



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

For The Fourth Quarter and
Year 2023

Table of Contents

	Page
1. Company and its Subsidiaries' Operating Results	2
2. Summary of Financial Result by Business	5
2.1 Market Condition and Financial Result of Refinery Business.....	6
2.2 Market Condition and Financial Result of Aromatics Business	9
2.3 Market Condition and Financial Result of an Intermediate for the Production of Surfactants Business.....	11
2.4 Market Condition and Financial Result of Lube Base Oil Business	13
2.5 Financial Result of Power Generation Business.....	15
2.6 Financial Result of Solvent and Chemicals Business	16
2.7 Financial Result of Olefin Business	17
2.8 Financial Result of Ethanol Business	18
3. Analysis of Consolidated Financial Statement.....	19
3.1 Statement of Financial Position	19
3.2 Statement of Cash Flows.....	21
3.3 Financial Ratios.....	22
4. Industry Outlook for the First Quarter of Year 2024 and the First Half of Year 2024.....	23
5.1 Summary of Approved Investment Plan.....	25
5.2 Summary of Key Project Investment: Clean Fuel Project (CFP).....	25

Management's Discussion and Analysis (MD&A)
Thai Oil Public Company Limited and Subsidiaries
For the Fourth Quarter and Year 2023

1. Company and its Subsidiaries' Operating Results

Table 1: Summary of Consolidated Financial

(Million Baht)	Q4/23	Q3/23	+/(-)	Q4/22	+/(-)	2023	2022	+/(-)
Integrated Intake (kbd)	309	305	4	285	24	310	297	13
Gross Integrated Margin (GIM) ⁽¹⁾ (US\$/bbl)								
: <u>excluding</u> Stock Gain/(Loss)	8.6	13.6	(5.0)	11.1	(2.5)	10.0	13.4	(3.4)
: <u>including</u> Stock Gain/(Loss)	3.6	23.3	(19.7)	1.5	2.1	9.8	14.3	(4.5)

(Million Baht)	Q4/23	Q3/23	+/(-)	Q4/22	+/(-)	2023	2022	+/(-)
Sales Revenue	115,336	119,656	(4,320)	123,132	(7,796)	459,402	505,703	(46,301)
Net Realized Loss on Financial Instruments ⁽²⁾	(781)	(2,490)	1,709	369	(1,150)	(2,493)	(15,841)	13,348
EBITDA	3,681	18,973	(15,292)	2,398	1,283	35,453	37,187	(1,734)
Net Gain/(Loss) on Fair Value Measurement of Financial Instruments	1,700	(2,028)	3,728	(1,247)	2,947	(356)	(164)	(192)
Net Foreign Exchange Gain/(Loss) ⁽³⁾	1,175	(517)	1,692	2,652	(1,477)	213	(64)	277
Gain from disposal of investment in an associate	-	-	-	-	-	-	10,038	(10,038)
Gain from reclassification of investment	-	-	-	-	-	-	7,297	(7,297)
Finance Costs	(1,053)	(1,032)	(21)	(994)	(59)	(4,089)	(3,860)	(229)
Reversal of Income Tax (Expense)	(710)	(2,680)	1,970	108	(818)	(4,672)	(8,918)	4,246
Net Profit/(Loss)	2,944	10,828	(7,884)	147	2,797	19,443	32,668	(13,225)
Basic Earnings/(Loss) per Share (Baht)	1.32	4.85	(3.53)	0.07	1.25	8.70	15.63	(6.93)

Stock Gain/(Loss)	(5,178)	9,638	(14,816)	(9,178)	4,000	(808)	3,613	(4,421)
Reversal/ (Write-Down) on Crude and Petroleum Product Inventory ⁽⁴⁾	1,841	(1,773)	3,614	2,104	(263)	(125)	(10)	(115)

Exchange Rate (Baht: 1 US\$)	Q4/23	Q3/23	+/(-)	Q4/22	+/(-)	2023	2022	+/(-)
Average FX	35.83	35.34	0.49	36.50	(0.67)	34.97	35.23	(0.26)
Ending FX	34.39	36.72	(2.33)	34.73	(0.34)	34.39	34.73	(0.34)

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 Q4/23, Q3/23, Q4/22, 2023, and 2022 of Baht 806 million, Baht (379) million, Baht 1,671 million, Baht 485 million, and Baht (983) 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 Q4/23, compared with Q3/23, Thaioil and Subsidiaries reported a slight increase in integrated intakes from Q3/23 due to an incident of crude oil leakage at single buoy mooring (SBM-2) in September 2023. However, sales revenue was reported at Baht 115,336 million, a decrease of Baht 4,320 million following the reduced selling prices of products owing to the higher supply of many products. Moreover, we reported GIM excluding stock gain / (loss) of 8.6 US\$/bbl or an decrease of 5.0 US\$/bbl from the previous quarter, mainly due to decrease in almost every product spread over Dubai after several refineries resumed operations following maintenance

shutdowns. Nevertheless, aromatics market improved from both better PX and BZ spreads over ULG95 primarily due to increased demand for PX in textiles, winter clothing, and PET packaging sectors ahead of the New Year period. Similarly, lube base oil spread over fuel oil inclined due to increased demand for lube base oil after the rainy season and limited exports from Japan. Additionally, bitumen spread over fuel oil rose due to the reduced fuel oil price at the end of the year. However, the decreases in crude oil prices in Q4/23 from Q3/23 resulted from reduced oil demand due to the global economic slowdown, coupled with slower-than-expected growth in the Chinese economy. As a result, we reported a stock loss of Baht 5,178 million in Q4/23, compared with a stock gain of Baht 9,638 million in Q3/23. Thus, GIM including stock gain / (loss) of 3.6 US\$/bbl was reported in Q4/23, dropped by 19.7 US\$/bbl from Q3/23. However, there was a reversal on crude and petroleum product inventory of Baht 1,841 million in Q4/23, compared with a write-down on crude and petroleum product inventory of Baht 1,773 million in Q3/23. Including realized net loss from financial instrument of Baht 781 million including only derivative instruments for commodity hedging, we reported EBITDA of Baht 3,681 million, reduced by Baht 15,292 million from the previous quarter. In contrast, a gain on financial instruments of Baht 1,700 million in Q4/23 was booked, compared with a loss on financial instruments of Baht 2,028 million in Q3/23. Moreover, we reported a net gain from foreign exchange of Baht 1,175 million (Baht 806 million of which was from foreign exchange gain on foreign currency assets and liabilities), compared with a net loss from foreign exchange Baht 517 million in Q3/23. Offsetting with depreciation, finance cost, and tax expenses, we booked a net profit of Baht 2,944 million in Q4/23, or Baht 1.32 Baht per share, a decline of Baht 7,884 million from the last quarter.

In comparison to Q4/22, we reported higher integrated intakes because of planned major turnaround at its CDU-2 and other units totaling of 26 days in Q4/22. Nevertheless, in Q4/23, lower selling prices resulted in a decline of revenue from sales by Baht 7,796 million and we reported worsened GIM excluding stock gain/loss by 2.5 US\$/bbl. The main reason was the drop in jet/kero and gasoil spreads over Dubai after the refineries resumed their operations and Chinese aviation activities were smaller than expected. In addition, lube base oil spread over fuel oil decreased due to increased supply from the new lube base oil producer in the region in the early part of the year as well as bitumen spread over fuel oil dropped due to market pressure from increased market supply and economic uncertainty both regionally and domestically. However, PX spread over ULG95 increased due to the opening of China's market, along with increased demand for PET beverage packaging. In addition, BZ spread over ULG95 went up due to China's economic stimulus measures. Moreover, gross margin from surfactant business went up slightly. Nevertheless, a decrease in crude oil prices led to a stock loss of Baht 5,178 million, smaller loss by Baht 4,000 million than Q4/22 while we booked a lowered reversal on crude and petroleum product inventory of Baht 263 million than Q4/22. Including net realized loss from financial instrument including only commodity hedging, we reported better EBITDA of Baht 1,283 million than Q4/22. Furthermore, we booked a gain on financial instruments of Baht 1,700 million in Q4/23, compared with a loss on financial instruments of Baht 1,247 million in Q4/22. At the same time, we booked a lower net gain on foreign exchange of Baht 1,477 million. Offsetting with depreciation, finance cost and tax expense, we reported a higher net profit of Baht 2,797 million from the same period last year.

