

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

For The Third Quarter and  
The First Nine Month of 2022

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**Management's Discussion and Analysis (MD&A)**  
**Thai Oil Public Company Limited and Subsidiaries**  
**For the Third Quarter and the First Nine Month of 2022**

**1. Company and its Subsidiaries' Operating Results**

Table 1: Summary of Consolidated Financial

(Million Baht)	Q3/22	Q2/22	+ / (-)	Q3/21	+ / (-)	9M/22	9M/21	+ / (-)
Integrated Intake (kbd)	288	312	(24)	259	29	301	270	31
Gross Integrated Margin (GIM) <sup>(1)</sup> (US\$/bbl)								
: <u>excluding</u> Stock Gain/(Loss)	8.8	25.6	(16.8)	5.5	3.3	14.2	4.9	9.3
: <u>including</u> Stock Gain/(Loss)	(0.7)	33.4	(34.1)	10.5	(11.2)	18.7	10.2	8.5
(Million Baht)	Q3/22	Q2/22	+ / (-)	Q3/21	+ / (-)	9M/22	9M/21	+ / (-)
Sales Revenue	124,174	143,892	(19,718)	79,960	44,214	382,571	231,530	151,041
Net Realized Loss on Financial Instruments	(220)	(10,263)	10,043	(479)	259	(16,210)	(654)	(15,556)
<b>EBITDA</b>	<b>(568)</b>	<b>22,322</b>	<b>(22,890)</b>	<b>6,784</b>	<b>(7,352)</b>	<b>34,789</b>	<b>22,060</b>	<b>12,729</b>
Net Gain/(Loss) on Fair Value Measurement of Financial Instruments	5,090	(2,383)	7,473	(1,429)	6,519	1,082	(2,256)	3,338
Net Foreign Exchange Gain/(Loss) <sup>(2)</sup>	(1,710)	(1,317)	(393)	(1,228)	(482)	(2,717)	(5,118)	2,401
Gain from disposal of investment in an associate	-	10,038	(10,038)	-	-	10,038	-	10,038
Gain from reclassification of investment	-	7,297	(7,297)	-	-	7,297	-	7,297
Finance Costs	(940)	(966)	26	(934)	(6)	(2,866)	(2,637)	(229)
Reversal of Income Tax (Expense)	156	(7,509)	7,665	(213)	369	(9,026)	(959)	(8,067)
<b>Net Profit/(Loss)</b>	<b>12</b>	<b>25,327</b>	<b>(25,315)</b>	<b>2,063</b>	<b>(2,051)</b>	<b>32,521</b>	<b>7,545</b>	<b>24,976</b>
<b>Basic Earnings/(Loss) per Share (Baht)</b>	<b>0.01</b>	<b>12.41</b>	<b>(12.40)</b>	<b>1.01</b>	<b>(1.00)</b>	<b>15.92</b>	<b>3.70</b>	<b>12.22</b>
Stock Gain/(Loss)	(9,238)	7,557	(16,795)	3,915	(13,153)	12,791	12,354	437
Reversal/ (Write-Down) on Crude and Petroleum Product Inventory <sup>(3)</sup>	236	259	(23)	(280)	516	(2,114)	(242)	(1,872)
Exchange Rate (Baht: 1 US\$)	Q3/22	Q2/22	+ / (-)	Q3/21	+ / (-)	9M/22	9M/21	+ / (-)
Average FX	36.58	34.60	1.98	33.10	3.48	34.81	31.71	3.10
Ending FX	38.07	35.46	2.61	34.09	3.98	38.07	34.09	3.98

**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 Q3/22, Q2/22, Q3/21, 9M/22 and 9M/21 of Baht (1,524) million, Baht (1,298) million, Baht (1,320) million, Baht (2,655) million, and Baht (4,841) 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 Q3/22, compared with Q2/22, Thaioil and Subsidiaries reported lower integrated intakes due to softened crack spreads and scheduled maintenance of some upgrading units. Thus, we reported sales revenue of Baht 124,174 million, or a decrease of Baht 19,718 million following lower selling prices due to economic slowdown. Additionally, demand was pressured from COVID-19 lockdown in China. We reported GIM excluding stock gain / (loss) of 8.8 US\$/bbl or a decline of 16.8 US\$/bbl, mainly due to lower crack spreads

and a higher crude premium (namely Murban and Arab Light), which were our main feedstock. Meanwhile, for aromatics, PX spread over ULG95 improved due to tightened supply in the region because of 1) lower regional production and 2) maintenance shutdowns at some plants in the region. Furthermore, BZ spread over ULG95 expanded following a higher gross profit of styrene, which was the downstream product of BZ. Surfactant business profit contribution was steadily strong from lower feedstock cost since the market was worried about economic slowdown in the increasing inflation environment. Moreover, base oil spread and bitumen spread over fuel oil increased due to the decline in fuel oil price following Dubai price. However, crude oil price in this quarter declined from Q2/22 from 1) lower forecasted oil demand from economic slowdown during monetary tightening to slowdown inflation, and 2) suppressed oil demand from COVID-19 lockdown in many cities in China. Thus, we reported stock loss of Baht 9,238 million in this quarter, while we reported stock gain of Baht 7,557 million in Q2/22. Thus, negative GIM including stock gain / (loss) of 0.7 US\$/bbl was reported during the period, whereas positive GIM was 33.4 US\$/bbl in Q2/22. There was a reversal on crude and petroleum product inventory of Baht 236 million, Baht 23 million lower than in Q2/22. Including realized loss from financial instrument of Baht 220 million, we reported negative EBITDA of Baht 568 million, compared with positive EBITDA of Baht 22,322 million in Q2/22. Meanwhile, gain on fair value measurement on financial instruments of Baht 5,090 million was booked, compared with loss from the same measurement of Baht 2,383 million in the previous quarter, and we reported net loss from foreign exchange of Baht 1,710 million (Baht 1,524 million of which was from foreign exchange loss on foreign currency assets and liabilities), or higher loss of Baht 393 million from the previous quarter due to the ongoing Thai Baht depreciation. Additionally, gain from GPSC share disposal of Baht 17,334 million, before tax, or Baht 12,880 million, net of tax, was booked in Q2/22. Therefore, in Q3/22, we reported net profit of Baht 12 million, or 0.01 Baht per share, a decline of Baht 25,315 million from the previous 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 cost attributable to this transaction, net of tax, of Baht 183 million.

In Q3/22, compared with Q3/21, we reported higher integrated intakes as the COVID-19 pandemic subsided and travel restrictions were lifted. Thus, we reported higher sale of Baht 44,214 million following higher selling prices tracking crude oil prices. We, therefore, reported higher GIM excluding stock gain/loss of 3.3 US\$/bbl, mainly due to stronger gasoline, jet/kero and gasoil spreads over Dubai. Additionally, bitumen spread over fuel oil went up due to tighter supply. Nevertheless, PX and BZ spreads over ULG95 declined following higher ULG95 price. Besides, profit contribution from surfactant business declined due to lower domestic demand, and with lower crude oil price, we unavoidably reported stock loss of Baht 9,238 million in this quarter compared with stock gain of Baht 3,915 million during the same period last year. A reversal on crude and petroleum product inventory of Baht 236 million was booked during the period, compared with a write-down of Baht 280 million in Q3/21. Including smaller realized loss from financial instrument of Baht 259 million, we reported negative EBITDA of Baht 568 million, while we reported positive EBITDA of Baht 6,784 million during the same period last year. We booked gain on fair value measurement on financial instruments of Baht 5,090 million, whereas loss of Baht 1,429 million was recognized during Q3/21. However, we booked higher net loss on foreign exchange of Baht 482 million. Offsetting with depreciation, finance cost and tax expense, we reported lower net profit of Baht 2,051 million from the same period last year.

