

Management's Discussion and Analysis (MD&A)
Thai Oil Public Company Limited

For The Second Quarter of 2023

The First Half of 2023

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Management's Discussion and Analysis (MD&A)

Thai Oil Public Company Limited and Subsidiaries

For the Second Quarter and The First Half of 2023

1. Company and its Subsidiaries' Operating Results

Table 1: Summary of Consolidated Financial

(Million Baht)	Q2/23	Q1/23	+/(-)	Q2/22	+/(-)	6M/23	6M/22	+/(-)
Integrated Intake (kbd)	315	312	3	312	3	313	307	6
Gross Integrated Margin (GIM) ⁽¹⁾ (US\$/bbl)								
: <u>excluding</u> Stock Gain/(Loss)	6.1	11.8	(5.7)	25.6	(19.5)	9.0	17.0	(8.0)
: <u>including</u> Stock Gain/(Loss)	4.2	8.3	(4.1)	33.4	(29.2)	6.3	28.7	(22.4)
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(Million Baht)	Q2/23	Q1/23	+/(-)	Q2/22	+/(-)	6M/23	6M/22	+/(-)
Sales Revenue	108,467	115,943	(7,476)	143,892	(35,425)	224,410	258,397	(33,987)
Net Realized Gain/(Loss) on Financial Instruments ⁽²⁾	449	329	120	(10,263)	10,712	778	(15,990)	16,768
EBITDA	4,618	8,182	(3,564)	22,322	(17,704)	12,800	35,357	(22,557)
Net Gain/(Loss) of Financial Instruments	(187)	158	(345)	(2,383)	2,196	(29)	(4,008)	3,979
Net Foreign Exchange Gain/(Loss) ⁽³⁾	(1,017)	571	(1,588)	(1,317)	300	(446)	(1,006)	560
Gain from disposal of investment in an associate	-	-	-	10,038	(10,038)	-	10,038	(10,038)
Gain from reclassification of investment	-	-	-	7,297	(7,297)	-	7,297	(7,297)
Finance Costs	(1,081)	(922)	(159)	(966)	(115)	(2,004)	(1,926)	(78)
Reversal of Income Tax (Expense)	523	(1,805)	2,328	(7,509)	8,032	(1,282)	(9,181)	7,899
Net Profit/(Loss)	1,117	4,554	(3,437)	25,327	(24,210)	5,671	32,510	(26,839)
Basic Earnings/(Loss) per Share (Baht)	0.50	2.04	(1.54)	12.41	(11.91)	2.54	15.94	(13.40)
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Stock Gain/(Loss)	(1,929)	(3,339)	1,410	7,557	(9,486)	(5,268)	22,029	(27,297)
Reversal/ (Write-Down) on Crude and Petroleum Product Inventory ⁽⁴⁾	15	(207)	222	259	(244)	(193)	(2,350)	2,157
<hr/>								
Exchange Rate (Baht: 1 US\$)	Q2/23	Q1/23	+/(-)	Q2/22	+/(-)	6M/23	6M/22	+/(-)
Average FX	34.66	34.08	0.58	34.60	0.06	34.36	33.89	0.47
Ending FX	35.75	34.26	1.49	35.46	0.29	35.75	35.46	0.29

Remark (1) Gross integrated margin is the integrated gross margin among Thaioil refinery, Thai Paraxylene Co., Ltd., LABIX Co., Ltd. and Thai Lube Base Plc.

(2) Including only derivative instruments for commodity hedging.

(3) Including net foreign exchange gain / (loss) on foreign currency assets and liabilities in Q2/23, Q1/23, Q2/22, 6M/23, and 6M/22 of Baht (705) million, Baht 763 million, Baht (1,298) million, Baht 58 million, and Baht (1,131) million, respectively.

(4) Including reversal / (write-down) of allowance for decline in value of crude and petroleum product inventories adjusted to net realizable value and reversal / (write-down) of petroleum product at cost.

In Q2/23, Thaioil and Subsidiaries reported a slight increase in integrated intakes from Q1/23. Sales revenue was reported at Baht 108,467 million, a decrease of Baht 7,476 million due to lower average selling prices. Moreover, we reported GIM excluding stock gain

/ (loss) of 6.1 US\$/bbl or a decrease of 5.7 US\$/bbl, mainly due to lower spread jet/kero and gasoil over Dubai after the supply from Russia continued in the market. In addition, for aromatics, although PX spread over ULG95 improved primarily due to strong demand towards the end of the summer season in Asia, BZ spread over ULG95 dropped due to a decrease in demand and concerns over economic recession. Nevertheless, the gross profit rate of surfactant business was better thanks to the reduction in BZ price, which is a major raw material. However, softened lube base oil spread over fuel oil was from slower-than-expected growth in the region, especially in China. Additionally, bitumen spread over fuel oil in Q2/23 decreased due to lower demand in the region and the budget limitations in road infrastructure upgrades. Furthermore, crude oil prices in Q2/23 dropped from Q1/23 as the oil demand was expected to slowdown from economic recession concerns following central banks' rate hike and concern over Chinese economic recovery, who was a large oil importer. As a result, we reported a stock loss of Baht 1,929 million in Q2/23, a lower stock loss of Baht 1,410 million than Q1/23. Thus, GIM including stock gain / (loss) of 4.2 US\$/bbl was reported in Q2/23, reduced by 4.1 US\$/bbl from Q1/23. However, there was a reversal on crude and petroleum product inventory of Baht 15 million in Q2/23, compared with a write-down on crude and petroleum product inventory of Baht 207 million in Q1/23. Including realized net gain from financial instrument of Baht 449 million including only derivative instruments for commodity hedging, we reported EBITDA of Baht 4,618 million, dropped by Baht 3,564 million from the previous quarter. Moreover, in Q2/23, a loss on financial instruments of Baht 187 million in Q2/23 was booked, compared with a gain from financial instruments of Baht 158 million in Q1/23, and we reported a net loss from foreign exchange of Baht 1,017 million (Baht 705 million of which was from foreign exchange loss on foreign currency assets and liabilities), compared with a net gain from foreign exchange of Baht 571 million in Q1/23 due to weaker Thai Baht at the end of the last quarter. Offsetting with depreciation, finance cost, and tax expenses, we booked a net profit of Baht 1,117 million in Q2/23, or Baht 0.50 Baht per share, a decline of Baht 3,437 million from the last quarter.

In comparison to Q2/22, we reported slightly higher integrated intakes. Nevertheless, a decrease in selling prices resulted in a decline of revenue from sales by Baht 35,425 million and we reported significantly lower GIM excluding stock gain/loss by 19.5 US\$/bbl. The main reason was the significant decreases in product spreads, particularly jet/kero and gasoil, due to ongoing Russian oil supply. Moreover, gross profit rate from surfactant business declined due to lower domestic demand. Nevertheless, bitumen spreads over fuel oil went up thanks to better regional demand. In addition, PX and BZ spreads over ULG95 increased thanks to reduced economic concerns stemming from improvements in the Russian-Ukraine crisis. However, the decrease in crude oil prices led to a stock loss of Baht 1,929 million, compared with a stock gain of Baht 7,557 million during the same period last year. We also booked a decrease of a reversal on crude and petroleum product inventory by Baht 244 million from Q/22. Including net realized gain from financial instrument including only commodity hedging, we reported lower EBITDA by Baht 17,704 million than Q2/22. Nevertheless, we booked a smaller loss on financial instruments by Baht 2,196 million than Q2/22. At the same time, we booked a lower net loss on foreign exchange of Baht 300 million. However, in Q2/22, there was gain from investment reclassification and disposal of our investment in GPSC of Baht 17,334 million (before tax), or Baht 12,880 million (after tax). Offsetting with depreciation, finance cost and tax expense, we reported a lower net profit of Baht 24,210 million from the same period last year.

In 6M/23 compared with 6M/22, Thaioil and Subsidiaries generated revenue of Baht 224,410 million, a decrease of Baht 33,987 million. This decline was attributed to the reduction in selling prices of products, which were in line with lower crude oil prices. Additionally, there was a significant decrease in gasoline spread over Dubai, driven by lower demand from China than expected. Moreover, jet/kero and gasoil spread over Dubai also experienced a considerable decrease from 6M/22 due to continuous flow of Russian oil into the market coupled with the declines in purchasing manager's indices (PMI) of the US and China, which created downward pressure on oil demand. Furthermore, the gross profit rate of the surfactant manufacturing business decreased. However, aromatic spread over ULG95 expanded as tension Russia-Ukraine situation improved while lube base oil and bitumen spreads over fuel oil expanded. Overall, GIM

excluding stock gain / (loss) decreased by 8.0 US\$/bbl, amounting to 9.0 US\$/bbl. Additionally, in 6M/23, there was a stock loss of Baht 5,268 million, compared with a stock gain of Baht 22,029 million in 6M/22. On the other hand, there was a write-down on crude and petroleum product inventory of Baht 193 million, lower loss by Baht 2,157 million than 6M/22. Including realized net gain from financial instrument of Baht 778 million compared with net loss of Baht 15,990 million in the same period of the previous year including derivatives, we reported EBITDA of Baht 12,800 million, dropped by Baht 22,557 million. Moreover, we had a loss on financial instruments of Baht 29 million, and we reported a net loss from foreign exchange of Baht 446 million due to Thai Baht depreciation. Moreover, in 6M/22, there was gain from investment reclassification and disposal of our investment in GPSC of Baht 17,334 million (before tax), or Baht 12,880 million (after tax). Offsetting with depreciation, finance cost, and tax expenses, we booked a net profit of Baht 5,671 million in 6M/23, a decline of Baht 26,839 million from the same period of the previous year.

