366 million. Details of cash flow by activities are as follows:

Unit: Million Baht

	PTT Group
Net cash provided by operating activities	28,159
Net cash used in investing activities	(128,600)
Net cash provided by financing activities	124,774
Effects of exchange rates on cash and cash equivalents	13,739
Exchange differences on translation	(13,763)
Cash and cash equivalents classified as held for sale	(14,673)
Net increase in cash and cash equivalents during the period	9,636
Cash and cash equivalents at the beginning of the period	312,730
Cash and cash equivalents at the end of the period	322,366

Net cash provided by operating activities of Baht 28,159 million was derived from Baht 174,203 million of profit before income taxes, adjusted to net cash provided by (used in) operating activities. The increase in net cash flow from operating activities mainly resulted from Baht 122,649 million of depreciation and amortization expenses, Baht 36,176 million of loss on foreign exchange rate, Baht 26,736 million of finance costs, Baht 5,994 million of allowance for changes in value of inventories, Baht 4,134 million of loss on impairment of assets, Baht 3,527 million of unrealized loss on fair value of commodity contracts. The decrease in net cash flow from operating activities mainly resulted from Baht 4,603 million of share of profit from investments in joint ventures and associates, and the change in net operating assets resulting in the decrease in cash flow of Baht 268,970 million while income taxes paid of Baht 73,599 million.

Net cash used in investing activities was Baht 128,600 million mainly resulted from the following:

: The cash outflow of investments in property, plant and equipment, investment property, intangible assets, and exploration and evaluation assets amounting to Baht 119,729 million, mainly due to additional investment in exploration and production assets in G1/61 Project, G2/61 Project, Zawtika Project, Bongkot Project, and S1 Project of PTTEP, additional investment of TOP in CFP and expand the capacity of electricity and steam of TOP SPP Co., Ltd. (TOP SPP), GC's Olefins I4/2 Modification project, the 7th Gas Separation Plant, Bang Pakong– South Bangkok power plant transmission pipeline project, the 5th transmission pipeline project of PTT, GSP Logistics Management, and LNG receiving terminal at Nong Fab of PTT LNG Co., Ltd. (PTTLNG).

: The cash outflow of business acquisition and long-term investments amounting to Baht 51,219 million, mainly from GPSC's investment in CI Changfang and CI Xidao, the acquisition of pharmaceutical business and the investment in financial asset, CATL, of PTTGM as well as the purchasing additional shares in VNT of GC.

: The cash inflow from short-term investment in financial assets totaling Baht 34,185 million, mainly from maturity of fixed deposits of OR, GC, and GPSC.

Net cash provided by financing activities was Baht 124,774 million, mainly from the following:

: The net cash inflow of short-term and long-term loans amounting to Baht 194,043 million mainly from GC, PTT, and IRPC.

: Dividend payment amounting to Baht 45,459 million mainly from PTT, PTTEP, and GC.

: Finance costs paid amounting to Baht 25,203 million mainly from GC, TOP, PTT, and PTTEP.



Financial ratios and earnings per share of PTT Group

Financial Ratio	Unit	9M2021	9M2022
<u>Profitability Ratios</u>			
Gross profit margin	%	17.81	15.24
Net profit margin	%	7.25	3.93
<u>Solvency Ratios</u>			
Interest coverage*	Times	15.55	15.62
<u>Earnings per share</u>			
Earnings per share	Baht/share	2.82	2.57

Financial Ratio	Unit	31 Dec 2021	30 Sep 2022
<u>Liquidity Ratios</u>			
Current ratio	Times	1.73	1.78
Quick ratio	Times	1.13	0.94
<u>Solvency Ratios</u>			
Debt to equity	Times	0.64	0.79

Note:

Gross profit margin	=	Gross profit divided by Sales and service income
Net profit margin	=	Net profit divided by Sales and service income
Interest coverage	=	EBITDA divided by Finance costs*
Earnings per share	=	Net income attributable to ordinary shareholders divided by the weighted average number of ordinary shares which are held by third parties during the periods
Current ratio	=	Current assets divided by Current liabilities
Quick ratio	=	(Cash and cash equivalent + Current investments + Accounts receivable) divided by Current Liabilities
Debt to equity	=	Interest bearing debt divided by Total shareholder's equity

*The calculation formula has been changed (old formula: Net cash flow from operating activities + Taxes paid from operating activities divided by Finance costs paid)

Economic Outlook in the Fourth Quarter of 2022

The world economy in 4Q2022 is expected to grow at a slower rate than 3Q2022 from the rapid pace of US monetary policy tightening to tame inflation, a new lockdown under zero-COVID policy, the worsening property market crisis and the extreme droughts in China, as well as the transition into winter that could further exacerbate the European energy crisis.

