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Fueling the Future of Thailand

Management's Discussion and  
Analysis Of Financial Condition and Result Of Operations  
Star Petroleum Refining Public Company Limited  
For Quarter 4/2019 and year 2019

## 1) Company's Operating Result

(US\$ Million)	Q4/19	Q3/19	+ /(-)	Q4/18	+ /(-)	2019	2018	+ /(-)
Total Revenue	912	1,435	(522)	1,658	(745)	5,392	6,439	(1,047)
EBITDA	(102)	(17)	(85)	(128)	26	(39)	177	(216)
EBIT	(123)	(38)	(85)	(149)	27	(121)	93	(214)
Gain on foreign exchange	5	7	(2)	1	4	39	24	15
Net income (Loss)	(98)	(30)	(68)	(118)	20	(94)	74	(168)
Net income (Loss) (US\$ per share)	(0.02)	(0.01)	(0.01)	(0.03)	0.01	(0.02)	0.02	0.00
Accounting gross refining margin (US\$/barrel) <sup>(1)</sup>	1.85	3.11	(1.26)	(5.96)	7.81	4.12	4.73	(0.61)
Market gross refining margin (US\$/barrel) <sup>(2)</sup>	2.49	5.07	(2.58)	4.40	(1.91)	3.39	5.67	(2.28)

Crude intake (thousand barrels/day)	77.9	144.8	(66.9)	165.3	(87.4)	134.3	159.6	(25.4)
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(Baht Million)	Q4/19	Q3/19	+ /(-)	Q4/18	+ /(-)	2019	2018	+ /(-)
Total Revenue	27,804	44,307	(16,503)	54,668	(26,864)	168,840	209,159	(40,320)
EBITDA	(3,104)	(538)	(2,566)	(4,216)	1,112	(1,082)	5,591	(6,672)
EBIT	(3,727)	(1,166)	(2,561)	(4,910)	1,183	(3,647)	2,854	(6,501)
Gain on foreign exchange	159	227	(68)	36	123	1,225	793	432
Net income (Loss)	(2,975)	(925)	(2,050)	(3,881)	906	(2,809)	2,263	(5,072)
Net income (Loss) (Baht per share)	(0.69)	(0.21)	(0.47)	(0.90)	0.21	(0.65)	0.52	(1.17)

<sup>(1)</sup> margin includes inventory gain/loss based on weighted average inventory cost.

<sup>(2)</sup> margin is calculated based on current replacement cost.

Exchange rate (Baht/US\$)	Q4/19	Q3/19	+ /(-)	Q4/18	+ /(-)	2019	2018	+ /(-)
Average FX	30.46	30.88	(0.42)	32.99	(2.53)	31.22	32.49	(1.27)
Closing FX	30.33	30.77	(0.44)	32.61	(2.28)	30.33	32.61	(2.28)

In Q4/19 SPRC underwent the planned major turnaround of all process units, together with the increase in capacity, reliability, and efficiency projects starting from 1 Nov 2019. All the refinery units resumed their operations as planned with slightly below budget. As a result of the turnaround, crude intake for Q4/19 dropped to 78 thousand barrels per day from 145 thousand barrels per day in Q3/19. SPRC had sale revenue of US\$912 million, dropped by US\$522 million following the lower refinery throughput. EBITDA, EBIT and net earnings in Q4/19 were negative because of low refinery throughput, weak refining margin and expenses relating to the turnaround. Accounting gross refining margin in Q4/19 was low at US\$1.85/bbl while market refining margin which excluding stock gain (loss) dropped from US\$5.07/bbl to US\$2.49/bbl from continuing excessive supply of refinery products. Continuing appreciation of Baht against US\$ during the quarter resulted to exchange gain in Q4/19.

