

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

For The Fourth Quarter and
Year 2022

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.....	17
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 2023, and the First Half of Year 2023.....	23
5. Appendix	25
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 2022

1. Company and its Subsidiaries' Operating Results

Table 1: Summary of Consolidated Financial

(Million Baht)	Q4/22	Q3/22	+/(−)	Q4/21	+/(−)	2022	2021	+/(−)
Integrated Intake (kbd)	285	288	(3)	303	(18)	297	278	19
Gross Integrated Margin (GIM) ⁽¹⁾ (US\$/bbl)								
: <u>excluding</u> Stock Gain/(Loss)	11.1	8.8	2.3	7.0	4.1	13.4	5.5	7.9
: <u>including</u> Stock Gain/(Loss)	1.5	(0.7)	2.2	9.9	(8.4)	14.3	10.1	4.2

(Million Baht)	Q4/22	Q3/22	+/(−)	Q4/21	+/(−)	2022	2021	+/(−)
Sales Revenue	123,132	124,174	(1,042)	104,298	18,834	505,703	335,827	169,876
Net Realized Loss on Financial Instruments	369	(220)	589	(1,807)	2,176	(15,841)	(2,461)	(13,380)
EBITDA	2,398	(568)	2,966	6,082	(3,684)	37,187	28,142	9,045
Net Gain/(Loss) on Fair Value Measurement of Financial Instruments	(1,247)	5,090	(6,337)	2,311	(3,558)	(164)	55	(219)
Net Foreign Exchange Gain/(Loss) ⁽²⁾	2,652	(1,710)	4,362	522	2,130	(64)	(4,595)	4,531
Gain from disposal of investment in an associate	-	-	-	-	-	10,038	-	10,038
Gain from reclassification of investment	-	-	-	-	-	7,297	-	7,297
Finance Costs	(994)	(940)	(54)	(958)	(36)	(3,860)	(3,595)	(265)
Reversal of Income Tax (Expense)	108	156	(48)	(1,075)	1,183	(8,918)	(2,034)	(6,884)
Net Profit/(Loss)	147	12	135	5,033	(4,886)	32,668	12,578	20,090
Basic Earnings/(Loss) per Share (Baht)	0.07	0.01	0.06	2.47	(2.40)	15.63	6.17	9.46

Stock Gain/(Loss)	(9,178)	(9,238)	60	2,709	(11,887)	3,613	15,063	(11,450)
Reversal/ (Write-Down) on Crude and Petroleum Product Inventory ⁽³⁾	2,104	236	1,868	574	1,530	(10)	332	(342)

Exchange Rate (Baht: 1 US\$)	Q4/22	Q3/22	+/(−)	Q4/21	+/(−)	2022	2021	+/(−)
Average FX	36.50	36.58	(0.08)	33.54	2.96	35.23	32.17	3.06
Ending FX	34.73	38.07	(3.34)	33.59	1.14	34.73	33.59	1.14

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 net foreign exchange gain / (loss) on foreign currency assets and liabilities in Q4/22, Q3/22, Q4/21, 2022 and 2021 of Baht 1,671 million, Baht (1,524) million, Baht 257 million, Baht (983) million, and Baht (4,584) million, respectively.

(3) 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 Q4/22, compared with Q3/22, Thaioil and Subsidiaries reported lower integrated intakes due to Thaioil refinery's planned major turnaround at its CDU2 and other units totaling of 26 days and major turnaround at Thai Lube Base Plc. (TLB) in Q4/22. We reported sales revenue of Baht 123,132 million, or a decrease of Baht 1,042 million following lower selling prices due to economic slowdown. We reported GIM excluding stock gain / (loss) of 11.1 US\$/bbl or an increase of 2.3 US\$/bbl, mainly due to higher crack spreads and a

lower crude premium (namely Murban and Arab Light). Furthermore, for aromatics, PX spread over ULG95 improved thanks to increases in regional demand for garments and bottled packaging toward the end of the year. Meanwhile, BZ spread over ULG95 reduced from the softened demand of consumer goods in electronic products as well as additional supply in region. Additionally, Surfactant business profit contribution was weaker from higher supply and a continued economic slowdown. Moreover, base oil spread over fuel oil dropped due to the slowdown in demand because of the concerns of economic slowdown. Although bitumen spread over fuel oil in Q4/22 boosted from the significant drop in fuel oil price in late year, TLB had worsened financial performance from its planned major turnaround. Moreover, crude oil price in this quarter declined from Q3/22 from 1) lower oil demand outlook from economic slowdown due to rising interest rates, and 2) suppressed oil demand from a worsened COVID-19 situation in China. Thus, we reported a stock loss of Baht 9,178 million in this quarter, lower stock loss of Baht 60 million in Q3/22. Thus, positive GIM including stock gain / (loss) of 1.5 US\$/bbl was reported during the period, whereas negative GIM was 0.7 US\$/bbl in Q3/22. There was a reversal on crude and petroleum product inventory of Baht 2,104 million in Q4/22, Baht 1,868 million better than in Q3/22. Including realized net gain from financial instrument of Baht 369 million, we reported positive EBITDA of Baht 2,398 million, compared with negative EBITDA of Baht 568 million in Q3/22. Meanwhile, a loss on fair value measurement on financial instruments of Baht 1,247 million was booked, compared with a gain from the same measurement of Baht 5,090 million in the previous quarter, but we reported a net gain from foreign exchange of Baht 2,652 million (Baht 1,671 million of which was from foreign exchange gain on foreign currency assets and liabilities), compared with a net loss from foreign exchange of Baht 1,710 million in Q3/22 due to higher Thai Baht appreciation than at the end of the last quarter. Offsetting with depreciation, finance cost, and tax expenses, we booked a net profit of Baht 147 million in Q4/22, or Baht 0.07 Baht per share, an incline of Baht 135 million from the last quarter. In Q3/22, we completed our equity raising and ended up issuing 192,307,693 shares at Baht 53.50 each, totaling to Baht 10,288 million, while we had direct costs attributable to this transaction, net of tax, of Baht 183 million. Additionally, in Q4/22, we issued additional shares of 1,500,000 shares at Baht 53.50 each, totaling to Baht 80 million as a part of the over-allotment option.

In Q4/22, compared with Q4/21, we reported lower integrated intakes. Thus, we reported a higher sale of Baht 18,834 million following higher selling prices tracking crude oil prices. We, therefore, reported a higher GIM excluding stock gain/loss of 4.1 US\$/bbl, mainly due to stronger jet/kero and gasoil spreads over Dubai. Additionally, base oil and bitumen spreads over fuel oil went up thanks to tighter supply. In addition, PX spreads over ULG95 increased because city lockdowns in the region were lifted. Nevertheless, BZ spread over ULG95 reduced from additional supply in the market. Moreover, profit contribution from surfactant business declined due to lower domestic demand, and with a lower crude oil price, we unavoidably reported a stock loss of Baht 9,178 million in this quarter compared with a stock gain of Baht 2,709 million during the same period last year. We booked a higher of reversal on crude and petroleum product inventory of Baht 1,530 million than Q4/21. Including net realized gain from financial instrument, we reported lower EBITDA by Baht 3,684 million from Q4/21. We booked a loss on fair value measurement on financial instruments of Baht 1,247 million, whereas a gain of Baht 2,311 million was recognized during Q4/21. However, we booked a higher net gain on foreign exchange of Baht 2,130 million. Offsetting with depreciation, finance cost and tax expense, we reported a lower net profit of Baht 4,886 million from the same period last year.

For 2022, compared with 2021, we reported sales of Baht 505,703 million, or Baht 169,876 million higher due to higher product selling prices tracking crude oil price. Furthermore, gasoline, jet/kero and gasoil spread over Dubai improved due to city opening and the lifting of international travel restrictions. Furthermore, profit from surfactant business was at a good level although aromatic spreads and base oil spreads declined. Therefore, we reported a higher GIM excluding stock gain/loss of 7.9 US\$/bbl, totaling to 13.4 US\$/bbl. Furthermore, we booked a stock gain of Baht 3,613 million, but Baht 11,450 million lower than in 2021. However, we had a write-down



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on crude and petroleum product inventory of Baht 10 million, compared with a reversal on crude and petroleum product inventory of Baht 332 million in 2021. Altogether with realized loss from financial instruments of Baht 15,841 million, we had higher EBITDA of Baht 37,187 million, or boosted by Baht 9,045 million. However, we also booked loss from fair value measurement of financial instrument of Baht 164 million and foreign exchange loss of Baht 64 million due to Thai Baht depreciation. Furthermore, we had a fair value measurement and gain from the partial disposal of our investment in GPSC of Baht 17,334 million (before tax) or Baht 12,880 million (net of tax). Offsetting with depreciation, finance cost, and tax expenses, we booked a net profit of Baht 32,668 million in 2022, or Baht 20,090 million higher than last year.