According to the S&P Global's report of October 2022, global oil demand in 4Q2022 is expected to maintain at the same level as in 3Q2022 at 100.9 MMBD due to concern over pressuring demand from the expectation of economic slowdown amid global high inflation. In addition, China has been holding on to its zero-COVID policy which limits oil demand growth. While the continued appreciation of US dollar tends to keep pressure on the oil demand and crude oil price. On the other hand, the supporting factors to oil price comes from the OPEC+ alliance, during the meeting on 5 October, agreed to cut its production quota in November and December by 2 MMBD. However, considering the current actual production, which is lower than the quota, the actual supply from OPEC+ is expected to lower by approximately 1 MMBD. Besides, Russian production is likely to decrease as embargo from the EU become effective in December. While production growth from US is limited due to high operating cost amid strong inflation which is a factor to support the oil price. In 4Q2022, Dubai crude oil price is expected to average at US\$91 - 96 per barrel; whereas Singapore GRM is expected to average at US\$3.5 - 4.5 per barrel, decreased from 3Q2022 because overall demand becomes lower amid economic downturn, while the supply increase from higher Chinese export volume of petroleum products following increasing export quota. In 2022, Dubai crude oil price is expected to average at US\$96 - 101 per barrel, and Singapore GRM is expected to average at US\$9.6 - 10.6 per barrel.

Petrochemical prices of both Olefins and Aromatics in 4Q2022 are expected to continue softening from 3Q2022, due to the persistent weak demand, amid a clear sign of global economic slowdown.

- **Olefins:** HDPE and PP prices in 4Q2022 are expected to decrease from 3Q2022, with average prices of US\$1,080 - 1,100 per ton for HDPE, and US\$1,060 - 1,080 per ton for PP, caused by economic slowdown and the existence of strictly zero-COVID policy in China. Furthermore, additional supply from new capacities in Asia will add more pressure to the market. However, an uptick in demand for the upcoming festival at the end of the year is expected to support the Olefins prices during this period.
- **Aromatics:** BZ and PX prices in 4Q2022 are expected to decrease from 3Q2022. BZ and PX prices are projected to be averaged at US\$890 - 910 per ton and US\$1,040 - 1,060 per ton respectively, due to an expected lower crude oil and naphtha prices, an expected lower downstream demand following a global economic slowdown, as well as a continuous operating rate cut of Asian downstream producers in order to maintain its margin. In addition, an upcoming of new capacities in China and Saudi Arabia will pressure the market further.

Thai economy in 4Q2022 is expected to keep expanding from 3Q2022, as tourism sector is projected to recover further due to the relaxation of travel restrictions in many countries. In particular, China has begun to gradually relax its entry measures, such as reducing the duration of quarantine for Chinese tourists inbound. Moreover, private consumption and private investment are likely to continue to expand especially the consumption from labors and sectors related to tourism, and pent-up demand at the end of the year from high income consumers, amid downward pressures from a slowdown inflation rate but remain stubbornly high. Meanwhile, merchandise export is expected to expand at a slower pace due to higher risk of economic recession among Thailand's trading partners. Besides, more economic stimulus packages at the end of the year might be considered by the cabinet, amid fiscal budget constraints due to the large indebtedness in the past few years. Thai economic recovery could face further downside risks, including a tightening of global financial conditions which could lead to global economic recession, the implementation of the zero-COVID policy in China that still strict and protracted, the rise of geopolitical tensions, and the emergence of new COVID-19 variants.



Major Project Plan

Gas Business Group: The progress of major projects

Pipelines Transmission Projects

- The 5th Transmission Pipeline (Rayong - Sai Noi – North/South Bangkok power plants)
 - Total Project Progress as of September 2022: 94.35% (Including 3 phases construction)
 - COD: December 2022

LNG Project:

Currently, PTT have long term LNG contracts with Qatargas, Shell, BP, and Petronas at 5.2 MTA and has a capability to procure LNG in order to fulfill the country demand growth in the future.

