



PTT Global Chemical Public Company Limited

Management Discussion and Analysis Q1/2023

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1. Executive Summary

In Q1/2023, PTT Global Chemical Public Company Limited (“the Company”) had total sales revenue of Baht 147,248 million, increased by 18% from Q4/2022 and decreased by 16% from Q1/2022. The total revenue has increased due to higher overall sales volume according to the scheduled maintenance shutdown of the refinery has been completed in the previous quarter, and higher average selling price of petrochemical products following the demand recovery from China's reopening. The Company had Adjusted EBITDA of Baht 9,530 million in this quarter, increased by 82% from Q4/2022, but decreased by 24% from Q1/2022, as Upstream Business performance improved especially Refined products spread remained at high level, while Aromatics products spread increased following the recovery of downstream demand as well as support from the shift of use of feedstock into gasoline production. Polymers & Chemicals Business performance increased following China's reopening. While Intermediates and Performance Chemicals businesses performance softened in this quarter In Q1/2023, overall petrochemical market gradually improved, however, performance of petrochemical associates and joint ventures companies remained weak. As such, the Company had Share of Loss from Investments at Baht 152 million, slightly improved from previous quarter. Coupled with increasing financial costs from the previous quarter that in line with the increase in market interest rates, The Company had Net Operating Loss Recurring (excluding Stock Loss Net NRV, Foreign Exchange Gain and Loss from financial derivatives, Gain from commodity hedging, and Extraordinary items) of Baht 240 million, improved from previous quarter. However, the Company recorded extraordinary items including Stock Loss Net NRV of Baht 1,359 million, Gain from commodity hedging of Baht 943 million, Net gain from Foreign Exchange Gain and Loss from financial derivatives of Baht 696 million. As a result, the Company reported Net profit in Q1/2023 of Baht 82 million (Baht 0.02/share).

Table 1 : Performance Summary

(Unit: Million Baht)	Q1/2022 ¹	Q4/2022 ¹	Q1/2023 ¹	YoY % +/-	QoQ % +/-
Sales Revenue	175,554	124,780	147,248	-16%	18%
EBITDA	8,799	2,072	9,115	4%	>200%
EBITDA Margin (%)	5%	2%	6%	1%	4%
Share of profit /(loss) of investments in JV and Associates	1,150	(381)	(152)	-113%	60%
Net Profit/(Loss)	2,596	678	82	-97%	-88%
EPS (Baht/Share)	0.58	0.15	0.02	-97%	-88%
Adjusted EBITDA ²	12,483	5,234	9,530	-24%	82%
Adjusted EBITDA Margin (%)	7%	4%	6%	-1%	2%

Note:

1) There was a restatement of financial statement for the period of three months ended March 31, 2022 and the period of three months ended December 31, 2022 since the measurements of net assets acquired from acquisition of Allnex Holding GmbH have been completed by an independent appraiser in the fourth quarter of the year 2022. The Company has adjusted the fair values of assets and liabilities acquired to reflect the final fair value determination in accordance with the accounting adjustment condition for business acquisition. The adjustment has no effect to the financial statement for the period of twelve months of fiscal year 2022 as previously reported.

2) Adjusted EBITDA refers to EBITDA excluding Stock gain/(loss), NRV, Gain/(loss) from commodity hedging, and Extra item.



In Q1/2023, Upstream Business performance significantly increased, mainly due to higher overall sales volume of petroleum products after the completion of the scheduled maintenance shutdown of the refinery in Q4/2022. The Market GRM was slightly increased to 10.3 USD per barrel, supported by Diesel spread remained to be relatively healthy and the increase in Gasoline product spread, while Crude premium dropped in this quarter. Aromatics performance increased following improved product spreads according to the seasonal demand and the tight supply during the quarter. Olefins performance slightly dropped, mainly caused by planned maintenance shutdown of Olefins plant 2/2 during this quarter to prepare for the start up of the Olefins Modification Project.

Intermediates Business performance slowed down compared to previous quarter due to Phenol market was weak especially Bis-Phenol A (BPA) products which continue to be impacted by the weak downstream demand and new capacities started up in China. The decline in overall PTA products spread impacted from the continuing rise in Paraxylene (PX) prices, although there is a robust recovery in downstream demand for the fiber and textile industry. In addition, the Monoethylene Glycol plant has been continued under planned maintenance shutdown in this quarter. For Polymers & Chemicals Business, the performance increased from the previous quarter due to the increase in polymers prices following China's reopening which helped to support demand in the market.

Bio & Circularity Business performance increased compared to the previous quarter due to rising Methyl Ester sales volume along with more traveling activities. Performance Chemicals Business can still maintain effective cost and price management. Additionally, total sale volume slightly increased due to economic activity picked up especially the restocking activities in Europe after the seasonality impact in the previous quarter.