2. Summary of Financial Result by Business

Table 2: Financial Result by Business

(Million Baht)

Sales Revenue	Q2/23	Q1/23	+/-)	Q2/22	+/-)	6M/23	6M/22	+/-)
Consolidated	108,467	115,943	(7,476)	143,892	(35,425)	224,410	258,397	(33,987)
Refinery	115,127	123,767	(8,640)	156,585	(41,458)	238,894	279,513	(40,619)
Aromatics and LAB ⁽¹⁾	19,005	19,002	3	25,894	(6,889)	38,007	45,197	(7,190)
Lube Base Oil	6,572	6,268	304	8,402	(1,830)	12,840	15,209	(2,369)
Power Generation	3,658	2,859	799	2,639	1,019	6,517	5,119	1,398
Solvent and Chemicals ⁽²⁾	3,688	4,758	(1,070)	6,039	(2,351)	8,446	10,285	(1,839)
Ethanol ⁽³⁾	408	470	(62)	368	40	878	766	112
Others ⁽⁴⁾	1,629	1,557	72	1,613	16	3,186	3,192	(6)
EBITDA	Q2/23	Q1/23	+/-)	Q2/22	+/-)	6M/23	6M/22	+/-)
Consolidated	4,618	8,182	(3,564)	22,322	(17,704)	12,800	35,357	(22,557)
Refinery	2,272	5,555	(3,283)	21,018	(18,746)	7,827	32,330	(24,503)
Aromatics and LAB	684	780	(96)	(243)	927	1,464	289	1,175
Lube Base Oil	772	1,141	(369)	735	37	1,913	1,190	723
Power Generation	841	584	257	519	322	1,424	952	472
Solvent and Chemicals	157	232	(75)	379	(222)	389	730	(341)
Olefins	(2)	(3)	1	(2)	0	(5)	(5)	0
Ethanol	1	44	(43)	1	0	46	62	(16)
Others	47	50	(3)	53	(6)	97	104	(7)
Net Profit / (Loss)	Q2/23	Q1/23	+/-)	Q2/22	+/-)	6M/23	6M/22	+/-)
Consolidated	1,117	4,554	(3,437)	25,327	(24,210)	5,671	32,510	(26,839)
Refinery	(179)	2,942	(3,121)	25,543	(25,722)	2,763	31,868	(29,105)
Aromatics and LAB	361	181	180	(487)	848	542	(425)	967
Lube Base Oil	576	886	(310)	549	27	1,462	878	584
Power Generation ⁽⁵⁾	349	473	(124)	333	16	821	621	200
Solvent and Chemicals	121	135	(14)	253	(132)	256	479	(223)
Olefins ⁽⁶⁾	(47)	32	(79)	(195)	148	(16)	(262)	246
Ethanol	(6)	(15)	9	(17)	11	(21)	(9)	(12)
Others ⁽⁷⁾	100	92	8	90	10	192	219	(27)

Remark

- (1) Thai Paraxylene Co., Ltd. invested 75% of total investment in LABIX Co., Ltd. which produces an intermediate for the production of surfactants (LAB).
- (2) Including Thaioil Solvent Co., Ltd., having respective interests in TopNEXT international Co., Ltd. (Former name: TOP Solvent Co., Ltd.), Sak Chaisidhi Co., Ltd., TOP Solvent (Vietnam) LLC., PT Tirta Surya Raya, and JSKEM Private Limited
- (3) Including Thaioil Ethanol Co., Ltd., having respective interests in Sapthip Co., Ltd. (Investment in subsidiary), and Ubon Bio Ethanol Plc (Financial asset measured at fair value through other comprehensive income).
- (4) Including Thaioil Energy Services Co., Ltd. (TOP holds 99.99% shares) which provides human resources management service and Thaioil Treasury Center Co., Ltd. (TOP holds 99.99% shares) which conducts the business in the area of International Business Center (IBC) and Treasury Center (TC) for Thaioil and Subsidiaries.
- (5) Since 7 June 2022, Thaioil and Subsidiaries reduced share proportions in the investments in Global Power Synergy Plc. (GPSC) to 10.0% and reclassified the remaining investment as Financial assets measured at fair value through other comprehensive income. Therefore, Thaioil booked share of profit from GPSC of Baht 58 million in the first half of 2022 and booked interim dividend income of Baht 56 million on 21 September 2022.
- (6) PT TOP Investment Indonesia holds 15% shares in PT Chandra Asri Petrochemical Tbk, which is the major integrated petrochemical company in Indonesia.
- (7) Including net profit / (loss) from Thaioil Energy Services Co., Ltd. and Thaioil Treasury Center Co., Ltd. and share of profits / (loss) from the investments in PTT Digital Solutions Co., Ltd., PTT Energy Solutions Co., Ltd. and Thai Petroleum Pipeline Co., Ltd. On 29 August 2022, The Extraordinary General Meeting of PTT Energy Solutions Co., Ltd shareholders No.1/2022 passed a resolution to liquidate the company, the process was completed on 29 December 2022.

2.1 Market Condition and Financial Result of Refinery Business

Table 3: Average Crude Oil Price, Petroleum Product Prices, Crude Premiums, and Crack Spreads

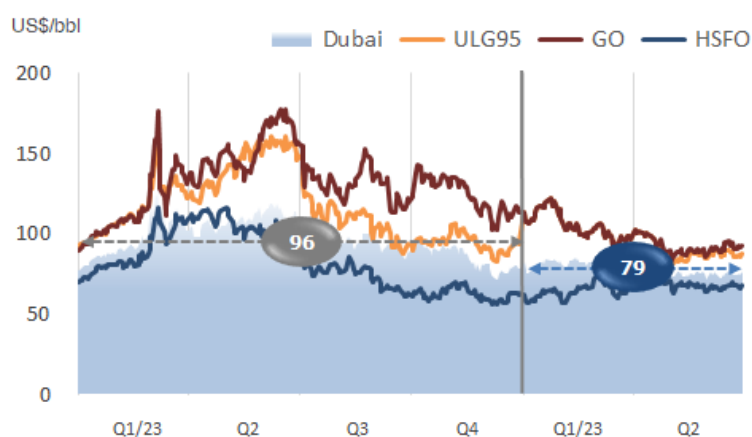
Average Prices (US\$/bbl)	Q2/23	Q1/23	+/(-)	Q2/22	+/(-)	6M/23	6M/22	+/(-)
Dubai Crude Oil ⁽¹⁾	77.8	80.3	(2.5)	108.1	(30.3)	79.0	101.8	(22.8)
Unleaded Gasoline (ULG95)	94.4	99.0	(4.6)	143.0	(48.6)	96.7	128.2	(31.5)
Jet/Kero	91.7	106.8	(15.1)	147.2	(55.5)	99.3	129.5	(30.2)
Gasoil (GO)	92.3	105.5	(13.2)	151.2	(58.9)	98.9	133.1	(34.2)
Fuel Oil (HSFO)	69.1	64.0	5.1	104.9	(35.8)	66.6	96.0	(29.4)
Crude Premiums (US\$/bbl)	Q2/23	Q1/23	+/(-)	Q2/22	+/(-)	6M/23	6M/22	+/(-)
Murban ⁽²⁾	2.8	5.0	(2.2)	7.4	(4.6)	3.9	5.7	(1.8)
Arab Light ⁽³⁾	2.6	2.4	0.2	6.2	(3.6)	2.5	4.5	(2.0)
Spreads over Dubai (US\$/bbl)	Q2/23	Q1/23	+/(-)	Q2/22	+/(-)	6M/23	6M/22	+/(-)
Unleaded Gasoline (ULG95)	16.6	18.6	(2.0)	35.0	(18.4)	17.6	26.4	(8.8)
Jet/Kero	14.0	26.5	(12.5)	39.2	(25.2)	20.2	27.7	(7.5)
Gasoil (GO)	14.6	25.2	(10.6)	43.1	(28.5)	19.9	31.3	(11.4)
Fuel Oil (HSFO)	(8.7)	(16.3)	7.6	(3.2)	(5.5)	(12.5)	(5.8)	(6.7)
Very Low Sulfur Fuel Oil (VLSFO)	3.7	5.0	(1.3)	21.9	(18.2)	4.3	16.9	(12.6)

Remark (1) Closing Dubai crude oil price at the end of Q2/23, Q1/23, and Q2/22 were calculated from average Dubai prices in the last month in the respective period. The prices were 75.0 US\$/bbl, 78.5 US\$/bbl, and 113.2 US\$/bbl, respectively.

