

Management's Discussion and Analysis of Financial Condition and Result of Operations

Star Petroleum Refining Public Company Limited

For Quarter 3/2023 and 9 months ended September 2023



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9M/23 9M/22

0.77

1.71

(0.94)

1. Company's Operating Result

(US\$ Million)

Note: In September 2023, 2 new companies (Star Fuel Holding Company Limited and Star Fuel Land Company Limited) have been set up which are consolidated into company financial statements. All Q3/23 numbers are presented on consolidation basis while other periods are stand-alone.

Q3/22 +/(-)

Q3/23 Q2/23 +/(-)

Table 1: Summary of Consolidated Financial statements

					-7/\/			4/4/4/
Total Revenue	1,730	1,557	173	2,082	(352)	5,023	6,303	(1,280)
EBITDA	171	(55)	226	(150)	321	182	346	(164)
Adjusted EBITDA (1)	68	(15)	84	43	25	115	362	(247)
(Loss) on foreign exchange	(4)	(4)	(0)	(17)	13	(9)	(28)	19
Net income	120	(61)	181	(137)	257	95	229	(133)
Net income (US\$ per share)	0.03	(0.01)	0.04	(0.03)	0.06	0.02	0.05	(0.03)
Accounting gross refining margin (US\$/barrel) (2)	16.35	(1.45)	17.79	(7.34)	23.69	6.91	11.88	(4.97)
Market gross refining margin (US\$/barrel) (3)	8.36	1.34	7.02	6.00	2.36	5.24	11.16	(5.92)
			/40 =\					/a =\
Crude intake (thousand barrels/day)	139.4	159.0	(19.5)	155.4	(16.0)	153.4	153.9	(0.5)
Crude intake Utilization	80%	91%	-11%	89%	-9%	88%	88%	0%
				1				
(Baht Million)	Q3/23	Q2/23	+/(-)	Q3/22	+/(-)	9M/23	9M/22	+/(-)
Total Revenue	61,107	53,883	7,224	76,146	(15,039)	174,120	219,558	(45,438)
EBITDA	6,035	(1,891)	7,927	(5,532)	11,567	6,386	11,362	(4,976)
Adjusted EBITDA ⁽¹⁾	2,419	(499)	2,918	1,549	870	4,056	11,924	(7,868)
(Loss) on foreign exchange	(163)	(134)	(29)	(620)	457	(315)	(1,017)	703
Net income	4,245	(2,105)	6,349	(5,027)	9,272	3,359	7,414	(4,054)

Remark: (1) Adjusted EBITDA refers EBITDA excluding Stock gain/loss, net NRV and Extra item

0.98

(0.49)

⁽³⁾ margin is calculated based on current replacement cost.

Exchange rate (Baht/US\$)	Q3/23	Q2/23	+/(-)	Q3/22	+/(-)	9M/23	9M/22	+/(-)
Average FX	35.34	34.66	0.68	36.58	(1.25)	34.69	34.81	(0.12)
Closing FX	36.72	35.75	0.97	38.07	(1.35)	36.72	38.07	(1.35)

1.46

(1.16)

2.14

Saudi Arabia's announcement of a voluntary extension to cut oil production by 1 million barrels per day until the end of this year and Russia's decision to also extend their export volume cut until the end of the year, have all contributed to supply limits in the oil market. Refineries maintenance and an increased demand for aviation fuel during the summer travel period, coupled with a limited supply of finished oil products due to low inventory levels in the United States and Singapore, resulted in a rise in oil prices during this quarter. However, the price is pressured by China and the European economic recession caused by inflation and high interest rates.

In Q3/23, the utilization rate for the crude intake was 139 thousand barrels per day, or equivalent to 80% of its refining capacity, lower than the prior quarter due to a planned DHTU shutdown for catalyst replacement to prepare for EURO V compliance and maintenance on the Residual Fluidized Catalytic Cracking Unit (RFCCU). SPRC maintained crude and product optimizations to maximize domestic demand. Similar to the prior quarter, SPRC maintained a good margin captured by our Bottom Line Improvement Program (BLIP) refinery optimizations across all areas (Crude, Refinery and Product optimization).

Net income

(Baht per share)

⁽²⁾ margin includes inventory gain/loss based on weighted average inventory cost.