Table 2 : Adjusted EBITDA by Business Unit

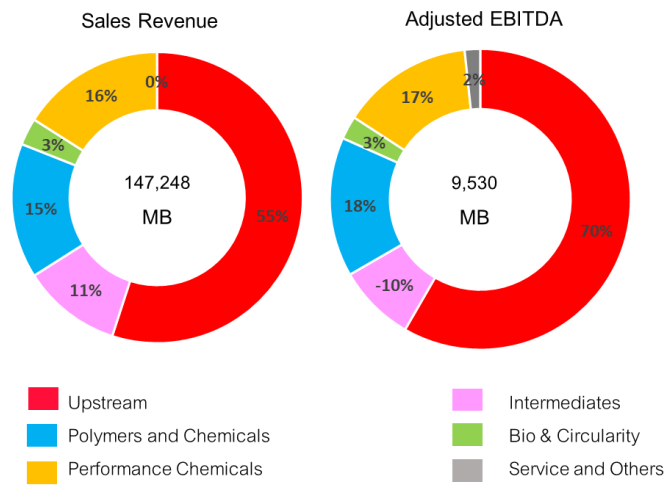
Adjusted EBITDA Margin by Business Unit	Q1/2022	Q4/2022	Q1/2023	YoY	QoQ
				% +/-	% +/-
Adjusted EBITDA (Million Baht)					
Upstream	4,841	1,658	6,632	37%	>200%
Intermediates	2,621	96	(978)	-137%	<-200%
Polymers & Chemicals	1,610	53	1,704	6%	>200%
Bio & Circularity	687	4	269	-61%	>200%
Performance Chemicals	2,418	2,240	1,660	-31%	-26%
Service and Others	306	1,183	243	-21%	-79%
Total	12,483	5,234	9,530	-24%	82%
Adjusted EBITDA margin (%)					
Upstream	6	3	8	2	5
Intermediates	12	1	(6)	(18)	(7)
Polymers & Chemicals	5	0	8	3	8
Bio & Circularity	11	0	7	(4)	7
Performance Chemicals	8	9	7	(1)	(2)
Average	7	4	6	(1)	2

Note

1) There was a restatement of financial statement for the period of three months ended March 31,2022 and the period of three months ended December 31,2022 since the measurements of net assets acquired from acquisition of Allnex Holding GmbH have been completed by an independent appraiser in the fourth quarter of the year 2022. The Company has adjusted the fair values of assets and liabilities acquired to reflect the final fair value determination in accordance with the accounting adjustment condition for business acquisition. The adjustment has no effect to the financial statement for the period of twelve months of fiscal year 2022 as previously reported.

2) Adjusted EBITDA refers to EBITDA excluding Stock gain/(loss),NRV, Gain/(loss) from commodity hedging, and Extra item.

Q1 2023



2. Performance Analysis by Business Unit

2.1 Upstream

Table 3: Price, Product Spreads and performance of Upstream

	Q1/2022	Q4/2022	Q1/2023	YoY % +/-	QoQ % +/-
Dubai Crude Oil (\$/bbl)	95.6	84.8	80.3	-16%	-5%
Diesel-Dubai (\$/bbl)	19.6	39.3	25.2	28%	-36%
LSFO-Dubai (\$/bbl)	21.1	14.4	12.3	-42%	-15%
Gasoline-Dubai (\$/bbl)	17.8	9.4	18.6	5%	98%
Jet-Dubai (\$/bbl)	16.2	33.5	26.5	63%	-21%
Market GRM (\$/bbl)	7.6	9.7	10.3	36%	6%
Condensate (\$/ton)	836	732	678	-19%	-7%
Paraxylene (FECF)-Condensate (\$/ton)	248	249	355	43%	43%
Benzene-Condensate (\$/ton)	238	92	252	6%	173%
BTX P2F (\$/ton)	48	96	248	>200%	159%
Naphtha (MOPJ) (\$/ton)	877	673	689	-21%	2%
Ethylene (SEA) (\$/ton)	1,174	905	923	-21%	2%
Propylene (SEA) (\$/ton)	1,152	880	959	-17%	9%
Hedging Gain/(Loss) (MB)	(8,568)	356	943	111%	165%
Stock Gain/(Loss) including NRV (MB)	5,027	(3,455)	(1,505)	-130%	56%
Adjusted EBITDA* (MB)	4,841	1,658	6,632	37%	>200%
Adjusted EBITDA (%)	6%	3%	8%	2%	5%
Petroleum Product Sales Volume (million bbl)	13.7	7.7	14.9	9%	93%
Petrochemical Product Sales Volume (million ton)	1.4	1.2	1.2	-11%	0%

Note: * Adjusted EBITDA refers to EBITDA excluding Stock gain/(loss), NRV, Gain/(loss) from commodity hedging, and Extra item

In Q1/2023, Upstream Business had Adjusted EBITDA of 6,632 million, increased by more than 200% from the previous quarter by, and Adjusted EBITDA Margin at 8%. Overall sales volume increased from Q4/2022. Petroleum product sales volume was 14.9 million barrels as Refinery was fully utilized after the completion of the scheduled maintenance shutdown for 49 days in Q4/2022, while petrochemical product sales volume was 1.2 million, flatted from the previous quarter. The factors supported increase in the performance are as follows:

1. Refinery performance, in Q1/2023, increased from the previous quarter resulting from the full utilization after the completion of the scheduled maintenance shutdown in Q4/2022. Also, the Petroleum Market was supported by China's re-opening which boosted the market demand, especially Gasoline spread

that was sharply increased during the quarter. Diesel spreads decreased due to the continued export from China while Russia was still be able to export even during the sanctions by the European Union. Low Sulfur Fuel Oil spread decreased as more supply from the new Refineries in the Middle East. In general, the overall supply situation was supported by seasonal refinery turnaround that limit the supply in the regional market even there were concerns on global economic recession and inflationary which remained key pressure factors to the demand side. In this quarter, Crude premium decreased from the previous quarter, which was another supporting factor for the Company's Refinery business to have higher Market GRM at 10.3 USD per barrel. From the decrease of Crude oil price coupled with the decline of Crude premium, the Company, as a resulted, recorded Stock Loss Net NRV in this period.

2. Aromatics performance, in Q1/2023, increased from the previous quarter resulting from Paraxylene and Benzene over Condensate spread increased. Paraxylene spread increased due to the demand recovery of the Polyester and textile market mainly due to China's re-opening. Additional supporting factors are the shift in the feedstock to gasoline blending due the higher demand of Gasoline during the driving season, and delay start up from new production capacities. Benzene spread was supported by China's re-opening and the Chinese New Year holiday that supported demand recovery, even Styrene monomer producers decreased production rate from fears of economic recession and turnaround season. Consequently, these factors resulted to increase in Market P2F of this quarter to 248 USD per ton.
3. Olefins performance, in Q1/2023, decreased from the previous quarter. Olefins product spread was stable in this period. Ethylene demand recovered from China's re-opening, however, the market was pressured by concerns on global economic recession and new capacities in China even some Asian producers already reduced production rate to control supply in the market. In this period, the Company had planned maintenance shutdown of Olefins 2/2 which resulted to lower sales volume.