(2) Murban crude premium (compared with market price) since June 2021 was calculated from the difference between average Murban price for loading month (month "M") and Dubai forward price for month "M" which was announced daily in two months before. The formula is based on ADNOC's new pricing structure.

(3) Arab Light crude premium is announced by the producer and is priced as a differential to the Oman/Dubai average

Graph 1: Prices of Crude Oil and Petroleum Product



Crude oil price in Q2/23 declined from Q1/23 and Q2/22 as well as that in 6M/23 which dropped from 6M/22 as it was suppressed by concerns over economic recession leading to potentially lower crude oil demand following ongoing rate hike from various central banks. Additionally, there was a concern over Chinese economic recovery, who was a large oil importer, as its important economic matrices such as Purchasing Manager Index (PMI) remained below 50 from April to June 2023. At the same time, oil supply remained at

high level globally since sanctions on Russian crude oil failed and supply from Iran and Venezuela increased. Nevertheless, crude oil price was supported by OPEC+ decision to cut its aggregated production down by 1.66 million barrels per day from May until the end of the year to stabilize crude oil price. Furthermore, Saudi Arabia also voluntarily reduce its crude production by 1 million barrel per day from July – August resulting in tightened global oil supply.

Murban over Dubai spread shrank in Q2/23 compared with Q1/23 and Q2/22 as well as that in 6M/23 which dipped from 6M/22 following decreases in oil demand leading to lower demand for crude oil from refiners. On the other hand, Arab Light spread over Dubai and Oman expanded slightly in Q2/23 compared to Q1/23 as crude oil supply from the Middle East was tightened from OPEC+

decision to cut its production. However, it remained below from Q2/22 as well as that in 6M/23 which fell from 6M/22 as the market concern over Russian crude supply was eased up.

Gasoline over Dubai spread in Q2/23 decreased from Q1/23 and Q2/22 as well as that in 6M/23 which dropped from 6M/22 as the demand from Chinese market stayed below market expectation while regional supply increased after China announced new export quota. However, gasoline spread was still supported by shutdowns at refiners in the US and Europe as the operators were facing with technical issues. Jet/kero spread over Dubai and Gasoil spreads over Dubai deteriorated in Q2/23 compared to Q1/23 and Q2/22 as well as that in 6M/23 which decreased from 6M/22 as Russian supply came out to the market while PMI in the US and China showed a deteriorating trend. However, increases in aviation activities especially in China helped support jet/kero spread in addition to lower gasoil supply following refiners' decision to shift their production to gasoline from gasoil. Fuel oil spread over Dubai in Q2/23 improved from Q1/23 as China purchased more fuel oil for its refiners and demand for fuel oil for electricity production in the Middle East rose in summer. Compared to Q2/22, as well as that in 6M/23 compared to 6M/22, fuel oil spread declined following concerns over Russian oil supply.

Table 4: Financial Result of Refinery Business

	Q2/23	Q1/23	+ / (-)	Q2/22	+ / (-)	6M/23	6M/22	+ / (-)
Throughput ⁽¹⁾ (%)	113%	112%	1%	112%	1%	113%	110%	3%
Intake (kbd)	311	308	3	308	3	309	304	5
Gross Refining Margin (GRM) (US\$/bbl)								
: <u>excluding</u> Stock Gain/(Loss)	4.5	10.0	(5.5)	25.1	(20.6)	7.2	16.1	(8.9)
: <u>including</u> Stock Gain/(Loss)	2.5	6.4	(3.9)	32.9	(30.4)	4.5	27.9	(23.4)

Remark (1) Throughput (%) calculated based on 275,000 barrels per day

In Q2/23, Thaioil refinery reported declines in EBITDA and net profit from the prior quarter. This was because of lower GRM excluding stock gain/loss and net foreign exchange loss.

In Q2/23, Thai Oil Refinery reported utilization rate of 113%, a slight increase from Q1/23 and booked sales revenue of Baht 115,127 million, or a decrease of Baht 8,640 million following lower product selling prices due to ongoing supply from Russia flowing into global oil market. Sales volume comprised of 86% domestic, 12% Indochina, and 2% export. Additionally, sales volume also declined. The company reported GRM excluding stock gain/loss of 4.5 US\$/bbl, a decline of 5.5 US\$/bbl from the previous quarter mainly due to smaller jet/kero and gas oil spreads over Dubai crude oil. Additionally, lower crude oil price resulted in stock loss of 2.0 US\$/bbl or Baht 1,929 million. This represented an improvement of Baht 1,410 million from the previous quarter. Meanwhile, there was a reversal on crude and product inventory of Baht 15 million, compared to a write-down of this transaction of Baht 207 million in the previous quarter. Altogether with net realized gain on financial instruments of Baht 434 million, the company booked EBITDA of Baht 2,272 million, a decline of Baht 3,283 million from the previous quarter. Furthermore, there was a loss from fair value measurement on financial instruments of Baht 210 million, while it was a gain of Baht 296 million in Q1/23 which was mainly attributable to commodity derivatives. Net foreign exchange loss of Baht 1,178 million was also booked during the period (mainly from foreign currency denominated assets and liabilities worth Baht 1,206 million), whereas it was a gain of Baht 535 million in the previous quarter. Offsetting with depreciation, finance cost, and tax expenses, net loss of Baht 179 million was posted compared to net profit of Baht 2,942 million in Q1/23 (net profit with dividend income in Q2/23 was Baht 3,563 million).

Compared 6M/23 to 6M/22, the refinery posted significantly decreases in EBITDA and net profit since GRM excluding stock gain/loss was considerably dipped and there was gain on GPSC reclassification and disposal in 6M/22.

Compared to Q2/22, the company reported a slight increase in utilization rate, but sales volume shrank by 3%. This led to lower sales revenue of Baht 41,458 million. Furthermore, GRM excluding stock gain/loss considerably went down by 20.6 US\$/bbl from plummeting crack spreads especially that of jet/kero and gasoil due to ongoing inflow of Russian oil into the market. Moreover, a decline in crude oil price led to a stock loss of Baht 1,929 million compared to a stock gain of Baht 7,557 million during the same period last year. Altogether with net realized gain on financial instruments of Baht 434 million, while the company booked net loss of Baht 10,304 million in Q2/22, EBITDA declined by Baht 18,746 million. With a loss from fair value measurement on financial instruments of Baht 210 million, or lower loss of Baht 2,144 million from Q2/22, mainly owing to commodity derivatives. In Q2/22, the company booked extraordinary gains from a partial disposal and reclassification of its investment in Global Power Synergy Plc. (GPSC) of Baht 18,026 million before tax, or Baht 13,572 million after tax. Offsetting with depreciation, finance cost and tax expenses, net loss of Baht 179 million was reported compared to net profit of Baht 25,543 million in Q2/22.

Compared 6M/23 to 6M/22, the company reported a slight increase in utilization rate with similar selling volumes while average selling prices declined. Thus, sales revenue went down by Baht 40,619 million, totaling to Baht 238,894 million. GRM excluding stock gain / loss of 7.2 US\$/bbl was booked, this represented a decline of 8.9 US\$/bbl. Furthermore, stock loss of Baht 5,268 million was reported during the period, as opposed to stock gain of Baht 22,029 million during the same period last year. Meanwhile, there was a write-down on crude and inventory product of Baht 193 million, or a decrease of Baht 2,157 million compared to 6M/22. Altogether with net realized gain on financial instruments of Baht 760 million, as opposed to net realized loss of Baht 16,052 million, EBITDA went down by Baht 24,503 million, totaling to Baht 7,827 million. Nevertheless, the company booked a gain from fair value measurement on financial instruments of Baht 86 million, compared to a loss of Baht 3,994 million in 6M/22. There was a net foreign exchange loss of Baht 643 million, which was lower by Baht 517 million from the same period last year. Furthermore, a partial disposal of GPSC led to reclassification gain and gain from disposal totaling of Baht 18,026 million, before tax, or Baht 13,572 million, net of tax during the period. Offsetting with depreciation, finance cost and tax expenses, net profit of Baht 2,763 million was realized, or Baht 29,105 million lower from the same period last year (net profit with dividend income in 6M/23 was Baht 6,598 million).