Compared Q4/19 with Q4/18, the planned major turnaround caused to lower sale revenue in Q4/19. EBITDA, EBIT and net earnings in Q4/19 were negative, which was similar to Q4/18, but to a lesser extent than Q4/18. There was a significant stock loss in Q4/18 with a loss from inventory write down to net realizable value of US\$62.2 million due to a sharp drop in oil price in Dec 18 while there was a slight stock loss in Q4/19 with a loss from inventory write down of US\$1.8 million. Excluding stock gain (loss) market refining margin in Q4/19 was lower than Q4/18 due to weakened product spread. Higher expenses relating to the planned turnaround also contributed to negative earnings in Q4/19. Higher exchange gain in this quarter from higher appreciation of Baht.

Compared 2019 with 2018, total crude intake in 2019 of 134 thousand barrels per day decreased from 160 thousand barrels per day in 2018 or 16% decrease, impacted from the reduction in refinery unit's throughput to optimize the refinery run during low refining margin in the market, end of run condition of some process units and planned refinery turnaround in Q4/19. This caused sale revenue in 2019 to drop 19% from 2018 which also due to the lower refinery product price. SPRC had negative EBITDA and net income in 2019 which were impacted from low throughput, low accounting refining margin, despite a slight stock gain, weak market refining margin and planned turnaround expenses. Excluding stock gain, market gross refining margin in 2019 was low at US\$3.39/bbl comparing to US\$5.67/bbl in 2018 impacted from product crack spread declined due to sluggish demand. Baht to US\$ remained strong and continued appreciation which resulted to higher exchange gain in 2019 and favorable to 2019 performance.

## 2) Market Condition

Pricing	Q4/19	Q3/19	+ / (-)	Q4/18	+ / (-)	2019	2018	+ / (-)
Dubai crude oil	62.08	61.16	0.92	67.44	-5.36	63.5	69.7	-6.2
Light Naphtha	59.98	54.87	5.11	63.07	-3.09	58.2	68.2	-10.0
Gasoline (premium)	75.01	72.80	2.21	72.16	2.85	72.5	80.0	-7.5
Jet Fuel	76.00	76.90	-0.90	83.07	-7.07	77.2	84.8	-7.6
Diesel	76.38	76.50	-0.13	82.20	-5.83	77.2	84.1	-6.9
Fuel Oil (HSFO)	43.41	62.08	-18.67	68.77	-25.36	58.6	66.8	-8.2

Spread over Dubai	Q4/19	Q3/19	+ / (-)	Q4/18	+ / (-)	2019	2018	+ / (-)
Light Naphtha	-2.09	-6.29	4.19	-4.37	2.28	-5.37	-1.21	-4.16
Gasoline (premium)	12.93	11.64	1.29	4.72	8.21	8.99	10.50	-1.51
Jet Fuel	13.92	15.74	-1.82	15.63	-1.71	13.72	15.36	-1.64
Diesel	14.30	15.35	-1.05	14.76	-0.46	13.71	14.63	-0.92
Fuel Oil (HSFO)	-18.67	0.92	-19.59	1.32	-19.99	-4.91	-2.62	-2.29

Average Dubai price for Q4/19 was US\$62.08/bbl, increased from US\$61.16/bbl in Q3/19. Crude oil markets do not change too much in this quarter as concern on cost of freight rates to ship U.S. crude to Asia with costs to charter a supertanker rising to a record \$12 million, a possible delay in resolving the U.S.-China trade war and sharply rose in global oil inventories despite OPEC and its allies deepening their output cuts and slowing U.S. production growth. The U.S. crude oil stocks have reached low record stock levels at 430 million barrels at the end of December. In 2019, crude prices were volatile with Dubai crude price moving between US\$59.08/bbl and US\$70.95/bbl, with an average of US\$63.52/bbl, which was lower than 2018 average of US\$69.65/bbl. Average Dubai price for Q2/19 and Q3/19 were US\$67.38/bbl and US\$61.16/bbl respectively as a result from U.S. attempts to drive Iranian oil exports down to zero come against the backdrop of a global market, OPEC supply cuts and Middle East tensions outweighed the U.S.-China trade dispute that has been dragging on the global economy and oil demand. Moreover, the attack on top oil exporter Saudi Arabia's oil facilities also threatens global oil supplies.