2.2 Intermediates

Table 4: Price, Product Spreads and and performance of Intermediates

(Unit : USD per ton)	Q1/2022	Q4/2022	Q1/2023	YoY % +/(-)	QoQ % +/(-)
Mono-ethylene glycol (MEG -ACP)	912	837	860	-6%	3%
MEG - 0.65 Ethylene	149	249	260	74%	4%
Phenol	1,495	1,094	1,017	-32%	-7%
Phenol spread*	480	355	174	-64%	-51%
Bisphenol A (BPA)	2,338	1,462	1,299	-44%	-11%
BPA spread*	853	351	242	-72%	-31%
Propylene Oxide (PO)	1,421	1,054	1,150	-19%	9%
Purified Terephthalic Acid (PTA)	828	758	775	-6%	2%
PTA - 0.67PX	102	101	82	-19%	-18%
Acrylonitrile (AN)	1,876	1,561	1,504	-20%	-4%
AN - Propylene	725	681	544	-25%	-20%
Methyl Methacrylate (MMA)	1,922	1,593	1,530	-20%	-4%
MMA - Naphtha	1,044	920	841	-19%	-9%
Adjusted EBITDA (MB)	2,621	96	(978)	-137%	<-200%
Adjusted EBITDA (%)	12%	1%	-6%	-18%	-7%
Sales Volume (Kton)	727	672	612	-16%	-9%
Share of gain/(loss) from investment (MB)	(45)	(337)	(309)	<-200%	8%

Note : Phenol spread derives from Phenol-0.878 BZ-0.474Propylene+0.616 Acetone and BPA spread derives from BPA-0.853 Phenol-0.273 Acetone

In Q1/2023, Intermediates Business had Adjusted EBITDA of Baht -978 million, decreased by more than 200% from the previous quarter, and Adjusted EBITDA Margin at -6%. Overall sales volume was approximately 612,000 tons which decreased from Q4/2022 by 9% mainly due to the planned maintenance shutdown of Monoethylene glycol (MEG) plant.

In this quarter, the performance dropped from the previous quarter resulting from lower Intermediates products spread, Phenol, BPA, and PTA. Global economic recession and inflationary still impacted to downstream demand, especially textile industry (Filament and Staple Fiber), construction industry, and Electrical and Electronics (E&E) industry, which has gradually recovered in the main market such as China. For supply situation, Phenol and BPA producers has encountered with new capacities that started up in China during March and April, especially new capacities of BPA which accounted for 4% of global annual BPA production capacity, even some producers have already cut their production.

2.3 Polymers & Chemicals

Table 5: Price, Product Spreads and and performance of Polymers & Chemicals

(Unit : USD per ton)	Q1/2022	Q4/2022	Q1/2023	YoY % +/-	QoQ % +/-
Average Polyethylene(PE)	1,439	1,047	1,096	-24%	5%
High-Density Polyethylene (HDPE)	1,330	1,033	1,085	-18%	5%
HDPE-Ethylene	156	128	162	4%	26%
Linear Low-Density Polyethylene (LLDPE)	1,346	999	1,074	-20%	8%
LLDPE-Ethylene	172	94	151	-12%	61%
Low-Density Polyethylen (LDPE)	1,640	1,110	1,130	-31%	2%
LDPE-Ethylene	466	205	207	-56%	1%
Polyethylene Terephthalate (PET)	1,152	913	971	-16%	6%
Polypropylene (PP)	1,387	995	1,096	-21%	10%
PP- Naphtha	510	323	407	-20%	26%
Polyvinyl chloride (PVC)	1,374	773	885	-36%	14%
PVC-0.5Ethylene	787	320	423	-46%	32%
Polyols	2,002	1,404	1,430	-29%	2%
Polyols-0.92PO	695	434	372	-46%	-14%
Adjusted EBITDA (MB)	1,610	53	1,704	6%	>200%
Adjusted EBITDA (%)	5%	0%	8%	3%	8%
Sales Volume (Kton)	599	541	535	-11%	-1%
Share of gain/(loss) from investment (MB)	660	(154)	(164)	-125%	-6%

In Q1/2023, Polymers and Chemicals Business had Adjusted EBITDA of Baht 1,704 million, increased by more than 200% from the previous quarter, and Adjusted EBITDA Margin at 8%. Overall sales volume was approximately 535,000 tons which slightly declined from Q4/2022.

Polymers demand, in Q1/2023, improved from the previous quarter as there were COVID-19 measurement to combat the spread of the virus in China in Q4/2022, while China's re-opening since the beginning of this year helped to support consumer's demand in the market, even we have seen some drop in demand at the end of the quarter due to long holiday in many countries and Ramadan in muslim countries. For supply situation, many Middle East producers was under maintenance shutdown resulted to lower export volume to Asia, while there were new production capacities in China and South East Asia. All factors that were mentioned had resulted to increase of polymers from Q4/2022.