2. Summary of Financial Result by Business

Table 2: Financial Result by Business

(Million Baht)

Sales Revenue	Q4/22	Q3/22	+/(-)	Q4/21	+/(-)	2022	2021	+/(-)
Consolidated	123,132	124,174	(1,042)	104,298	18,834	505,703	335,827	169,876
Refinery	130,665	134,614	(3,949)	110,821	19,844	544,792	348,721	196,071
Aromatics and LAB ⁽¹⁾	20,485	23,255	(2,770)	19,123	1,362	88,938	60,547	28,391
Lube Base Oil	4,790	7,774	(2,984)	6,093	(1,303)	27,773	23,832	3,941
Power Generation ⁽²⁾	3,327	3,269	58	2,155	1,172	11,716	7,573	4,143
Solvent and Chemicals ⁽³⁾	5,848	6,452	(604)	3,711	2,137	22,585	13,314	9,271
Marine Transportation ⁽⁴⁾	-	-	-	-	-	-	211	(211)
Ethanol ⁽⁵⁾	514	516	(2)	444	70	1,796	1,589	207
Others ⁽⁶⁾	1,745	1,710	35	1,831	(86)	6,647	6,330	317

EBITDA	Q4/22	Q3/22	+/(-)	Q4/21	+/(-)	2022	2021	+/(-)
Consolidated	2,398	(568)	2,966	6,082	(3,684)	37,187	28,142	9,045
Refinery	846	(3,037)	3,883	4,066	(3,220)	30,139	15,500	14,639
Aromatics and LAB	598	31	567	695	(97)	917	4,989	(4,072)
Lube Base Oil	637	1,654	(1,017)	619	18	3,481	4,745	(1,264)
Power Generation	567	621	(54)	487	80	2,140	1,862	278
Solvent and Chemicals	141	171	(30)	241	(100)	1,043	1,041	2
Olefins	(1)	(2)	1	8	(9)	(7)	(1)	(6)
Marine Transportation	-	-	-	3	(3)	-	36	(36)
Ethanol	77	67	10	33	44	206	189	17
Others	(282)	58	(340)	55	(337)	(121)	205	(326)

Net Profit / (Loss)	Q4/22	Q3/22	+/(-)	Q4/21	+/(-)	2022	2021	+/(-)
Consolidated	147	12	135	5,033	(4,886)	32,668	12,578	20,090
Refinery	279	(1,261)	1,540	3,890	(3,611)	30,887	2,462	28,425
Aromatics and LAB	(444)	(313)	(131)	35	(479)	(1,183)	2,586	(3,769)
Lube Base Oil	471	1,302	(831)	457	14	2,651	3,678	(1,027)
Power Generation ⁽⁷⁾	359	476	(117)	525	(166)	1,456	2,488	(1,032)
Solvent and Chemicals	(59)	105	(164)	127	(186)	525	663	(138)
Olefins ⁽⁸⁾	(201)	(351)	150	(67)	(134)	(813)	(90)	(723)
Marine Transportation	-	-	-	3	(3)	-	18	(18)
Ethanol	15	11	4	(5)	20	18	579	(561)
Others ⁽⁹⁾	(123)	86	(209)	121	(244)	183	411	(228)

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) Thai Oil Plc. shares 99.99% in TOP SPP Co., Ltd. and shares 73.99% in Thaioil Power Co., Ltd (TP) for small power plants (SPPs) business. On 1 February 2021, there was the entire business transfer of TP to Thai Oil Plc.

(3) 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

(4) Thai Oil Plc. acquired all ordinary shares in Thaioil Marine International Pte Ltd. (TOMI) from Thaioil Marine Co., Ltd. (TM), and on 30 April 2021, Thai Oil Plc. disposed and transferred all ordinary shares in TM to Phurich Marine Co., Ltd, causing TM to be terminated from a subsidiary of Thai Oil Plc.

(5) 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).

(6) 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.

(7) 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.

(8) PT TOP Investment Indonesia holds 15% shares in PT Chandra Asri Petrochemical Tbk, which is the major integrated petrochemical company in Indonesia.

(9) 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 pass a resolution to liquidate the company, the process was completed on 29 December 2022.

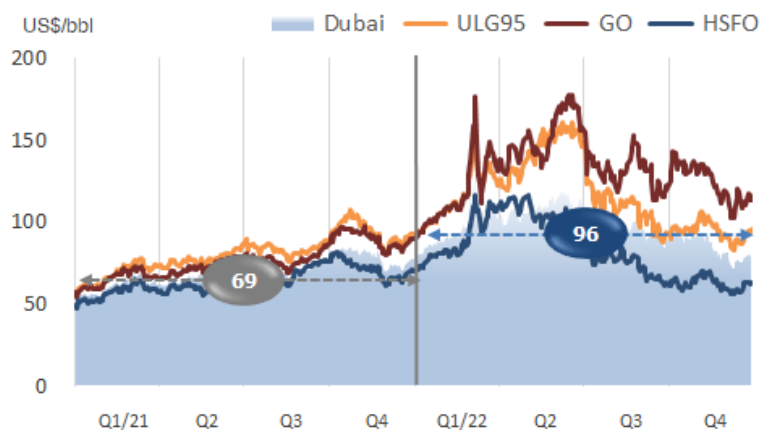
2.1 Market Condition and Financial Result of Refinery Business

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

Average Prices (US\$/bbl)	Q4/22	Q3/22	+ / (-)	Q4/22	+ / (-)	2022	2021	+ / (-)
Dubai Crude Oil ⁽¹⁾	84.8	96.9	(12.1)	78.3	6.5	96.3	69.2	27.1
Unleaded Gasoline (ULG95)	94.2	110.1	(15.9)	93.8	0.4	115.2	80.3	34.9
Jet/Kero	118.3	129.3	(11.0)	88.6	29.7	126.6	75.1	51.5
Gasoil (GO)	124.2	132.1	(7.9)	89.8	34.4	130.6	76.0	54.6
Fuel Oil (HSFO)	62.4	74.6	(12.2)	71.5	(9.1)	82.3	64.4	17.9
Crude Premiums (US\$/bbl)	Q4/22	Q3/22	+ / (-)	Q4/22	+ / (-)	2022	2021	+ / (-)
Murban ⁽²⁾	7.0	10.5	(3.5)	2.7	4.3	7.2	1.8	5.4
Arab Light ⁽³⁾	5.7	8.5	(2.8)	2.0	3.7	5.8	1.7	4.1
Spreads over Dubai (US\$/bbl)	Q4/22	Q3/22	+ / (-)	Q4/22	+ / (-)	2022	2021	+ / (-)
Unleaded Gasoline (ULG95)	9.4	13.2	(3.8)	15.5	(6.1)	18.8	11.1	7.7
Jet/Kero	33.5	32.4	1.1	10.2	23.3	30.3	5.8	24.5
Gasoil (GO)	39.3	35.2	4.1	11.4	27.9	34.3	6.7	27.6
Fuel Oil (HSFO)	(22.5)	(22.3)	(0.2)	(6.9)	(15.6)	(14.1)	(4.9)	(9.2)
Very Low Sulfur Fuel Oil (VLSFO)	6.5	11.7	(5.2)	7.0	(0.5)	13.0	6.1	6.9

Remark (1) Closing Dubai crude oil price at the end of Q4/22, Q3/22, and Q4/21 were calculated from average Dubai prices in the last month in the respective period. The prices were 77.2 US\$/bbl, 90.9 US\$/bbl, and 73.2 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



Dubai price in Q4/22 went down from Q3/22 following 1) lower oil demand following economic slowdown from rising policy rate of central banks 2) warmer winter in Europe leading to lower-than-expected oil demand in electricity sector, and 3) hikes in COVID-19 cases in China pressuring oil demand. However, crude oil price in Q4/22 and 2022 was higher compared with the same period last year due to Russia-Ukraine war resulting in sanctions on Russian crude oil in EU since 5th December 2022. Furthermore, crude oil price was

supported by tight supply since OPEC+ reduced their throughput by 2 million barrels per day in November 2022 and better oil demand after COVID-19 situation relieved.