The higher EBITDA, EBIT and net earnings for Q3/23 were mainly contributed by the increase in both stock gain and market refining margin. NIAT for the quarter was at US\$120 million, compared to a negative of US\$(61) million in the prior quarter. Accounting refining margin in Q3/23 was at US\$16.35/bbl compared to negative at US\$(7.34)/bbl last quarter, due to a stock gain from an increase in oil prices, while stock loss and LCM in the prior quarter. Excluding stock gain (loss), the market refining margin was US\$8.36/bbl, a significant increase from US\$1.34/bbl due to rising product spreads, especially Diesel and Jet, as a result of tightening supply and increasing demand during summer travel season. Total operating expenses in this quarter slightly decreased from the provision for stock obsolescence in the prior quarter, while there was an exchange loss of US\$4 million from the depreciation of the Baht against the US dollar during the quarter.

Compared Q3/23 with Q3/22, sales revenue decreased 17%, mainly due to a decrease in sales volume in line with lower intake. Positive EBITDA, EBIT and net earnings in Q3/23, while they were negative in Q3/22. There was a significant increase in earnings due to the stock gain in Q3/23, while there was a significant stock loss and LCM in Q3/22 due to the decline in oil price because of the recession fears in the prior year. Excluding stock gain or loss, refining margin in Q3/23 was US\$8.36/bbl compared to US\$6.00/bbl in Q3/22, mainly from strengthening the middle distillate refined product crack.

Compared 9M/23 with 9M/22, sales revenue decreased 20%, which was impacted by lower average oil prices and a decrease in sales volume from lower intake compared with the same period in the prior year. NIAT in 9M/23 was U\$\$95 million, considerably lower than the previous period of U\$\$229 million in 9M/22. Excluding stock gain (loss), the market gross refining margin fell from U\$\$11.16/bbl in 9M/22 compared to U\$\$5.24/bbl in 9M/23 due to a lower crack spread of main products from the fear of an economic slowdown, while the market and refining margin was strong in the prior year due to tight supply from the Russia-Ukraine conflict.

2. Market Condition

Pricing	Q3/23	Q2/23	+/(-)
Dubai crude oil	86.63	77.59	9.04
Light Naphtha (MOPJ)	71.89	66.66	5.23
Gasoline (premium)	105.6	94.13	11.47
Jet Fuel	112.7	91.56	21.14
Diesel	113.56	92.13	21.43
Fuel Oil	81.41	69.01	12.4

Q3/22	+/(-)
96.68	-10.05
79.09	-7.2
109.76	-4.16
129.11	-16.41
131.91	-18.35
74.44	6.97

Spread over Dubai	Q3/23	Q2/23	+/(-)
Light Naphtha (MOPJ)	-14.74	-10.93	-3.81
Gasoline (premium)	18.97	16.54	2.43
Jet Fuel	26.07	13.97	12.10
Diesel	26.93	14.54	12.39
Fuel Oil	-5.23	-8.58	3.35

Q3/22	+/(-)
-17.6	2.86
13.07	5.9
32.43	-6.36
35.22	-8.29
-22.24	17.01

The average Dubai price for Q3/23 was \$86.63/bbl increased from US\$77.59/bbl in Q2/23. Dubai price continues to be supported by production cuts made by the OPEC+ member countries. As well as Saudi Arabia and Russia extended their voluntary production cut of 1 million barrels per day and 0.3 million barrels per day of oil production, respectively, to end 2023. In addition, better-than-expected Chinese economic data and reports of record oil consumption bolstered the view that demand in the world's second-largest crude consumer will continue to surge.

Naphtha spread over Dubai in Q3/23 decreased to US\$-14.74/bbl as crude price surged, weak petrochemical demand recovery, and the return of crackers from planned outages have resulted in negative olefins margins. Continued erosion of cracker margins has driven some cracker operators to step up rate cuts and shutdowns. In addition, the lower prices of alternative feedstock liquefied petroleum gas (LPG) have resulted in higher negative naphtha cracks.

Gasoline spread over Dubai in Q3/23 increased to US\$18.97/bbl as high gasoline import to India, Malaysia, and Vietnam due to maintenance season and unplanned refinery outage. Australia's domestic gasoline



demand also improved on the back of increasing tourist inflows from Asia as well. In additional, unplanned reformer outage in South Korea and extension of South Korea tax cuts on transport fuels have further support the cracks.