2.2 Market Condition and Financial Result of Aromatics Business

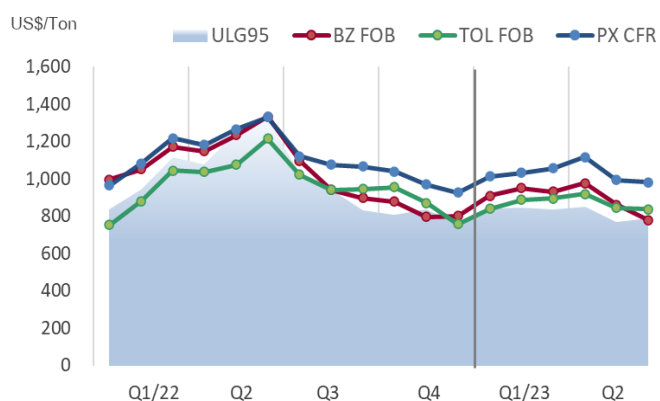
Table 5: Average Prices and Spreads of Aromatics Products

Average Prices (US\$/Ton)	Q2/23	Q1/23	+/(-)	Q2/22	+/(-)	6M/23	6M/22	+/(-)
Paraxylene (PX) ⁽¹⁾	1,030	1,034	(4)	1,259	(229)	1,032	1,173	(141)
Benzene (BZ) ⁽²⁾	873	930	(57)	1,238	(365)	901	1,156	(255)
Toluene (TL) ⁽²⁾	867	874	(7)	1,109	(242)	870	1,001	(131)
Spreads over ULG95 (US\$/Ton)	Q2/23	Q1/23	+/(-)	Q2/22	+/(-)	6M/23	6M/22	+/(-)
Paraxylene (PX)	228	193	35	44	184	211	84	127
Benzene (BZ)	71	89	(18)	23	48	80	66	14
Toluene (TL)	65	33	32	(107)	172	49	(89)	138

Remark (1) Based on CFR Taiwan price

(2) Based on FOB Korea price

Graph 2: Prices of Aromatics Products and ULG95



In Q2/23, PX price dropped from Q1/23 following the decrease in crude oil price due to recession concern. However, PX spread over ULG95 increased from Q1/23 due to stronger demand in the summer season. Additionally, there were some plant maintenance programs, and as a result, supply declined. Therefore, PX spreads over ULG95 in Q2/23 and 6M/23 improved from Q2/22 and 6M/22 respectively.

BZ price in Q2/23 plummeted from Q1/22 due to a decrease in oil prices from recession concerns. BZ spread over ULG95 in Q2/23

also dropped from Q1/23 because BZ demand was weakened owing to low profit of downstream businesses such as styrene monomer. However, BZ spreads over ULG95 in Q2/23 and 6M/23 rose from Q2/22 and 6M/22, respectively since there were annual maintenance shutdowns at some BZ plants. In addition, BZ production volume was diminished as some olefins plants were not operating at full capacity, resulting in tighter supply.

TL price in Q2/23 was lower than Q1/23 following the fall of oil prices following the concerns over decline in global economic growth and unclear prospect of Chinese economic recovery. However, demand for TL as an octane booster in gasoline production remained strong especially that it was the summer and the US driving season. Consequently, TL spread over ULG95 in Q2/23 and 6M/23 widened from Q2/22 and 6M/22, respectively.

Table 6: Financial Result of TPX

	Q2/23	Q1/23	+/(-)	Q2/22	+/(-)	6M/23	6M/22	+/(-)
Aromatics Production Rate ⁽¹⁾ (%)	71%	67%	4%	77%	-6%	69%	75%	-6%
Aromatics Production (kTon)	148	138	10	160	(12)	286	311	(25)
Product-to-feed Margin ⁽²⁾ (US\$/Ton)	49	65	(16)	(27)	76	57	(2)	59

Remark (1) Based on a nameplate capacity of 838,000 Tons/year (527,000 tons of paraxylene per year, 259,000 tons of benzene per year and 52,000 tons of mixed xylene per year)

(2) Calculated from gross margin divided by feedstock volume (Ton)

In Q2/23, TPX had lower product-to-feed margin due to a plummet of BZ spread. However, TPX had a higher sales volume and gain from financial instruments. Thus, TPX had better performance than the previous quarter.

For 6M/23, TPX had better product-to-feed margin from less concerns about the Russia-Ukraine conflicts and the COVID pandemic. Therefore, TPX performance was greater.

In Q2/23, compared with Q1/23, Thai Paraxylene Co., Ltd. (TPX) had an aromatics production rate of 71%, higher than the previous quarter by 4%. TPX had sales revenue of Baht 13,134 million, increased by Baht 604 million due to higher sales volume. Although PX spread and TL spread over ULG95 increased, BZ spread over ULG95 plummeted significantly because of a reduction in demand and, recession concerns. As a result, product-to-feed was lower by 16 US\$/ton from the previous quarter. However, TPX had a net realized gain on financial instruments of Baht 15 million, increased by Baht 12 million from Q1/23. Thus, TPX recorded an EBITDA of Baht 279 million, lower EBITDA by Baht 140 million. Besides, in this quarter, net gain on fair value measurement of financial instruments of Baht 166 million was recorded compared with loss on fair value measurement of financial instruments of Baht 112 million in the previous quarter. In addition, TPX had a net foreign exchange gain of Baht 25 million, compared with a net foreign exchange loss of Baht 14 million in the previous quarter. Offsetting with depreciation, finance costs and income tax expense, In Q2/23, TPX posted net profit of Baht 225 million, higher net profit by Baht 143 million from the former period.

Compared with Q2/22, TPX aromatics production rate decreased by 6%. Sales revenue went down by Baht 5,172 million due to decreases in average selling prices. However, TPX reported a higher in product-to-feed margin by 76 US\$/ton since aromatics spreads over ULG95 were widened as ULG95 price dropped considerably from less concerns about the Russia-Ukraine war. Combining with net realized gain on financial instruments, TPX had an EBITDA Baht 279 million, compared with an EBITDA loss of Baht 943 million in Q2/22. Besides, TPX had a gain on fair value measurement of financial instruments of Baht 166 million, compared with net gain on fair value measurement of financial instruments of Baht 23 million, while net foreign exchange gain reduced by Baht 27 million. Therefore, TPX posted a net profit of Baht 225 million, compared with a net loss of Baht 875 million in the same period last year.

Compared 6M/23 with 6M/22, TPX had sales revenue of Baht 25,664 million, decrease by Baht 6,301 million as average selling prices (especially BZ) declined even though total sales volume increased. However, TPX reported better product-to-feed margin of 59 US\$/ton from higher aromatics spreads over ULG95 after concern over Russia and Ukraine tension subsided. Combining with net realized gain on financial instruments of Baht 18 million, TPX posted an EBITDA of Baht 698 million, compared with an EBITDA loss of Baht 1,053 million in 6M/22. Besides, TPX had net gain on fair value measurement of financial instruments of Baht 54 million, compared with net gain on fair value measurement of financial instruments of Baht 11 million in 6M/22, and had a decreased in net foreign exchange gain by Baht 38 million. Therefore, TPX recorded net profit of Baht 307 million, compared with a net loss of Baht 1,177 million in the same period last year.

In Q2/23, aromatics group (TPX holds 75% shares of LABIX) had consolidated sales revenue of Baht 19,005 million, consolidated EBITDA of Baht 684 million and consolidated net gain of Baht 361 million. For 6M/23, aromatics group had consolidated sales revenue of Baht 38,007 million, consolidated EBITDA of Baht 1,464 million and consolidated net gain of Baht 542 million.

2.3 Market Condition and Financial Result of an Intermediate for the Production of Surfactants Business

Table 7: Average Price of LAB

Average Price (US\$/Ton)	Q2/23	Q1/23	+/(-)	Q2/22	+/(-)	6M/23	6M/22	+/(-)
Linear Alkylbenzene (LAB) ⁽¹⁾	1,528	1,624	(96)	1,829	(301)	1,576	1,800	(224)

Remark (1) Based on ICIS price

Graph 3: Price of LAB



In Q2/23, LAB price dropped from that of Q1/23 and Q2/22. Additionally, LAB price in 6M/23 was also lower than that of 6M/2, tracking a lower crude oil price due to recession concerns after the FED raised interest rates. Moreover, there is also a lack of confidence in China's future economic growth, as China is the world's biggest oil importer.

LAB spread over jet and/or benzene, however, improved due to demand for laundry products boosting in the summer season in

most countries in Asia, especially in China, as they have relaxed the lockdown measures or the Zero COVID policy since the beginning of the year, which has helped reduce the excess amount of LAB exported from China. Source : ICIS LAB Weekly Report, July 2023.

Table 8: LAB Production

	Q2/23	Q1/23	+/(-)	Q2/22	+/(-)	6M/23	6M/22	+/(-)
LAB Production Rate ⁽¹⁾ (%)	125%	121%	4%	122%	3%	123%	122%	1%
LAB Production (kTon)	37	36	1	36	1	73	72	1

Remark (1) Based on nameplate capacity of 120,000 Tons/year

In Q2/23, LABIX had higher gross margin. Thus, LABIX performance improved from the prior quarter.

In 6M/23, LABIX had a dropped on gross margin following pressure on lower domestic demand. LABIX then had a lower performance.

In Q2/23, LABIX Co., Ltd. (LABIX) had LAB production rate at 125% and LAB sales volume remained at the similar level of Q1/23. However, a decrease in LAB price tracking feedstock prices resulted in sales revenue was Baht 6,275 million, decreased by Baht 571 million. Meanwhile, LABIX had a slightly higher gross margin due to a rise in LAB spread over jet and benzene compared to Q1/23, LABIX then reported EBITDA of Baht 405 million, increased by Baht 43 million. In addition, LABIX had a net foreign exchange gain of Baht 35 million, compared with a net foreign exchange loss of Baht 8 million in Q1/23. Offsetting with depreciation, finance costs and income tax expenses, LABIX posted net profit of Baht 181 million, an increased by Baht 49 million from the prior quarter.