Murban premium over Dubai and Arab Light premium over the Oman/Dubai average went down in Q4/22 compared with that of Q3/22. This was because of concerns over global economy and softened oil demand from COVID-19 pandemic in China leading to re-lockdown measure. However, Murban premium over Dubai and Arab Light premium over the Oman/Dubai average in Q4/22 and 2022 increased from the same period last year after many countries used the Middle East crude oil instead of Russian oil which was sanctioned.

Gasoline spread over Dubai in Q4/22 declined from Q3/22 and Q4/21 due to higher regional supply after China announced its export quota indicating low Chinese domestic demand due to the pandemic. However, gasoline market was partially supported by higher demand from Indian import due to its domestic plant maintenance. On the other hand, gasoil spread in Q4/22 expanded from Q3/22 and Q4/21 following tightened supply due to sanctions on Russian export crude while global gasoil inventory level stayed below its 5-year-average. Furthermore, jet/kero spread also increased in Q4/22 from Q3/22 and Q4/21 following the increase in air traveling globally owing to lockdown easing and strong winter demand for heating purpose as North Asia was unusually cold in 2022. Both high sulfur fuel oil and low sulfur fuel oil spreads in Q4/22 declined from Q3/22 and Q4/21 following higher export from Russia into Asian nations. Meanwhile, global refiners leveled up their productions to accommodate recovering demand.

Overall, in 2022, crack spreads i.e. gasoline, gasoil, jet/kero and low sulfur fuel oil expanded compared with those in 2021 mainly thanks to better oil demand since COVID-19 situation was relief in many countries leading to the resumption of economic activity and travelling. However, high sulfur fuel oil spread in 2022 decreased from that in 2021 owing to higher supply after many refiners boosted their productions.

Table 4: Financial Result of Refinery Business

	Q4/22	Q3/22	+ / (-)	Q4/21	+ / (-)	2022	2021	+ / (-)
Throughput ⁽¹⁾ (%)	103%	104%	(1%)	109%	(6%)	107%	100%	7%
Intake (kbd)	283	286	(3)	300	(17)	294	275	19
Gross Refining Margin (GRM) (US\$/bbl)								
: <u>excluding</u> Stock Gain/(Loss)	9.3	6.7	2.6	5.4	3.9	12.0	2.2	9.8
: <u>including</u> Stock Gain/(Loss)	(0.3)	(2.9)	2.6	8.3	(8.6)	13.0	6.9	6.1

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

In Q4/22, the refinery reported net profit from higher petroleum product spreads and lower crude premiums. Additionally, net foreign exchange gain was recorded. Nevertheless, stock loss and loss on fair value measurement of financial instruments was posted.

In Q4/22, Thaioil refinery recorded throughput of 103%, which was slightly reduced from the previous quarter due to its planned major turnaround at its CDU-2 and other units totaling of 26 days. However, its sales volume rose by 3%. It sold 86% domestically, 12% to Indochina, and 2% to other countries. Sales revenue of Baht 130,665 million was realized, this was a decline of Baht 3,949 million tracking lower selling prices following economic slowdown. Additionally, the refinery reported GRM excluding stock gain/loss of 9.3 US\$/bbl, or an increase of 2.6 US\$/bbl from the previous quarter due to stronger gasoil spread. Additionally, crude premium (Murban and Arab Light) also declined. However, lower crude oil price resulted in a stock loss of 9.7 US\$/bbl or Baht 9,178 million while there was a reversal on crude and petroleum product inventory of Baht 2,104 million in Q4/22, which was an increase of Baht 1,868 million from Q3/22. Altogether with net realized gain from financial instruments of Baht 294 million, the refinery reported EBITDA of Baht 846 million, compared with negative EBITDA

In 2022, the refinery had higher net profit than that of 2021. This was mainly because of hikes in petroleum product spreads and gain on GPSC disposal in Q2/22.

of Baht 3,037 million in Q3/22. However, the refinery booked loss on fair value measurement of financial instruments of Baht 1,344 million while it booked such gain of Baht 5,206 million in the last quarter. This was mainly attributable to commodity hedging contracts. Net foreign exchange gain of Baht 3,009 million, Baht 1,951 million of which was from foreign currency denominated assets and liabilities. Offsetting with depreciation, finance cost and tax expenses, net profit of Baht 279 million was booked while net loss of Baht 1,261 million was booked in the previous quarter.

Compared with Q4/21, the refinery throughput declined by 6%. Meanwhile, sales volume slightly rose and sales revenue increase of Baht 19,844 million was posted due to higher average selling prices as the pandemic situation subsided. Furthermore, the refinery reported GRM excluding stock gain/loss, higher by 3.9 US\$/bbl from the same period last year due to stronger jet/kero and gasoil spreads. However, with weakened crude oil price, stock loss of Baht 9,178 million was booked during the period compared with stock gain of Baht 2,709 million last year. Furthermore, a higher reversal of crude and petroleum product inventory of Baht 1,530 million was booked, compared with the same period last year. In Q4/22, net realized gain of financial instruments of Baht 2,151 million was posted. EBITDA dipped by Baht 3,220 million. However, loss from fair value measurement of financial instruments of Baht 1,344 million was posted during the period while it was a gain of Baht 2,440 million during the same period last year. In Q4/22, the refinery recorded higher net foreign exchange gain by Baht 2,474 million. Offsetting with depreciation, finance cost, and tax expenses, the refinery reported lower net profit by Baht 3,611 million.

In 2022, the refinery had higher throughput by 7%, compared with that of 2021, as it adopted its production plan to capture resumption in economic activities and the fact that COVID-19 pandemic was declared an endemic. At the same time, sales volume expanded by 11% and with higher product selling prices, sales revenue went up by Baht 196,071 million, totaling to Baht 544,792 million. GRM excluding stock gain/loss of 12.0 US\$/bbl, or a 9.8 US\$/bbl increase was reported during the period. Additionally, stock gain of Baht 3,613 million was observed which represented a decline of Baht 11,450 million from that of year 2021. Altogether with net realized loss from financial instruments of Baht 15,997 million, which was a higher loss of Baht 13,280 million, EBITDA of Baht 30,139 million was recorded. This represented an increase of Baht 14,639 million from the same period last year in term of EBITDA. Furthermore, loss on fair value measurement of financial instruments of Baht 131 million was booked that was slightly higher than that of the prior year. In 2022, the refinery booked net loss on foreign exchange of Baht 24 million, this was an improvement of Baht 4,849 million. Meanwhile, there was a gain on partial disposal in investment in GPSC totaling of Baht 18,026 million, before tax, or Baht 13,572 million, net of tax. Offsetting with depreciation, finance cost and tax expenses, the refinery posted net profit of Baht 30,887 million in 2022, representing an increase of Baht 28,425 million from 2021 (net profit, with dividend income, was Baht 33,665 million).

2.2 Market Condition and Financial Result of Aromatics Business

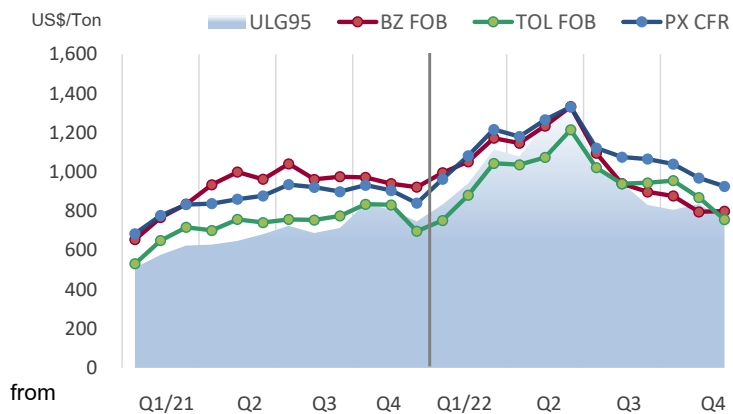
Table 5: Average Prices and Spreads of Aromatics Products

Average Prices (US\$/Ton)	Q4/22	Q3/22	+ / (-)	Q4/21	+ / (-)	2022	2021	+ / (-)
Paraxylene (PX) ⁽¹⁾	979	1,088	(109)	893	86	1,103	859	244
Benzene (BZ) ⁽²⁾	825	978	(153)	945	(120)	1,029	914	115
Toluene (TL) ⁽²⁾	861	969	(108)	788	73	958	729	229
Spreads over ULG95 (US\$/Ton)	Q4/22	Q3/22	+ / (-)	Q4/21	+ / (-)	2022	2021	+ / (-)
Paraxylene (PX)	178	152	26	96	82	124	177	(53)
Benzene (BZ)	24	42	(18)	148	(124)	50	232	(182)
Toluene (TL)	60	33	27	(9)	69	(21)	47	(68)

Remark (1) Based on CFR Taiwan price

(2) Based on FOB Korea price

Graph 2: Prices of Aromatics Products and ULG95



In Q4/22, PX price dropped from Q3/22, due to concerns over economic recession pressuring crude oil demand. Meanwhile PX spread over ULG95 improved from Q3/22 due to increase in regional demand on garments and bottled packaging toward the end of year. For PX price, in Q4/22 and 2022, it rose compared with Q4/21 and 2021 due to demand recovery following the improvement in COVID-19 situation. For PX spread over ULG95, in Q4/22, increased Q3/22 due to easing of lockdown in region. However, PX

spread over ULG95, in 2022, decreased from 2021 due to the Russia-Ukraine conflict and new supply especially from China, where there was new additional supply of around 3.2 million ton in 2022, which was higher than the total supply of 1.9 million ton in 2021.