For the first nine months of 2022, compared with the same period last year, we reported sales of Baht 382,571 million, or Baht 151,041 million higher due to higher product selling prices tracking crude oil price. Meanwhile, gasoline, jet/kero and gasoil spread over Dubai improved due to city opening and the lifting of travel restrictions. Furthermore, profit from surfactant business was at a good level while aromatic spreads and base oil/bitumen spreads declined. Therefore, we reported higher GIM excluding stock gain/loss of 9.3 US\$/bbl, totaling to 14.2 US\$/bbl. Furthermore, we booked stock gain of Baht 12,791 million, or Baht 437 million higher than the same period last year. However, we had a write-down on crude and petroleum product inventory of Baht 2,114 million, or Baht 1,872 million higher



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loss than the same period last year. Altogether with realized loss from financial instruments of Baht 16,210 million, we had higher EBITDA of Baht 34,789 million, or boosted by Baht 12,729 million. In addition, we also booked gain from fair value measurement of financial instrument of Baht 1,082 million but foreign exchange loss of Baht 2,717 million due to Thai Baht depreciation. Furthermore, we had fair value measurement and gain from 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 net profit of Baht 32,521 million, or Baht 24,976 million higher than the same period last year.

## 2. Summary of Financial Result by Business

Table 2: Financial Result by Business

(Million Baht)

Sales Revenue	Q3/22	Q2/22	+/-)	Q3/21	+/-)	9M/22	9M/21	+/-)
<b>Consolidated</b>	<b>124,174</b>	<b>143,892</b>	<b>(19,718)</b>	<b>79,960</b>	<b>44,214</b>	<b>382,571</b>	<b>231,530</b>	<b>151,041</b>
Refinery	134,614	156,585	(21,971)	82,777	51,837	414,127	237,900	176,227
Aromatics and LAB <sup>(1)</sup>	23,255	25,894	(2,639)	16,079	7,176	68,452	41,424	27,028
Lube Base Oil	7,774	8,402	(628)	6,420	1,354	22,983	17,740	5,243
Power Generation <sup>(2)</sup>	3,269	2,639	630	1,906	1,363	8,388	5,418	2,970
Solvent and Chemicals <sup>(3)</sup>	6,452	6,039	413	3,417	3,035	16,737	9,603	7,134
Marine Transportation <sup>(4)</sup>	-	-	-	-	-	-	211	(211)
Ethanol <sup>(5)</sup>	516	368	148	410	106	1,282	1,145	137
Others <sup>(6)</sup>	1,710	1,613	97	1,562	148	4,901	4,499	402

EBITDA	Q3/22	Q2/22	+/-)	Q3/21	+/-)	9M/22	9M/21	+/-)
<b>Consolidated</b>	<b>(568)</b>	<b>22,322</b>	<b>(22,890)</b>	<b>6,784</b>	<b>(7,352)</b>	<b>34,789</b>	<b>22,060</b>	<b>12,729</b>
Refinery	(3,037)	21,018	(24,055)	3,443	(6,480)	29,294	11,434	17,860
Aromatics and LAB	31	(243)	274	1,379	(1,348)	320	4,293	(3,973)
Lube Base Oil	1,654	735	919	1,327	327	2,844	4,126	(1,282)
Power Generation	621	519	102	468	153	1,573	1,375	198
Solvent and Chemicals	171	379	(208)	204	(33)	902	800	102
Olefins	(2)	(2)	-	(9)	7	(7)	(9)	2
Marine Transportation	-	-	-	-	-	-	33	(33)
Ethanol	67	1	66	23	44	129	156	(27)
Others	58	53	5	63	(5)	161	149	12

Net Profit / (Loss)	Q3/22	Q2/22	+/-)	Q3/21	+/-)	9M/22	9M/21	+/-)
<b>Consolidated</b>	<b>12</b>	<b>25,327</b>	<b>(25,315)</b>	<b>2,063</b>	<b>(2,051)</b>	<b>32,521</b>	<b>7,545</b>	<b>24,976</b>
Refinery	(1,261)	25,543	(26,804)	(1,312)	51	30,608	(1,428)	32,036
Aromatics and LAB	(313)	(487)	174	1,002	(1,315)	(739)	2,552	(3,291)
Lube Base Oil	1,302	549	753	1,038	264	2,180	3,222	(1,042)
Power Generation <sup>(7)</sup>	420	333	87	656	(236)	1,041	1,963	(922)
Solvent and Chemicals	105	253	(148)	143	(38)	584	536	48
Olefins <sup>(8)</sup>	(351)	(195)	(156)	(23)	(328)	(613)	(23)	(590)
Marine Transportation	-	-	-	-	-	-	15	(15)
Ethanol	11	(17)	28	535	(524)	3	584	(581)
Others <sup>(9)</sup>	86	90	(4)	108	(22)	305	290	15

**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 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.

(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 from the investments in PTT Digital Solutions Co., Ltd., PTT Energy Solutions Co., Ltd. and Thai Petroleum Pipeline Co., Ltd. On 29 August, The Extraordinary General Meeting of PTT Energy Solutions Co., Ltd shareholders No.1/2022 pass a resolution to liquidate the company, the process is expected to finish in 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

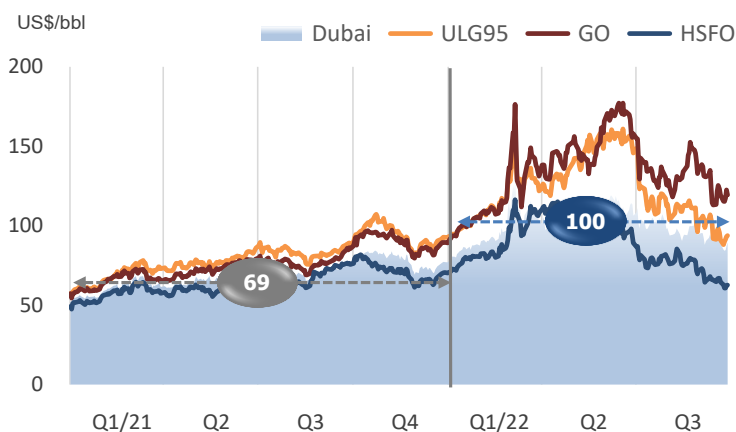
Average Prices (US\$/bbl)	Q3/22	Q2/22	+ / (-)	Q3/21	+ / (-)	9M/22	9M/21	+ / (-)
Dubai Crude Oil <sup>(1)</sup>	96.9	108.1	(11.2)	71.7	25.2	100.2	66.2	34.0
Unleaded Gasoline (ULG95)	110.1	143.0	(32.9)	83.4	26.7	122.2	75.8	46.4
Jet/Kero	129.3	147.2	(17.9)	77.0	52.3	129.4	70.6	58.8
Gasoil (GO)	132.1	151.2	(19.1)	77.1	55.0	132.8	71.3	61.5
Fuel Oil (HSFO)	74.6	104.9	(30.3)	68.3	6.3	88.9	62.0	26.9
Crude Premiums (US\$/bbl)	Q3/22	Q2/22	+ / (-)	Q3/21	+ / (-)	9M/22	9M/21	+ / (-)
Murban <sup>(2)</sup>	10.5	7.4	3.1	2.5	8.0	7.3	1.5	5.8
Arab Light <sup>(3)</sup>	8.5	6.2	2.3	2.5	6.0	5.8	1.6	4.2
Spreads over Dubai (US\$/bbl)	Q3/22	Q2/22	+ / (-)	Q3/21	+ / (-)	9M/22	9M/21	+ / (-)
Unleaded Gasoline (ULG95)	13.2	35.0	(21.8)	11.8	1.4	22.0	9.6	12.4
Jet/Kero	32.4	39.2	(6.8)	5.4	27.0	29.3	4.4	24.9
Gasoil (GO)	35.2	43.1	(7.9)	5.4	29.8	32.6	5.1	27.5
Fuel Oil (HSFO)	(22.3)	(3.2)	(19.1)	(3.4)	(18.9)	(11.3)	(4.2)	(7.1)
Very Low Sulfur Fuel Oil (VLSFO)	11.7	21.9	(10.2)	4.9	6.8	15.1	5.9	9.2

**Remark** 1) Closing Dubai crude oil price at the end of Q3/22, Q2/22, and Q3/21 were calculated from average Dubai prices in the last month in the respective period. The prices were 90.0 US\$/bbl, 113.2 US\$/bbl, and 72.6 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 Q3/22 went down from Q2/22 following 1) lower oil demand forecast following economic slowdown from high inflation leading central banks to introduce tightening monetary policies, and 2) expansion of COVID-19 lockdown measures in some Chinese cities pressuring oil demand. However, crude oil price was higher compared with the same period last year due to resumption of economic activities as lockdown policies were eased. Furthermore, crude oil price was supported by OPEC+ plan to reduce aggregated supply down by 0.1 million barrels per

day starting from October 2022 to stabilize crude oil price.