In 2023, compared with 2022, Thaioil and Subsidiaries generated revenue of Baht 459,402 million, a decrease of Baht 46,301 million. This decline was attributed to lower product prices, which were in line with lower crude oil prices. Additionally, there was a decrease in the spread of almost every refining product over Dubai due to the slowing global economy trend and increased supply. In addition, lube base oil spread over fuel oil dropped from higher supply as well as the gross margin of surfactant manufacturing business decreased because of lower domestic demand. However, PX spread over ULG95 expanded from higher PX demand than 2022 and bitumen spreads over fuel oil slightly expanded. Overall, GIM excluding stock gain / (loss) decreased by 3.4 US\$/bbl, amounting to 10.0 US\$/bbl. Additionally, in 2023, there was a stock loss of Baht 808 million, compared with a stock gain of Baht 3,613 million in 2022. On the other hand, there was a write-down on crude and petroleum product inventory of Baht 125 million, bigger loss than 2022 of Baht



Member of
Dow Jones
Sustainability Indices
Powered by the S&P Global CSA

Sustainability Award
Silver Class 2022
S&P Global

115 million than last year. Including realized net loss from financial instrument of Baht 2,493 million, smaller loss by Baht 13,348 million than the previous year including only derivative instruments for commodity hedging, we reported EBITDA of Baht 35,453 million, dropped by Baht 1,734 million. Moreover, we had a loss on financial instruments of Baht 356 million, but we reported a net gain from foreign exchange of Baht 213 million due to Thai Baht appreciation (Baht 485 million of which was from foreign exchange gain on foreign currency assets and liabilities). Moreover, in 2022, 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 19,443 million in 2023, a decline of Baht 13,225 million from the previous year.

2. Summary of Financial Result by Business

Table 2: Financial Result by Business

(Million Baht)

Sales Revenue	Q4/23	Q3/23	+ / (-)	Q4/22	+ / (-)	2023	2022	+ / (-)
Consolidated	115,336	119,656	(4,320)	123,132	(7,796)	459,402	505,703	(46,301)
Refinery	124,795	128,365	(3,570)	130,665	(5,870)	492,055	544,792	(52,737)
Aromatics and LAB ⁽¹⁾	20,848	20,121	727	20,485	363	78,975	88,938	(9,963)
Lube Base Oil	6,061	6,413	(352)	4,790	1,271	25,315	27,773	(2,458)
Power Generation	3,364	2,906	458	3,327	37	12,788	11,716	1,072
Solvent and Chemicals ⁽²⁾	5,309	5,626	(317)	5,848	(539)	19,381	22,585	(3,204)
Ethanol ⁽³⁾	569	433	136	514	55	1,879	1,796	83
Others ⁽⁴⁾	2,184	1,698	486	1,745	439	7,068	6,647	421
EBITDA	Q4/23	Q3/23	+ / (-)	Q4/22	+ / (-)	2023	2022	+ / (-)
Consolidated	3,681	18,973	(15,292)	2,398	1,283	35,453	37,187	(1,734)
Refinery	1,449	17,013	(15,564)	846	603	26,288	30,139	(3,851)
Aromatics and LAB	895	582	313	598	297	2,941	917	2,024
Lube Base Oil	398	367	31	637	(239)	2,678	3,481	(803)
Power Generation	836	769	67	567	269	3,029	2,140	889
Solvent and Chemicals	194	305	(111)	141	53	887	1,043	(156)
Olefins	2	(2)	4	(1)	3	(5)	(7)	2
Ethanol	10	30	(20)	77	(67)	87	206	(119)
Others	52	68	(16)	(282)	334	216	(121)	337
Net Profit / (Loss)	Q4/23	Q3/23	+ / (-)	Q4/22	+ / (-)	2023	2022	+ / (-)
Consolidated	2,944	10,828	(7,884)	147	2,797	19,443	32,668	(13,225)
Refinery	2,030	9,814	(7,784)	279	1,751	14,607	30,887	(16,280)
Aromatics and LAB	227	104	123	(444)	671	873	(1,183)	2,056
Lube Base Oil	268	254	14	471	(203)	1,984	2,651	(667)
Power Generation ⁽⁵⁾	519	567	(48)	359	160	1,907	1,456	451
Solvent and Chemicals	(29)	177	(206)	(59)	30	403	525	(122)
Olefins ⁽⁶⁾	(68)	(116)	48	(201)	133	(200)	(813)	613
Ethanol	(24)	(9)	(15)	15	(39)	(54)	18	(72)
Others ⁽⁷⁾	132	115	17	(123)	255	440	183	257

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 Saphthip 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. Thaioil booked dividend income of Baht 85 million both in Q1/23 and Q3/23, led to be equal to Baht 170 million in 2023
- (6) PT TOP Investment Indonesia holds 15% shares in PT Chandra Asri Petrochemical Tbk, which is a major integrated petrochemical company in Indonesia. In addition, on 29 December 2023, at the extraordinary meeting of shareholders of PT Chandra Asri Petrochemical Tbk, it was approved to change the company's name to "PT Chandra Asri Pacific Tbk", with the name change registration was approved on January 3, 2024.
- (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.

2.1 Market Condition and Financial Result of Refinery Business

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

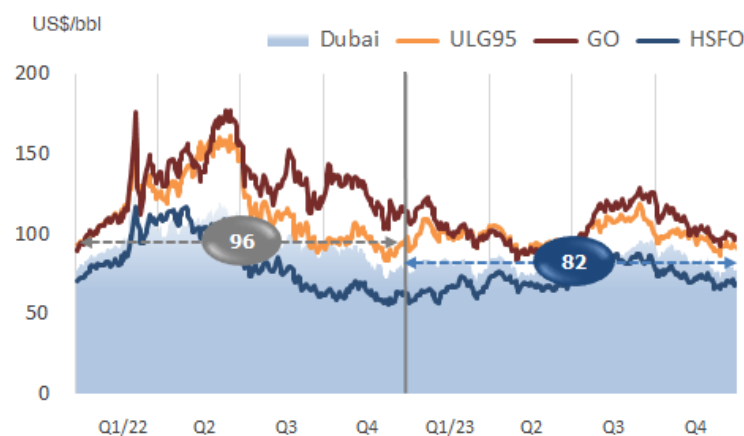
Average Prices (US\$/bbl)	Q4/23	Q3/23	+/(–)	Q4/22	+/(–)	2023	2022	+/(–)
Dubai Crude Oil ⁽¹⁾	83.6	86.7	(3.1)	84.8	(1.2)	82.1	96.3	(14.2)
Unleaded Gasoline (ULG95)	96.1	105.6	(9.5)	94.2	1.9	98.8	115.2	(16.4)
Jet/Kero	107.2	112.8	(5.6)	118.3	(11.1)	104.6	126.6	(22.0)
Gasoil (GO)	104.7	113.6	(8.9)	124.2	(19.5)	104.0	130.6	(26.6)
Fuel Oil (HSFO)	72.5	81.4	(8.9)	62.4	10.1	71.8	82.3	(10.5)
Crude Premiums (US\$/bbl)	Q4/23	Q3/23	+/(–)	Q4/22	+/(–)	2023	2022	+/(–)
Murban ⁽²⁾	3.3	1.8	1.5	7.0	(3.7)	3.2	7.2	(4.0)
Arab Light ⁽³⁾	3.9	3.2	0.7	5.7	(1.8)	3.0	5.8	(2.8)
Spreads over Dubai (US\$/bbl)	Q4/23	Q3/23	+/(–)	Q4/22	+/(–)	2023	2022	+/(–)
Unleaded Gasoline (ULG95)	12.5	18.9	(6.4)	9.4	3.1	16.7	18.8	(2.1)
Jet/Kero	23.6	26.1	(2.5)	33.5	(9.9)	22.5	30.3	(7.8)
Gasoil (GO)	21.1	26.9	(5.8)	39.3	(18.2)	21.9	34.3	(12.4)
Fuel Oil (HSFO)	(11.0)	(5.4)	(5.6)	(22.5)	11.5	(10.3)	(14.1)	3.8
Very Low Sulfur Fuel Oil (VLSFO)	6.3	1.3	5.0	6.5	(0.2)	4.1	13.0	(8.9)

Remark (1) Closing Dubai crude oil price at the end of Q4/23, Q3/23, and Q4/22 were calculated from average Dubai prices in the last month in the respective period. The prices were 77.3 US\$/bbl, 93.3 US\$/bbl, and 77.2 US\$/bbl, respectively.