BZ price in Q4/22 was lower than Q3/22 and Q4/21 due to concerns over economic slowdown. However, BZ price in 2022 increased from 2021 following the increases in oil price. Meanwhile, BZ spread over ULG95 in Q4/22 and 2022 declined from Q3/22, Q4/21 and 2021 respectively because of softened demand for BZ in electronic products. And additional supply in region around 2.2 million ton in 2022 higher than 1.6 million ton in 2021.

TL price in Q4/22 dropped from Q3/22 following lower oil prices. Meanwhile, TL price in Q4/22 and 2022 rose from Q4/21 and 2021 respectively due to improving on demand. For TL spread over ULG95 in Q4/22 rose from Q3/22 and Q4/21 respectively due higher demand. However, TL spread over ULG95 in 2022 rose from 2021 following the conflict between Russia and Ukraine that pressure on demand in market.

Table 6: Financial Result of TPX

	Q4/22	Q3/22	+ / (-)	Q4/21	+ / (-)	2022	2021	+ / (-)
Aromatics Production Rate ⁽¹⁾ (%)	67%	70%	(3%)	81%	(14%)	71%	87%	(16%)
Aromatics Production (kTon)	141	147	(6)	171	(30)	596	727	(131)
Product-to-feed Margin ⁽²⁾ (US\$/Ton)	45	7	38	19	26	12	80	(68)

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 Q4/22, TPX had higher product-to-feed margin from increased aromatics spreads due to the easing of lockdown in China and other countries. As a result, TPX had better EBITDA from the previous quarter.

For 2022, TPX had lower product-to-feed margin from decreased aromatics spreads due to lower demand from the economic slowdown and the conflict between Russia and Ukraine, it had led to a drop in TPX performance.

In Q4/22, compared with Q3/22, Thai Paraxylene Co., Ltd. (TPX) had an aromatics production rate of 67%, and TPX had sales revenue of Baht 12,790 million, decreased by Baht 2,197 million due to decreases in total sales volume and average selling prices. However, PX and TL spreads over ULG95 improved following the easing of lockdown in China and other countries. In addition, the price of ULG95 dropped as a supporting factor, resulted in a higher product-to-feed margin of 38 US\$/ton from the previous quarter. However, TPX had a net realized gain on financial instruments of Baht 75 million, increased by Baht 57 million from the previous quarter. Thus, TPX recorded an EBITDA of Baht 169 million, compared with negative EBITDA of Baht 475 million in previous quarter. Besides, in this quarter, net gain on fair value measurement of financial instruments of Baht 13 million was recorded, compared with loss on fair value measurement of financial instruments of Baht 80 million in Q3/22. In addition, TPX had a net foreign exchange loss of Baht 86 million, compared with net foreign exchange gain 53 million in previous quarter. Offsetting with depreciation, finance costs and income tax expense, In Q4/22, TPX posted net loss of Baht 650 million, which was higher loss by Baht 66 million from Q3/22.

Compared with Q4/21, TPX aromatics production rate decreased by 14%. TPX sales revenue declined by Baht 986 million due to lower total sales volume and average selling prices. However, TPX reported higher product-to-feed margin of 26 US\$/ton due to higher PX and TL spreads over ULG95. Combining with net realized gain on financial instruments, TPX had an EBITDA of Baht 169 million, which was higher gain by Baht 100 million from Q4/21. Besides, TPX had net gain on fair value measurement of financial instruments of Baht 13 million, compared with loss on fair value measurement of financial instruments of Baht 183 million, while TPX had a net foreign exchange loss of Baht 86 million, compared with net foreign exchange gain 14 million in Q4/21. Therefore, TPX posted a net loss of Baht 650 million in Q4/22, which was higher loss by Baht 334 million from the same period last year.

Compared 2022 with 2021, TPX had sales revenue of Baht 59,742 million, increased by Baht 14,653 million due to increases in average selling prices, However, TPX reported a decrease in product-to-feed margin of 68 US\$/ton from lower in aromatics spreads over ULG95 due to the conflict between Russia and Ukraine and economic slowdown pressuring aromatics demand. Combining with net realized gain on financial instruments of Baht 158 million, TPX posted negative EBITDA of Baht 1,359 million, compared with an EBITDA of Baht 2,975 million in 2021. Besides, TPX had net loss on fair

value measurement of financial instruments of Baht 56 million, compared with net gain on fair value measurement of financial instruments of Baht 48 million in previous year, and had a decreased in net foreign exchange gain by Baht 178 million. Therefore, TPX recorded net loss of Baht 2,411 million, compared with a net profit of Baht 1,665 million in the same period last year.

In Q4/22, aromatics group (TPX holds 75% shares of LABIX) had consolidated sales revenue of Baht 20,485 million, consolidated EBITDA of Baht 598 million and consolidated net loss of Baht 444 million.

In 2022, aromatics group had consolidated sales revenue of Baht 88,938 million, consolidated EBITDA of Baht 917 million and consolidated net loss of Baht 1,183 million.

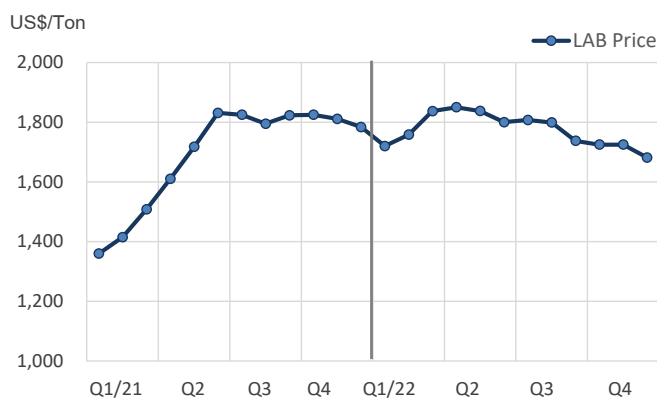
2.3 Market Condition and Financial Result of an Intermediate for the Production of Surfactants Business

Table 7: Average Price of LAB

Average Price (US\$/Ton)	Q4/22	Q3/22	+/(-)	Q4/21	+/(-)	2022	2021	+/(-)
Linear Alkylbenzene (LAB) ⁽¹⁾	1,711	1,781	(70)	1,807	(96)	1,773	1,692	81

Remark (1) Based on ICIS price

Graph 3: Price of LAB



In Q4/22, LAB price declined from Q3/22 and Q4/21 due to economic slowdown due to rising inflation globally. This resulted in lower jet/kero and benzene prices. On the other hand, there was a new supply from the expansion of IOC plant in India after it went through its annual maintenance shutdown. This brought up its production from 140,000 tons per year to 162,000 tons per year. However, LAB spreads over jet and benzene increased in Q4/22 compared with Q3/22 from seasonal demand after the monsoon season in India and Southeast Asia and after the period of plant maintenance in Taiwan (FUCC, 105 KTA).

In 2022, LAB price increased from 2021 due to increased jet fuel and benzene prices from the conflict between Russia and Ukraine; as a result, LAB spreads over main feedstock such as jet fuel and benzene declined significantly in 2022, compared with 2021. However, LAB market was supported from demand in asia following on amount of population and better quality of life in developing countries and awareness in sanitation on COVID-19 situation. (Source: ICIS LAB Weekly Report, January 2023)

Table 8: LAB Production

	Q4/22	Q3/22	+ / (-)	Q4/21	+ / (-)	2022	2021	+ / (-)
LAB Production Rate ⁽¹⁾ (%)	117%	113%	4%	120%	(3%)	118%	112%	7%
LAB Production (kTon)	35	34	1	36	(1)	142	134	8

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

In Q4/22, there was a pressure on domestical demand. As a result, LABIX's performance dropped from the previous quarter.