Jet crack spreads over Dubai increased from the previous quarter to be US\$26.07/bbl as strong summer air travel, lower middle east exports, falling stocks in ARA and multiyear low stocks in Singapore have boosted cracks. The lifting of the ban on group tours for Chinese tourists has also added more optimism to demand recovery, supporting the cracks. Heating oil stockpiling amid maintenance season and low stocks have heightened the volatility of the cracks.

Diesel crack spreads over Dubai increased from the previous quarter to US\$26.93/bbl. The strong import requirement from Vietnam, lower export volumes from Northeast Asia, low stocks in the USA/ARA/Singapore amid the beginning of the fall turnaround season, and a spate of unplanned refinery outages in Asia and the Atlantic Basin have led to bullishness in the gasoil complex. In additional, gasoil crack was supported by the temporary ban on product export by Russia amid low inventory levels.

Fuel oil spread over Dubai in Q3/23 increased from the previous quarter to be US\$-5.23/bbl. The HSFO market remains tight owing to lower supplies amid summer power generation demand in the Middle East. HSFO production is curtailed by the tight supply of medium-heavy crudes while Kuwait continues to seek for HSFO imports.

SPRC's average market refining margin in Q3/23 was US\$8.36/bbl, which is higher than US\$1.34/bbl in Q2/23. In Q3/23, SPRC continued to optimize feedstocks by optimizing freight cost, process opportunity crude and maximizing asphalt production to minimize FO production which is a low value product. SPRC also produced mogas GB91+ (swap from GB95 to GB91+) and import mogas component to increase mogas production.



3. Financial Performance

Financial Results

Table 2: Consolidated Financial result

	US\$ Million		
	Q3/23	Q2/23	+/(-)
Total Revenue	1,730	1,557	173
Cost of sales	(1,568)	(1,618)	50
Gross profit (loss)	162	(62)	224
Other income	1	0	1
(Loss) on exchange rate	(4)	(18)	14
Administrative expenses (1)	(7)	(9)	1
Finance costs	(2)	(3)	1
Fair value gain (loss) on derivatives	0	14	(14)
Income tax	(30)	15	(45)
Net income	120	(61)	181

US\$ Million			
+/(-)	Q3/22		
(352)	2,082		
657	(2,225)		
305	(143)		
1	0		
7	(12)		
2	(9)		
1	(2)		
5	(5)		
(64)	34		
257	(137)		

US\$ Million				
9M/23	9M/22	+/(-)		
5,023	6,303	(1,280)		
(4,862)	(5,917)	1,055		
161	386	(225)		
3	1	2		
(23)	(6)	(17)		
(28)	(69)	41		
(7)	(5)	(2)		
14	(22)	36		
(24)	(57)	33		
95	229	(133)		

	Baht Million			
	Q3/23	Q2/23	+/(-)	
Total Revenue	61,107	53,883	7,224	
Cost of sales	(55,368)	(55,989)	620	
Gross profit (loss)	5,739	(2,106)	7,845	
Other income	40	15	25	
(Loss) on exchange rate	(163)	(633)	470	
Administrative expenses (1)	(259)	(300)	42	
Finance costs	(56)	(106)	50	
Fair value gain (loss) on derivatives	0	499	(499)	
Income tax	(1,056)	526	(1,583)	
Net income	4,245	(2,105)	6,350	

Baht Million				
Q3/22	+/(-)			
76,146	(15,039)			
(81,416)	26,047			
(5,270)	11,009			
16	24			
(433)	270			
(333)	75			
(77)	21			
(187)	187			
1,257	(2,313)			
(5,027)	9,272			
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Baht Million				
9M/23	9M/22	+/(-)		
174,120	219,558	(45,438)		
(168,465)	(206,818)	38,353		
5,655	12,740	(7,085)		
102	46	56		
(815)	(266)	(549)		
(984)	(2,334)	1,350		
(256)	(175)	(80)		
501	(751)	1,252		
(835)	(1,846)	1,011		
3,359	7,414	(4,054)		

 $\underline{Remark:} \ ^{(1)} \ Administrative \ expenses \ are \ the \ integrated \ among \ Star \ Fuels \ Holding \ Co., \ Ltd. \ and \ Star \ Fuels \ Land \ Co., \ Ltd.$