(2) Murban crude premium (compared with market price) 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 Q4/23 fell from Q3/23 and Q4/22 as well as that in 2023 decreased from 2022 due to a drop in oil demand following economic slowdown since Fed and ECB maintained their policy rates at 5.25 – 5.50% and 4.00 – 4.75%, respectively. Moreover, Chinese real estate sector, which accounted to roughly 30% of Chinese economy, was severely hit. However, crude oil price in Q4/23 was supported by OPEC+ oil production cut until the end of 2023 and unrest in the Middle East; especially Israel-Hamas war,

Murban spread over Dubai and Arab light spread over Dubai and Oman in Q4/23 increased from Q3/23 tracking tight supply in the Middle East after OPEC+ agreed voluntary oil production cuts by a total of 2 million barrels per day. However, the spreads in Q4/23 and 2023 was lower than those of Q4/22 and 2022, respectively, since many refiners reduced oil imports in response to sluggish oil demand tracking economic slowdown.

Gasoline spread over Dubai in Q4/23 and 2023 shrank from those of Q3/23 and 2022, respectively, since many refineries resumed their operations after emergency shutdowns for maintenance in Q3/23 particularly in Taiwan and Japan, resulting in higher regional

supply. Furthermore, the market was pressured by the end of U.S. driving season. On the other hand, the spread in Q4/23 improved from Q4/22 because Chinese export was at low level due to unannounced petroleum export quota for 2024. Gasoil spread over Dubai in Q4/23 reduced from Q3/23 and Q4/22 as well as that in 2023 was lower than 2022. This was because 1) many refineries resumed their operations after shutdowns for maintenance 2) Russian supply was traded in the market, and 3) U.S. and China Purchasing Managers' Index (PMI) was lower which suppressed gasoil demand. Jet/kero spread over Dubai in Q4/23 reduced from Q3/23 and Q4/22 as well as that in 2023 was lower than 2022 since China flights was lower than anticipated following economic problems. High sulfur fuel oil spread over Dubai in Q4/23 increase from Q3/23 and Q4/22 as well as that in 2023 was higher than 2022 because of lower supply since OPEC+ reduced its oil production. Nevertheless, the spread in Q4/23 dropped from Q3/23 due to an increase in Venezuela oil as it was temporarily not sanctioned until April 2024. Low sulfur fuel oil in Q4/23 and 2023 shrank from Q4/22 and 2022, respectively. This was because of oil arbitrage to Asia and Russian oil exporting to Asian resulting in higher supply. However, the spread in Q4/23 increased from Q3/23 since a new Kuwait refinery (Al-Zour) could not be able to operate at full capacity

Table 4: Financial Result of Refinery Business

	Q4/23	Q3/23	+ / (-)	Q4/22	+ / (-)	2023	2022	+ / (-)
Throughput ⁽¹⁾ (%)	111%	110%	1%	103%	8%	112%	107%	5%
Intake (kbd)	306	302	4	283	23	307	294	13
Gross Refining Margin (GRM) (US\$/bbl)								
: <u>excluding</u> Stock Gain/(Loss)	7.2	12.4	(5.2)	9.3	(2.1)	8.5	12.0	(3.5)
: <u>including</u> Stock Gain/(Loss)	2.1	22.2	(20.1)	(0.3)	2.4	8.3	13.0	(4.7)

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

In Q4/23, Thaioil refinery reported falls in EBITDA and net profit from the prior quarter. This was because of a reduction in GRM including stock gain/loss tracking lower petroleum product spreads and lower crude oil price.

In Q4/23, Thai Oil Refinery reported utilization rate of 111% which slightly increased from Q3/23. The refinery booked sales revenue of Baht 124,795 million, or a decrease of Baht 3,570 million following lower product selling prices due to a rise in supply in spite of higher sales volume by 3%. Sales volume comprised of 84% domestic, 13% Indochina, and 3% export. The company reported GRM excluding stock gain/loss of 7.2 US\$/bbl, a drop of 5.2 US\$/bbl from the previous quarter mainly due to lower almost all petroleum product spreads over Dubai since refineries resumed full operations and Chinese flights were lower than expected. Additionally, a dip in crude oil price resulted in stock loss of 5.1 US\$/bbl or Baht 5,178 million, compared with stock gain of Baht 9,638 million in Q3/23. However, there was a reversal of on crude and product inventory of Baht 1,841 million, compared to a write-down of this transaction of Baht 1,773 million in the previous quarter. Altogether with net realized loss on financial instruments of Baht 822 million, improved by Baht 1,767 million, the company booked EBITDA of Baht 1,449 million, a fall of Baht 15,564 million from the previous quarter. Nevertheless, there was a gain from fair value measurement on financial instruments of Baht 1,606 million, compared with a loss of Baht 1,915 million in Q3/23, which was mainly attributable to commodity derivatives. Furthermore, net foreign exchange gain of Baht 1,524 million was also booked during the period (mainly from foreign currency denominated assets and liabilities worth Baht 1,663 million), compared with net foreign exchange loss of Baht 628 million in the prior quarter. Offsetting with

Compared 2023 with 2022, the refinery posted decreases in EBITDA and net profit since GRM including stock gain/loss was dipped and there was gain on GPSC reclassification and disposal in 2022.

depreciation, finance cost, and tax expenses, net profit of Baht 2,030 million was posted, a decrease of Baht 7,784 million from Q3/23 (net profit with dividend income in Q4/23 was Baht 2,109 million).

Compared to Q4/22, the company reported an increase in utilization rate by 8% because of planned major turnaround at its CDU-2 and other units totaling of 26 days in Q4/22. The refinery booked a drop in sales revenue of Baht 5,870 million following lower product selling prices. However, GRM excluding stock gain/loss went down by 2.1 US\$/bbl from drops in jet/kero and gasoil spreads over Dubai after the refineries resumed their operations and Chinese flights were lower than expected. Moreover, a decrease in crude oil price led to a stock loss of Baht 5,178 million which was less than that of Q4/22 by Baht 4,000 million. Altogether with net realized loss on financial instruments of Baht 822 million, compared with net realized gain of this transaction of Baht 294 million in the same period last year, EBITDA was increased by Baht 603 million. Nevertheless, the refinery reported a gain from fair value measurement on financial instruments of Baht 1,606 million, compared with a loss of Baht 1,344 million in Q4/22, mainly owing to commodity derivatives. However, lower net foreign exchange gain of Baht 1,485 million was also booked during the period. Offsetting with depreciation, finance cost and tax expenses, greater net profit of Baht 1,751 million was reported.

Compared 2023 to 2022, the company reported a rise in utilization rate while selling volumes reached a plateau. With considerable declines in average selling prices, sales revenue went down by Baht 52,737 million, totaling to Baht 492,055 million. GRM excluding stock gain / loss of 8.5 US\$/bbl was booked, this represented a decline of 3.5 US\$/bbl. Furthermore, stock loss of Baht 808 million was reported during the period, compared with stock gain of Baht 3,613 million in 2022. Altogether with net realized loss on financial instruments of Baht 2,650 million, a smaller loss by Bath 13,347 million, EBITDA went down by Baht 3,851 million, totaling to Baht 26,288 million. Furthermore, the company booked a loss from fair value measurement on financial instruments of Baht 224 million, a slight increase from that of 2022. On the other hand, There was a net foreign exchange gain of Baht 254 million, compared with a net foreign exchange loss of Baht 24 million in the same period last year. Nevertheless, 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 in 2022. Offsetting with depreciation, finance cost and tax expenses, net profit of Baht 14,607 million was realized, or Baht 16,280 million lower from the same period last year (net profit with dividend income in 2023 was Baht 21,513 million).