Murban premium over Dubai and Arab Light premium over the Oman/Dubai average went up in Q3/22 compared with that of Q2/22 and Q3/21 following higher oil demand resulting in refiners to boost their productions while sanction imposed on Russian crude led oil buyers to shift their purchases toward the Middle Eastern crudes—this further strengthen crude oil demand from the Middle East.

Meanwhile, gasoline spread over Dubai in Q3/22 went down compared with that of Q2/22 due to 1) concerns over lower oil demand from economic slowdown 2) lower Indonesian gasoline import since its government reduced its subsidy on oil fuel, and 3) weaker demands from various COVID-19 lockdowns in China to combat the pandemic. Compared with Q3/21, gasoline spread went up following higher gasoline demand as COVID-19 situation subsided. Nevertheless, jet/kero and gasoil spreads over Dubai declined from the previous quarter as some refineries shifted their productions toward these products from gasoline as the spreads were stronger. This sent regional supply up. However, jet/kero and gasoil inventory in the US, EU and Singapore remained below 5-year-average suggested that the market was still tightened. Compared with Q3/21, gasoil spread improved due to sanction against Russian petroleum products while jet/kero spread expanded from higher demand from higher aviation activities due to lockdown easing. Very low sulfur fuel oil spread in this quarter went down tracking lower demand for gasoline and gasoil from concerns over economic prospect. Likewise, fuel oil spread declined from that of Q2/21 and Q3/22 due to excessive supply in the market since Russia exported more fuel oil into the Asia while there were lower imports of fuel oil into South Asia. However, the market was supported by demand for electricity generation in the Middle East in the summer.

Table 4: Financial Result of Refinery Business

	Q3/22	Q2/22	+ / (-)	Q3/21	+ / (-)	9M/22	9M/21	+ / (-)
Throughput <sup>(1)</sup> (%)	104%	112%	(8%)	92%	12%	108%	97%	11%
Intake (kbd)	286	308	(22)	254	32	297	266	31
Gross Refining Margin (GRM) (US\$/bbl)								
: <u>excluding</u> Stock Gain/(Loss)	6.7	25.1	(18.4)	1.6	5.1	12.9	0.9	12.0
: <u>including</u> Stock Gain/(Loss)	(2.9)	32.9	(35.8)	6.7	(9.6)	17.5	6.3	11.2

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

*In Q3/22, despite gain from fair value measurement of financial instruments, the refinery reported net loss due to lower crack spreads and stock loss.*

*For 9M/22, the refinery booked net profit compared with net loss during the same period last year due to 1) improved crack spreads, 2) stock gain, and 3) gain from GPSC disposal in Q2/22.*

In Q3/22, Thaioil refinery reported throughput of 104% or an 8% decline from the previous quarter due to planned maintenance shutdown of certain upgrading units, and reported lower sales volume by 6%. During the period, it sold 86%, 11% and 3% to domestic, Indochina, and other export markets, respectively. Sales revenue of Baht 134,614 million, a decrease of Baht 21,971 million was booked during the period. Sales went down following lower product selling prices from economic slowdown, and softened demand from COVID-19 lockdown in China. Additionally, the refinery reported GRM excluding stock gain/loss of 6.7 US\$/bbl, or a decline of 18.4 US\$/bbl from the previous quarter due to softer crack spreads. Additionally, weakened crude oil price resulted in stock loss of 9.6 US\$/bbl or equivalent to Baht 9,238 million, compared with stock gain of Baht 7,557 million in Q2/22. Meanwhile, a reversal on crude and petroleum product inventory of Baht 236 million was recognized during the period, this was slightly lower than the previous quarter. Altogether with net realized loss from financial instruments of Baht 239 million, the refinery reported negative EBITDA of Baht 3,037 million, compared with EBITDA of Baht 21,018 million in Q2/22. However, the refinery booked gain on fair value measurement of financial instruments of Baht 5,206 million while it booked the loss of Baht



2,354 million in the last quarter. This was mainly attributable to commodity hedging contracts. Net foreign exchange loss of Baht 1,874 million, Baht 1,172 million of which was from foreign currency denominated assets and liabilities. In Q2/22, there was a disposal of investment in GPSC of Baht 18,026 million, before tax (or Baht 13,572 million, net of tax). Offsetting with depreciation, finance cost and tax expenses, net loss of Baht 1,261 million was booked while net profit of Baht 25,534 million was booked in the previous quarter (net loss, with dividend income, was Baht 775 million).

Compared with Q3/21, the refinery throughput increased by 12%. Likewise, sales volume also increased by 16% following higher demand as the pandemic situation subsided. The refinery reported higher sales revenue of Baht 51,837 million following higher selling prices from strong product demands after the pandemic and lockdown easing. Furthermore, the refinery reported GRM excluding stock gain/loss, higher by 5.1 US\$/bbl from the same period last year due to stronger gasoline, jet/kero and gasoil spreads. However, with weakened crude oil price, stock loss of Baht 9,238 million was booked during the period compared with stock gain of Baht 3,915 million last year. Furthermore, a reversal of crude and petroleum product inventory of Baht 236 million was booked during the period whereas a write-down of Baht 280 million was booked in the same period last year. In this quarter, with lower net realized loss of financial instruments of Baht 207 million, an EBITDA dipped by Baht 6,480 million. However, gain from fair value measurement of financial instruments of Baht 5,206 million was posted during the period while loss of the same measurement of Baht 1,699 million was reported during the same period last year. Offsetting with depreciation, finance cost, and tax expenses, the refinery reported lower loss of Baht 51 million.

Compared 9M/22 with 9M/21, the refinery had higher throughput of 11% from adjustment of production plan in response to resumption of economic activities following alleviated COVID-19 situation. At the same time, sales volume expanded by 15% and with higher product selling prices, sales revenue went up by Baht 176,227 million, totaling to Baht 414,127 million. GRM excluding stock gain/loss of 12.9 US\$/bbl, or a 12.0 US\$/bbl increase was reported during the period, stock gain of Baht 12,791 million was observed. This was slightly increase from last year. A write-down on crude and petroleum product inventory of Baht 2,114 million, or an increase of Baht 1,872 million was recorded during the period. Altogether with net realized loss from financial instruments of Baht 16,291 million, EBITDA of Baht 29,294 million was achieved. This represented an increase of Baht 17,860 million from the same period last year in term of EBITDA. Furthermore, gain on fair value measurement of financial instruments of Baht 1,213 million was booked whereas it was loss of Baht 2,453 million last year. In 9M/22, the refinery booked net loss on foreign exchange of Baht 3,033 million, this was an improvement of Baht 2,375 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 30,608 million in the first nine month of 2022. On the other hand, during the same

period last year, net loss of Baht 1,428 million was recorded. (net profit, with dividend income, was Baht 33,386 million).

## 2.2 Market Condition and Financial Result of Aromatics Business

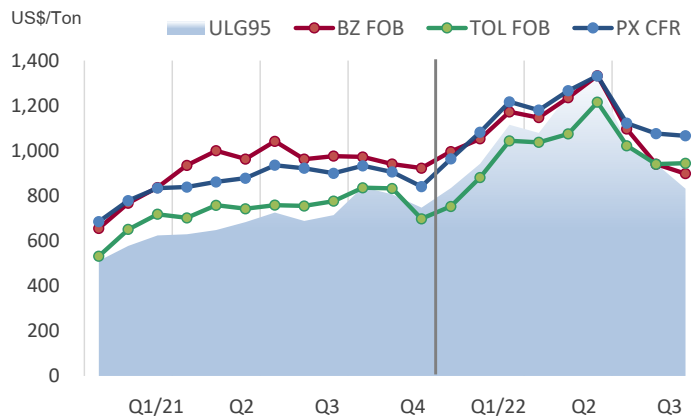
Table 5: Average Prices and Spreads of Aromatics Products