2.4 Bio & Circularity

Table 6: Price, Product Spreads and and performance of Bio & Circularity

(Unit : USD per ton)	Q1/2022	Q4/2022	Q1/2023	YoY	QoQ
				% +/-	% +/-
Methyl Ester (ME) P2F (THB per Kilogram)	3.1	4.2	4.3	38%	2%
Fatty Alcohol (FA) P2F	240	595	543	126%	-9%
Adjusted EBITDA (MB)	687	4	269	-61%	>200%
Adjusted EBITDA (%)	11%	0%	7%	-4%	7%
ME Sales Volume (Kton)	74	76	86	17%	14%
FA Sales Volume (Kton)	24	21	22	-7%	2%
Share of gain/(loss) from investment (MB)	493	39	127	-74%	>200%

In Q1/2023, Bio and Circularity Business had Adjusted EBITDA of Baht 269 million, increased by more than 200% from the previous quarter, and Adjusted EBITDA Margin at 7%. These were driven by the full utilization and slightly increase in Methyl Ester (ME) P2F from the slowdown of COVID-19 pandemic, and the adjustment of biodiesel mandatory stipulated by the Ministry of Energy changed from B5 to B7 from October 10, 2022, to September 30, 2023 (extended from previously ending in March 2023), to support the domestic palm oil price. However, Fatty Alcohol P2F was decreased due to the overall demand is less than expected as most buyers already stock the products in order to avoid the risk caused by uncertainty.

2.5 Performance Chemicals

Table 7: Price, Product Spreads and and performance of Performance Chemicals

(Unit : USD per ton)	Q1/2022	Q4/2022	Q1/2023	YoY	QoQ
				% +/-	% +/-
Adjusted EBITDA (MB)	2,418	2,240	1,660	-31%	-26%
Adjusted EBITDA (%)	8%	9%	7%	-1%	-2%
Sales Volume (Kton)	227	183	199	-12%	8%
Share of gain/(loss) from investment (MB)	(10)	(16)	(40)	<-200%	-152%

In Q1/2023, Performance Chemicals Business had Adjusted EBITDA of 1,660 million, decreased by 26% from the previous quarter due to the performance of Vencorex, which its product HDI derivatives sales volume dropped following the slowdown of demand as global economic recession. While allnex's sale volume increased from the previous quarter, which was the low season due to the long holidays in December, especially in Europe and America. In Q1/2023, the higher demand compared with the previous quarter due to increase in re-stocking activities. Additionally, the margins per unit was broadly maintained at the same level as previously. Nevertheless, sales volume was lower compared with Q1/2022 due to a slowdown of demand as the global economic recession and the direct and indirect impact of the war between Russia and Ukraine.

3. Operating Performance

Unit : MB		Q1/2022 ¹	Q4/2022 ¹	Q1/2023	YoY % + /(-)	QoQ % + /(-)
1	Sales Revenue	175,554	124,780	147,248	-16%	18%
2	Feedstock cost	(135,428)	(92,801)	(112,516)	-17%	21%
3	Product to Feed Margin	40,126	31,979	34,732	-13%	9%
4	Variable Cost	(12,606)	(13,053)	(12,354)	-2%	-5%
5	Fixed OH	(8,724)	(8,173)	(7,668)	-12%	-6%
6	Stock Gain/(Loss) and NRV	4,884	(3,518)	(1,359)	-128%	61%
7	Gain/(Loss) on Commodity Hedging	(8,568)	356	943	111%	165%
8	Other Revenue	1,529	2,535	1,383	-10%	-45%
9	SG&A Expenses	(7,842)	(8,053)	(6,562)	-16%	-19%
10	EBITDA	8,799	2,072	9,115	4%	>200%
11	Depreciation & Amortization	(6,492)	(6,361)	(6,960)	7%	9%
12	Gain on shares purchase	-	939	-	-	-100%
13	Gain from investment reclassification	-	848	-	-	-100%
14	Technical incident in the warehouse construction project	-	(43)	-	-	-100%
15	EBIT	2,307	(2,545)	2,155	-7%	185%
16	Net financial expense	(2,014)	(2,405)	(2,683)	33%	12%
17	FX Gain(Loss)	1,661	3,990	696	-58%	-83%
18	Share of gain/(loss) from investment	1,150	(381)	(152)	-113%	60%
19	Corporate Income Tax	(38)	2,028	43	<-200%	-98%
20	Net Profit/(Loss) after Tax	3,066	687	59	-98%	-91%
	Profit/(loss) attributable to:					
21	Non-controlling interests	470	9	(23)	-105%	<-200%
22	Owners of the Company	2,596	678	82	-97%	-88%
23	Adjusted EBITDA ²	12,483	5,234	9,530	-24%	82%

Note:

1) There was a restatement of financial statement for the period of three months ended March 31, 2022 and the period of three months ended December 31, 2022 since the measurements of net assets acquired from acquisition of Allnex Holding GmbH have been completed by an independent appraiser in the fourth quarter of the year 2022. The Company has adjusted the fair values of assets and liabilities acquired to reflect the final fair value determination in accordance with the accounting adjustment condition for business acquisition. The adjustment has no effect to the financial statement for the period of twelve months of fiscal year 2022 as previously reported.

2) Adjusted EBITDA refers to EBITDA excluding Stock gain/(loss), NRV, Gain/(loss) from commodity hedging, and Extra item.

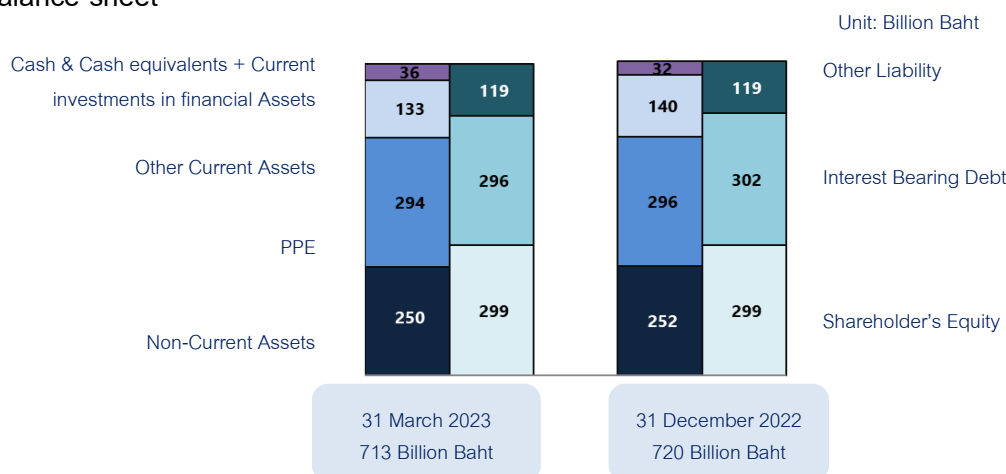
- In Q1/2023, the Company had sales revenue of Baht 147,248 million rising from Q4/2022. The main drivers were higher Upstream sales volume, with strong Refinery contributed considerably after the