2.2 Market Condition and Financial Result of Aromatics Business

Table 5: Average Prices and Spreads of Aromatics Products

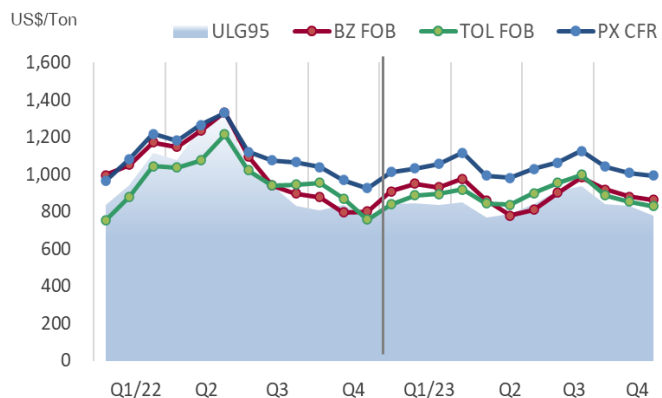
Average Prices (US\$/Ton)	Q4/23	Q3/23	+/(-)	Q4/22	+/(-)	2023	2022	+/(-)
Paraxylene (PX) ⁽¹⁾	1,014	1,073	(59)	979	35	1,038	1,103	(65)
Benzene (BZ) ⁽²⁾	888	899	(11)	825	63	898	1,029	(131)
Toluene (TL) ⁽²⁾	857	951	(94)	861	(4)	887	958	(71)

Spreads over ULG95 (US\$/Ton)	Q4/23	Q3/23	+/(-)	Q4/22	+/(-)	2023	2022	+/(-)
Paraxylene (PX)	198	175	23	178	20	198	124	74
Benzene (BZ)	71	1	70	24	47	58	50	8
Toluene (TL)	40	53	(13)	60	(20)	48	(21)	69

Remark (1) Based on CFR Taiwan price

(2) Based on FOB Korea price

Graph 2: Prices of Aromatics Products and ULG95



In Q4/23 and 2023, PX price dropped from Q3/23 and 2022, respectively following the decrease in crude oil prices due to less demand from economic slowdown. However, PX price in Q4/23 increased from Q4/22 after China's city reopening resulted in higher trade of PX in the market. For PX spread over ULG95, in Q4/23 and 2023 improved from Q3/23, Q4/22 and 2022 because of higher demand for PX from textile industry, and bottled packaging (PET) in festive season, along with emergency shutdowns in China in the late year.

BZ price in Q4/23 and 2023 was lower than Q3/23 and 2022, respectively, in line with the decrease in crude oil prices from global less demand. However, BZ price in Q4/23 increased from Q4/22 after China's reopening resulted in higher trade of BZ in the market. For BZ spread over ULG95, in Q4/23 and 2023 improved from Q3/23, Q4/22 and 2022 due to China's stimulus package resulted in improved demand for appliances and the automotive industry. In addition, the conflict in the Red Sea caused a delay in the shipments of benzene.

TL price in Q4/23 dropped from Q3/23 and Q4/22. Likewise, TL price in 2023 went down from 2022, following lower oil prices from global economic slowdown. For TL, its spread over ULG95 in Q4/23 declined from Q3/23 and Q4/22 respectively due to lower demand for TL as an additive for gasoline production after ending of driving season, along with higher inventory of TL in China. However, TL spread over ULG95 in 2023 rose from 2022 after aromatics market improved. As a result, additional TL was used for the production of PX and BZ.

Table 6: Financial Result of TPX

	Q4/23	Q3/23	+ / (-)	Q4/22	+ / (-)	2023	2022	+ / (-)
Aromatics Production Rate ⁽¹⁾ (%)	79%	74%	5%	67%	12%	73%	71%	2%
Aromatics Production (kTon)	167	156	11	141	26	609	596	13
Product-to-feed Margin ⁽²⁾ (US\$/Ton)	55	31	24	45	10	50	12	38

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 Q4/23, TPX had higher product-to-feed margin from increased aromatics spreads due to higher demand in festive season. As a result, TPX had better EBITDA from the previous quarter.

For 2023, TPX had better product-to-feed margin from improved aromatic spreads due to lower ULG95 price after concern over Russia and Ukraine tension subsided, as a result, TPX performance improved.

In Q4/23, compared with Q3/23, Thai Paraxylene Co., Ltd. (TPX) had an aromatics production rate of 79%, increased by 5%. TPX had sales revenue of Baht 14,111 million, decreased by Baht 121 million due to a decrease in average selling prices. However, PX and BZ spreads over ULG95 improved, resulted in a higher product-to-feed margin of 24 US\$/ton from the previous quarter. In addition, TPX had a net realized gain on financial instruments of Baht 41 million, decreased by Baht 56 million from the previous quarter. Thus, TPX recorded an EBITDA of Baht 430 million, compared with EBITDA of Baht 156 million in the previous quarter. Besides, in this quarter, net loss on fair value measurement of financial instruments of Baht 0.5 million was recorded, compared with loss on fair value measurement of financial instruments of Baht 47 million in Q3/23. Additionally, TPX had a net foreign exchange loss of Baht 63 million, compared with net foreign exchange gain 20 million in previous quarter. Offsetting with depreciation, finance costs and income tax expense, In Q4/23, TPX posted net profit of Baht 143 million, compared to a loss of Baht 50 million from the former period.

Compared with Q4/22, TPX aromatics production rate increased by 12%. TPX sales revenue increased by Baht 1,321 million due to higher total sales volume and average selling prices. TPX reported higher product-to-feed margin of 10 US\$/ton due to higher PX and BZ spreads over ULG95. Combining with net realized gain on financial instruments, TPX had an EBITDA of Baht 430 million, which was higher gain by Baht 261 million from Q4/22. Besides, TPX had net loss on fair value measurement of financial instruments of Baht 0.5 million in Q4/23, compared with gain on fair value measurement of financial instruments of Baht 13 million in Q4/22, also TPX had a net foreign exchange loss of Baht 63 million, compared with net foreign exchange loss 86 million in Q4/22. Therefore, TPX posted a net profit of Baht 143 million in Q4/23, compared to a loss of Baht 650 million from the same period last year.

Compared 2023 with 2022, TPX had sales revenue of Baht 54,007 million, went down by Baht 5,735 million due to a drop in average selling prices. However, TPX reported an increase in product-to-feed margin of 38 US\$/ton due to better aromatics spreads from lower ULG95 price after concerns about Russia-Ukraine tensions have lessened. Combining with net realized gain on financial instruments of Baht 155 million, TPX posted EBITDA of Baht 1,284 million, compared with a negative EBITDA of Baht 1,359 million in 2022. In addition, TPX had net gain on fair value measurement of financial instruments of Baht 7 million, compared with net loss on fair value measurement of financial instruments of Baht 56 million in previous year, but had a net foreign exchange loss of Baht 33

million, compared to a net in foreign exchange gain of Baht 17 million in previous year. Therefore, TPX recorded net profit of Baht 401 million, compared to a loss of Baht 2,411 million in the same period last year.

In Q4/23, aromatics group (TPX holds 75% shares of LABIX) had consolidated sales revenue of Baht 20,848 million, consolidated EBITDA of Baht 895 million and consolidated net profit of Baht 227 million.

In 2023, aromatics group had consolidated sales revenue of Baht 78,975 million, consolidated EBITDA of Baht 2,941 million and consolidated net loss of Baht 873 million.

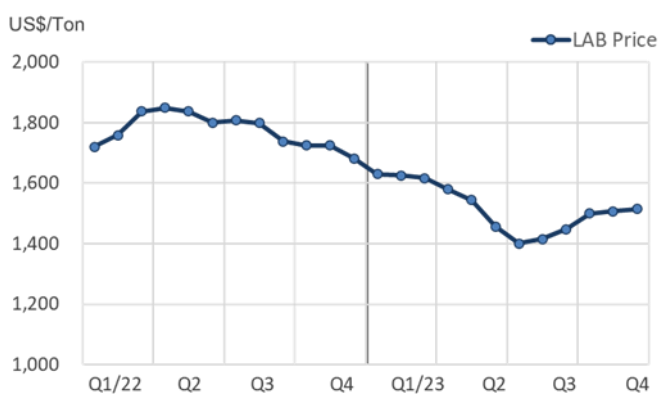
2.3 Market Condition and Financial Result of an Intermediate for the Production of Surfactants Business

Table 7: Average Price of LAB

Average Price (US\$/Ton)	Q4/23	Q3/23	+/(-)	Q4/22	+/(-)	2023	2022	+/(-)
Linear Alkylbenzene (LAB) ⁽¹⁾	1,497	1,421	76	1,711	(214)	1,518	1,773	(255)

Remark (1) Based on ICIS price

Graph 3: Price of LAB



In Q4/23, LAB price rose from Q3/23 as it was supported from higher demand for cleaning products from India and Southeast Asia. In addition, supply decreased from the previous quarter owing to plant maintenances in China, India, Taiwan and South Korea. Thus, LAB spreads over jet and benzene increased in Q4/23 compared with Q3/23. However, LAB price in Q4/23 and 2023 increased from Q3/22 and 2022, respectively after jet fuel and benzene prices decreased following crude oil prices and the global economic slowdown trend from a high level of interest rate.