In 2022, LABIX had higher sales revenue from higher sales volume and prices. LABIX had better performance from the last year.

In Q4/22, LABIX Co., Ltd. (LABIX) had LAB production rate at 117% and LAB sales volume dropped by 5% from Q3/22 due to softened domestic demand. As a result, LABIX had sales revenue of Baht 8,079 million, decreased by Baht 649 million. Furthermore, LABIX had a lower gross margin. This led LABIX to report EBITDA of Baht 429 million, decreased by Baht 77 million from the previous quarter. In addition, LABIX had a net foreign exchange loss of Baht 84 million, compared with net foreign exchange gain of Baht 30 million in Q3/22. Offsetting with depreciation and finance costs, LABIX posted net profit of Baht 274 million, decreased by Baht 87 million from the previous quarter.

Compared with Q4/21, LABIX had lower LAB production rate and sales volume by 3% and 8% respectively due to a drop in domestical demand. However, a rise in LAB price resulted in sales revenue increases by Baht 2,344 million. Meanwhile, LABIX had a weakened gross margin following lower domestical demand, LABIX, then, reported EBITDA decreased by Baht 197 million. In addition, LABIX had a higher net foreign exchange loss of Baht 54 million compared with Q4/21. Offsetting with depreciation and finance costs, LABIX reported net profit of Baht 274 million, dropped by Baht 194 million from the same period of previous year.

Compared 2022 with 2021, LABIX had sales revenue of Baht 30,912 million, increased by Baht 14,168 million following a rise in LAB price tracking feedstock prices and greater sales volume. Meanwhile, LABIX had a gross margin close to 2021. This led LABIX to record EBITDA of Baht 2,277 million, increased by Baht 263 million. However, LABIX had a net foreign exchange loss of Baht 27 million decreased by Baht 51 million from previous year. Offsetting with depreciation and finance costs, LABIX reported net profit of Baht 1,638 million, a rose by Baht 410 million from the previous year.

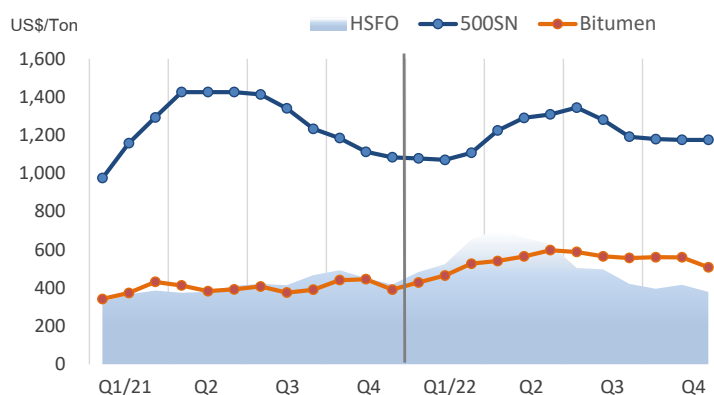
2.4 Market Condition and Financial Result of Lube Base Oil Business

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

Average Prices (US\$/Ton)	Q4/22	Q3/22	+/(-)	Q4/21	+/(-)	2022	2021	+/(-)
500SN ⁽¹⁾	1,176	1,272	(96)	1,127	49	1,199	1,255	(56)
Bitumen ⁽²⁾	542	569	(27)	426	116	538	398	140
Spreads over HSFO (US\$/Ton)	Q4/22	Q3/22	+/(-)	Q4/21	+/(-)	2022	2021	+/(-)
500SN	780	798	(18)	673	107	677	847	(170)
Bitumen	146	96	50	(29)	175	16	(10)	26

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



Lube base oil (500SN) and its spread over fuel oil in Q4/22 declined from that of the previous quarter due to concern over potential economic recession. However, the market was partially supported by a permanent closure of a lube base plant (Group 1) in Japan, and a maintenance shutdown of a plant in Thailand. Similarly, these closure and maintenance supported 500SN price to be above from that of the year 2021. For the whole year, 500SN spread was weakened in 2022

compared to that of year 2021. This was mainly due to regional higher production following the COVID-19 situation which had subsided. However, Group 1 base oil market was still strong due to a closure of a Japanese plant and a plant maintenance in Thailand. This prevented market from having too excessive supply.

Bitumen price in Q4/22 declined from the previous quarter due to the new wave of the pandemic situation in China suppressing demand as well as holiday season. On the other hand, bitumen price spread over fuel oil expanded from the previous quarter due to the plummeting of fuel oil price in Q4/22. Similarly, fuel oil spread also expanded compared to that of Q4/21 due to limited supply following a plant maintenance in Thailand and additional demand for bitumen in infrastructure development in Vietnam and Indonesia. Overall, in 2022, bitumen price and its spread increased compared to that of year 2021 due to supply deficit following major plants shifting away from bitumen production to other higher-margin-petroleum product following ongoing Russia-Ukraine tension. However, there were concerns over delay in infrastructure development and bitumen price on the demand side.

Table 10: Financial Result of TLB

	Q4/22	Q3/22	+/-	Q4/21	+/-	2022	2021	+/(-)
Base Oil Production Rate ⁽¹⁾ (%)	43%	86%	(43%)	88%	(45%)	77%	91%	(14%)
Base Oil Production (kTon)	28	58	(30)	59	(31)	205	243	(38)
Product-to-feed Margin ⁽²⁾ (US\$/Ton)	184	209	(25)	118	66	154	176	(22)

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

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

In Q4/22, TLB reported lower production rate following its maintenance shutdown. Lower spread sent P2F down, and resulting in TLB reporting lower EBITDA and net profit.

In 2022, TLB reported lower sales revenue following decline in its product prices and lower run rate following its maintenance shutdown. Recovering supply in 2022 resulted in lower product spread sent TLB EBITDA and net profit down.

In Q4/22, Thai Lube Base Plc. (TLB) reported base oil production rate of 43% and reported sales revenue of Baht 4,790 million, which was a decrease of Baht 2,984 million from the previous quarter mainly due to lower base oil production rate due to its planned maintenance shutdown. During the period, most of its product prices (i.e. base oil, bitumen, etc.) declined following concerns over economic recession. This brought TLB Product-to-feed margin down by 25 US\$/ton to 184 US\$/ton and EBITDA down by Baht 1,017 million totaling to Baht 637 million. Offsetting with depreciation, finance cost, and tax expense, TLB reported net profit of Baht 471 million, which was a decrease of Baht 831 million from Q3/22.

Compared with Q4/21, TLB reported lower sales of Baht 1,303 million mainly due to its shutdown. During the period, TLB reported higher Product-to-feed Margin by 66 US\$/ton due to 1) increase in product selling price suppressing the demand, and 2) maintenance shutdown of a base oil plant in Thailand resulting in limited base oil and bitumen supply. As such, EBITDA and net profit rose by Baht 18 million and Baht 14 million, respectively.

For year 2022, TLB posted higher sales revenue to Baht 3,941 million, totaling to Baht 27,773 million compared with that of 2021 mainly due to higher bitumen price. However, lower base oil spread over fuel oil price dragged TLB Product-to-feed margin down by 22 US\$/ton resulting in EBITDA of Baht 3,481 million, or Baht 1,264 million lower, and net profit of Baht 2,651 million, which was Baht 1,027 million lower from year 2021.

2.5 Financial Result of Power Generation Business

Table 11: Sales Volume from Power Generation Business

TP + TOP SPP	Q4/22	Q3/22	+ / (-)	Q4/21	+ / (-)	2022	2021	+ / (-)
Electricity Dispatched (GWh)	397	407	(10)	395	2	1,559	1,656	(97)
Steam Exported (kTon)	554	544	10	591	(37)	2,249	2,459	(210)

Remark (1) On 1 February 2021, Thaioil Power Co., Ltd. (TP) transferred all business to Thai Oil Plc. (TOP) following a shareholding restructuring plan of power generation business. Therefore, the electricity dispatched and steam exported in Q4/21 presented the information of TOP SPP Co., Ltd.

In Q4/22, TOP SPP sales revenue increased from increase in steam sales volume following customers' demand while higher water cost following higher fuel oil price and operating cost leading to lower net profit.