Production Volumes

Table 3: Refinery products only

Petroleum products	Q3/23	Q2/23	Q3/22
Polymer Grade Propylene	307	353	346
Liquefied Petroleum Gas	512	574	586
Light Naphtha	645	913	818
Gasoline	3,542	3,893	3,816
Jet Fuel	1,623	1,646	929
Diesel	4,732	5,686	6,233
Fuel Oil	704	498	929
Asphalt	263	418	241
Mix C4	420	532	510
Other ⁽¹⁾	1,043	1,475	1,551
Total production	13,791	15,989	15,958

1110454	rius burreis
9M/23	9M/22
1,001	1,050
1,706	1,850
2,324	2,674
11,480	11,720
4,945	2,438
16,350	18,105
1,754	2,501
1,112	666
1,445	1,495
3,855	4,209
45,971	46,707
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⁽¹⁾ Includes sulfur and reformate and products sold pursuant to our cracker feed exchange.

Total Sale Revenue

Table 4: Refinery sale revenue only

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Petroleum products (1)	Q3/23	Q2/23	Q3/22
Polymer Grade Propylene	19	23	25
Liquefied Petroleum Gas	24	27	35
Light Naphtha	42	60	67
Gasoline	522	498	548
Jet Fuel	187	152	115
Diesel	658	587	865
Fuel Oil	49	26	74
Asphalt	23	33	15
Mix C4	36	40	47
Crude	85	-	161
Others ⁽²⁾	85	111	128
Total Revenue	1,730	1,557	2,082
1) Includes Government LPG and oi	Louboidios		

68	
	89
87	126
157	240
1,539	1,829
511	301
1,951	2,707
107	190
92	58
123	160
85	190
305	414
5,023	6,303

Sales revenue in Q3/23 increased 11% from Q2/23 mainly from higher average oil prices, but this was partially offset by a decrease in sales volume of 14.3 million barrels in Q3/23 compared to 16.5 million barrels in Q2/23, particularly Diesel and Gasoline from DHTU planned a shutdown for catalyst replacement and RFCCU pit stop. The total sale amount in Q3/23 also included the sale of 1 million barrels of crude oil.

Comparing Q3/23 with Q3/22, sales revenue decreased 17%, which was impacted by a lower sales volume, which decreased from 16.6 million barrels in Q3/22 to 14.3 million barrels in Q3/23.

Similarly, sales revenue for 9M/23 also decreased by 20% compared to 9M/22, mainly due to lower oil prices, while sales volume remained at 47.6 million barrels for 9M/23 and 47.7 million barrels for 9M/22.

⁽¹⁾ Includes Government LPG and oil subsidies.

⁽²⁾ Includes sulfur, reformate and products sold pursuant to our cracker feed exchange.



The table below presents the breakdown of revenues from the sales of petroleum products to the company's customers.

Customer	Q3/23	Q2/23	Q3/22
Chevron	45%	40%	45%
PTT & PTTOR	45%	45%	42%
Other oil and petrochemical companies	10%	15%	13%
Total	100%	100%	100%

9M/23	9M/22
43%	41%
45%	45%
12%	14%
100%	100%

Cost of Sales

As a result of lower crude intake in Q3/23, the cost of sale decreased by 3% compared to the prior quarter. The decrease was in line with the decrease in sales volume but partially offset by a higher weighted average cost of sales in relation to the rise in oil prices in this quarter, which included a reversal loss (net) from inventory writedown to a net realizable value of US\$6 million in Q3/23.

Comparing Q3/23 to Q3/22, cost of sales in Q3/23 decreased by 30%, which was reflected from lower weighted oil price in this quarter and lower sales volume compared with the same quarter in the prior year.

Cost of sales in 9M/23 decreased 18% from 9M/22. The decrease in cost of crude oil on weighted average inventory was in line with the decrease in oil price compared with the same period in the prior year.

Gain / (loss) on Foreign Exchange and Financial Derivatives

Comparing Q3/23 with Q2/23, SPRC had a net foreign exchange loss of US\$4 million in Q3/23, approximately with the prior quarter, owing to Thai Baht's depreciation against the USD.

Comparing Q3/23 to Q3/22, there were exchange losses in both quarters of US\$4 million in Q3/23 and US\$17 million in Q3/22. The value of the Baht declined, which resulted in an exchange loss when SPRC had net Baht-denominated receivables.