As a result, LAB spreads over jet and benzene in Q4/23 and 2023 dropped from Q4/22 and 2022.

Table 8: LAB Production

	Q4/23	Q3/23	+ / (-)	Q4/22	+ / (-)	2023	2022	+ / (-)
LAB Production Rate ⁽¹⁾ (%)	123%	123%	-	117%	6%	123%	118%	5%
LAB Production (kTon)	37	37	-	35	2	148	142	6

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

In Q4/23, with a slightly decreasing in gross margin, LABIX had a drop in performance compared to the prior quarter.

In 2023, LABIX had a dropped on gross margin following pressure on lower domestic demand and higher supply in the market. LABIX then had a lower performance.

In Q4/23, LABIX Co., Ltd. (LABIX) had LAB production rate at 123% and LAB sales volume was the same as Q3/23. However, an increase in LAB price tracking feedstock prices resulted in sales revenue was Baht 7,207 million, increased by Baht 921 million and EBITDA of Baht 465 million, increased by Baht 39 million. In addition, LABIX had a net foreign exchange loss of Baht 81 million, compared with net foreign gain of Baht 21 million in Q3/23. Offsetting with depreciation, finance costs and income tax expenses, LABIX posted net profit of Baht 112 million, a decreased by Baht 93 million from the prior quarter.

Compared with Q4/22, LABIX had a higher LAB production rate and sales volume by 6% and 14% respectively from capacity expansion in Q2/23. However, a decrease in LAB price tracking feedstock prices resulted in sales revenue decreased by Baht 872 million. While LABIX had a slightly higher gross margin due to an increase in sales volume from capacity expansion, LABIX then had a slightly higher EBITDA by Baht 36 million. Meanwhile, LABIX had a lower net foreign exchange loss of Baht 3 million compared with Q4/22. Offsetting with depreciation, finance costs and income tax expenses which LABIX realized tax expense of Baht 28 million in Q4/23 compared with the realized revenue from deferred tax asset of Baht 94 million in Q4/22, LABIX then reported a lower net profit by Baht 162 million from the same period of the previous year.

Compared 2023 with 2022, LABIX had a higher LAB production rate volume by 5% from capacity expansion in Q2/23. The sales revenue was Baht 26,615 million, decreased by Baht 4,297 million following the decrease in LAB price tracking feedstock prices. Furthermore, a decrease in gross margin from the drop in domestic demand while there was more supply and sales resumption in the LAB market, LABIX then recorded lower in EBITDA of Baht 620 million. Meanwhile, LABIX had a net foreign exchange loss of Baht 33 million, increased by Baht 6 million compared to 2022. Offsetting with depreciation, finance costs and income tax, LABIX then reported a lower net profit by Baht 1,008 million from the same period of the previous year.

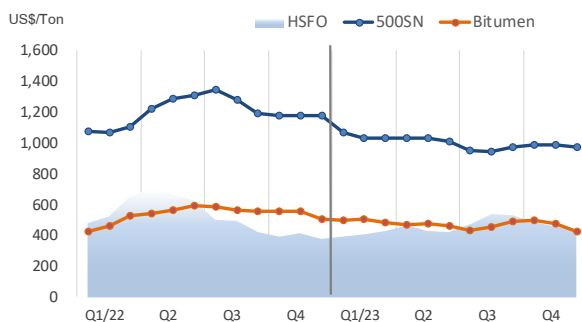
2.4 Market Condition and Financial Result of Lube Base Oil Business

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

Average Prices (US\$/Ton)			Q4/23	Q3/23	+/(-)	Q4/22	+/(-)	2023	2022	+/(-)
500SN ⁽¹⁾			982	959	23	1,176	(194)	1,003	1,199	(196)
Bitumen ⁽²⁾			466	457	9	542	(76)	472	538	(66)
Spreads over HSFO (US\$/Ton)			Q4/23	Q3/23	+/(-)	Q4/22	+/(-)	2023	2022	+/(-)
500SN			521	442	79	780	(259)	548	677	(129)
Bitumen			6	(60)	66	146	(140)	17	16	1

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



In Q4/23, lube base oil and its spread over fuel oil price rose from the last quarter from increasing demands post rainy season. Additionally, limited supply was noted in the market after a permanent shutdown of a plant in Japan. However, with ongoing economic uncertainty and new supply from a new base oil plant in China in the early 2023, 500SN price and its spread declined compared to Q4/22. A similar decline was observed when compared 2023 with 2022.

Bitumen price and its spread over fuel oil in Q4/23 improved slightly from Q3/23 as road construction and improvement activities resumed at the end of the year. However, the market was still pressured by Chinese economic slowdown, and limited fiscal budget for road improvement. Moreover, price in the Middle East and South Korea also pressured our benchmark price in Singapore. On the other hand, bitumen price and spread in Q4/23 declined compared with Q4/22 from ongoing increases in supply as refineries in the region were raising their output. Similarly, economic uncertainty domestically and regionally pressured demand near end of the year. As such, bitumen price declined in 2023 compared with 2022 while bitumen spread did not move much as fuel oil price also came down.

Table 10: Financial Result of TLB

	Q4/23	Q3/23	+/-	Q4/22	+/-	2023	2022	+/(-)
Base Oil Production Rate ⁽¹⁾ (%)	76%	79%	(3%)	43%	33%	79%	77%	2%
Base Oil Production (kTon)	51	53	(2)	29	22	211	205	6
Product-to-feed Margin ⁽²⁾ (US\$/Ton)	97	85	12	184	(87)	118	154	(36)

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

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

In Q4/23 TLB reported lower base oil production rate following lower intakes due to group optimization. However, rising spreads resulted in higher P2F, EBITDA and net profit compared to the previous quarter.

In 2023, TLB reported lower sales despite having higher sales volume. With lower spreads following higher supply, TLB reported lower EBITDA and net profit.

In Q4/23 Thai Lube Base Plc (TLB) reported base oil production rate of 76% and booked sales of Baht 6,061 million, or a decline of Baht 352 million from the previous quarter as TLB had lower intake from group optimization aiming at maximizing group profit. However, with higher average selling prices, product spreads rose and sent TLB Product-to-feed Margin up by \$12/ton to \$97/ton. TLB showed EBITDA of Baht 398 million, or an increase of Baht 31 million. Offsetting with depreciation, finance cost and taxes, TLB booked net profit of Baht 268 million, or a rise of Baht 14 million from the previous quarter.

Compared with Q4/22, TLB had higher sales of Baht 1,271 million as sales volume increased from the same period last year when there was a planned maintenance at lube refinery. With increasing supply, product spreads declined and sent Product-to-feed Margin down by US\$87 per ton. Likewise, EBITDA fell by Baht 239 million and net profit declined by Baht 203 million from the same period last year.

In 2023, TLB reported sales revenue of Baht 25,315 million, which represented a decline of Baht 2,458 million from last year mainly due to lower product selling price. With lower base oil spread, TLB's Product-to-feed Margin fell by US\$36 per ton and sent EBITDA down by Baht 803 million, totaling to Baht 2,678 million. Thus, TLB reported net profit of Baht 1,984 million, or a decline of Baht 667 million from last year.

2.5 Financial Result of Power Generation Business

Table 11: Sales Volume from Power Generation Business

TOP SPP	Q4/23	Q3/23	+ / (-)	Q4/22	+ / (-)	2023	2022	+ / (-)
Electricity Dispatched (GWh)	553	570	(17)	397	156	2,063	1,559	504
Steam Exported (kTon)	853	828	25	554	299	3,138	2,249	889

In Q4/23, TOP SPP had a rise in net profit comparing to Q3/23 due to an increase in steam sales volume.