In 2022, TOP SPP reported higher sales revenue from higher selling prices following higher natural gas price resulted in higher net profit.

In Q4/22, TOP SPP Co., Ltd. (TOP SPP) had sales revenue of Baht 3,327 million, which increased by Baht 58 million due to an increase in steam sales volume following customers' demand while higher water cost following higher fuel oil price and higher operating expenses. As a result, TOP SPP reported EBITDA of Baht 567 million, decreased by Baht 54 million. Offsetting with depreciation, finance costs and income tax expense, TOP SPP recorded a net profit of Baht 359 million, decreased by Baht 61 million.

Compared Q4/22 with Q4/21, TOP SPP sales revenue increased by Baht 1,172 million because of increases in average selling prices following higher natural gas price. This led to a rise in EBITDA of Baht 80 million. Offsetting with depreciation, finance costs and income tax expense, TOP SPP net profit increased by Baht 77 million from the same period of last year.

Compared 2022 with 2021, TOP SPP had sales revenue of Baht 11,716 million, increased by Baht 4,467 million due to rises in average selling prices following higher natural gas price while the volume of electricity dispatched exported decreased because of planned maintenance for gas turbines. During the period, TOP SPP had EBITDA of Baht 2,140 million, increased by Baht 341 million. Offsetting with depreciation, finance costs and income tax expense, TOP SPP recorded net profit of Baht 1,342 million, increased by Baht 356 million from 2021. Besides, the sale of ordinary shares in GPSC, of approximately 10.78% of the total issued and paid-up shares, completed on June 7, 2022. As a result, Thaioil and Subsidiaries reduced GPSC's shareholding from 20.78% to 10.0%. Thaioil and Subsidiaries booked share of profit from GPSC of Baht 58 million, a decrease of Baht 1,436 million and booked interim dividend income of Baht 56 million on 21 September 2022. Therefore, Thaioil had total net income from power generation business of Baht 1,456 million, decreased by Baht 1,032 million from the same period last year.

2.6 Financial Result of Solvent and Chemicals Business

Table 12: Financial Result of Thaioil Solvent

	Q4/22	Q3/22	+ / (-)	Q4/21	+ / (-)	2022	2021	+ / (-)
Solvent Utilization Rate ⁽¹⁾ (%)	103%	103%	-	97%	6%	117%	120%	(3%)
Solvent Production ⁽¹⁾ (kTon)	36	36	-	34	2	165	165	-
Solvent and Chemical Sales Volume (kTon)	149	160	(11)	109	40	568	446	122

Remark (1) Produced solvent by Sak Chaisidhi Co., Ltd. (TopNEXT International Company Limited (Former name: TOP Solvent Co., Ltd.) holds 80.52% shares)

In Q4/22, TOS reported a lower in sales revenue following average crude oil price and a decrease in sales volume. Moreover, TOS had lower gross profit margin owing to oversupply of some products in domestic market and a decline in demand. Thus, TOS reported drops in EBITDA and net loss in this quarter.

For 2022, a higher sales revenue occurred from hikes in sales volume and average selling price per unit. Moreover, TOS had EBITDA close to 2021 and had net foreign exchange loss resulting in lower net profit than the previous year.

In Q4/22, Solvent and Chemicals Product Business reported 103% solvent utilization rate which closed to the previous quarter following demand of solvent and chemical. Solvent and chemicals sales volume decreased by approximately 11 kTons. This led business group to record sales revenue of Baht 5,848 million, decreased by Baht 604 million following average crude oil price trend. Therefore, business group reported EBITDA of Baht 141 million, reduced by Baht 30 million because the gross profit margin was squeezed by oversupply of some products in domestic market and incremental cost outpacing selling price. Moreover, business group had net foreign exchange loss of Baht 199 million compared with net foreign exchange gain of Baht 83 million in the previous quarter. Offsetting with depreciation, finance costs, and income tax expense, TOS posted net loss of Baht 59 million in Q4/22 compared to net profit of Baht 105 million in the previous quarter.

Compared Q4/22 with Q4/21, Business group's utilization rate increased by 6% from the same period last year and there was an increase in sales volume by approximately 40 kTons. The average solvent and chemicals selling price per unit rose considerably tracking crude oil price causing business group to record an increase in sales revenue of Baht 2,137 million. However, business group posted a decrease in EBITDA of Baht 100 million due to lower gross profit margin. This was because of an oversupply in some product groups of the domestic market and incremental cost outpacing selling price. Business group posted higher net foreign exchange loss by Baht 190 million than Q4/21. Offsetting with depreciation, finance costs, and income tax expense, TOS, in Q4/22, recorded a decrease in net profit of Baht 186 million from the same period last year.

For 2022, compared with 2021, Business group had a 117% solvent utilization rate and had an increase in sales volume of approximately 122 kTons. Additionally, significantly higher average selling price per unit tracking crude oil price led business group to record sales revenue of Baht 22,585 million, increased by Baht 9,271 million. Moreover, business group recorded EBITDA of Baht 1,043 million which closed to the prior year. In 2022, business group had net foreign exchange loss of Baht 58 million, while they had net foreign exchange gain of Baht 112 million in 2021. Offsetting with depreciation, finance costs and income tax expense, TOS posted net profit of Baht 525 million, decreased by Baht 138 million from the same period of the previous year.

On 3 October 2022, TOP Solvent Co., Ltd., the marketing arm of Thaioil and Subsidiaries, has changed its name to TopNEXT International Co., Ltd. to drive in sales, export, and distribution to overseas countries.

2.7 Financial Result of Olefin Business

Table 13: Spread of Olefin Products

	Q4/22	Q3/22	+/(-)	Q4/21	+/(-)	2022	2021	+/(-)
HDPE – Naphtha MOPJ ⁽¹⁾	361	390	(29)	507	(146)	418	536	(118)
LLDPE – Naphtha MOPJ ⁽¹⁾	326	386	(60)	540	(214)	423	554	(131)
PP – Naphtha MOPJ ⁽¹⁾	302	358	(56)	563	(261)	396	651	(255)

Remark: (1) Based on ICIS price

In Q4/22 olefin market was continually under pressure from excess supply. TII booked net loss of Baht 201 million.

For the year 2022, TII had net loss of Baht 813 million mainly from higher feedstock cost, weaker demand from COVID lockdowns and excess supply.

In Q4/22, High density polyethylene (HDPE) spread over naphtha decreased compared with Q3/22 to 361 US\$/ton, while Polypropylene (PP) over naphtha also weakened to 302 US\$/ton. Although there had some supports from China's easing COVID-19 restrictions, olefin market was continually pressured from softer demand despite festive season and new additional production had been added from China, resulting in CAP reducing their utilization rate. Furthermore, in Q4/22, TII realized a share of the loss from the investment in CAP. Besides, TII itself had administrative expenses as well. Therefore, TII realized a net loss of Baht 201 million, compared with a net loss of Baht 351 million in the previous quarter.

For the year 2022, TII reported a net loss of Baht 813 million, compared with a net loss of Baht 90 million in 2021 as TII realized a share of the loss from CAP due to a naphtha price rose tracking crude oil prices from the conflict between Russia and Ukraine. In addition, olefin market was pressured by China's lockdowns and new additional capacity especially from China in 2H/2022. Owing to economic reasons, most olefin plants reduced their production.

2.8 Financial Result of Ethanol Business

Table 14: Utilization Rate of TET

	Q4/22	Q3/22	+/(-)	Q4/21	+/(-)	2022	2021	+/(-)
Ethanol Utilization Rate (%)								
- Sapthip	106%	119%	(14%)	109%	(3%)	101%	86%	15%

In Q4/22 TET reported lower sales revenue from lower sales volume. However, a higher selling price of ethanol from a rise in production cost result to TET reported higher in gross profit, EBITDA and net profit from Q3/22.

In Q4/22, Thaioil Ethanol Co., Ltd. (TET) reported ethanol utilization rate at 106%, a decreased by 14% from Q3/22 because of shutdown for cleaning in December. It reported consolidated sales revenue from Sapthip Co., Ltd. (TET holds 50% shares) of Baht 514 million which decreased by Baht 2 million from the prior period mainly came from the decreased in sales volumes of ethanol and alcohol for cleaning purposes. However, the selling price of ethanol increased from rises in production costs. As a result, it had a higher TET's gross profit and reported EBITDA of Baht 77 million, increased by Baht 10 million. Offsetting with selling and administrative expenses, depreciation, finance costs, income tax expense, and non-controlling interests, TET reported consolidated net profit of Baht 15 million compared with consolidated net profit of Baht 11 million in the previous quarter.