completion of the scheduled maintenance shutdown for 49 days in Q4/2022, and the higher spread of Aromatics product both Paraxylene and Benzene spread from the fourth quarter. Compared to Q1/2022, sales revenue was decreased driven by the lower prices of Petroleum and Petrochemical product.

- Variable costs went down from Q4/2022 due to the planned maintenance shutdown of Monoethylene Glycol plant and Olefins plant 2/2, even though the full operating of Refinery plant in this quarter.
- Fixed overhead and SG&A expenses decreased from Q4/2022 driven by the restructuring cost among the group of the company, impacted in the previous quarter while no such item existed in this quarter.
- Depreciation and Amortization increased from Q4/2022 due to asset light management of assets related to the production process incurred in the previous quarter.
- Financial Expenses increased from Q4/2022 mainly due to the higher benchmark interest rate in the market.
- The Company had Foreign Exchange gain in Q1/2023 of Baht 696 million due to the appreciation in Baht currency from Q4/2022.
- In Q1/2023, the Company's share of loss from investment slightly decreased from the previous quarter mainly driven by weak performance from the global economic recession, which resulted to softened product spread.

4. Statements of Financial Position

4.1 Balance sheet



Assets

As of March 31, 2023, the Company had total asset of Baht 713,369 million, decreased by Baht 6,596 million from December 31, 2022 and variance of the assets were described as follows:

- Total Current asset decreased by Baht 3,014 million mainly due to a decrease in Inventories by Baht 4,730 million as lower feedstock and petroleum products prices from the end of 2022 even an increase in Cash and Cash Equivalents and Current Investments in financial assets by Baht 4,080 million, and an increase in Account Receivables by Baht 2,138 million due to the overall products price increased as the demand recovered.
- Other current assets decreased by Baht 4,502 million mainly due to a decrease in Value-added tax receivable related to the importing of raw materials and a decrease in Receivable from oil fuel fund according to the decline in crude oil prices.
- Property plant and equipment decreased by Baht 2,037 million mainly due to the completion of projects and higher Depreciation.
- Non-current asset decreased by Baht 1,958 million from the fair value measurements on the investment in Global Power Synergy Public Company Limited (GPSC).

Liabilities

As of March 31, 2023, the Company had total liabilities of Baht 414,842 million, decreased by Baht 6,296 million from December 31, 2022 and movements of liabilities were as follows:

- Interest-bearing debt decreased by Baht 5,802 million (including Lease liabilities) due to the repayment of Short-term and Long-term borrowings from financial institutions and USD Bond buy back by USD 50 million.
- Trade accounts payable increased by Baht 6,425 million mainly due to higher crude sourcing after finished planned maintenance shutdown in Q4/2022
- Other liabilities decreased by Baht 6,442 million due to Other payable decreased, such as a decline in Payables to contractors due to the payment to contractors related to projects, and a decrease in Derivatives Liabilities related to Commodity hedging for Petroleum and Aromatics products.

Shareholder's Equity

As of March 31, 2023, the Company had total Shareholder's Equity of Baht 298,528 million, which decreased by Baht 300 million from December 31, 2022, as a result from lower Other components of equity by Baht 416 million, which included the loss from fair value measurements in financial assets and the fair value measurements of GPSC.

4.2 Cashflow statement

Cashflow (Unit: Million Baht)	For three months Ended 31 Mar 2023
Net cash flows provided by operating activities	18,270
Net cash flows used in investing activities	(4,417)
Net cash flows provided by financing activities	(9,284)
Net increase (decrease) in cash and cash equivalents, before effect from foreign exchange rate	4,569
Effects of exchange rates on cash and cash equivalents	126
Net decrease in cash and cash equivalents during the period	4,695
Cash and cash equivalents at the beginning of the period	25,940
Cash and cash equivalents at the end of the period	30,635
Current investments in financial assets at the end of the period	5,407
Net cash and cash equivalent and investment at the end of the period	36,042

For the period ended March 31, 2023, the company had cash flow activities as follows:

- Cash flows received by operating activities of Baht 18,270 million.
- Cash flow used in investing activities of Baht 4,417 million. The Company had cash paid for property, plant, and equipment, and intangible assets amounting to Baht 4,967 million from Olefins 2 Modification Project (OMP)
- Cash flow provided by financing activities of Baht 9,284 million mainly due to the repayment of Short-term and Long-term borrowings from financial institutions by Baht 4,346 million and cash paid for bond repayment by Baht 1,540 million.

As a result, as of March 31, 2023, the Company had total Cash and Cash Equivalents of Baht 30,635 million, along with Current investments in financial assets of Baht 5,407 million. Hence, the Company had total cash and cash equivalent and investment of Baht 36,042 million. The Company had Net interest-bearing debt to equity at 0.87 times and Net interest-bearing debt to EBITDA at 11.44 times.