Average Prices (US\$/Ton)	Q3/22	Q2/22	+/(-)	Q3/21	+/(-)	9M/22	9M/21	+/(-)
Paraxylene (PX) <sup>(1)</sup>	1,088	1,259	(171)	919	169	1,145	848	297
Benzene (BZ) <sup>(2)</sup>	978	1,238	(260)	993	(15)	1,097	904	193
Toluene (TL) <sup>(2)</sup>	969	1,109	(140)	763	206	990	710	280
Spreads over ULG95 (US\$/Ton)	Q3/22	Q2/22	+/(-)	Q3/21	+/(-)	9M/22	9M/21	+/(-)
Paraxylene (PX)	152	44	108	210	(58)	107	204	(97)
Benzene (BZ)	42	23	19	284	(242)	58	260	(202)
Toluene (TL)	33	(107)	140	54	(21)	(48)	66	(114)

**Remark** (1) Based on CFR Taiwan price

(2) Based on FOB Korea price

Graph 2: Prices of Aromatics Products and ULG95



In Q3/22, PX price dropped from Q2/22 following the decline in crude oil price. Besides, PX price compared to Q3/21 increased following the easing of lockdown in various countries. For PX spread over ULG95, it increased from Q2/22 due to tighter supply from capacity reduction, regional maintenance shutdowns and new PX plants in China being postponed. However, compared to Q3/21, it dropped due to a surge in oil prices from the Russia-Ukraine conflict. BZ price in Q3/22 was lower than Q2/22 and Q3/21 due to lower demand following the economic slowdown from the Russia-

Ukraine conflict. BZ spread over ULG95 in Q3/22 rose from Q2/22 because of the improvement on demand. However, compared to Q3/21, there was a drop from higher capacity and lower demand on BZ product.

TL price in Q3/22 dropped from Q2/22 following lower oil prices. Meanwhile, TL price in Q3/22 rose from Q3/21 due to higher oil price following the conflict between Russia and Ukraine. For TL spread over ULG95 in Q3/22, it rose from the previous quarter due to lower oil price and tighter supply from regional capacity reduction. However, compared to Q3/21, it declined from weakened demand for TL for PX and BZ production.

Table 6: Financial Result of TPX

	Q3/22	Q2/22	+/(-)	Q3/21	+/(-)	9M/22	9M/21	+/(-)
Aromatics Production Rate <sup>(1)</sup> (%)	70%	77%	(7%)	88%	(18%)	73%	86%	(13%)
Aromatics Production (kTon)	147	160	(13)	184	(37)	457	536	(79)
Product-to-feed Margin <sup>(2)</sup> (US\$/Ton)	7	(27)	34	90	(83)	1	103	(102)

- 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 Q3/22, TPX had higher product-to-feed margin due to increased aromatics spreads. As a result, TPX had better performance from the previous quarter.*

*For 9M/22, TPX had lower product-to-feed margin from decreased aromatics spreads due to lower demand from the economic slowdown, it had let to a drop in TPX performance.*

In Q3/22, compared with Q2/22, Thai Paraxylene Co., Ltd. (TPX) had an aromatics production rate of 70%, and TPX had sales revenue of Baht 14,987 million, decreased by Baht 3,319 million due to decreases in total sales volume and average selling prices. However, aromatics 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 34 US\$/ton from the previous quarter. However, TPX had a net realized gain on financial instruments of Baht 18 million, decreased by Baht 23 million from the previous quarter. Thus, TPX recorded an EBITDA loss of Baht 475 million, lower EBITDA loss by Baht 468 million. Besides, in this quarter, net loss on fair value measurement of financial instruments of Baht 80 million was recorded, compared with gain on fair value measurement of financial instruments of Baht 23 million in Q2/22. In addition, TPX had a net foreign exchange gain of Baht 53 million, increased by Baht 1 million from the previous quarter. Offsetting with depreciation, finance costs and income tax expense, In Q3/22, TPX posted net loss of Baht 584 million, which was lower loss by Baht 291 million from the previous quarter.

Compared with Q3/21, TPX aromatics production rate decreased by 18%. However, TPX had an increased sales revenue by Baht 3,051 million due to increases in average selling prices. However, TPX reported a decrease in product-to-feed margin by 83 US\$/ton due to lower aromatics spread over ULG95. Combining with net realized gain on financial instruments, TPX had an EBITDA loss of Baht 475 million, compared with an EBITDA of Baht 748 million in Q3/21. Besides, TPX had net loss on fair value measurement of financial instruments of Baht 80 million, compared with gain on fair value measurement of financial instruments of Baht 276 million, while TPX had a decrease in net foreign exchange gain of Baht 34 million. Therefore, TPX posted a net loss of Baht 584 million, compared with a net profit of Baht 682 million in the same period last year.

Compared 9M/22 with 9M/21, TPX had sales revenue of Baht 46,952 million, increased by Baht 15,640 million due to increases in total sales volume and average selling prices, However, TPX reported a decrease in product-to-feed margin of 102 US\$/ton from lower in aromatics spreads over ULG95 due to the conflict between Russia and Ukraine and economic slowdown pressuring the demand. Combining with net realized gain on financial instruments of Baht 82 million, TPX posted EBITDA loss of Baht 1,528 million, compared with an EBITDA of Baht 2,906 million in 9M/21. Besides, TPX had net loss on fair value measurement of financial instruments of Baht 69 million, compared with net gain on fair value measurement of financial instruments of Baht 231 million, and had a decreased in net foreign exchange gain by Baht 78 million. Therefore, TPX recorded net loss of Baht 1,761 million, compared with a net profit of Baht 1,981 million in the same period last year.

In Q3/22, aromatics group (TPX holds 75% shares of LABIX) had consolidated sales revenue of Baht 23,255 million, consolidated EBITDA of Baht 31 million and consolidated net loss of Baht 313 million.

For 9M/22, aromatics group had consolidated sales revenue of Baht 68,452 million, consolidated EBITDA of Baht 320 million and consolidated net loss of Baht 739 million.

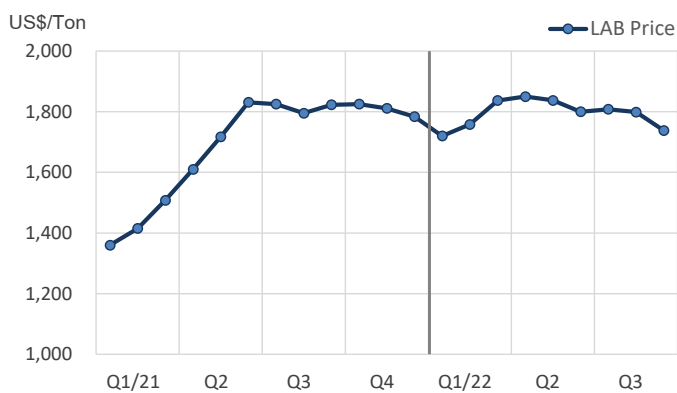
### 2.3 Market Condition and Financial Result of an Intermediate for the Production of Surfactants Business

Table 7: Average Price of LAB

Average Price (US\$/Ton)	Q3/22	Q2/22	+ / (-)	Q3/21	+ / (-)	9M/22	9M/21	+ / (-)
Linear Alkylbenzene (LAB) <sup>(1)</sup>	1,781	1,829	(48)	1,814	(33)	1,794	1,654	140

Remark (1) Based on ICIS price

Graph 3: Price of LAB



In Q3/22, LAB price declined from that of Q2/22, Q3/21. Due to weak demand during the monsoon season (Jun-Sep) in India and Southeast Asia. Meanwhile only IOC, LAB price in India was closed for annual maintenance. and expanding the production capacity from 140,000 tons per year to 162,000 tons per year. However, LAB price in 9M/22 compared to 9M/21 increased in higher feedstock cost including crude oil price and benzene price that rose from the conflict between Russia and Ukraine.

LAB spread over jet and benzene in Q3/22 compared to Q2/22, rose up due to a drop in feedstock price following the economic slowdown on inflation and China's COVID-19 situations that still lockdown in the country .