In 2023, TOP SPP had an increase in net profit from TOP SPP expansion after commercial operation (COD).

In Q4/23, TOP SPP Co., Ltd. (TOP SPP) had sales revenue of Baht 3,364 million, which increased by Baht 458 million due to an increase in steam sales volume following customers' demand and rises in average selling prices following higher natural gas price. As a result, TOP SPP reported EBITDA of Baht 836 million, increased by Baht 67 million. After offsetting with depreciation, finance costs and income tax expenses, TOP SPP recorded a net profit of Baht 519 million, increased by Baht 37 million.

Compared Q4/23 with Q4/22, TOP SPP sales revenue increased by Baht 37 million mainly from a rise in sales volume of electricity and steam from commercial operation of TOP Expansion since 1st April 2023 resulting in enhanced electricity efficiency while there was a decrease in average selling prices following lower natural gas price. This led to a rise in EBITDA of Baht 269 million. Offsetting depreciation, finance costs and income tax expense, TOP SPP net profit increased by Baht 160 million from the same period of last year.

Compared 2023 with 2022, TOP SPP booked sales revenue of Baht 12,788 million, reflecting an increase of Baht 1,072 million mainly due to a rise in sales volume from commercial operation of TOP Expansion. This caused TOP SPP to post EBITDA of Baht 3,029 million, or an increase of Baht 889 million. In 2023, TOP SPP recorded a loss of Baht 202 million due to unwinding IRS and financing costs related to financing activity. Offsetting depreciation and tax expenses, TOP SPP reported net profit of Baht 1,737 million, which increases by Baht 395 million from the same period of last year. Besides, Thaioil and Subsidiaries reduced GPSC's shareholding from 20.78% to 10.0%. Hence Thaioil and Subsidiaries did not book a share of profit from GPSC compared with the same period of last year. Furthermore, dividend income from GPSCs of Baht 85 million in Q1/23 and interim dividend income of Baht 85 million were booked.

2.6 Financial Result of Solvent and Chemicals Business

Table 12: Financial Result of Thaioil Solvent (TOS)

	Q4/23	Q3/23	+ / (-)	Q4/22	+ / (-)	2023	2022	+ / (-)
Solvent Utilization Rate ⁽¹⁾ (%)	65%	83%	(18%)	68%	(3%)	73%	77%	(4%)
Solvent Production ⁽¹⁾ (kTon)	35	44	(9)	36	(1)	156	165	(9)
Solvent and Chemicals Sales Volume (kTon)	152	162	(11)	149	3	573	568	5

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 kTon to 214 kTon since April 2023

In Q4/23, Business group reported lower sales revenue from sales volume following demand. This led to EBITDA decreased following the lower gross profit margin and recorded net loss in this quarter.

For 2023, Sales revenue reduced from selling price decreased tracking crude oil price. This led to EBITDA and net profit lower from the same period of the previous year.

In Q4/23, Solvent and Chemicals Product Business reported 65% solvent utilization rate, decreased by 18% from Q3/23. Solvent and chemicals sales volume decreased by approximately 11 kTon from the prior quarter. This led business group to record sales revenue of Baht 5,309 million, decreased by Baht 317 million following demand of solvent and chemical. Therefore, business group reported EBITDA of Baht 194 million, decreased by Baht 111 million because of the lower gross profit margin. Moreover, business group recorded net foreign exchange loss and derivative of Baht 125 million, decreased by Baht 147 million from the prior quarter. Offsetting with depreciation of Baht 66 million, finance costs of Baht 45 million, income tax expense of Baht 2 million, and non-controlling interests. In Q4/23, business group posted net loss of Baht 29 million, compared with net profit of Baht 177 million in the prior quarter.

Compared Q4/23 with Q4/22, Business group's utilization rate decreased by 3% from the same period of prior year, sales volume increased by approximately 3 kTon but the average solvent and chemicals selling price per unit decreased tracking crude oil price. As a result, Business group had sales revenue decrease by Baht 539 million. However, Business group posted an increase in EBITDA of Baht 52 million due to higher gross profit margin. Business group recorded lower net foreign exchange loss and derivative by Baht 19 million than Q4/22. Offsetting with depreciation, finance costs, income tax expense and non-controlling interests, Business group, in Q4/23, recorded a decrease in net loss of Baht 30 million from the same period last year.

For 2023, compared with 2022, Business group had a 73% solvent utilization rate and sales volume increased by approximately 5 kTon. The lower average solvent and chemicals selling price per unit tracking crude oil price. This led business group to record sales revenue of Baht 19,381 million, decreased by Baht 3,204 million. Business group reported EBITDA of Baht 887 million, reduced by Baht 155 million. In 2023, business group had net foreign exchange gain and derivative of Baht 29 million which rose by Baht 74 million from 2022. Offsetting with depreciation, finance costs, income tax expense, and non-controlling interests. In 2023, business group posted net profit of Baht 403 million, decreased by Baht 122 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)	Q4/23	Q3/23	+/(-)	Q4/22	+/(-)	2023	2022	+/(-)
HDPE – Naphtha MOPJ ⁽¹⁾	363	384	(21)	361	2	394	418	(24)
LLDPE – Naphtha MOPJ ⁽¹⁾	316	343	(27)	326	(10)	364	423	(59)
PP – Naphtha MOPJ ⁽¹⁾	291	305	(14)	302	(11)	338	396	(58)

Remark: (1) Based on ICIS price

In olefin market, which pressured by surplus supply from China, CAP implemented strategies to optimize operation and manage working capital. As a result, TII realized share of loss in CAP in Q4/23 lower than previous quarter.

The performance of 2023 improved compared to 2022 because of lower production costs and the acquisition of an electric power company that created opportunities to increase revenue in the future.

The olefin market in Q4/23 was still in a downward trend from Q3/23. This is mainly due to the release of products to reduce inventory level from suppliers before the end of the year and supply from China that pressured the market. Meanwhile, demand from consumers remained weak due to concerns about the economic slowdown. As a result, high-density polyethylene (HDPE) spread over Naphtha decreased to 363 \$/ton, linear low-density polyethylene (LLDPE) spread over Naphtha was at 316 \$/ton and the polypropylene (PP) spread over naphtha decreased to 291 \$/ton. However, CAP implemented strategies to optimize operation and manage working capital which can effectively manage operating expenses. As a result, in Q4/23 TII realized a decreased share of loss in CAP and when combined with TII's operating expenses, TII reported a net loss of Baht 68 million, a loss decreased by Baht 48 million from Q3/23.

Although in Q4/23 the olefin spreads were pressured from weak market conditions, CAP increased production capacity and sales volume compared to Q4/22 to meet the increasing customer demand. As a result, in Q4/23 TII reported a net loss of Baht 68 million, a loss decreased by Baht 133 million from Q4/22.

For the performance in 2023, TII reported a net loss of Baht 200 million, a loss decreased by Baht 613 million from 2022. This was due to the lower production costs in 2023 while demand in the petrochemical market increased from the opening of China at the beginning of the year. As a result, CAP increased production capacity and sales volume. In addition, the acquisition of an electric power company at the beginning of the year improved CAP's performance in 2023.

2.8 Financial Result of Ethanol Business

Table 14: Utilization Rate of TET

	Q4/23	Q3/23	+ / (-)	Q4/22	+ / (-)	2023	2022	+ / (-)
Ethanol Utilization Rate (%)								
- Saphthip	101%	98%	3%	106%	(5)%	93%	101%	(8)%

In Q4/23, TET recorded higher sales revenue from increased in sale volume and selling price of ethanol from Saphthip. However, rising feedstock cost led to a decrease in EBITDA and consolidated net profit comparing with in Q3/23.

For the year 2023, TET reported higher sales revenue from higher selling price of ethanol. However, with higher feedstock costs, TET had lower gross profit margin, EBITDA, and net profit from the same period of the previous year.

In Q4/23, Thaioil Ethanol Co., Ltd. (TET) reported consolidated sales revenue from Saphthip Co., Ltd. (TET holds 50% shares) of Baht 569 million, rose by Baht 136 million from the prior period mainly came from higher sales volumes. Likewise, utilization rate went up to 101%, increased by 3% as there was a maintenance shutdown in Q4/23 which was lower than this quarter and ethanol price went up. However, a rise in feedstock cost and operating expense were higher than previous quarter led to TET reported EBITDA of Baht 10 million, decreased by Baht 20 million. TET reported consolidated net loss of Baht 24 million compared with consolidated net loss of Baht 9 million in the previous quarter.