4.3 Key Financial Ratios

Financial Ratios	Q1/2022	Q4/2022	Q1/2023
	(Restatement)	(Restatement)	
Current Ratio (Times)	1.44	1.65	1.65
EBITDA to Sales Revenue (%)	9.94%	3.31%	3.50%
Net Profits to Sales Revenues (%)	7.03%	-1.29%	-1.73%
Return on Total Assets (%)	7.88%	-0.01%	-0.33%
Return on Equity (%)	12.50%	-2.87%	-3.72%
Interest Bearing Debt to Equity (Times)	0.90	1.01	0.99
Net Interest Bearing Debt to Equity (Times)	0.64	0.90	0.87
Interest Bearing Debt to EBITDA (Times)	5.48	13.46	13.02
Net Interest Bearing Debt to EBITDA (Times)	3.87	12.04	11.44

Remarks:

Current Ratio	=	Current Assets divided by Current Liabilities
EBITDA to Sales Revenue	=	EBITDA divided by Sales Revenue
Net Profit to Sales Revenue	=	Profits attributable to Owners of the Company to Sales Revenue
Return on Total Assets	=	Earnings before Interest and Tax divided by Average Total Assets
Return on Equity	=	Profits attributable to Owners of the Company divided by Average Equity attributable to Owners of the Company
Interest Bearing Debt to Equity	=	Interest Bearing Debt divided by Shareholder's Equity
Net Interest Bearing Debt to Equity	=	Interest Bearing Debt net Cash and Cash Equivalent and Current Investments in financial assets divided by Shareholder's Equity
Interest Bearing Debt to EBITA	=	Interest Bearing Debt net Cash and Cash Equivalent and Current Investments in financial assets divided by EBITDA
Net Interest Bearing Debt to EBITDA	=	Interest Bearing Debt net Cash and Cash Equivalent and Current Investments in financial assets divided by EBITDA

5. Projects Progress

The Company has important projects in the pipeline:

- The Company and Kuraray Co. Ltd (KRR) set up a joint venture, Kuraray GC Advanced Materials Co. Ltd, with High Heat Resistant Polyamide-9T (PA9T) capacity of 13,000 ton per year and Hydrogenated Styrenic Block Copolymer (HSBC) capacity of 16,000 ton per year. The plant already started commercial operation in Q1/2023.
- The Company had approved an investment for the Olefins 2 Modification Project which will allow the Company to increase Propane usage as feedstock and align with the Company's strategy to enhance feedstock flexibility and long-term competitiveness. The plant is expected to start commercial operation within Q2/2023.

Currently, the projects are remained on the development plan. The company will publicly announce the information once the implementation of the projects is officially made.

Estimated Annual CAPEX of PTTGC Group for the next 5 years

Projects	Total	Estimated Annual CAPEX (M.USD)				
	2023-2027	2023	2024	2025	2026	2027
1) Olefin 2 Modification Project	33	33	-	-	-	-
2) Other projects	269	225	27	16	-	-
total	302	258	27	16	-	-
3) allnex expansion & growth Capex	491	80	111	114	95	91
GC group Grand total	793	338	139	130	95	91

Notes: 1. Group annual maintenance ~ 400 M.USD (including allnex Holding GmbH)

2. Other projects such as IT & digital, new office facility, operational excellence etc.

3. allnex expansion & growth Capex based on capex plan, including committed and uncommitted projects

6. Market and Business Outlook in 2023

The global economic outlook in 2023 continues to be impacted by multiple factors. A prolonged period of the Russia-Ukraine conflict, which in response to Russia's invasion of Ukraine, sanctions were imposed on Russian economy and energy, which have caused direct impacts on economies around the globe. These resulted in an impact on the global energy supply and prices, and global inflationary. However, there was a positive sign shown in China by an orderly easing of mobility restrictions. The IMF has revised down the expected world economy growth to 2.8% in 2023 (As of April 2023). The global economy is expected to continue to recover in line with the increase in demand for Petroleum and Petrochemical products, however, there are heightened uncertainties over the economic outlook and monetary policy in each country.

Upstream business unit

The Company anticipates that the average price of Dubai crude oil in 2023 will be within the range of 80-85 USD per barrel. The International Energy Agency (IEA) had estimated the crude oil demand (as of April 2023) in 2023 at 101.9 million barrels per day, increased by 2.0 million barrels per day from the 2022 demand. However, downside risk exists. The energy crisis continues to be a major concern, along with a recovery in demand in the second half of this year after China re-opening, OPEC-Plus supply control, and global economic trends and economic recession.

For Petroleum products, the Company anticipates that products price and products spread will be softened in 2023 comparing with 2022 which products spread has stood at high level due to tight supply in the market impacted from the consequence of the conflicts in Europe. As a result, Diesel over Dubai crude oil spread is expected to be 17-21 USD per barrel while Low Sulfur Fuel Oil (LSFO) over Dubai crude oil spread to be 10-13 USD per barrel. The expected Gasoline over Dubai crude oil spread is 15-19 USD per barrel. The Company will continue to focus on the production and our contracts with suppliers and partners to ensure that the Company will be able to handle current and future crises and uncertainties. The Company expects that the Refinery utilization rate of 2023 will be operated at around 101%.

For Aromatics products, Paraxylene over Naphtha spread is expected to be stable at 370-390 USD per ton, increased from the previous year following the upward trend of Gasoline product in Q1/2023. In term of demand, the expected demand from downstream business such as Fiber and Filaments industries, Purified Terephthalic Acid (PTA), and PET Bottle Resin are expected to gradually recover following supported by food and beverage industry, e-commerce industry and the recovery in global economy by China reopening. However, new producers entering to the market in 2023 will pressure the market. Benzene over Naphtha spread is expected to be 240-260 USD per ton, supported by the new capacity of downstream products such as Phenol. The Company expects that the Aromatics utilization rate of 2023 will be 90% due to the planned maintenance shutdown of Aromatics plant in Q3/2023.