For the year 2022, TET booked higher sales revenue from the prior year due to an increase in sales volume and selling price of ethanol. TET reported higher gross profit and EBITDA but lower net profit from extra items in 2021.

Comparing with Q4/21, TET had a rise in consolidated sales revenue from Sapthip Co., Ltd., of Baht 70 million mainly from an increase in selling price of ethanol. This led, TET recorded an increased in EBITDA and net profit by Baht 44 million and Baht 20 million, respectively from the previous period.

For the year 2022, TET reported consolidated sales revenue of Baht 1,796 million, an increase of Baht 207 million from the same period of last year mostly came from an increase in sales volume and selling price of ethanol. This sent higher in gross profit and reported EBITDA by Baht 206 million which increased by Baht 17 million. TET reclassified UBE investment from equity method to financial assets measured at fair value through other comprehensive income. Therefore, TET had no longer booked profit sharing from investment in UBE in this period. This led TET to book consolidated net profit of Baht 18 million compared with consolidated net profit of Baht 579 million in 2021 which it had recorded the above extra items.

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 2022	31 December 2021	+ / (-)	+ / (-) %
Assets				
Cash, cash equivalents and short-term investments ⁽¹⁾	43,919	30,024	13,895	46%
Other current assets	109,909	71,215	38,694	54%
Non-current assets	290,753	260,905	29,848	11%
Total assets	444,581	362,144	82,437	23%
Liabilities				
Current liabilities ⁽²⁾	82,070	34,263	49,208	144%
Long-term borrowings and debentures (including current portion) ⁽³⁾	171,860	181,836	(9,976)	(5%)
Other non-current liabilities	31,994	22,951	7,642	33%
Total liabilities	285,923	239,050	46,873	20%
Equity				
Equity attributable to owners of the company	156,034	120,881	35,153	29%
Non-controlling interests	2,623	2,213	410	19%
Total equity	158,657	123,094	35,563	29%
Total liabilities and equity	444,581	362,144	82,437	23%

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 2022, Thaioil and Subsidiaries reported total assets of Baht 444,581 million, rising from 31 December 2021 by Baht 82,437 million, or a 23% due to

- Cash, cash equivalent and short-term investment rose by Baht 13,895 million mainly due to equity raise in 2022 altogether with bond issuance to accommodate maturing bond offsetting with capital expenditure incurred during the year
- Current assets rose by Baht 38,694 million from rising account receivables and inventory following higher crude oil price compared with that in December 2021. Additionally, oil fuel fund receivables increased in 2022 as a result of Royal Thai Government intervention on fuel prices
- Non-current assets went up by Baht 29,848 million mainly form higher property, plant and equipment from project investment such as CFP project

Total Liabilities

As of 31 December 2022, Thaioil and Subsidiaries had total liabilities of Baht 285,923 million, which went up by Baht 46,873 million or 20% from 31 December 2021, mainly due to

- Current liabilities rose by Baht 49,208 million primarily due to higher trade payables from higher average crude oil prices in addition to Extended Trade Credit scheme with PTT Plc.
- Long-term borrowings and debentures (including current portions) declined by Baht 9,976 million due to repayment of bridging loan borrowed from PTT Plc, and other financial institutions to acquire CAP. On the other hand, there was a bond issuance in late 2022 to refinance a bond maturing in early 2023
- Other non-current liabilities rose by Baht 7,642 million mainly from an increase in lease liabilities of Baht 8,590 million

Table 16: Consolidated Borrowings

(Million Baht)	Thaioil	LABIX	TOP SPP	TS	TET	TTC	รวม
Debentures : US\$-denominated ⁽¹⁾	13,383	-	-	-	-	109,081	122,464
: Baht-denominated	26,488	-	-	-	-	-	26,488
Borrowings : Baht-denominated	11,906	3,416	6,884	160	89	-	22,455
: Other currencies-denominated ⁽¹⁾	-	-	-	453	-	-	453
As of 31 December 2022	51,777	3,416	6,884	613	89	109,081	171,860
As of 31 December 2021	63,966	4,464	7,277	597	94	105,438	181,836
+ / (-)	(12,189)	(1,048)	(393)	16	(5)	3,643	(9,976)

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

Total Equity

As of 31 December 2022, Thaioil and Subsidiaries reported consolidated equity of Baht 158,657 million, or an increase of Baht 35,563 million or 29% from 31 December 2021 mainly due to 1) net operating profit during the period, 2) extraordinary gain from partial disposal in GPSC, and 3) equity raise (both issued and paid-up capital, and additional paid in capital).

3.2 Statement of Cash Flows

On 31 December 2022, Thaioil and Subsidiaries reported cash and cash equivalent of Baht 43,576 million, Baht 34,787 million of which belonged to Thaioil alone (separated financial statement).

Statement of cash flows for the year 2022 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	43,251	39,246
Net cash flows from / (used in) investing activities	(9,049)	(7,293)
Net cash flows from / (used in) financing activities	(20,253)	(21,792)
Net decrease in cash and cash equivalents	13,949	10,161
Cash and cash equivalents at the beginning of period	29,696	24,600
Effect of exchange rate changes on cash and cash equivalents	(69)	27
Cash and cash equivalents at the end of period ⁽¹⁾	43,576	34,787

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

In 2022, Thaioil and Subsidiaries reported net operating cash flow of Baht 43,251 million, which was mainly a result of net operating profit, before tax, of Baht 42,024 million, lower non-cash adjustment, before tax, of Baht 2,687 million, and increases in working capital of Baht 13,382 million. During the period, there was a tax payment, net, of Baht 9,468 million. In term of investing activities, there was net cash flows used in investing activities of Baht 9,049 million. This was attributable to capital expenditure in major projects such as Clean Fuel Project, and TOP SPP expansion project, offset by cash inflow from partial disposal in GPSC of Baht 22,047 million.

Meanwhile, Baht 20,253 million was used in financing activities. This was mainly owing to 1) net cash received from short term borrowing from financial institutions of Baht 967 million, 2) proceeds received from equity raise of Baht 10,369 million, 3) repayment of long term borrowing, net, of Baht 9,084 million, 4) new issuance of a debenture, net of repayment of a maturing debenture of Baht 9,000 million, 5) finance cost of Baht 7,397 million, 6) repayment of short-term borrowing from a related party of Baht 14,000 million, and 7) dividend payment of Baht 8,547 million.

As such, from 31 December 2021, there was a net decrease of Baht 13,949 million in cash and cash equivalent. Effect on exchange rate changes on cash and cash equivalents of Baht 69 million was booked. With beginning cash and cash equivalent of Baht 29,696 million, ending cash and cash equivalents of Baht 43,576 million was shown on 31 December 2022.

3.3 Financial Ratios

Table 18: Financial Ratios (Consolidated)

Profitability Ratios	Q4/22	Q3/22	+/(-)	2022	2021	+/(-)
Quality of earnings ratio (%)	2%	0%	2%	7%	8%	(1%)
Gross profit margin ratio (%)	1%	(1%)	2%	9%	8%	(1%)
Net profit margin ratio (%)	0%	0%	-	6%	4%	2%

Liquidity Ratios	Q4/22	Q3/22	+/(-)	2022	2021	+/(-)
Current ratio (times)	1.5	1.5	-	1.5	2.6	(1.1)
Quick ratio (times)	0.7	0.6	0.1	0.6	1.4	(0.8)

Financial Policy Ratios	Q4/22	Q3/22	+/(-)	2022	2021	+/(-)
Total liability/ Total equity (times)	1.8	1.8	-	1.8	1.9	(0.1)
Net debt/ Equity (times)	1.0/0.8 ⁽¹⁾	1.1/0.9 ⁽¹⁾	(0.1)	1.0/0.8 ⁽¹⁾	1.4/1.2 ⁽¹⁾	(0.3)
Long-term loan/ Total equity (times)	1.2/1.1 ⁽¹⁾	1.2/1.1 ⁽¹⁾	-	1.2/1.1 ⁽¹⁾	1.6/1.5 ⁽¹⁾	(0.4)
Interest coverage ratio (times)	2.4	(0.6)	3.0	9.6	7.8	1.8
Long-term loan/ Total capitalization (%)	55%	55%	-	55%	62%	(7%)

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 First Quarter of Year 2023, and the First Half of Year 2023

Crude Oil & Refinery Market Outlook

In Q1/23, crude oil prices are expected to remain high continuing from Q4/22 mainly supported by recovering global oil demand especially from China after its government relaxed its COVID-19 restrictions and re-opened its border from January 8, 2023 onwards, as a result, Chinese refineries increased their crude oil import to serve recovering demand following the significant increase in domestic travel activity, both land and air travel during Chinese New Year. In addition, crude oil prices were supported by OPEC and OPEC+ production down more than 2.0 million barrels per day, as well as Russian production and crude exports are expected to decrease after Europe banned crude oil import from Russia since December 5, 2022 onwards. However, the market is concerned about the recession, especially in the US and Europe. As a result of continuous interest rate hikes by the Federal Reserve (FED) and central banks of many countries around the world to response to rising inflation, crude oil prices could be pressured.