Table 8: LAB Production

	Q3/22	Q2/22	+ / (-)	Q3/21	+ / (-)	9M/22	9M/21	+ / (-)
LAB Production Rate <sup>(1)</sup> (%)	113%	122%	(9%)	118%	(5%)	119%	109%	10%
LAB Production (kTon)	34	36	(2)	36	(2)	107	98	9

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

*In Q3/22, LABIX had pressure on domestic demand following a rise in feedstock prices. It led LABIX had a drop performance. Compared 9M/22 with 9M/21, LABIX had greater sales volume and gross margin was close to the same period of previous year. It led LABIX had better performance.*

In Q3/22, LABIX Co., Ltd. (LABIX) had LAB production rate at 113% and LAB sales volume dropped by 7% from Q2/22 due to weak domestical demand from higher feedstock prices. However, a rise in LAB price tracking feedstock prices resulted in LABIX had sales revenue of Baht 8,728 million, increased by Baht 657 million. However, LABIX had a lower gross margin. This led LABIX to reported EBITDA of Baht 506 million, decreased by Baht 195 million from previous quarter. Moreover, LABIX had higher net foreign exchange gain by Baht 14 million. Offsetting with depreciation and finance costs, LABIX posted net profit of Baht 361 million, decreased by Baht 156 million from the prior quarter.

Compared with Q3/21, LABIX had lower LAB production rate by 5%. Meanwhile, sales volume increased by 15%. Moreover, a rise in LAB price resulted in sales revenue increases by Baht 4,203 million. However, LABIX had worse gross margin following lower demand and reported EBITDA decreased by Baht 126 million. In addition, LABIX had net foreign exchange gain of Baht 30 million,

compared with net foreign exchange loss of Baht 19 million in Q3/21. Offsetting with depreciation and finance costs, LABIX reported net profit of Baht 361 million, dropped by Baht 65 million from the same period of previous year.

Compared 9M/22 with 9M/21, LABIX had sales revenue of Baht 22,834 million, increased by Baht 11,825 million following a rise in LAB price tracking feedstock prices and greater sales volume. Meanwhiles, LABIX had gross margin close to the same period of previous year. This led LABIX recorded EBITDA of Baht 1,848 million, increased by Baht 460 million. Moreover, net foreign exchange gain of Baht 57 million, compared with net foreign exchange loss of Baht 47 million in 9M/21. Offsetting with depreciation and finance costs, LABIX reported net profit of Baht 1,364 million rose by Baht 603 million from the same period of previous year.

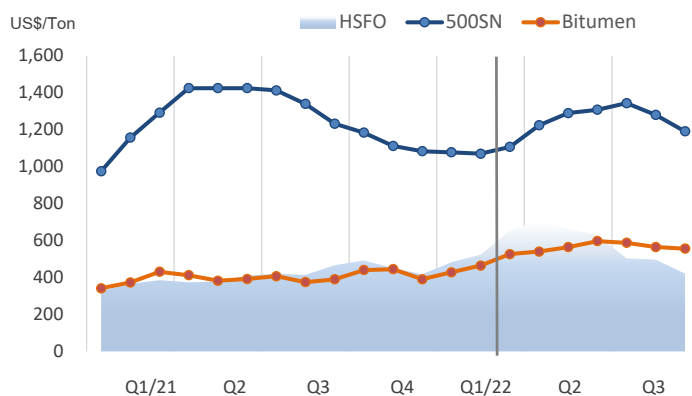
## 2.4 Market Condition and Financial Result of Lube Base Oil Business

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

Average Prices (US\$/Ton)	Q3/22	Q2/22	+/(-)	Q3/21	+/(-)	9M/22	9M/21	+/(-)
500SN <sup>(1)</sup>	1,272	1,274	(2)	1,329	(57)	1,207	1,298	(91)
Bitumen <sup>(2)</sup>	569	567	2	391	178	536	389	147
Spreads over HSFO (US\$/Ton)	Q3/22	Q2/22	+/(-)	Q3/21	+/(-)	9M/22	9M/21	+/(-)
500SN	798	608	190	895	(97)	643	905	(262)
Bitumen	96	(99)	195	(43)	139	(28)	(4)	(24)

**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



feedstock and supply. Furthermore, base oil spread also declined.

Lube base oil price maintained steadily in Q3/22 compared with that of Q2/22 although depressed Chinese demand prevailed and the fact that it was rainy season. However, base oil spread went up due to a significant decline in fuel oil price following a decline in fuel oil price. However, the price in Q3/22 and 9M/22 with that of Q3/21, and 9M/21, price went down this year as the market was cramped last year due to 1) refinery cut-run, and 2) scheduled annual maintenance resulting in limited

Bitumen price and its spread over fuel oil in Q3/22 got firmer compared with that of Q2/22 and Q3/21 due to an ongoing narrowed supply owing to a delayed in crude oil shipping of a Singaporean refiner. Meanwhile, demand was stretched due to limited fiscal budget on road maintenance. In addition, unfavorable weather in rainy season also limited road maintenance activities. These factors pressured bitumen market. However, the spread in 9M/22 contracted compared to than that of 9M/21 given because of 1) Chinese economic slowdown from its COVID-19 policy suppressed demand, and 2) high level of bitumen price discouraging some buyer

Table 10: Financial Result of TLB

	Q3/22	Q2/22	+/(-)	Q3/21	+/(-)	9M/22	9M/21	+/(-)
Base Oil Production Rate <sup>(1)</sup> (%)	86%	90%	(4%)	88%	(2%)	88%	92%	(4%)
Base Oil Production (kTon)	58	60	(2)	59	(1)	176	184	(8)
Product-to-feed Margin <sup>(2)</sup> (US\$/Ton)	209	133	76	187	22	146	197	(51)

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

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

*In Q3/22, TLB had higher P2F mainly due to stronger bitumen spread over fuel oil. This sent up TLB EBITDA and net profit.*

*In 9M/22, TLB had higher sales revenue compared with that of 9M/21.*

*However, recovering supply issue sent down TLB P2F. Therefore, its EBITDA and net profit also decreased.*

In Q3/22, Thai Lube Base Plc. (TLB) reported base oil production rate of 86% and sales revenue of Baht 7,774 million, which signaled a decline of Baht 628 million from Q2/22. Meanwhile, base oil production rate declined from the previous period while TLB shifted its production toward bitumen and other byproducts following higher spreads of these products. A steep decline in fuel oil price resulted in expanded spreads and sent Product-to-feed margin up to 209 US\$/ton or 76 US\$/ton increase. Thus, TLB booked EBITDA of Baht 1,654 million, or an increase of Baht 919 million. Offsetting with depreciation, finance cost, and tax expenses, TLB recorded net profit of Baht 1,302 million, a rise of Baht 753 million from Q2/22.

Compared with Q3/21, TLB had higher sales revenue of Baht 1,354 million due to higher product selling prices tracking crude oil price. However, base oil price spread over fuel oil subsided since the market was very tight. On the other hand, TLB reported higher Product-to-feed margin of 22 US\$/ton mainly due to cramped bitumen supply in this year, and higher EBITDA of Baht 327 million. Altogether, net profit rose by Baht 264 million from the same period last year.

Compared 9M/22 with 9M/21, TLB booked sales revenue of Baht 22,983 million in this year, this was an increase of Baht 5,234 million from the same period last year mainly due to higher bitumen price. However, with weaker base oil spread and bitumen spread, TLB showed lower Product-to-feed margin of 51 US\$/ton. This, therefore, sent down EBITDA down by Baht 1,282 million to Baht 2,844 million. And net profit down by Baht 1,042 million to Baht 2,180 million compared with the same period last year.

## 2.5 Financial Result of Power Generation Business

Table 11: Sales Volume from Power Generation Business

TP + TOP SPP	Q3/22	Q2/22	+/(-)	Q3/21	+/(-)	9M/22	9M/21 <sup>(1)</sup>	+/(-)
Electricity Dispatched (GWh)	407	402	5	409	(2)	1,163	1,261	(98)
Steam Exported (kTon)	544	590	(46)	595	(51)	1,695	1,868	(173)

**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 Q2/21 presented the information of TOP SPP Co., Ltd.

*In Q2/22 and 9M/22, TOP SPP sales revenue increased from increases in average selling prices from natural gas price leading to higher net profit.*

In Q3/22, TOP SPP Co., Ltd. (TOP SPP) had sales revenue of Baht 3,269 million, which increased by Baht 630 million due to higher selling prices following higher natural gas price. As a result, TOP SPP reported EBITDA of Baht 621 million, increased by Baht 102 million. Offsetting with depreciation, finance costs and income tax expense, TOP SPP recorded a net profit of Baht 420 million, increased by Baht 93 million. Besides, Thaioil and Subsidiaries had GPSC's shareholding 10.0%, and booked dividend income of Baht 56 million on 21 September 2022

Compared Q3/22 to Q3/21, TOP SPP sales revenue increased by Baht 1,363 million because of increases in average selling prices following higher natural gas price. This led to a rise in EBITDA of Baht 153 million. Offsetting with depreciation, finance costs and income tax expense, TOP SPP net profit increased by Baht 155 million from the same period of last year.