Gasoline spread over Dubai rise to US\$12.93/bbl. Gasoline market in this year was volatile as high supplies across regions of Asia, U.S. and Europe in Q1/19 and increased in Q2/19 due to peak Asian refinery turnarounds. Gasoline crack was higher in October and November as supply tightened slightly owing to heavy refinery turnarounds and unplanned outages, more demand from India and Indonesia. Significant inventory drawdowns in North America, and ARA and Singapore inventories which are below the five-year-average. However, in December market still under pressure for rising inventories due to the start-up of new refining capacities from Rongsheng in China and Hengyi in Brunei. Singapore light distillates stocks were 12.7 million barrels on average, averaging 13.4% lower y/y.

Naphtha spread over Dubai in Q4/19 was minus US\$2.09/bbl. Asia's naphtha crack improved support by relatively strong gasoline market pulled more naphtha barrels for more gasoline blending, supply tightness caused by refinery maintenance leading to narrow arbitrage flow into Asia and firm naphtha demand in the

region after restart of several ethylene crackers including Formosa and Chandra Asri.

Jet and Diesel crack spread over Dubai was decrease, averaging US\$13.92/bbl and US\$14.30/bbl, respectively. Middle distillate cracks decrease as weak demand for heating kerosene due to a warm start to the winter of 2019, weak passenger demand and freight growth were created substantial headwinds. Gasoil crack in 2019 was pressure on weak demand growth stemming from the region's protracted trade dispute with the United States, a surge of exports out of India and China. Overall Singapore inventories were 10.5 million barrels on average, averaging 8.9% lower y/y.

Fuel oil spread over Dubai in Q4/19 was minus US\$18.67/bbl, lower than Q3/19. Fuel oil market was weaker as concern on the IMO 2020 deadline, the transition into the low sulfur world is in full swing. Most vessels without scrubbers are clearing their High Sulfur Fuel Oil (HSFO) stocks, and shipowners are only stemming the minimum required quantity for their current voyage. Moreover, the higher Very Low Sulfur Fuel Oil (VLSFO) demand has been displacing demand for HSFO and VLSFO crack climbs to more than 2-month high. Singapore inventories were 20.2 million barrels on average, averaging 0.2% higher y/y.

Due to high crude premium and product market effect especially weak in gasoline and fuel oil crack, SPRC's average market refining margin in Q4/19 was US\$2.49/bbl as compared to US\$5.07/bbl in Q3/19 and US\$4.40bbl in Q4/18. In Q4/19, SPRC maximized margin from benefit captured from crude slate optimization, process optimization and maximized domestic placement for all products.

### 3) Financial Results

	US\$ Million			US\$ Million		US\$ Million		
	Q4/19	Q3/19	+ / (-)	Q4/18	+ / (-)	2019	2018	+ / (-)
Total Revenue	912	1,435	(522)	1,658	(745)	5,392	6,439	(1,047)
Cost of sales	(1,009)	(1,472)	463	(1,800)	791	(5,498)	(6,342)	844
<b>Gross profit</b>	<b>(97)</b>	<b>(38)</b>	<b>(59)</b>	<b>(143)</b>	<b>46</b>	<b>(107)</b>	<b>96</b>	<b>(203)</b>
Other income	0	0	(0)	0	(0)	1	3	(1)
Gain on exchange rate	5	7	(2)	1	4	39	24	15
Administrative expenses	(31)	(8)	(23)	(8)	(23)	(55)	(29)	(26)
Income tax	25	8	17	32	(6)	29	(17)	46
<b>Net income (Loss)</b>	<b>(98)</b>	<b>(30)</b>	<b>(68)</b>	<b>(118)</b>	<b>20</b>	<b>(94)</b>	<b>74</b>	<b>(168)</b>