Comparing 9M/23 to 9M/22, Thai Baht value continued to decline due to the US dollar strengthening on interest rate hikes to control the inflation rate, which impacted an exchange loss of US\$9 million (including derivatives) compared to an exchange loss of US\$28 million in the same period of the prior year.

Administrative Expenses

Comparing Q3/23 with Q2/23, administrative expenses slightly decreased to US\$7.3 million in Q3/23 from US\$8.7 million in Q2/23 as a result of the decrease in provision for stock obsolescence.

Comparing Q3/23 with Q3/22, administrative expenses decreased from US\$9 million in Q3/22 to US\$7 million in Q3/23 due to the expenses and the provision related to the oil spill incident of US\$2.7 million incurred in Q3/22.

There were expenses relating to the oil spill incident in early 2022 of US\$46.7 million in 9M/22 while it was down to US\$3.5 million in 9M/23. This decrease caused lower administrative expenses in 9M/23 compared to the same period of the prior year.

Income tax

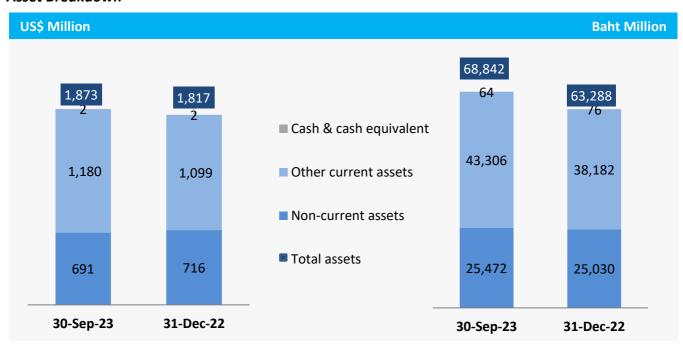
Operating profit in 9M/23 resulted in income tax expenses in this period of US\$24 million.



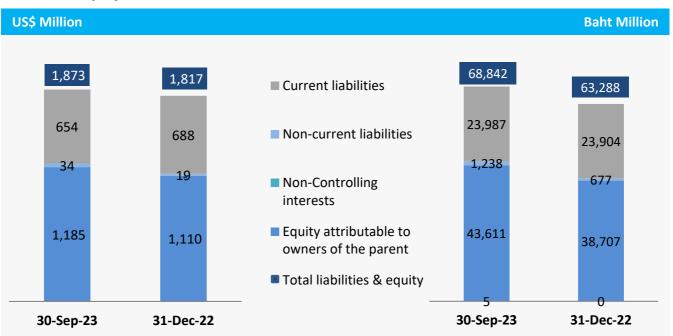
Analysis of Financial Position

Graph 1: Condensed Consolidated Statements of Financial Position

Asset Breakdown



Liabilities & Equity



Assets

Total assets as of 30 September 23 increased by US\$55 million (Baht 5,554 million) from 31 December 22.

Total current assets increased by US\$80 million (Baht 5,113 million) mainly due to:

- a) an increase in inventory of US\$103 million (Baht 5,128 million) mainly from higher inventory volume at end of September 23 compared to December 22 due to lower crude intake in September; and
- b) an increase in other current assets of US\$9 million (Baht 349 million) mainly from prepaid expenses; but partly offset by
- c) a decrease in trade and other receivables of US\$32 million (Baht 353 million) mainly from a reduction in oil fund subsidy receivables.



On the contrary, non-current assets decreased US\$25 million (but increase Baht 441 million from currency translation) mainly due to a decrease in property, plant and equipment of US\$25 million (but increase Baht 393 million from currency translation) due to depreciation expenses in 9M/23 but partly offset by a right of use from the land lease.

Liabilities

Total liabilities as of 30 September 23 decreased by US\$20 million (but increase Baht 645 million from currency translation) from 31 December 22. The decrement was mainly from:

- a) a decrease in S-T and L-T borrowing of US\$137 million (Baht 4,448 million) from loan repayment in 9M/23; and
- b) a decrease in other current liabilities from short-term provision relating to oil spill incident of US\$3 million (Baht 106 million), and a decrease in Excise tax payable of US\$2 million (Baht 27 million) from lower sale volume in September 23; but partly offset by
- c) an increase in trade and other account payables of US\$86 million (Baht 3,893 million) from timing of crude payment in December 22 to be paid before year end which resulted to low trade payable at end 2022; and
- d) an increase in corporate income tax payable of US\$21 million (Baht 746 million) from net profit in 9M/23; and
- e) an increase in lease liabilities of US\$14 million (Baht 526 million) from land lease hold right contract with IEAT for 30 years.