For 9M/22 compared with 9M/21, TOP SPP booked sales revenue of Baht 8,388 million, or an increase of Baht 3,295 million mainly due to higher selling prices following higher natural gas price. This caused TOP SPP to post higher EBITDA of Baht 261 million, totaling to Baht 1,573 million. Offsetting with depreciation, finance costs and tax expenses, TOP SPP reported net profit of Baht 983 million, or an increase of Baht 279 million from the same period last year.

## 2.6 Financial Result of Solvent and Chemicals Business

Table 12: Financial Result of Thaioil Solvent

	Q3/22	Q2/22	+/(-)	Q3/21	+/(-)	9M/22	9M/21	+/(-)
Solvent Utilization Rate <sup>(1)</sup> (%)	103%	126%	-23%	102%	1%	122%	124%	-2%
Solvent Production <sup>(1)</sup> (kTon)	36	44	(8)	36	0.2	129	131	(2)
Solvent and Chemical Sales Volume (kTon)	160	143	17	108	52	419	337	82

**Remark** (1) Produced solvent by Sak Chaisidhi Co., Ltd. (TOP Solvent Co., Ltd. holds 80.52% shares)

*In Q3/22, TOS reported a rise in sales revenue from increases in sales volume. However, TOS reported gross profit margin declined from some products which had oversupply in domestic market and price level of many products group sharply declined. Thus, TOS reported both decrease in EBITDA and net profit from prior quarter.*

*For 9M/22, compared with 9M/21, TOS reported higher sales revenue due to increase in solvent sales volume and average solvent selling price per unit. TOS had higher gross profit margin and net profit than the same period of the previous year.*

In Q3/22, Solvent and Chemical Products Business-Thaioil Solvent (TOS) reported 103% solvent utilization rate, decreased by 23% from Q2/22 due to the raw material and product prices were downtrend from the prior quarter in line with crude oil price. While an increase in solvent sales volume of about 17,000 tons, this was due to the overall economic recovery from the easing of the COVID-19 epidemic. This led TOS to record sales revenue of Baht 6,452 million, increased by Baht 413 million. Therefore, TOS reported EBITDA of Baht 171 million, decreased by Baht 208 million because the gross profit margin decline from some products which had oversupply in domestic market and price level of many products group sharply declined in line with oil price. However, TOS recorded net foreign exchange gain of Baht 83 million, increased by Baht 37 million because of depreciation in Thai Baht from Q2/22. Offsetting with depreciation of Baht 63 million, finance costs of Baht 36 million, income tax expense of Baht 20 million, and non-controlling interest. In Q3/22, TOS posted net profit of Baht 105 million, decreased by Baht 148 million from the prior quarter.

Compared with Q3/21, TOS's utilization rate was at the same level as the same period of prior year, while sales volume increased by approximately 52,000 tons. The average solvent selling price per unit increased tracking crude oil price causing TOS to record an increase in sales revenue of Baht 3,036 million and higher gross profit margin. However, TOS posted a decrease in EBITDA of Baht 32 million due from increasing in selling and administration expenses. Besides, TOS posted higher net foreign exchange gain by Baht 22 million from Q3/21. Offsetting with depreciation, finance costs, income tax expense, and non-controlling interests. TOS, in Q3/22, then recorded a decrease in net profit of Baht 38 million from the same period of last year.

For 9M/22, compared with 9M/21, TOS had a 122% solvent utilization rate and had an increase in sales volume of Thaioil Solvent business about 82,000 tons. Additionally, higher average solvent selling price per unit tracking crude oil price from the same period of prior year, led TOS to record sales revenue of Baht 16,737 million, increased by Baht 7,134 million. In 9M/22, TOS had higher gross profit margin because an increase in demand from the overall economic recovery from the COVID-19 outbreak. Therefore, TOS posted EBITDA of Baht 902 million, roused by Baht 101 million. Anyway, in 9M/22, TOS had net foreign exchange gain of Baht 141 million, which was higher than 9M/21 by Baht 21 million. Offsetting with depreciation, finance costs, income tax expense, and non-



controlling interests. TOS posted net profit of Baht 584 million, increased by Baht 48 million from the same period of the previous year.

## 2.7 Financial Result of Olefin Business

Table 13: Spread of Olefin Products

	Q3/22	Q2/22	+/(-)	Q3/21	+/(-)	9M/22	9M/21	+/(-)
HDPE – Naphtha MOPJ <sup>(1)</sup>	389	468	(79)	462	(73)	437	-	-
LLDPE – Naphtha MOPJ <sup>(1)</sup>	386	510	(124)	722	(336)	455	-	-
PP – Naphtha MOPJ <sup>(1)</sup>	359	445	(86)	551	(192)	427	-	-

Remark: (1) Based on ICIS price

*In Q3/22, olefin market was continually under pressure had resulted in most olefin plants reducing their production due to economic reasons. TII realized net loss of Baht 351 million*

In Q3/22, High density polyethylene (HDPE) spread over naphtha decreased compared with Q2/22 to 389 \$/ton, while Polypropylene (PP) over naphtha also weakened to 359 \$/ton due to olefin market was continually pressured from China's lockdown as well as there was a softer demand from economic uncertainty and new additional capacity especially in Malaysia and China. As a result, in Q3/22, TII realized a share of the loss from the investment in CAP. Besides, TII itself had administrative expenses as well. Therefore, TII booked a net loss of Baht 351 million, compared with a net loss of Baht 195 million in the prior quarter

## 2.8 Financial Result of Ethanol Business

Table 14: Utilization Rate of TET

	Q3/22	Q2/22	+/(-)	Q3/21	+/(-)	9M/22	9M/21	+/(-)
Ethanol Utilization Rate (%)								
- Sapthip	119%	74%	46%	70%	50%	100%	78%	21%

*In Q3/22, TET recorded higher sales revenue from increased in sale volume and selling price of ethanol from Sapthip, TET reported higher EBITDA and consolidated net profit from Q2/22.*

In Q3/22, Thaioil Ethanol Co., Ltd. (TET) reported ethanol utilization rate at 119%, increased by 46% due to planned maintenance shutdown in May for 30 days in Q2'22. It reported consolidated sales revenue from Sapthip Co., Ltd. (TET holds 50% shares) of Baht 516 million which increased by Baht 147 million from the prior period mainly came from the increased in sales volumes of ethanol and the selling price of ethanol. As a result, it had a higher TET's gross profit and reported EBITDA of Baht 67 million, increased by Baht 66 million. Offsetting with selling and administrative expenses, depreciation, finance costs, and income tax expense, and non-controlling interests, TET reported consolidated net profit of Baht 11 million compared with consolidated net loss of Baht 17 million in the previous quarter.

Compared with Q3/21, TET had a rise in consolidated sales revenue from Sapthip Co., Ltd., of Baht 106 million following a higher in ethanol utilization and the increased in sales volume of ethanol and

*For 9M/22, TET reported higher sales revenue from higher sale volume.*

*However, with higher feedstock costs, TET had lower gross profit margin, EBITDA, and net profit from the same period of the previous year.*

the selling price of ethanol. This led TET to post a higher in gross profit margin and an increased in EBITDA by Baht 44 million. Besides, Ubon Bio Ethanol Plc. (UBE) completed its initial public offering (IPO), and its shares began trading on the Stock Exchange of Thailand in September 2021. From this transaction, 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 quarter. In Q3/22, TET booked consolidated net profit of Baht 11 million compared with consolidated net profit of Baht 535 million in the same period of the previous year which recorded gain from sale investment and gain from investment reclassification.