In comparison with Q4/22, TET had a rise in consolidated sales revenue from Saphthip Co., Ltd., of Baht 55 million from an increase in ethanol selling price while rising feedstock cost this led to EBITDA decreased by Bath 67 million and TET reported higher net loss by Baht 39 million from the same period of last year.

Compared 2023 with 2022, TET recorded higher consolidated sales revenue of Baht 1,879 million, which increased by Baht 83 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 lower sales volumes due to lower demand in E85 and E20 led to TET reported EBITDA of Baht 87 million, decreased by Baht 119 million. This led to TET consolidated net loss of Baht 54 million, or higher loss of Baht 72 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)	31 December 2023	31 December 2022	+ / (-)	+ / (-) %
Assets				
Cash, cash equivalents and short-term investments ⁽¹⁾	34,376	43,919	(9,543)	(22%)
Other current assets	90,995	109,909	(18,914)	(17%)
Non-current assets	294,621	290,753	3,869	1%
Total assets	419,993	444,581	(24,588)	(6%)
Liabilities				
Current liabilities ⁽²⁾	63,440	83,471	(20,031)	(24%)
Long-term borrowings and debentures (including current portion) ⁽³⁾	159,919	171,860	(11,941)	(7%)
Other non-current liabilities	28,322	30,593	(2,270)	(7%)
Total liabilities	251,681	285,923	(34,242)	(12%)
Equity				
Equity attributable to owners of the company	165,568	156,034	9,533	6%
Non-controlling interests	2,744	2,623	121	5%
Total equity	168,312	158,657	9,654	6%
Total liabilities and equity	419,993	444,581	(24,588)	(6%)

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

As of 31 December 2023, Thaioil and Subsidiaries reported total assets of Baht 419,993 million, which fell down from 31 December 2022 by Baht 24,588 million, or 6% due to

- Cash, cash equivalent and short-term investment fell by Baht 9,543 million mainly due to cash from operations in 2023 netted with dividend paid in April and September 2023, and capital expenditures which mainly comprised of construction of Clean Fuel Project (CFP). Additionally, there was a debenture matured in early 2023 amount of US\$ 500 million.
- Current assets declined by Baht 18,914 million from decreases inventory following decline in crude oil prices and related products. Additionally, oil fuel fund receivables declined significantly from repayment from the fund which was in line with Royal Thai Government energy price policy.
- Non-current assets went up by Baht 3,869 million mainly from higher property, plant and equipment from project investment such as CFP project offsetting with Right Of Use assets. Meanwhile, FVTOCI went down following decline in prices of the securities the company invested in.

Total Liabilities

As of 31 December 2023, Thaioil and Subsidiaries had total liabilities of Baht 251,681 million, which came down by Baht 34,242 million or 12% from 31 December 2022, mainly due to

- Current liabilities fell by Baht 20,031 million primarily due to lower trade payables from lower average crude oil prices in addition to Extended Trade Credit scheme with PTT Plc. On the other hand, short term borrowings rose as some subsidiaries used more working capital during the period.
- Long-term borrowings and debentures (including current portions) declined by Baht 11,941 million as debentures matured and repaid outweighed new debentures and loans issued during the year
- Other non-current liabilities dropped by Baht 2,270 million mainly from lower lease liabilities and derivatives declined in accordance with fair value measurement

Table 16: Consolidated Borrowings

(Million Baht)	Thaioil	LABIX	TOP SPP	TS	TET	TTC	รวม
Debentures : US\$-denominated ⁽¹⁾	5,812	-	-	-	-	98,340	104,152
: Baht-denominated	36,480	-	-	-	-	-	36,480
Borrowings : Baht-denominated	16,212	2,651	-	-	52	-	18,915
: Other currencies-denominated ⁽¹⁾	-	-	-	372	-	-	372
As of 31 December 2023	58,504	2,651	-	372	52	98,340	159,919
As of 31 December 2022	51,777	3,416	6,884	613	89	109,081	171,860
+ / (-)	6,727	(765)	(6,884)	(241)	(37)	(10,741)	(11,941)

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

Total Equity

As of 31 December 2023, Thaioil and Subsidiaries reported consolidated equity of Baht 168,312 million, or an increase of Baht 9,655 million from 31 December 2022 mainly due to 1) net operating profit during the period, offsetting with dividend declared and paid, 2) decline in FVTOCI from a decline in GPSC and UBE share prices, and 3) fair value of some CVC investments

3.2 Statement of Cash Flows

On 31 December 2023, Thaioil and Subsidiaries reported cash and cash equivalent of Baht 28,432 million, Baht 23,737 million of which belonged to Thaioil alone (separated financial statement).

Statement of cash flows for the year 2023 of Thaioil and Subsidiaries was detailed as presented below:

Table 17: Condensed Statement of Cash Flows

(Million Baht)	Consolidated	Separated
Net cash flows from / (used in) operating activities	28,088	20,185
Net cash flows from / (used in) investing activities	(19,692)	(18,580)
Net cash flows from / (used in) financing activities	(23,072)	(12,260)
Net decrease in cash and cash equivalents	(14,676)	(10,656)
Cash and cash equivalents at the beginning of period	43,576	34,787
Effect of exchange rate changes on cash and cash equivalents	(468)	(395)
Cash and cash equivalents at the end of period ⁽¹⁾	28,432	23,737

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

In 2023, Thaioil and Subsidiaries reported net operating cash flow of Baht 28,088 million, which was mainly a result of net operating profit, before tax, of Baht 24,257 million, lower non-cash adjustment, before tax, of Baht 12,887 million, and lower working capital of Baht 6,873 million. During the period, there was a tax payment, net, of Baht 2,183 million. In term of investing activities, there was net cash flows used in investing activities of Baht 19,692 million. This was attributable to capital expenditure of Baht 14,504 million which was mainly due to Clean Fuel Project.

Additionally, Baht 23,072 million was used in financing activities following 1) net cash paid from both short term and long term borrowing from financial institution of Baht 2,309 million, 2) new debenture issued of Baht 10,000 million while there was a redemption of a debenture totaling of Baht 16,318 million, 3) dividend payments totaling of Baht 5,268 million and 4) finance cost paid during the period of Baht 7,653 million

As such, net cash decrease of Baht 14,676 million was observed from 31 December 2022. Additionally, net effect of exchange rate changes on cash and cash equivalents of negative Baht 468 million occurred during the period. Altogether with beginning cash and cash equivalent of Baht 43,576 million, we reported cash and cash equivalent totaling of Baht 28,432 million on 31 December 2023.

3.3 Financial Ratios

Table 18: Financial Ratios (Consolidated)

Profitability Ratios	Q4/23	Q3/23	+/(-)	2023	2022	+/(-)
Quality of earnings ratio (%)	3%	16%	(13%)	8%	7%	1%
Gross profit margin ratio (%)	3%	16%	(13%)	7%	9%	(2%)
Net profit margin ratio (%)	2%	9%	(7%)	4%	6%	(2%)

Liquidity Ratios	Q4/23	Q3/23	+/(-)	2023	2022	+/(-)
Current ratio (times)	1.7	1.8	(0.1)	1.7	1.5	0.2
Quick ratio (times)	0.9	0.9	(0.0)	0.9	0.7	0.2

Financial Policy Ratios	Q4/23	Q3/23	+/(-)	2023	2022	+/(-)
Total liability/ Total equity (times)	1.5	1.6	(0.1)	1.5	1.8	(0.3)
Net debt/ Equity (times)	0.9	1.0	(0.1)	0.9	1.0	(0.1)
Long-term loan/ Total equity (times)	1.1	1.2	(0.1)	1.1	1.2	(0.1)
Interest coverage ratio (times)	3.5	18.4	(14.9)	8.7	9.6	(0.9)
Long-term loan/ Total capitalization (%)	52%	54%	(2%)	52%	55%	(3%)

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

4. Industry Outlook for the First Quarter of Year 2024 and the First Half of Year 2024

Crude oil and Refinery Market Outlook

Crude oil market in Q1/24 and 1H/24 are expected to soften compared to Q4/23 and 1H/23 due to a slowdown in oil demand growth in major world economies, including the United States (US), the European Union (EU), and China. This slowdown primarily stems from high policy rates in the US and EU, as well as the crisis in the Chinese property sector, which accounted for 30 percent of China's economy. Furthermore, oil prices are projected to face pressure from increasing crude oil supply from Non-OPEC countries which are the US, Canada, Brazil and Gyana. Additionally, there is likely to be a rise in supply from Venezuela following the lifting of oil and gas sanctions by the US government until April 2024. However, the crude oil market is supported by OPEC+ countries, led by Saudi Arabia and Russia, along with six other alliances, which have voluntarily cut their production by 2 million barrels per day until Q1/2024. Meanwhile, concerns over geopolitical tensions in the Middle East and conflicts on North Africa could cause uncertainty in oil supply.