Compared with Q2/22, LABIX had a higher LAB production rate of 3% while sales volume was quite the same. However, a decrease in LAB price tracking feedstock prices resulted in sales revenue decreased by Baht 1,796 million. While LABIX had a lower gross margin due to a drop in domestic demand while there was more supply resumption in the LAB market, LABIX then had lower EBITDA by Baht 296 million. Additionally, LABIX had a higher net foreign exchange gain of Baht 19 million compared with Q2/22. Offsetting with depreciation, finance costs and income tax expenses, LABIX reported a lower net profit by Baht 336 million from the same period of the previous year.

Compared 6M/23 with 6M/22, LABIX had a higher LAB production rate of 1% while sales volume was quite the same. The sales revenue was Baht 13,121 million, decreased by Baht 984 million following the decrease in LAB price tracking feedstock prices. Furthermore, there was a decrease in gross margin from the drop in domestic demand while there was more supply resumption in the LAB market, LABIX then recorded lower EBITDA of Baht 576 million. Meanwhile, LABIX had a net foreign exchange gain of Baht 27 million, quite same as 6M/22. Offsetting with depreciation and finance costs, LABIX then reported net profit dipped by Baht 690 million from the same period of the previous year.

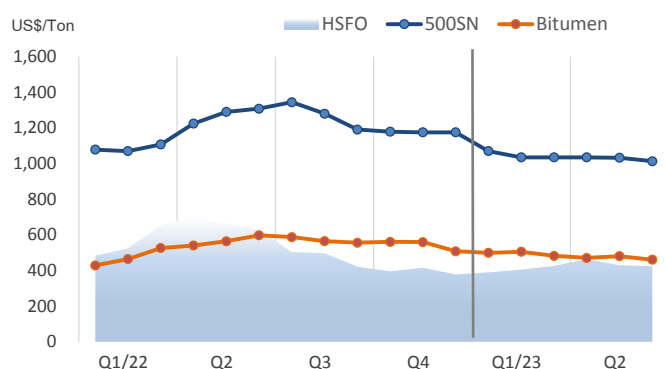
2.4 Market Condition and Financial Result of Lube Base Oil Business

Table 9: Average Prices and Spreads of Key Lube Base Oil Products

Average Prices (US\$/Ton)	Q2/23	Q1/23	+/(-)	Q2/22	+/(-)	6M/23	6M/22	+/(-)
500SN ⁽¹⁾	1,027	1,047	(20)	1,274	(247)	1,037	1,175	(138)
Bitumen ⁽²⁾	470	495	(25)	567	(97)	483	520	(37)
Spreads over HSFO (US\$/Ton)	Q2/23	Q1/23	+/(-)	Q2/22	+/(-)	6M/23	6M/22	+/(-)
500SN	588	640	(52)	608	(20)	614	565	49
Bitumen	31	89	(58)	(99)	130	60	(90)	150

Remark (1) Based on Ex-tank Singapore price
(2) Based on FOB Singapore price

Graph 4: Prices of Lube Base Oil (500SN), Bitumen and Fuel Oil



Base oil price (500SN) and its spread over fuel oil declined in Q2/23 compared to that of Q1/23 and Q2/22 as the market was pressured by slow demand growth especially from China. Additionally, rainy season hindered transportation and driving activities in late Q2/23 although demand for Gr I was somewhat supported by some plant maintenance. Meanwhile, 500SN price came down by a big margin in 6M/23 compared to 6M/22 following a significant decline in fuel oil price. However, this helped

expand spread between base oil price, and fuel oil.

Bitumen price in Q2/23 declined from the previous quarter and the same period last year. For the first six month this year, bitumen price also declined compared to the same period last year. This was largely due to weakened regional demand especially from China, Malaysia and Indonesia whose road maintenance budgets were limited. This also sent down bitumen spread in Q2/23 compared to Q1/23. However, compared to last year, bitumen spreads were relatively strong this year following economic recovery and lower fuel oil price.

Table 10: Financial Result of TLB

	Q2/23	Q1/23	+ /(-)	Q2/22	+ /(-)	6M/23	6M/22	+ /(-)
Base Oil Production Rate ⁽¹⁾ (%)	83%	79%	5%	90%	(7%)	81%	89%	(9%)
Base Oil Production (kTon)	55	52	4	60	(4)	107	118	(11)
Product-to-feed Margin ⁽²⁾ (US\$/Ton)	136	172	(36)	133	3	143	115	28

Remark (1) Based on nameplate capacity of 267,015 Tons/year

(2) Calculated from gross margin divided by feedstock volume (Ton)

TLB reported higher base oil production rate and thus booked higher revenues.

However, with lower product spreads, P2F, EBITDA and Net Profit declined from the previous quarter.

6M/23 performance, compared with 6M/22, TLB top line declined following lower product prices.

However, with lower fuel oil price widened spreads, TLB reported higher P2F, EBITDA, and net profit.

In Q2/23, Thai Lube Base Plc. (TLB) reported base oil production rate at 83% and sales revenue of Baht 6,572 million, an increase of Baht 304 million from Q1/23 following an increase in base oil production rate, which was largely due to group optimization. Nevertheless, product spreads declined following concerns over weakened demand. Thus, TLB reported Product-to-feed Margin of 136 US\$/ton, declined by 36 US\$/ton. Consequently, EBITDA came down by Baht 369 million, totaling to Baht 772 million. Offsetting with depreciation, finance cost and tax expenses, TLB posted net profit of Baht 576 million, or a decrease of Baht 310 million from the previous quarter.

Compared to Q2/22, TLB revenue went down by Baht 1,830 million as product selling prices plummeted following a decline in global oil price. At the same time, base oil production rate reduced from group optimization for economic purpose. However, Product-to-feed Margin improved by 3 US\$/ton, owing to higher bitumen spread from large decline in fuel oil price.

Compared 6M/23 to 6M/22, TLB booked lower sales revenue by Baht 2,369 million from lower product selling prices in addition to lower production volumes. Meanwhile, base oil spreads and bitumen spread were supported by a significant decline in fuel oil price leading to widened product spreads. Thus, TLB reported lower net income in 6M/23 compared to 6M/22.

2.5 Financial Result of Power Generation Business

Table 11: Sales Volume from Power Generation Business

TOP SPP	Q2/23	Q1/23	+/(-)	Q2/22	+/(-)	6M/23	6M/22	+/(-)
Electricity Dispatched (GWh)	561	379	182	402	159	940	756	184
Steam Exported (kTon)	878	579	299	590	288	1,457	1,151	306

In Q2/23 and 6M/23, TOP SPP had a rise in sales revenue and EBITDA increased after completed commercial operation from TOP SPP expansion while higher operating cost from refinancing activity leading to TOP SPP earned lower net profit from Q1'23 but an increased in net profit comparing to 6M/23.

In Q2/23, TOP SPP Co., Ltd. (TOP SPP) had sales revenue of Baht 3,658 million, increased by Baht 799 million owing to TOP SPP Expansion project to increase in electricity and steam production began its commercial operation (COD) on the 1st April 2023. As a result, TOP SPP reported EBITDA of Baht 841 million, increased by Baht 257 million. While, TOP SPP recorded loss on unwind IRS of Baht 108 million and financing cost of Baht 193 million, increased by 120 million due to financing activities from TOP SPP expansion after COD. Offsetting with depreciation and income tax expense, TOP SPP recorded a net profit of Baht 349 million, decreased by Baht 39 million compared with the previous quarter.

Compared with Q2/22, TOP SPP sales revenue increased by Baht 1,019 million because of increases in sale volume from of the startup of TOP SPP Expansion project in this quarter. This led to a rise in EBITDA of Baht 321 million. While, TOP SPP recorded loss on unwind IRS in Q2/23 of Baht 108 million and financing increased by 120 million due to financing activities from TOP SPP expansion after COD. Offsetting with depreciation and income tax expense, TOP SPP net profit increased by Baht 22 million from the same period of last year.

For 6M/23 compared with 6M/22, TOP SPP booked sales revenue of Baht 6,517 million, an increase of Baht 1,398 million mainly due to a rise in sale volume from commercial operation of TOP Expansion. This caused TOP SPP to post EBITDA of Baht 1,424 million, or an increase of Baht 472. In 6M/23, TOP SPP recorded loss on unwind IRS in Q2/23 of Baht 108 million and financing increased by 122 million due to financing activities from TOP SPP expansion after COD. Offsetting with depreciation and tax expenses, TOP SPP reported net profit of Baht 737 million, which increases by Baht 174 million from the same period last year. Besides, Thairoil and Subsidiaries reduced GPSC's shareholding from 20.78% to 10.0%. Therefore, Thairoil and Subsidiaries did not book share of profit from GPSC compared with the same period of last year. Furthermore, GPSC's annual general meeting on 31st March 2023 approved a dividend payment from the operating results of GPSC and its subsidiaries for the year 2022. Therefore, the dividend income of Baht 85 million was recorded.