For 9M/22 performance compared with 9M/21, TET recorded consolidated sales revenue of Baht 1,282 million, an increase of Baht 137 million from the same period of last year. This was due to increased sales volume of ethanol. However, due to significantly higher feedstock costs, the gross profit margin from ethanol dropped and sent TET EBITDA recorded by Baht 129 million which decreased by Baht 27 million. Additionally, 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. Led TET to book consolidated net profit of Baht 3 million compared with consolidated net profit of Baht 584 million in 9M/21 which 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)	30 September 2022	31 December 2021	+ / (-)	+ / (-) %
<b>Assets</b>				
Cash, cash equivalents and short-term investments <sup>(1)</sup>	27,288	30,024	(2,736)	(9%)
Other current assets	122,213	71,215	50,998	72%
Non-current assets	291,051	260,905	30,146	12%
<b>Total assets</b>	<b>440,553</b>	<b>362,144</b>	<b>78,409</b>	<b>22%</b>
<b>Liabilities</b>				
Current liabilities <sup>(2)</sup>	77,380	34,263	43,117	126%
Long-term borrowings and debentures (including current portion)	172,286	181,836	(9,550)	(5%)
Other non-current liabilities	33,172	22,951	10,221	45%
<b>Total liabilities</b>	<b>282,837</b>	<b>239,050</b>	<b>43,787</b>	<b>18%</b>
<b>Equity</b>				
Equity attributable to owners of the company	155,156	120,881	34,275	28%
Non-controlling interests	2,560	2,213	347	16%
<b>Total equity</b>	<b>157,715</b>	<b>123,094</b>	<b>34,621</b>	<b>28%</b>
<b>Total liabilities and equity</b>	<b>440,553</b>	<b>362,144</b>	<b>78,409</b>	<b>22%</b>

Remark (1) Including deposits at a financial institution used as collateral (2) Including short-term loan

#### Total Assets

As of 30 September 2022, Thaioil and Subsidiaries reported total assets of Baht 440,553 million, rising from 31 December 2021 by Baht 78,409 million, or a 22% rise due to

- Cash, cash equivalent and short-term investment dipped down by Baht 2,736 million from capital expenditure incurred during the year
- Current assets rose by Baht 50,998 million from rising account receivables and inventory following higher crude oil price
- Non current assets went up by Baht 30,146 million mainly from higher property, plant and equipment from project investment such as CFP project

#### Total Liabilities

As of 30 September 2022, Thaioil and Subsidiaries had total liabilities of Baht 282,837 million, which went up by Baht 43,787 million or 18% from 31 December 2021, mainly due to

- Current liabilities rose by Baht 43,117 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 9,550 million due to partial repayment of bridging loan borrowed from PTT Plc, and other financial institutions to acquire CAP
- Other non-current liabilities rose by Baht 10,221 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 <sup>(1)</sup>	14,677	-	-	-	-	119,625	134,302
: Baht-denominated	14,500	-	-	-	-	-	14,500
Borrowings : Baht-denominated	11,898	3,715	7,082	221	76	-	22,992
: Other currencies-denominated <sup>(1)</sup>	-	-	-	492	-	-	492
<b>As of 30 September 2022</b>	<b>41,075</b>	<b>3,715</b>	<b>7,082</b>	<b>712</b>	<b>76</b>	<b>119,625</b>	<b>172,286</b>
As of 31 December 2021	63,966	4,464	7,277	597	94	105,438	181,836
<b>+ / (-)</b>	<b>(22,891)</b>	<b>(749)</b>	<b>(195)</b>	<b>115</b>	<b>(18)</b>	<b>14,187</b>	<b>(9,550)</b>

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

### Total Equity

As of 30 September 2022, Thaioil and Subsidiaries reported consolidated equity of Baht 157,715 million, or an increase of Baht 34,621 million or 28% 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) completed in September 2022.

### 3.2 Statement of Cash Flows

On 30 September 2022, Thaioil and Subsidiaries reported cash and cash equivalent of Baht 23,171 million, Baht 17,844 million of which belonged to Thaioil alone (separated financial statement).

Statement of cash flows for Q3/22 of Thaioil and Subsidiaries are detailed as presented below:

Table 17: Condensed Statement of Cash Flows

(Million Baht)	Consolidated	Separated
Net cash flows from / (used in) operating activities	22,778	20,895
Net cash flows from / (used in) investing activities	(7,213)	(4,339)
Net cash flows from / (used in) financing activities	(23,388)	(24,648)
<b>Net decrease in cash and cash equivalents</b>	<b>(7,824)</b>	<b>(8,092)</b>
Cash and cash equivalents at the beginning of period	29,696	24,600
Effect of exchange rate changes on cash and cash equivalents	1,299	1,336
<b>Cash and cash equivalents at the end of period <sup>(1)</sup></b>	<b>23,171</b>	<b>17,844</b>

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

In the first nine months of 2022, net cash flow from operating activities of Baht 22,778 million was made. This was a result of 1) net profit before tax of Baht 41,922 million, 2) lower non-cash adjustment, before tax, Baht 2,843 million, 3) increases in working capital of Baht 6,925 million, and 4) tax paid of Baht 9,376 million. Furthermore, net cash used in investing activities of Baht 7,213 million was recorded. 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 and dividend received totaling of Baht 22,047 million.

Additionally, Baht 23,388 million was used in financing activities. This was mainly owing to 1) net cash received from short term borrowing from financial institutions of Baht 1,913 million, 2) proceeds received from equity raise of Baht 10,288 million, 3) repayment of long term borrowing, net, of Baht 8,536 million, 4) finance cost of Baht 5,079 million, 5) repayment of short-term borrowing from a related party of Baht 14,000 million, 6) repayment of debenture upon its maturity of Baht 3,000 million, and 7) dividend payment of Baht 4,112 million.

As such, from 31 December 2021, there was a net decrease of Baht 7,824 million in cash and cash equivalent. Effect on exchange rate changes on cash and cash equivalents of Baht 1,299 million was booked. With beginning cash and cash equivalent of Baht 29,696 million, ending cash and cash equivalents of Baht 23,171 million was shown on 30 September 2022.

### 3.3 Financial Ratios

Table 18: Financial Ratios (Consolidated)

Profitability Ratios	Q3/22	Q2/22	+/(-)	Q3/21	+/(-)
Quality of earnings ratio (%)	0%	16%	(16%)	8%	(8%)
Gross profit margin ratio (%)	(3%)	15%	(18%)	7%	(10%)
Net profit margin ratio (%)	0%	15%	(15%)	2%	(2%)

Liquidity Ratios	Q3/22	Q2/22	+/(-)	Q3/21	+/(-)
Current ratio (times)	1.5	1.4	0.1	2.6	(1.1)
Quick ratio (times)	0.6	0.7	(0.1)	1.3	(0.7)

Financial Policy Ratios	Q3/22	Q2/22	+/(-)	Q3/21	+/(-)
Total liability/ Total equity (times)	1.8	1.9	(0.1)	1.9	(0.1)
Net debt/ Equity (times)	1.1/0.9 <sup>(1)</sup>	1.0/0.9 <sup>(1)</sup>	0.1/0.0	1.4/1.3 <sup>(1)</sup>	(0.3)/(0.4)
Long-term loan/ Total equity (times)	1.2	1.3	(0.1)	1.6	(0.4)
Interest coverage ratio (times)	(0.6)	23.1	(23.7)	7.3	(7.9)
Long-term loan/ Total capitalization (%)	55%	56%	(1%)	62%	(7%)

#### Financial Ratios Calculation

Quality of Earnings ratio (%)	= EBITDA / Sales Revenue
Gross Profit Margin ratio (%)	= Gross Profit <sup>(2)</sup> / 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, and (2) Excluding depreciation and amortization.

#### 4. Industry Outlook for the fourth quarter of 2022, and year 2023

##### Crude Oil & Refinery Market Outlook

In Q4/22, crude oil prices are expected to remain high mainly supported by increasing oil demand during upcoming winter. Also, higher natural gas prices from tight natural gas and coal supply are promoting gas-to-oil switching demand. The Energy Information Administration (EIA) reports global oil demand in Q4/22 is expected to increase by 1.35 million barrels per day compared to Q3/22, reaching 100.89 million barrels per day due to lower OPEC+ supply from its production cut 2 million barrels per day in Nov'22 coupled with supply disruption from banning of Russian crude oil import which will take effect on December 5, 2022. However, the concern over the global economic recession following a massive interest rate hike from Central banks around the world could pressure crude oil prices.