Refinery business in Q1/24 and 1H/24 is expected to be maintained at a healthy level compared to Q4/23 and 1H/23 mainly supported by reduced supply from a cold snap in the US which caused unplanned refinery outages. While there is still a risk from the Red Sea conflict that impacts oil transportation in the area, along with low product inventories which remain below the 5-year average, despite the upward trend. However, prices are under pressure by higher supply from Chinese exports and new capacity additions that gradually startup in 2023 and 2024, mainly from the Middle East. Additionally, concerns over global economic slowdown potentially affect oil demand.

Aromatics Market Outlook

In Q1/24, the Paraxylene (PX) market is expected to improve compared to Q4/23, supported by increasing demand in the region after Chinese New Year festival and higher PET demand later in the quarter due to the summer season.

In 1H/24, the PX market is expected to improve compared to 1H/23 because of economic stimulus policies in China, potentially boosting consumption and domestic travel, leading to increased demand for clothing and PET.

In Q1/24, the Benzene (BZ) market is expected to be supported by tighter global supply resulting from a cold snap in the US and low BZ inventory in China.

In 1H/24, the BZ market is expected to improve compared to 1H/23 due to economic stimulus policies in China, which are expected to increase electronics consumption.

For Toluene (TL) in Q1/24, market conditions are expected to improve due to higher demand for feedstock used in producing PX and BZ for the Chinese New Year festival.

In 1H/24, the TL market is expected to improve compared to 1H/23, supported by an improving aromatics market; however, demand for TL for gasoline blending is likely to decrease marginally.

(Source: CMA Fall 2023)

LAB Market Outlook

In Q1/24, LAB price is expected to decrease compared to Q4/23 following crude oil price due to concerns about a global economic slowdown. However, demand for LAB in Asia is likely to increase, especially after Chinese New Year festival until March 2024, before the summer season in Asian countries.

In 1H/24, the LAB market is expected to soften compared to 1H/23 due to crude oil price and increasing supply in the region amid concerns over a global economic slowdown. Nonetheless, the LAB market is supported by increasing demand in the region during the summer, which is a seasonal demand for detergents.

Lube Base Oil market outlook

In Q1/24, the 500 SN price and spread of 500SN over HSFO are expected to soften compared to Q4/23 due to lower demand during winter and decreasing prices of base oil group 2. However, the supply of base oil group 1 is expected to be limited due to planned maintenance at plants in Japan and Thailand, while improving demand during summer for agricultural and driving purposes would support the lube base oil market.

In the first half of 2024, the lube base oil market is expected to be softer than 1H/23, pressured by weakening demand for lube base oil group 1 in the region, as well as rising supply due to capacity additions of base oil group 2 and 3 in India and China.

Bitumen market outlook

The bitumen price and spread of bitumen over HSFO in Q1/24 and 1H/24 are expected to decrease compared to Q4/23 and 1H/23 due to higher demand resulting from the resumption of regional refineries and increasing production. However, the higher budget allocated for infrastructure improvements, especially in India and China, is likely to support bitumen demand, despite potential delays in project approvals in some countries.

5. Appendix

5.1 Summary of Approved Investment Plan

From 2024 to 2026, Thaioil and Subsidiaries have outstanding approved capital expenditure of US\$703 million, mainly consisting of CFP project (Clean Fuel Project) of US\$233 million and an investment in PT Chandra Asri Petrochemical Tbk (“CAP”) of US\$270 million. An estimated budget for the investment during 2024-2026 is summarized in the table below.

TOP Group Strategic Investment Plan

CAPEX Plan (Unit US\$ million)

Updated as of December 2023

Project	Estimated Budgeting for Investment Plan 2024 - 2026
CFP project *	233
Total Ongoing CAPEX	200
Reliability, Efficiency and Flexibility Improvement	115
Infrastructure Improvement (i.e. RHCU Phrase 2, New Bangphra Raw Water Line, New Fuel Oil Tank)	23
Other Investments (i.e. Corporate Venture Capital - CVC , Digital Transformation)	62
Olefins Investment	270
Total CAPEX	703

* 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



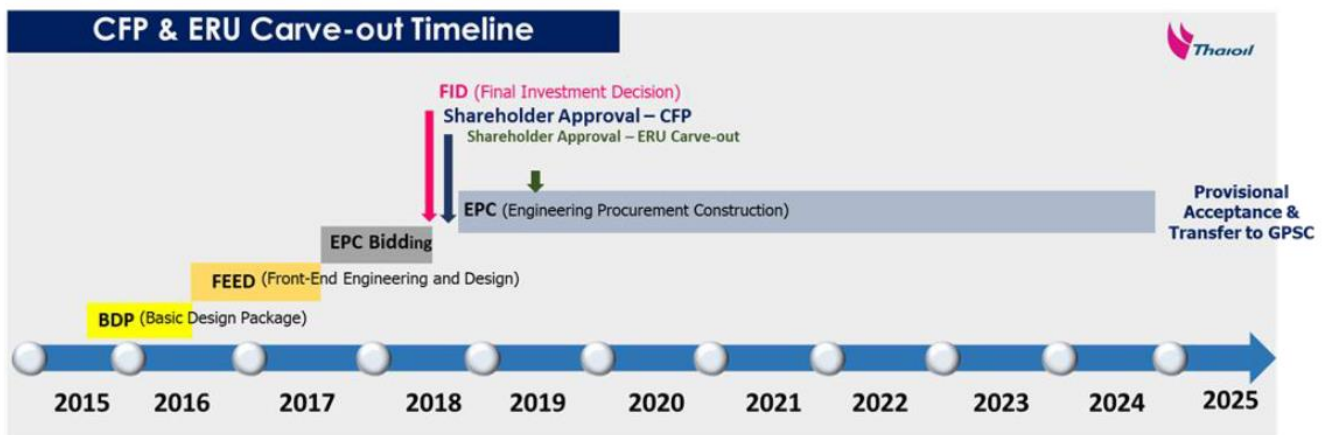
5.2 Summary of Key Project Investment: Clean Fuel Project (CFP)

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 and approximately US\$ 151 million in interest during its construction. 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, with the value not exceeding US\$757 million 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 31 December 2023, the completion progress of the CFP was approximately 95%, material equipment and modules have been imported and currently being expedited installation in construction area. However, the global COVID-19 pandemic during 2020-2022 significantly impacted various projects worldwide, including equipment manufacturing, transportation, and construction. The CFP has been affected, resulting in delays from the original schedule. However, the company, along with project contractors and advisors have been working to address and modify the operation plan to minimize the project's impact, for instance, adjusting construction plans to accelerate the progress, increasing sub-contractors to support work scopes and changing timelines under strict COVID-19 control measures, and modifying work structures to improve operational efficiency. Due to the complexity of these processes and measures, the investment expenditure has increased approximately US\$550 million and an increasing in interest during construction approximately US\$422 million, and project timeline has been extended by 2 years. Despite these challenges, the company remains committed to expediting the CFP according to the strategic plan to generate long-term growth and profitability.

Additionally, although the overall construction of the project is behind schedule, the company plans to start commissioning of the Hydrodesulfurization unit (HDS-4), which is currently conducting for readiness preparation and expected to be commissioned in February 2024 ahead of schedule plan to support the production of EURO-5 standard which will be implemented in Thailand in 2024. As for the other units, efforts are actively underway to accelerate commissioning processes.