2.6 Financial Result of Solvent and Chemicals Business

Table 12: Financial Result of Thaioil Solvent

	Q2/23	Q1/23	+/(-)	Q2/22	+/(-)	6M/23	6M/22	+/(-)
Solvent Utilization Rate ⁽¹⁾ (%)	67%	82%	(15%)	83%	(16%)	74%	86%	(12%)
Solvent Production ⁽¹⁾ (kTon)	36	44	(8)	44	(9)	79	93	(13)
Solvent Sales Volume (kTon)	109	144	(35)	143	(34)	253	260	(7)

Remark (1) Produced solvent by Sak Chaisidhi Co., Ltd. (TopNEXT International Company Limited (Former name: TOP Solvent Co., Ltd.) holds 80.52% shares)
Sak Chaisidhi Co., Ltd. changed capacity from 141 kTA to 214 kTA since April 2023

In Q2/23, Business group reported lower sales revenue from decreased in sales volume following demand and decreased in selling price tracking crude oil price.

Moreover, a decrease in EBITDA and net profit due to gross profit from incremental cost outpacing selling price.

For 6M/23, compared with 6M/22, Sales revenue reduced from sales volume and selling price. This led to EBITDA and net profit lower from the same period of the previous year.

Compared Q2/23 with Q1/23, Solvent and Chemicals Product Business reported 67% solvent utilization rate, decreased by 15%. Solvent and Chemicals sales volume decreased by approximately 35 kTons from the prior quarter. This led the business group to record sales revenue of Baht 3,688 million, decreased by Baht 1,070 million following demand of solvent and chemical. Therefore, the business group reported EBITDA of Baht 157 million, reduced by Baht 76 million because the gross profit margin was squeezed. Moreover, the business group had increased net gain on exchange and financial instruments gain and derivative of Baht 36 million from the prior quarter. Offsetting with depreciation of Baht 66 million, finance costs of Baht 36 million, income tax expense of Baht 29 million, and non-controlling interests. In Q2/23, the business group posted net profit of Baht 121 million, decreased by Baht 14 million from the prior quarter.

Compared Q2/23 with Q2/22, the business group's utilization rate dropped by 12% from the same period of prior year, The average solvent and chemicals selling price per unit decreased tracking crude oil price and, sales volume decreased by approximately 34 kTons. As a result, the business group posted lower sales revenue by Baht 2,351 million, and lower EBITDA by Baht 223 million due to lower gross profit margin. This was because of incremental cost increase outpacing selling price increase. The business group recorded higher net gain on exchange and financial instruments by Baht 48 million than Q2/22. Offsetting with depreciation, finance costs, income tax expense and non-controlling interests, the business group, in Q2/23, recorded a decrease in net profit of Baht 133 million from the same period last year.

For 6M/23, compared with 6M/22, the business group had a 74% solvent utilization rate and had lower average solvent and chemicals selling price per unit tracking crude oil price and decrease in sales volume of approximately 7 kTons. This led the business group to record sales revenue of Baht 8,446 million, decreased by Baht 1,839 million. Thus, the business group reported EBITDA of Baht 389 million, reduced by Baht 342 million. In 6M/23, business group had net foreign exchange gain and derivative of Baht 132 million which rose by Baht 84 million from 6M/22. Offsetting with depreciation, finance costs, income tax expense, and non-controlling interests. In 6M/23, business group posted net profit of Baht 255 million, decreased by Baht 223 million from the same period of the previous year.

2.7 Financial Result of Olefin Business

Table 13: Spread of Olefin Products

Spreads (US\$/Ton)	Q2/23	Q1/23	+/(-)	Q2/22	+/(-)	6M/23	6M/22	+/(-)
HDPE – Naphtha MOPJ ⁽¹⁾	434	396	38	468	(34)	415	460	(45)
LLDPE – Naphtha MOPJ ⁽¹⁾	413	385	28	510	(97)	399	489	(90)
PP – Naphtha MOPJ ⁽¹⁾	376	380	(4)	445	(69)	378	462	(84)

Remark: (1) Based on ICIS price

In this quarter, CAP increased production capacity and had an increase in export sales volume and a decline in domestic sales volume. As a result, the average selling price in Q2/23 decreased compared to the previous quarter, so TII recognized share of loss in Q2/23.

The performance of 6M/23 improved compared to the same period as a result of lower production costs and increased demand. CAP increased production capacity and sales volume in line with the recovery of the petrochemical market from the relaxing of lockdown in China.

The seasonal shutdown of refineries in Asia resulted in the market supply in Q2/23 decreased while demand increased from the Mid-year sale promotion. High-density polyethylene (HDPE) and linear low-density polyethylene (LLDPE) spreads over Naphtha improved from Q1/23 to 434 and 413 \$/ton, respectively, while the polypropylene (PP) spread over naphtha slightly decreased to 376 \$/ton. Although CAP has increased production capacity in line with the better situation in the olefins market, in this quarter, CAP had an increase in export sales volume and a decline in domestic sales volume following the customers' demand. As a result, the average selling price in Q2/23 decreased compared to the previous quarter. In Q2/23, TII recognized a share of loss from the investment in CAP and when combined with TII's operating expenses, TII reported a net loss of 47 million baht compared with Q1/23 which reported a net profit of 32 million baht.

Although the olefins product spreads were more pressured compared to Q2/22, CAP had the ability to increase sales volume to meet the customers' demand. As a result, Q2/23 TII reported a net loss of 47 million baht compared to a net loss of 195 million baht in Q2/22.

For TII's 6M/23 performance, there was a net loss of 16 million baht, compared to a net loss of 262 million baht from the same period last year. This was mainly due to the lower production costs following the decline in crude oil prices and higher demand for petrochemicals following China's easing of COVID lockdown restrictions in the beginning of the year. As a result, demand in the petrochemical market increased. CAP increased production capacity and increased sales volume.

2.8 Financial Result of Ethanol Business

Table 14: Utilization Rate of TET

	Q2/23	Q1/23	+ / (-)	Q2/22	+ / (-)	6M/23	6M/22	+ / (-)
Ethanol Utilization Rate (%)								
- Saphthip	67%	107%	(40%)	74%	(7%)	87%	90%	(3%)

In Q2/23, TET booked lower sales revenue from lower sales volume and higher feedstock costs, TET reported lower EBITDA and consolidated net loss in this quarter.

For 6M/23, TET reported higher sales revenue from higher selling price of ethanol from the same period of last year.

However, with higher feedstock costs, TET had lower EBITDA, causing TET to have consolidated net loss in this period.

In Q2/23, Thailoil Ethanol Co., Ltd. (TET) reported consolidated sales revenue from Saphthip Co., Ltd. (TET holds 50% shares) of Baht 408 million, lower by Baht 62 million from the prior period mainly came from sales volumes of ethanol were declined due to planned maintenance shutdown in this quarter for 36 days. Although the selling price of ethanol was increased, feedstock cost rose significantly. As a result, it had a drop in gross profit margin and reported EBITDA of Baht 1 million, decreased by Baht 43 million. TET received dividend income from Ubon Bio Ethanol Plc. (UBE) of Baht 19 million was recorded. Offsetting with selling and administrative expenses, depreciation, finance costs, and income tax expense, and non-controlling interests, TET reported consolidated net loss of Baht 6 million compared with consolidated net loss of Baht 15 million in the previous quarter.

In comparison with Q2/22, TET had a rise in consolidated sales revenue from Saphthip Co., Ltd., of Baht 40 million because the selling price of ethanol increased and feedstock cost declined while there were higher operating expenses from plant maintenance. This led to a decrease in gross profit margin, while EBITDA remained at the same level as last year. Besides, TET received dividend income from UBE was higher than last year of Baht 8 million. After offsetting with selling and administrative expenses, depreciation, finance costs, and income tax expense, and non-controlling interests, TET reported higher net profit by Baht 11 million from the same period of last year.

For 6M/23 compared with 6M/22, TET recorded higher consolidated sales revenue of Baht 878 million, which increased by Baht 112 million from the same period of last year. This was due to an increase in ethanol selling price. However, due to significantly higher feedstock costs, the gross profit margin from ethanol dropped and sent TET reported EBITDA of Baht 46 million, decreased by Baht 16 million. This led to TET consolidated net loss of Baht 21 million, or higher loss of 12 million from the same period of last year.