In 2023, crude oil prices are likely to slightly softer than 2022 due to the concern over the global economic slowdown following a massive interest rate hike in response to high inflation. In addition, Non-OPEC's supply is likely to increase especially from the U.S. However, crude oil market continues to be supported by the uncertainty of Russian crude oil production and export into EU as EU imposes ban on Russian crude oil starting from December 5, 2022, and OPEC+ crude production cut policy.

Gross Refinery Margin (GRM) in Q4/22 is expected to improve from Q3/22, supported by improving petroleum product demand during winter as well as increasing gas to oil switching demand due to high natural gas prices. In addition, jet fuel demand is likely to be strong as many countries around the world reopen countries and ease travel restrictions. However, the market is still under pressure due to a massive batch of China's export quota.

In 2023, Gross Refining Margin (GRM) is expected to remain stable compared to 2022. Jet fuel demand is expected to improve after the reopening in many countries, while supply from Russia is likely to decline due to the uncertainty of product export in Feb 2023, the deadline to end imports of Russian petroleum products amid low global product inventory. However, the market is expected to be under pressure from the startup of new refineries and uncertainties of China's petroleum product export quota policy next year which would increase yoy. (Source : EIA EIA monthly report Oct'22)

## **Aromatics Market Outlook**

In Q4/22, Paraxylene (PX) market is expected to be supported by improving textile and polyester demand for clothing for upcoming winter as well as increasing PET demand. However, the market remains under pressure due to the new aromatic plant addition in China.

In 2023, PX market is expected to improve supported by growing demand around 2 million tons as downstream product demand continue to grow, whereas PX supply remains high from PX capacity addition around 5.3 million tons in 2023. However, lower gasoline price, which is feedstock price, would support PX spread over gasoline to remain healthy.

In Q4/22, Benzene (BZ) market is expected to improve, supported by recovering demand for electrical products and the automotive industry. However, the market remains under pressure due to the new aromatic plant addition in China.

In 2023, BZ market is expected to be supported by growing demand around 1.8 million tons from recovery of COVID-19 situation globally. Meanwhile, new BZ capacity addition of 3 million tons will pressure BZ market. However, lower gasoline price which is feedstock price, would support BZ spread over gasoline to remain healthy.

Toluene (TL) market in Q4/22 is likely to rally due to rising demand for solvent coupled with limited TL supply from low production in the region, whereas, decreasing demand for the gasoline blending after U.S. driving season end.

In 2023, TL market is expected to be supported by increasing TL demand for feedstock producing PX and BZ around 1 million tons after the reopening in many countries coupled with demand for solvent is likely to be improve. (Source : CMA Spring 2022, CMA monthly report Oct 2022)

## **LAB Market Outlook**

LAB in Q4/22 is expected to improve compared to Q3/22, boosted by rising demand of washing products after monsoon season ended in India and Southeast Asia and lower supply from LAB plant schedule maintenance in Taiwan – FUCC with LAB capacity of 105,000 tons per year in early Nov'22. However, LAB market remains under pressure from the capacity addition of IOC plant in India with 22,000 tons per year.

In 2023, LAB market is expected to be softer, pressured by capacity addition in the region (UIC in Indonesia 40,000 tons per year, TPL in India 25,000 tons per year) However, demand for washing product is expected to remain healthy due to the growing awareness of hygiene. (Source : : ICIS LAB Weekly Report, Oct 2022)



### **Lube Base Oil Market Outlook**

In Q4/22, lube base oil market is expected to softer than Q3/22, pressured by the concern over the global economic slowdown which could pressure lube base oil demand. Also, high sulfur fuel oil (HSFO) price is likely to be higher during winter could pressure base oil margin. However, the market is expected to be supported by increasing demand after winter end as well as lower supply from the closure of lube base oil group 1 in Japan and schedule maintenance in Thailand.

In 2023, lube base oil market is expected to be softer than 2022, pressured by rising supply due to capacity addition of base oil group 2 and 3 in China, as well as weakening lube base oil group 1 demand in the region. (Source : Argus, Oct'22)

### **Bitumen Market Outlook**

In Q4/22, bitumen market is expected to be softer than Q3/22, due to the concern over the global economic slowdown coupled with potential higher feedstock price (HSFO). However, the market is expected to be supported by the higher government's budget disbursement for road construction and repairment during the end of the year as well as lower supply due to schedule maintenance of lube base oil & bitumen plants in Thailand.

In 2023, bitumen market is expected to softer than 2022, due to the resumption of regional refineries with increasing production. However, the market is expected to be supported by improving demand for road construction due to economic recovery from reopening country.

## 5. Appendix

### 5.1 Summary of Approved Investment Plan

From 2022 to 2025, Thaioil and Subsidiaries have outstanding approved capital expenditure of US\$ 1,811 million, mainly consisting of CFP project (Clean Fuel Project) of US\$ 1,277 million and an investment in PT Chandra Asri Petrochemical Tbk (“CAP”) of US\$ 270 million. An estimated budget for the investment during 2022-2025 is summarized in a table below.

## TOP Group Strategic Investment Plan

### CAPEX Plan (Unit US\$ million)

Updated as of October 2022

Project	Estimated Budgeting for Investment Plan 2022 - 2025
<b>CFP project *</b>	<b>1,277</b>
<b>Total Ongoing CAPEX</b>	<b>167</b>
Reliability, Efficiency and Flexibility Improvement	53
Infrastructure Improvement ( i.e. New Bangphra Raw Water Line, Jetty 7&8, Site office preparation for fire water & fire water improvement )	18
Other Investments ( i.e. Corporate Venture Capital - CVC , Digital Transformation )	96
<b>TOP SPP Expansion</b>	<b>97</b>
<b>Olefins Investment</b>	<b>270</b>
<b>Total CAPEX</b>	<b>1,811</b>

\* 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



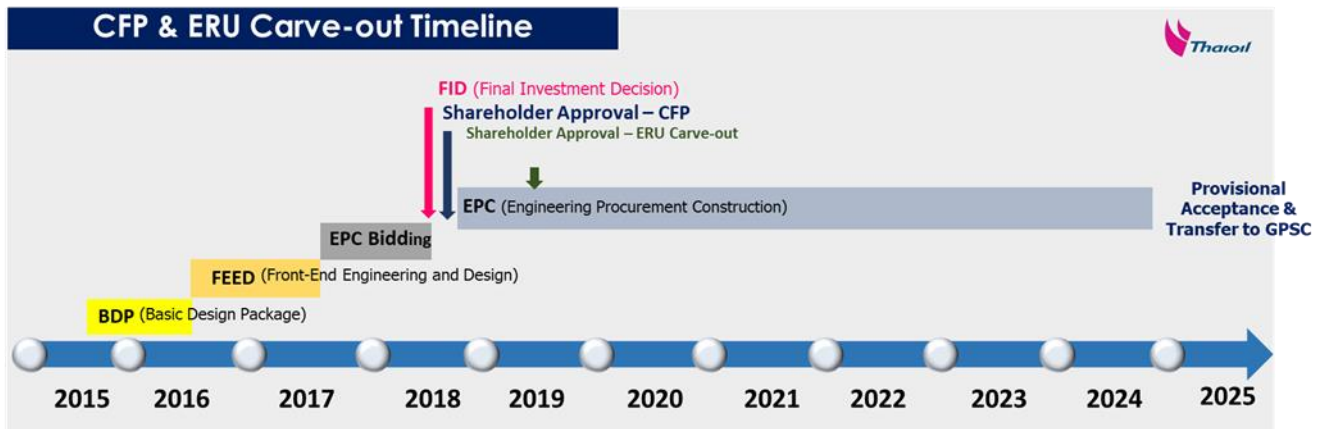
### 5.2 Summary of Key Project Investment: Clean Fuel Project (CFP)

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 1<sup>st</sup> 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 September 2022, the progress of the CFP was more than 87.5% 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.

### 5.3 Plan of Scheduled Turnaround Maintenance in 2022

Production Unit	Reason	Period
Crude Distillation Unit 2* and other related main production units	Major Turnaround	1 - 26 October 2022 (Approximately 26 days)

Remark \*nameplate capacity approximately 50,000 barrels per day