Shareholders' Equity

Shareholders' equity as of 30 September 23 increased US\$75 million (Baht 4,909 million) from 31 December 22 resulted from the net profit in 9M/23 of US\$95 million (Baht 3,359 million) offset by dividend payment of US\$19 million (Baht 650 million). Shareholders' equity in Baht also included the impact from exchange rate translation.

Statement of Cash Flow

Table 5: Condensed Consolidated Statement of Cash Flows

9M/2023	US\$ Million	
Net cash generated from operating activities	169	
Net cash used in investing activities	(7)	
Net cash used in financing activities	(162)	
Net decrease in cash and cash equivalents	(0)	
Cash and cash equivalents at the beginning of the period	2	
Adjustments from foreign exchange translation	(0)	
Cash and cash equivalents at the end of the period	2	

Baht Million
5,963
(252)
(5,712)
(1)
76
(11)
64

SPRC cash and cash equivalents were US\$2 million at the end of September 2023, compared with US\$2 million at the end of December 2022.

Details of cash flow activities in 9M/23 are as follow:

- a) Net cash generated from operating activities was US\$169 million (Baht 5,963 million) was primarily due to:
 - a. 9M/23 net profit was US\$95 million (Baht 3,359 million) from strong refining margin in Q3/23 and non-cash items of US\$56 million (Baht 1,979 million); and
 - b. Cash generated from operating liabilities was US\$70 million (Baht 2,419 million) mainly from an increase in trade and other payables US\$77 million (Baht 2,687 million) due to timing of crude payment, but partly offset by short-term provision paid of US\$7 million (Baht 235 million)



- relating to the oil spill incident. Cash generated was offset by
- c. Cash used in operating assets was US\$52 million (Baht 1,794 million). The increase both in oil price and volume also gave rise to an increase in inventory US\$62 million (Baht 2,154 million) and an increase in other current and non-current assets of US\$12 million (Baht 413 million) mainly from prepaid expenses, partially offset by a decrease in trade and other receivables of US\$22 million (Baht 773 million) from oil fuel fund subsidy refund.
- b) Net cash used in investing activities was US\$7 million (Baht 252 million), mainly from minor projects in environmental and IT.
- c) Net cash used in financing activities was US\$162 million (Baht 5,712 million) for the loan repayment of US\$143million (Baht 5,067 million) in 9M/23 and dividend payment of US\$19 million (Baht 650 million) from 2022 earnings.

Financial Ratios

Table 6: Financial Ratios (Consolidated)

		Q3/23	Q2/23	Q3/22	9M/23	9M/22
Current Ratio	(Time)	1.8	1.7	1.5	1.8	1.5
Gross Profit Margin	(%)	9.4	(4.0)	(6.9)	3.2	6.1
Net Profit Margin	(%)	6.9	(3.9)	(6.6)	1.9	3.6
Debt to Equity ratio	(Time)	0.6	0.6	0.8	0.6	0.8
Net Interest-Bearing Debt to Equity ratio	(Time)	0.1	0.1	0.2	0.1	0.2
Interest Coverage ratio	(Time)	95.4	(24.1)	(80.4)	17.1	58.2

Note:

Current Ratio	= Current Assets / Current Liabilities	(Time)
Gross Profit Margin	= Gross Profit (Loss) / Sales Revenue	(%)
Net Profit Margin	= Quarter (Net Profit (Loss) / Total Revenue)	(%)
Debt to Equity Ratio	= Total Liabilities / Total Shareholders' Equity	(Time)
Net Interest-Bearing Debt to Equity ratio	= Interest Bearing Debt - Cash / Total Shareholders' Equit	y (Time)
Interest Coverage ratio (Accrual basis)	= Earnings before interest and taxes (EBIT) /	(Time)
	interest expenses	



4. Other Important Events until Present

September 2023

SPRC and two other business partners have established two new companies and registered them with the Department of Business Development, Ministry of Commerce with the details as follows:

- 1. Star Fuels Holding Co., Ltd. ("SFHC"): the establishment of which was registered on 4 September 2023 with a registered capital of Baht 10,200,000. The Company holds 49 percent of the total shares in SFHC while two other business partners who are not connected persons of the Company collectively hold 51 percent of the total shares of SFHC. The main objective of SFHC is to invest in other juristic persons; and
- 2. Star Fuels Land Co., Ltd. ("SFLC"): the establishment of which was registered on 6 September 2023 with a registered capital of Baht 20,000,000. The Company holds 49 percent of the total shares in SFLC while SFHC holds 51 percent of the total shares of SFLC. The main objective of SFLC is to invest in land for use in the operation of the fuel business and rent out the properties.