3. Analysis of Consolidated Financial Statement

3.1 Statement of Financial Position

The financial position of Thaioil and Subsidiaries can be summarized as follows:

Table 15: Condensed Consolidated Statements of Financial Position

(Million Baht)	30 June 2023	31 December 2022	+ / (-)	+ / (-) %
Assets				
Cash, cash equivalents and short-term investments ⁽¹⁾	35,660	43,919	(8,259)	(19%)
Other current assets	79,164	109,909	(30,745)	(28%)
Non-current assets	292,131	290,753	1,379	0%
Total assets	406,956	444,581	(37,625)	(8%)
Liabilities				
Current liabilities ⁽²⁾	55,547	83,471	(27,924)	(33%)
Long-term borrowings and debentures (including current portion) ⁽³⁾	165,493	171,860	(6,367)	(4%)
Other non-current liabilities	30,070	30,593	(522)	(2%)
Total liabilities	251,111	285,924	(34,813)	(12%)
Equity				
Equity attributable to owners of the company	153,173	156,034	(2,862)	(2%)
Non-controlling interests	2,672	2,623	49	2%
Total equity	155,845	158,657	(2,812)	(2%)
Total liabilities and equity	406,956	444,581	(37,625)	(8%)

Remark (1) Including deposits at a financial institution used as collateral (2) Including short-term loan (3) Including current portion and excluding lease liabilities

Total Assets

On 30 June 2023, Thaioil and Subsidiaries had total assets of Baht 406,956 million, or a decline of Baht 37,625 million (or 8%) from 31 December 2022 owing to

- Lower cash and cash equivalent of Baht 8,259 million due to cash paid for annual dividend netting with performance from the first half of the year, cash paid for \$500 million debenture redemption upon its maturity date, and cash paid for PPE acquisition which was mainly linked to Clean Fuel Project (CFP)
- Lower current assets of Baht 30,745 million due to lower trade receivables tracking lower crude oil price and lower product price while oil fuel fund receivables also plummeted significantly as per government policy on fuel price
- Higher non-current assets of by Baht 1,379 million mainly form higher property, plant and equipment from project investment such as CFP project, offsetting with lower deferred tax assets (DTA) and Right of Use assets (ROU) which were normal parts of business operation as per accounting standards

Total Liabilities

As of 30 June 2023, Thaioil and Subsidiaries had total liabilities of Baht 251,111 million, which went down by Baht 34,813 million or 12% from 31 December 2022, mainly due to

- Current liabilities dropped by Baht 27,924 million primarily due to lower trade payables from lower average crude oil prices in addition to lower short term borrowing and lower other liabilities which decreased during the period.
- Long-term borrowings and debentures (including current portions) declined by Baht 6,367 million due to new debenture issued in late 2022 and debenture redemption upon its maturity in early 2023.
- Other non-current liabilities declined by Baht 522 million due to lower lease liabilities and derivative liabilities in both CCS and commodity hedging valuation per relevant accounting standards.

Table 16: Consolidated Borrowings

(Million Baht)	Thaioil	LABIX	TOP SPP	TS	TET	TTC	รวม
Debentures : US\$-denominated ⁽¹⁾	6,045	-	-	-	-	102,247	108,291
: Baht-denominated	36,479	-	-	-	-	-	36,479
Borrowings : Baht-denominated	17,045	3,118	-	57	70	-	20,289
: Other currencies-denominated ⁽¹⁾	-	-	-	433	-	-	433
As of 30 June 2023	59,568	3,118	-	490	70	102,247	165,493
As of 31 December 2022	51,777	3,416	6,884	613	89	109,081	171,860
+ / (-)	7,791	(298)	(6,884)	(123)	(19)	(6,834)	(6,367)

Remark (1) Including foreign exchange gain/loss from foreign-currency-denominated liabilities revaluation

Total Equity

As of 30 June 2023, Thaioil and Subsidiaries reported consolidated equity of Baht 155,845 million, or a decline of Baht 2,812 million, equivalent to 2% decline from year end 2022 due to net profit booked during the first half of 2023 netting with dividend payment declared and paid in April 2023. Additionally, there was a change in cashflow hedge components, which was included as a part of other comprehensive income owing to strong depreciation of Thai Baht toward the end of Q2/23.

3.2 Statement of Cash Flows

On 30 June 2023, Thaioil and Subsidiaries reported cash and cash equivalent of Baht 32,597 million, Baht 28,173 million of which belonged to Thaioil alone (separated financial statement).

Table 17: Condensed Statement of Cash Flows

(Million Baht)	Consolidated	Separated
Net cash flows from / (used in) operating activities	13,818	8,757
Net cash flows from / (used in) investing activities	(8,274)	(11,078)
Net cash flows from / (used in) financing activities	(16,870)	(4,587)
Net increase in cash and cash equivalents	(11,326)	(6,908)
Cash and cash equivalents at the beginning of period	43,576	34,787
Effect of exchange rate changes on cash and cash equivalents	347	293
Cash and cash equivalents at the end of period ⁽¹⁾	32,597	28,173

Remark (1) Excluding deposits at a financial institution used as collateral

During the first half of 2023, Thai Oil and Subsidiaries had net cash from operation of Baht 13,818 million owing to net profit before taxes of Baht 7,022 million, while it had higher non-cash adjustment of Baht 6,182 million, and net cash inflow from changes in working capital of Baht 1,114 million. At the same time, it paid tax totaling Baht 500 million. Meanwhile, with ongoing investing activities such as purchases of land, building and equipment especially for Clean Fuel Project (CFP) totaling Baht 5,940 million.

Additionally, it had net outflows from financing activities of Baht 16,870 million mainly due to net cash paid to financial institutions (loan repayment) of Baht 12,738 million, while it booked additional long-term borrowing from financial institutions of Baht 10,488 million. During the period, it also issued a debenture with cash inflow of Baht 10,000 million, while it redeemed its maturing debentures of Baht 16,381 million.

Consequently, cash ending declined by Baht 11,326 million from 31 December 2022. There was also an effect of exchange rate on cash totaling Baht 374 million. Summing up with beginning cash and cash equivalents at the beginning of the period, cash of Baht 32,597 million was reported on 30 June 2023

3.3 Financial Ratios

Table 18: Financial Ratios (Consolidated)

Profitability Ratios	Q2/23	Q1/23	+ / (-)	Q2/22	+ / (-)
Quality of earnings ratio (%)	4%	7%	(3%)	16%	(12%)
Gross profit margin ratio (%)	3%	6%	(3%)	20%	(17%)
Net profit margin ratio (%)	1%	4%	(3%)	15%	(14%)

Liquidity Ratios	Q2/23	Q1/23	+ / (-)	Q2/22	+ / (-)
Current ratio (times)	1.8	1.6	0.2	1.4	0.4
Quick ratio (times)	0.9	0.8	0.1	0.7	0.2

Financial Policy Ratios	Q2/23	Q1/23	+ / (-)	Q2/22	+ / (-)
Total liability/ Total equity (times)	1.6	1.6	(0.0)	1.9	(0.3)
Net debt/ Equity (times)	1.0 / 0.8 ¹⁾	0.8 / 0.7 ¹⁾	0.2	1.0 / 0.8 ¹⁾	-
Long-term loan/ Total equity (times)	1.2 / 1.1 ¹⁾	1.1 / 1.0 ¹⁾	0.1	1.2 / 1.0 ¹⁾	-
Interest coverage ratio (times)	4.3	8.9	(4.6)	9.6	(5.4)
Long-term loan/ Total capitalization (%)	55%	53%	2%	56%	(1%)

Financial Ratios Calculation

Quality of Earnings ratio (%)	= EBITDA / Sales Revenue
Gross Profit Margin ratio (%)	= Gross Profit / Sales Revenue
Net Profit Margin ratio (%)	= Net Profit for the period / Total Revenue
Current ratio (times)	= Current Assets / Current Liabilities
Quick ratio (times)	= (Cash and Cash equivalent + Short-term investments + Accounts Receivable) / Current Liabilities
Total Liabilities / Total Equity (times)	= Total Liabilities / Total Equity
Net Debt/ Equity (times)	= Net Debt / Total Equity
Long term loan/ Total Equity (times)	= Long Term Loan / Total Equity
Long term loan	= Long-term borrowings from financial institutions + Debentures (includes current portion) + Lease liabilities (includes current portion)
Interest Coverage ratio (times)	= EBITDA / Interest Expenses (Finance costs)
Long term loan/ Total Capitalization (%)	= Long Term Loan / Total Capitalization
Total Capitalization	= Long Term Loan + Total Equity
Net Debt	= Interest bearing debt + Lease liabilities - Cash and cash equivalent – Short-term investments

Remark (1) Excluding lease liability

4. Industry Outlook for the Third Quarter of Year 2023, and the Fourth Quarter of Year 2023

Crude oil and refinery market outlook

Crude oil prices in Q3/23 and Q4/23 are expected to increase from the previous quarter because crude supply is expected to be tightened in 2H/23 as OPEC+ announced voluntary cuts their production amounting 1.66 MBD (OPEC+ alliance on 2 April announced voluntary cuts 1.16 MBD and Russia 0.5 MBD) from May 2023 until the end of 2023. Moreover, Saudi Arabia additionally cut the production amounting 1.0 MBD during July – August 2023. This cut was incremental from their agreement. While Russia is expected to reduce their crude export 0.5 MBD in August 2023. In terms of oil demand, it tends to grow in 2H'23 due to seasonal demand from driving and heating activities despite concerns over economic slowdown especially in US and Europe as a result of the acceleration of interest rate hikes by the Federal Reserve (FED) and central banks of many countries in response to rising inflation and lower-than-expected growth of the Chinese economy, which limits the increase of crude oil prices.