The outlook for Olefins products, the Company anticipates that Ethylene products price will be at 970-1,000 USD per ton. Propylene is expected to be 970-1,000 USD per ton, however, the supply will be pressured by new capacity in China. The Company expects Olefins utilization rate to be around 85% due to the planned maintenance for the preparation for the commercial operation of Olefins plant 2/2 modification project in Q1/2023 and the planned maintenance shutdown of Olefins plant 1 in Q3/2023.

Intermediates business unit

For Phenol market trend in 2023, the Company anticipates that Phenol P2F spread will be at 240-250 USD per ton decreased from the previous year, as new Phenol supply is predicted to enter the market. The demand

for end products is not yet recovered in first half of 2023. However, with policies launching in China to stimulate vehicle and construction markets, this will gradually support the consumption in the second half of 2023.

For MEG and PTA market, the Company expects that the average MEG price will be 540-560 USD per ton and PTA price is expected to be stable. This year, the expected demand from downstream business is expected to gradually recover, the same as Paraxylene product.

Polymers & Chemicals Business unit

The Company anticipates that the average Polyethylene price in 2023 is expected to be 1,130-1,180 USD per ton. This is supported by the stronger demand for packaging, along with the re-opening of China and the decrease of new capacity, even though there are concerns about economic uncertainty. The Company expects that the Polyethylene plants utilization rate will be around 98% in 2023. The expected market outlook of Polyethylene Terephthalate (PET) is as aforementioned.

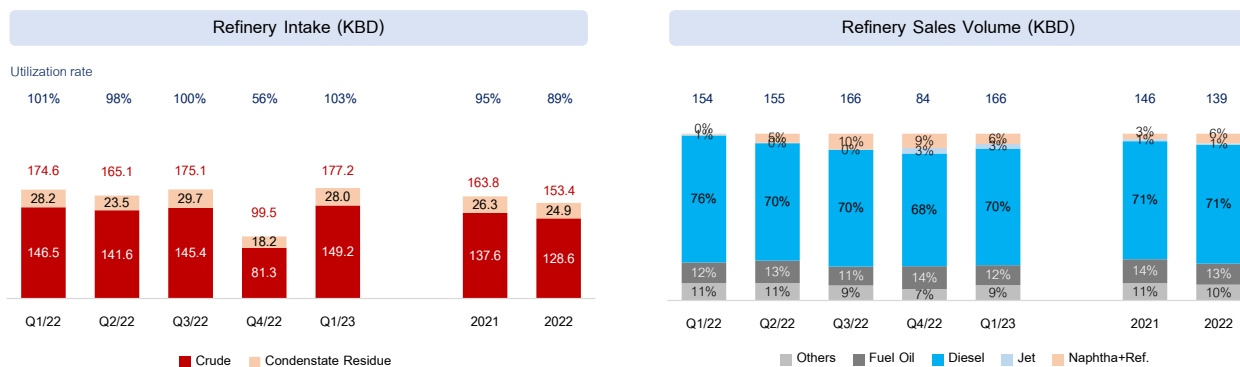
Performance Chemicals Business unit

The end markets industry such as automotive industry, and construction industry are expected to be recovered in 2023 as the launches policies to expand and stimulate both industries in China and the China re-opening will boost the demand. For packaging industry is expected to grow following an upward economic growth trend. However, overall demand for this year is still challenging driven by economic recessions, directly and indirectly factors impacted by the tension between Russia and Ukraine.