- **LNG Receiving Terminal #2:**

Total Project progress as of September 2022: approximately 99.61% (Including total project)

- Total Capacity of 7.5 MTA be approved by the Cabinet meeting on 11 April 2017
 - The capacity of 2.5 MTA is already COD since July 2022 and capacity of 5 MTA is scheduled to COD in December 2022
- **Other LNG Receiving Terminal Project (LNG Receiving Terminal 3):**
 - On 24 September 2019, the Cabinet approved the private entity selection, negotiations and the draft of the contract between Public Private Partnership (PPP) and the Industrial Estate Authority of Thailand (IEAT) on the development of Map Ta Phut seaport phase III (Section 1) as proposed by the Eastern Economic Corridor Office. Gulf MTP LNG Terminal Co., Ltd., a new joint venture company between PTT Tank Terminal Co., Ltd. (PTT Tank) and Gulf Energy Development Public Co., Ltd. (GULF) with shareholding of 30%, and 70%, respectively, is to proceed land reclamation with the investment cost of approximately Baht 12,900 million which is expected to be completed by 2024, as well as having the right to construct LNG terminal 3 phase 1 with the capacity not less than 5 MTA. The LNG terminal 3 phase 1 has an investment cost approximately Baht 28,000 million which is expected to be completed by the year 2027.

[Summary Planned Shutdown for Gas Separation Plants in 2022](#)

Plant	1Q2022	2Q2022	3Q2022	4Q2022
GSP #1			SD (6-19 Aug :14 days)	
GSP #2		TD (10 May-1 Jun : 23 days)		
GSP #3		TD (10 May-1 Jun : 23 days)	SD (21-26 Aug :6 days)	
GSP #4			Major SD (1-20 Sep : 20 days)	
GSP #5			TD (1-30 Sep : 30 days)	TD (1-15 Oct : 15 days) Minor SD (5-19 Dec : 15 days)
GSP#6			SD (9-12 Jul :4 days)	
ESP		Major SD (10 May-1 Jun : 23 days)		

[Summary Planned Shutdown for Gas Separation Plants in 2023](#)

Plant	1Q2022	2Q2022	3Q2022	4Q2022
GSP #2				Minor SD (Nov : 15-20 days)
GSP #3			Minor SD (Sep : 15-20 days)	
ESP			TD 50% (Sep : 30 days)	TD 50% (Nov : 30 days)

*TD: Turndown

**SD: Shutdown

Appendix

Exploration and Production Business consists of PTT Exploration and Production Public Co., Ltd. (PTTEP)

Natural Gas Business consists of PTT natural gas business unit, PTT Natural Gas Distribution Co., Ltd. (PTTNGD) and PTT LNG Co., Ltd (PTTLNG)

Coal Business consists of PTT Energy Resources Co., Ltd. (PTTER), PTT Global Management Co., Ltd. (PTTGM)

Oil and Retail Business consists of PTT Oil and Retail Business Public Co., Ltd. (OR)

International Trading Business consists of PTT international business unit and PTT International Trading Pte. Ltd. (PTTT), PTT International Trading London Limited (PTTT LDN) and PTT International Trading USA Incorporated (PTTT USA)

Petrochemical and Refinery Business consists of PTT Global Chemical Public Co., Ltd. (GC), Thai Oil Public Co., Ltd. (TOP), IRPC Public Co., Ltd. (IRPC), and PTT Tank Terminal Co., Ltd. (PTT TANK)

New Business and Infrastructure Business consists of PTT New Business and Infrastructure business unit, Global Power Synergy Public Co., Ltd. (GPSC), PTT Energy Solution Co., Ltd. (PTTES), Energy Complex Co., Ltd. (EnCo) and PTT Digital Solutions Co., Ltd. (PTT DIGITAL)

Other Business consists of Business Services Alliance Co., Ltd. (BSA), PTT Green Energy Pte. Ltd. (PTTGE), and PTT Treasury Center Co., Ltd. (PTT TCC)

*Note: *PTTGM owns shares in many companies which operate in various businesses such as Coal Business, Natural Gas Business, and New Business and Infrastructure Business. However, currently PTTGM's performance is mainly contributed from the Coal Business.*