Gross Refinery Margin (GRM) in Q3/23 and Q4/23 are expected to improve from the previous quarter, supported by increasing demand from driving season in the US and demand for heating purposes during the winter. Furthermore, jet fuel demand is expected to continually elevate thanks to the growth of air transportation. The market is also expected to be supported by lower product inventory, which is still below the 5-year average despite the upward trend. However, new refineries and higher Chinese product export are expected to limit upside of GRM growth.

Aromatics market outlook

In Q3/23, paraxylene (PX) market is expected to slightly decline compared to Q2/23 as the market is pressured by higher feedstock costs tracking crude oil prices, high inflation which reduced the purchasing power of consumers, and increasing supply after maintenance in Q2/23. However, the market is expected to be supported by improving textile market towards the end of the year and new PTA plant in China (Hengli Petrochemical 2.5 MTA). (Source: CMA Report in July 2023)

In Q4/23, the PX market is expected to increase from rising demand in industrial and tourism sectors. Nonetheless, concerns over Chinese and regional economic remain pressure PX market. (Source: CMA Report in July 2023)

In Q3/23, Benzene (BZ) market is expected to weaken due to depressed downstream business, i.e., Styrene Monomer (SM) and other products. This; therefore, limits BZ demand in addition to higher price of gasoline, pressuring BZ spread.

In Q4/23, BZ market is expected to improve owing to higher demand especially in industrial sector during New Year festive season, resulting in increasing BZ demand to produce electronic devices and gift amid regional economic uncertainty. (Source: CMA Report, July 2023)

In Q3/23, Toluene (TL) market is expected to soften due to lower TL demand as feedstock for aromatic production. However, higher gasoline demand during driving season in the US continues to support TL demand as gasoline blending production. (Source: CMA Report, July 2023)

In Q4/23, TL market is likely to remain softened due to weak demand after the end of driving season in the US, resulting in lower TL demand for gasoline blending. Additionally, TL demand from chemical and solvent market is likely to be limited due to economic uncertainty in the region including China. (Source: CMA Report, July 2023)

LAB market outlook

LAB in Q3/23 is expected to soften compared to Q2/23 due to lower demand of washing products during monsoon season in India and Southeast Asia. Also, the number of regional LAB plant maintenance shutdowns will be lower compared to the previous quarter amid global economic concerns. (Source: CMA Report, July 2023)

In Q4/23, LAB market is expected to improve compared to Q3/23 because of increasing demand after end of the monsoon season in the region and limited supply from annual planned maintenance shutdown in South Korea and Taiwan. However, LAB market is expected to be pressured by higher feedstock prices namely jet fuel and BZ. Other than that, UIC plant in Indonesia increases their production from 180,000 tons per year to 222,000 tons per year. (Source: CMA Report, July 2023)

Lube base oil market outlook

Lube base oil market in Q3/23 and Q4/23 is expected to be weakened than Q2/23 owing to higher HSFO price amid the world economic uncertainty and softening regional demand during rainy season. The market will be supported by limited supply from the closure of lube base oil group I plant in Japan in late of 2023.

Bitumen market outlook

Bitumen market in Q3/23 and Q4/23 is expected to soften compared to Q2/23 because of higher HSFO price, which is expected to continue increasing. Regional demand will be softened due to limited budget for road maintenance and the delayed road infrastructure improvements as a result of unfavorable weather conditions during rainy season, coupled with economic concerns.

5. Appendix

5.1 Summary of Approved Investment Plan

From 2023 to 2026, Thaioil and Subsidiaries have outstanding approved capital expenditure of US\$1,077 million, mainly consisting of CFP project (Clean Fuel Project) of US\$551 million and an investment in PT Chandra Asri Petrochemical Tbk (“CAP”) of US\$270 million. An estimated budget for the investment during 2023-2026 is summarized in the table below.

TOP Group Strategic Investment Plan

CAPEX Plan (Unit US\$ million)

Updated as of July 2023

Project	Estimated Budgeting for Investment Plan 2023 - 2026
CFP project *	551
Total Ongoing CAPEX	245
Reliability, Efficiency and Flexibility Improvement	141
Infrastructure Improvement (i.e. RHCU Phase 2, New Bangphra Raw Water Line, New Fuel Oil Tank)	33
Other Investments (i.e. Corporate Venture Capital - CVC , Digital Transformation)	71
TOP SPP Expansion	11
Olefins Investment	270
Total CAPEX	1,077

* CAPEX of CFP Project including the disposal of asset to transfer ownership in the Energy Recovery Unit (ERU) which is a part of the CFP Project
 Notes: Excluding approximately 40 M\$/year for annual maintenance



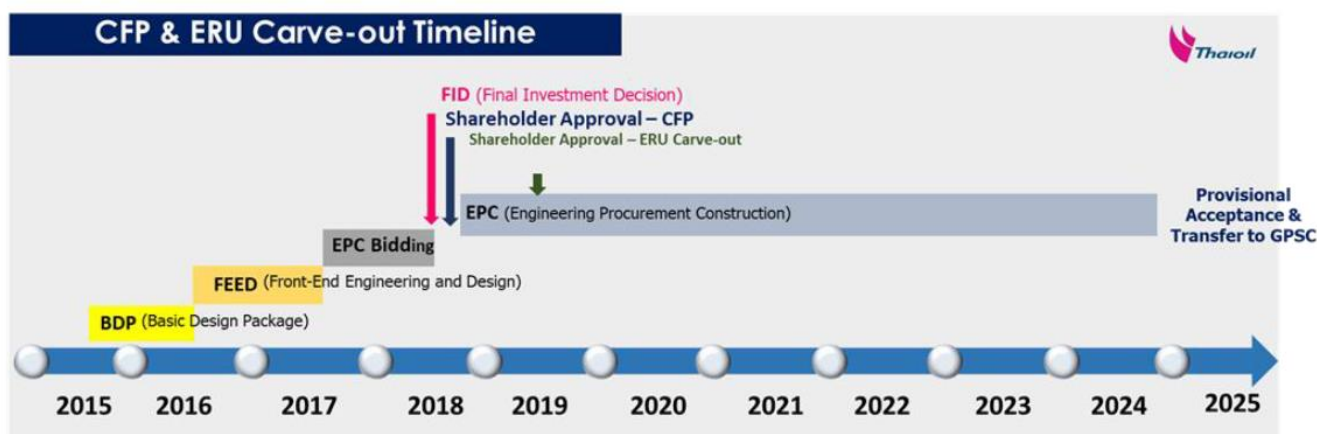
5.2 Summary of Key Project Investment: Clean Fuel Project (CFP)

The objective of CFP project is to enhance the competitiveness and efficiency and increase oil refining capacity to 1) upgrade low value product to higher value and more environmentally friendly products and 2) allow the refinery to handle more types and greater quantity of crude oils, which create economies of scale and a reduce raw material costs. Moreover, the project enhances the country’s long-term energy stability and economic development, with the investment project value of approximately US\$4,825 million. CFP was approved by the Company’s Extraordinary General Meeting of Shareholders on 27 August 2018. The CFP timeline is shown as summarized below:

Clean Fuel Project (CFP)

Main objectives of CFP

- Enhance **competitive advantage** of the refinery and **maintain 1st quartile performer**
- Enhance capability to **upgrade lower value product** into higher value product and ability to **process heavier (cheaper) crude oil**



On 10 April 2019, the 2019 Annual General Meeting of Shareholders resolved to approve the disposal of assets to transfer ownership in the Energy Recovery Unit (ERU), which is a part of CFP, to and the execution of the Relevant Agreements including the asset sale and purchase agreement, fuel and utilities supply agreement, power purchase agreement, operation and maintenance services agreement and land sub-lease agreement as well as the novation agreement with Global Power Synergy Public Company Limited (GPSC) or wholly owned subsidiary of GPSC (ERU Project). The ERU Project aims to reduce total investment cost of CFP, enhance liquidity and support future investment. Furthermore, the transaction will boost the return on investment of CFP while the Company can continue to manage and oversee the implementation of CFP and ERU during the construction and operation phase while maintaining safety, reliability and plant optimization of the project as originally planned.

As of June 2023, the progress of the CFP was more than 92% complete and we had significant progress on the installation of material equipment and modules. However, the COVID-19 pandemic during the past two years affected most of the construction projects, including our CFP. As a result, the CFP has been delayed from its original schedules. Therefore, we have negotiated with the contractors to adjust the operation plan (New Project Execution Plan) and we have carried out CFP in accordance with various measures to accelerate the progress, which is expected to result in an increase of the total expenditure of the project. In addition, we have jointly implemented additional operating measures with the CFP's contractors to minimize the risks on future delay of CFP, for instance, adjustment of working structure to increase operating efficiency, adjustment of construction plan to accelerate the progress, increase of sub-contractors to support the work scopes and the adjusted timeframe, among others., and such measures have been conducted under strict COVID-19 control measure. We expect CFP to gradually start its commercial operation in 2024.