The establishment of two new companies above is a part of the implementation plan of the fuel business investment transaction, which has been approved by the Extraordinary General Meeting of Shareholders of the Company No. 1/2023 held on 31 January 2023.

The Company assessed and classified both companies as investment in subsidiary due to a call option agreement that the company has the substantive right to exercise the power to control SFHC and has the right to appoint or remove the committee members responsible for directing SFLC's relevant activities.

5. Market Outlook

In October, refinery complex (HDC and RCC) margins decrease as weaker transport fuel cracks especially for gasoline. In November, expect complex margins should rebound and rise slightly through to December in tandem with gasoline cracks even as refinery runs in Asia will be increase in November as autumn maintenance draws to a close. Stronger gasoline cracks, elevated gasoil cracks, support from seasonal heating oil demand, and recovering international aviation jet demand will incentivize complex refineries to run at reasonably high utilization rates that keep the product markets adequately supplied as well.

Naphtha crack is expected to be under pressure as the propane which is the alternative feed stock for cracker will remain pressured by a deluge of US LPG cargoes arriving from 2nd half of October. In addition, arrivals of Russia-origin cargoes into the Singapore Strait and more naphtha will be exported from Kuwait's Al-Zour refinery and Oman's Duqm refinery as they ramp up through to the end of the year will increase naphtha supply in Aisa. However, Long Son Petrochemicals' cracker in Vietnam will begin operations using propane, it will take some naphtha after ramping up. ExxonMobil's Huizhou cracker in China could also start importing naphtha from 1Q 2024, depending on the import quota situation.

Asian gasoline cracks are expected to weaken for October and November but remain higher than the previous year as summer driving demand eases. The seasonal change to winter-spec gasoline alongside the end of summer driving season in US and Europe have negative impact to gasoline cracks. The end of planned maintenance at several refineries will increase gasoline supplies by some 140 thousand barrels per day over Q4/23. But healthy travel stats from China during its National Day Golden Week holiday give Asian gasoline cracks a small respite before strong rebound in gasoline exports over 2nd half of October after end of Holiday. Meanwhile, efforts by local governments to maintain affordable fuel prices, along with increased support during various festivities in the region, should see Asia's gasoline demand rising from 4.2 million barrels per day in November to 4.3 million barrels per day in December.

Jet/kerosene cracks are expected to remain firm as the full impact of the Russian export ban will be most acute in October before supply uncertainties eases as expect the export ban is a temporary measure to shore up domestic supplies. International aviation demand recovery will continue to support the cracks, the international air travel in China with international flights expected to hit 65-70% of pre-pandemic levels. A surge in winter heating demand for kerosene in Northeast Asian countries such as Japan and South Korea will support the crack.



Expect the easing Asian gasoil complex amid increased exports from China. Expect the impact of the temporary Russian export ban on diesel will be temporary impact until the country builds up sufficient domestic supplies. On other hand, the streaming of Al-Zour refinery and the pending commercial production from Duqm refinery will add more supplies and subsequently alleviate supply uncertainties in the market as Europe enters the first winter without Russian diesel. In addition, the return of offline capacity from turnarounds and the robust diesel cracks will continue to incentivize refiners to produce diesel.

HSFO crack spreads are forecast to decline in October and November as peak demand for power generation in the Middle Eastern subsides, and surplus barrels being exported in the months ahead. Expect the HSFO surplus in the Middle East will increase by 60 thousand barrels per day to 120 thousand barrels per day in 4Q 2023. Supplies from Saudi Arabia's Jizan refinery should stay elevated. In addition, HSFO imports into China should continue falling with the resumption of dilbit flows and depleting fuel oil import quotas. Furthermore, the return of Russian refineries from turnarounds will increase fuel oil export availability. However, the extension of the production cuts by OPEC+ will continue to provide support for the cracks and consequently, the cracks will be stronger than same period last year.



6. Appendix