In the first half of 2023, crudes oil prices are likely to decline compared to the first half of 2022, which was when the market was concerned over global supply disruption from Russia-Ukraine conflict. In the first half of 2023, market has less concerned about tight supply as Russian crude oil production and exports fell lower than market expected, as well as a concerns over the economic recession, affecting global oil demand. However, crude oil prices are expected to remain high supported by growing global, oil demand mainly in China.

Gross Refinery Margin (GRM) in Q1/23 is expected to improve from Q4/22, supported by tight petroleum product supply from the US refineries' unplanned shutdown in late December 2022 because of 1) winter storms and 2) refiners' transition to resume its normal production capacity. In addition, petroleum product prices are supported by the uncertainty of Russian product exports after Europe ban refined oil products from Russia start from February 5, 2023 onwards. However, market is likely to be pressured by Chinese refined product exports which market expected to increase after the government has raised its first batch of 2023 export quotas for refined oil products.

In the first half of 2023, Gross Refinery Margin (GRM) is likely to be softer than the first half of 2022, pressured by increasing supply mainly export from China as well as new capacity of new refineries in Middle East and China. However, GRM is expected to remain healthy due to the uncertainty of Russian refined oil product exports and lower-than-5-year product inventories and recovering oil demand after China reopen that will take effect January 8, 2023.

Aromatics Market Outlook

In Q1/23, Paraxylene (PX) market is expected to be pressured mainly from new additional capacity of new plants start up in China. However, PX demand in the region is likely to improve after Chinese New Year, supported by seasonal downstream demand which is increasing demand for polyester after easing Covid-19 lockdown measures as well as improving PET bottles ahead of summer season.

In the first half of 2023, PX market is expected to be softer than the first half of 2022 due to the new PX capacity addition in China approximately 3.1 million tons per year resulting in higher supply in the region. PX demand continues to decelerate at 0.7 million tons per year. However, Chinese COVID-19 restriction easing in early 2023 resulting in higher economic activity, could help support PX market.

In Q1/23, Benzene (BZ) market is expected to be pressured by new additional capacity of new plants start up in China coupled with high inventory. However, reopening and lockdown easing in China would support demand of consumer products, electronic devices as well as a recovery in economic activity after Chinese New Year which could support BZ market.

In the first half of 2023, BZ market is expected to be softer than the first half of 2022 due to the new BZ capacity addition in China approximately 1.7 million tons per year, while BZ demand is expected to grow by 0.5 million tons per year from lockdown easing, as a result, electronic products demand is expected to improve.

In Q1/23, Toluene (TL) market is expected to be pressured by new additional capacity of new plants start up in the region, while weakening TL demand for PX and BZ production. However, TL demand for the gasoline blending is expected to recover after Chinese New Year in late of January 2023.

In the first half of 2023, TL market is expected to remain weak due to new capacity addition in the region approximately 1.0 million tons per year, while TL demand continues to decelerate 0.3 million tons per year. However, easing of COVID-19 restrictions in China could support TL market.

LAB Market Outlook

LAB in Q1/23 is expected to be softer compared to Q4/22, pressured by ample supply mainly in China due to lower demand of washing products following economic slowdown in the past year. However, LAB demand in Asia is likely to improve after New Year and Chinese New Year holidays especially in March ahead of summer in Asia.

In the first half of 2023, LAB market is expected to be softer, pressured by rising supply following increasing LAB production of refineries in North Asia. However, LAB market is expected to be supported by higher washing products in Asia especially during summer when demand for detergent products is normally peak.

Lube Base Oil Market Outlook

In Q1/23, lube base oil market is expected to be softer than Q4/22, pressured by weakened lube base oil Group II price following gasoil price. However, the market is expected to be supported by increasing demand following China economic recovery as well as improving demand during summer due to agricultural and driving activities.

In the first half of 2023, lube base oil market is expected to remain stronger than pre-COVID level, but likely to be softer than ending of 2022 due to lube base oil Group II and III new capacity addition in China (Hainan Handi Sunshine 800,000 tons per year) despite planned maintenance of lube base oil Group I in the region.

Bitumen Market Outlook

In Q1/23, bitumen market is expected to be softer than Q4/22 pressured by increasing supply after the resumption of regional refineries. However, bitumen market is likely to be supported by higher economic activity after China reopen as well as improving demand for road repair and construction in Indonesia and Vietnam.

In the first half of 2023, bitumen market is expected to be pressured by rising supply which has been continuously increasing from the end of 2022 coupled with lower demand for road paving during rainy season. However, bitumen market is expected to be supported by road repair and construction in the region from economic recovery.

5. Appendix

5.1 Summary of Approved Investment Plan

From 2023 to 2025, Thaioil and Subsidiaries have outstanding approved capital expenditure of US\$ 991 million, mainly consisting of CFP project (Clean Fuel Project) of US\$ 553 million and an investment in PT Chandra Asri Petrochemical Tbk (“CAP”) of US\$ 270 million. An estimated budget for the investment during 2023-2025 is summarized in the table below.

TOP Group Strategic Investment Plan

CAPEX Plan (Unit US\$ million)

Updated as of January 2023

Project	Estimated Budgeting for Investment Plan 2023 - 2025
CFP project *	553
Total Ongoing CAPEX	112
Reliability, Efficiency and Flexibility Improvement	36
Infrastructure Improvement (i.e. New Bangphra Raw Water Line, Site office preparation for fire water & fire water improvement)	6
Other Investments (i.e. Corporate Venture Capital - CVC , Digital Transformation)	70
TOP SPP Expansion	56
Olefins Investment	270
Total CAPEX	991

* 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



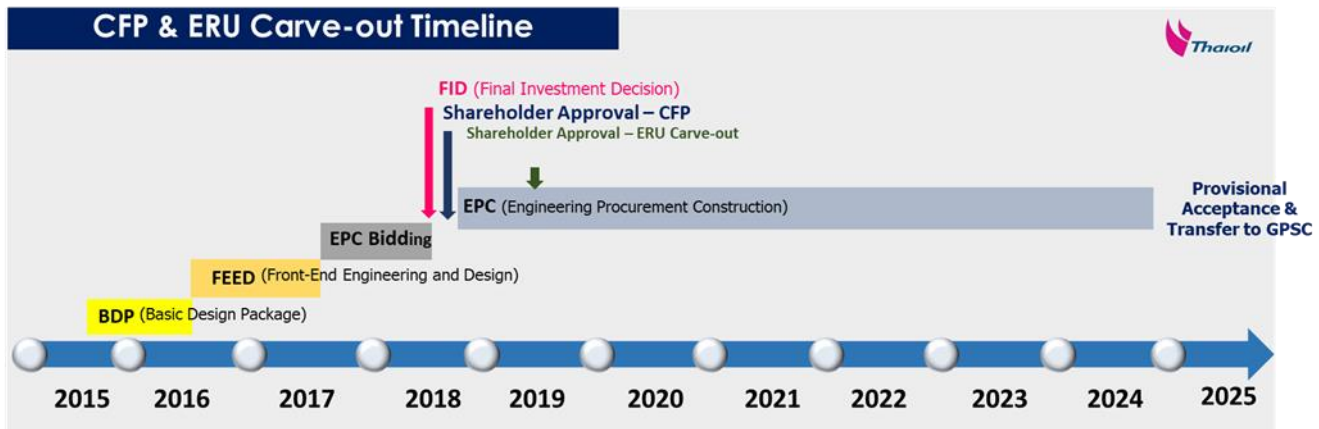
5.2 Summary of Key Project Investment: Clean Fuel Project (CFP)

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 December 2022, the progress of the CFP was more than 89.6% 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.