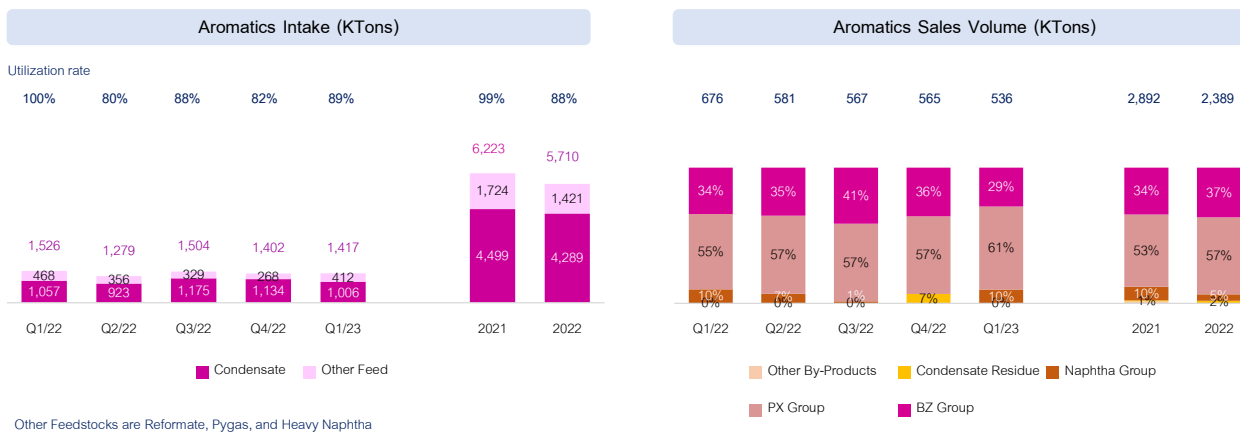
7. Appendix

7.1 Production and Sales

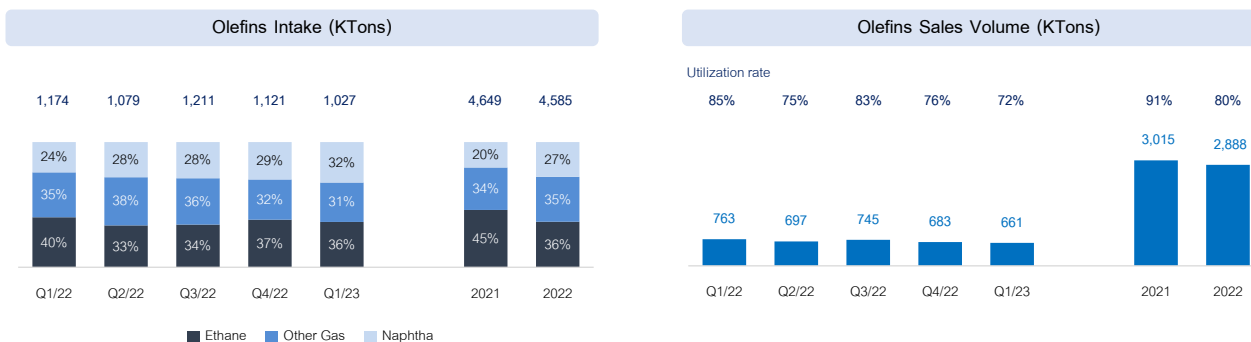
Graph 1: Refinery Intake and Sales Volume



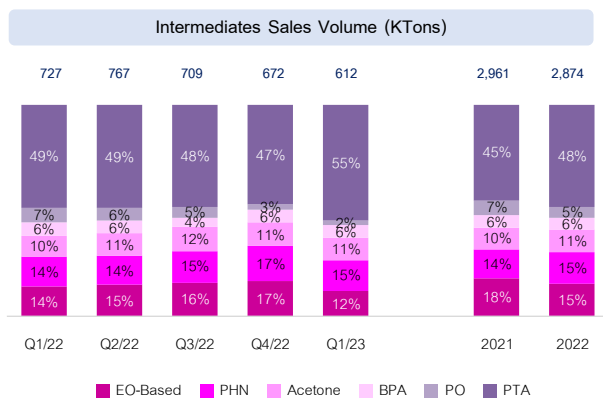
Graph 2: Aromatics Intake and Sales Volume (BTX)



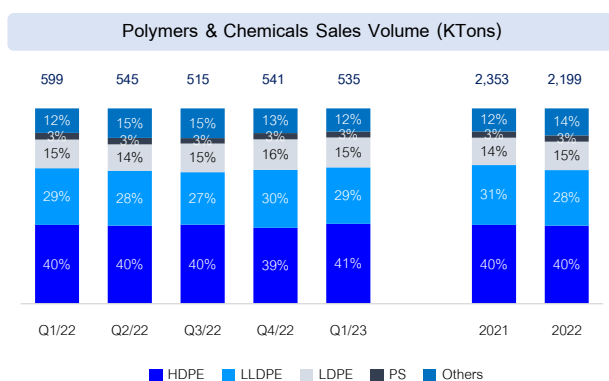
Graph 3: Olefins Intake and Olefins and Derivatives Sales Volume



Graph 4: Intermediates products sales Volume



Graph 5: Polymers & Chemicals products sales Volume



Graph 6: Utilization rate

Utilization rate	Q1/22	Q2/22	Q3/22	Q4/22	Q1/23	2021	2022
Upstream							
- Refinery	101%	98%	100%	56%	103%	95%	89%
- Aromatics	100%	80%	88%	82%	89%	99%	88%
- Olefins	85%	75%	83%	76%	72%	91%	80%
Intermediates							
- MEG	66%	88%	84%	79%	13%	104%	79%
- Phenol	119%	118%	116%	107%	104%	113%	115%
- BPA	119%	112%	71%	107%	98%	111%	102%
- PO	104%	81%	69%	22%	26%	85%	69%
Polymers & Chemicals							
HDPE	111%	102%	95%	92%	106%	105%	100%
LLDPE	92%	80%	97%	88%	93%	98%	89%
LDPE	128%	85%	128%	121%	96%	111%	115%
Total PE	106%	90%	101%	95%	99%	103%	98%

7.2 Detail of Adjusted EBITDA by Business Unit

Adjusted EBITDA Margin by Business Unit	Q1/2022	Q4/2022	Q1/2023	YoY	QoQ
				% +/-	% +/-
Adjusted EBITDA (Million Baht)					
Upstream	4,841	1,658	6,632	37%	>200%
Refinery	3,342	2,449	4,900	47%	100%
Aromatics	(1,106)	(409)	2,440	>200%	>200%
Olefins	2,606	(382)	(708)	-127%	-85%
Intermediates	2,621	96	(978)	-137%	<-200%
Polymers & Chemicals	1,610	53	1,704	6%	>200%
Bio & Circularity	687	4	269	-61%	>200%
Performance Chemicals	2,418	2,240	1,660	-31%	-26%
Service and Others	306	1,183	243	-21%	-79%
Total	12,483	5,234	9,530	-24%	82%
Adjusted EBITDA margin (%)					
Upstream	6	3	8	2	5
Intermediates	12	1	(6)	(18)	(7)
Polymers & Chemicals	5	0	8	3	8
Bio & Circularity	11	0	7	(4)	7
Performance Chemicals	8	9	7	(1)	(2)
Average	7	4	6	(1)	2

Note:

1) There was a restatement of financial statement for the period of three months ended March 31, 2022 and the period of three months ended December 31, 2022 since the measurements of net assets acquired from acquisition of Allnex Holding GmbH have been completed by an independent appraiser in the fourth quarter of the year 2022. The Company has adjusted the fair values of assets and liabilities acquired to reflect the final fair value determination in accordance with the accounting adjustment condition for business acquisition. The adjustment has no effect to the financial statement for the period of twelve months of fiscal year 2022 as previously reported.

2) Adjusted EBITDA refers to EBITDA excluding Stock gain/(loss), NRV, Gain/(loss) from commodity hedging, and Extra item

7.3 Planned Maintenance Shutdown Schedule 2023