	Baht Million			Baht Million		Baht Million		
	Q4/19	Q3/19	+ / (-)	Q4/18	+ / (-)	2019	2018	+ / (-)
Total Revenue	27,804	44,307	(16,503)	54,668	(26,864)	168,840	209,159	(40,320)
Cost of sales	(30,756)	(45,470)	14,714	(59,369)	28,613	(172,051)	(206,188)	34,136
<b>Gross profit</b>	<b>(2,952)</b>	<b>(1,163)</b>	<b>(1,789)</b>	<b>(4,701)</b>	<b>1,749</b>	<b>(3,211)</b>	<b>2,972</b>	<b>(6,183)</b>
Other income	6	9	(2)	12	(6)	36	84	(48)
Gain on exchange rate	159	227	(68)	36	123	1,225	793	432
Administrative expenses	(939)	(238)	(701)	(252)	(687)	(1,690)	(947)	(743)
Income tax	771	255	516	1,040	(269)	885	(541)	1,425
<b>Net income (Loss)</b>	<b>(2,975)</b>	<b>(925)</b>	<b>(2,050)</b>	<b>(3,881)</b>	<b>906</b>	<b>(2,809)</b>	<b>2,263</b>	<b>(5,072)</b>

## Production Volumes

Petroleum products	Q4/19	Q3/19	Q4/18	Thousands barrels	
				2019	2018
Polymer Grade Propylene	162	392	352	1,269	1,488
Liquefied Petroleum Gas	338	670	753	2,346	2,733
Light Naphtha	330	556	709	2,247	2,540
Gasoline	1,709	3,788	3,918	12,823	15,847
Jet Fuel	713	1,209	1,380	4,381	5,206
Diesel	2,867	5,422	6,156	19,443	23,479
Fuel Oil	599	1,175	1,757	4,522	6,856
Asphalt	71	198	215	745	810
Mix C4	168	431	337	1,396	1,685
Other <sup>(1)</sup>	154	929	1,549	4,213	4,999
<b>Total production</b>	<b>7,110</b>	<b>14,771</b>	<b>17,126</b>	<b>53,386</b>	<b>65,643</b>

<sup>(1)</sup> Includes sulfur and reformat and products sold pursuant to our cracker feed exchange with PTT Global Chemical (PTTGC).

## Total Sale Revenue

Petroleum products <sup>(1)</sup>	Q4/19	Q3/19	Q4/18	US\$ Million	
				2019	2018
Polymer Grade Propylene	11	27	28	87	122
Liquefied Petroleum Gas	14	28	37	103	137
Light Naphtha	23	27	48	129	182
Gasoline	275	463	440	1,616	1,869
Jet Fuel	60	87	129	346	467
Diesel	470	626	699	2,394	2,695
Fuel Oil	19	73	123	255	438
Asphalt	4	9	16	43	49
Mix C4	12	27	22	93	126
Crude	19	0	0	30	0
Others <sup>(2)</sup>	4	67	116	296	354
<b>Total Revenue</b>	<b>912</b>	<b>1,435</b>	<b>1,658</b>	<b>5,392</b>	<b>6,439</b>

<sup>(1)</sup> Includes Government LPG and oil subsidies.

<sup>(2)</sup> Includes sulfur, reformat and products sold pursuant to our cracker feed exchange with PTT Global Chemical (PTTGC).

Sale revenue in Q4/19 decreased 36% from Q3/19 and 47% from Q4/18 mainly from lower sale volume resulted from the planned turnaround. Sale volume dropped to 9.4 million barrels in Q4/19 from 15.5 million barrels in Q3/19 and 17.9 million barrels in Q4/18.

SPRC had sale revenue of US\$5,392 million in 2019, decreased by US\$1,047 million from 2018 or 16%. The decrease was mainly due to lower refinery production from 1) the optimization of economic returns, 2) the end of run plant condition of some process units before the planned turnaround and 3) the planned turnaround in Nov-Dec 19. Sales volume of petroleum products was at 58.0 million barrels in 2019, lower than 2018 which was at 66.9 million barrels. A decrease in global oil price and weak product crack spread comparing to crude oil in 2019 also led to lower sale revenue.

In Q4/19, the company sold its petroleum products based on sale revenue to Chevron, PTT&PTTOR and other oil and petrochemical companies in the proportion of 55%, 39% and 6%, respectively.

### Cost of Sales

Comparing cost of sale, Q4/19 cost of sale decreased from Q3/19 and Q4/18 while 2019 cost of sale also decreased from prior year which in line with the decrease in sale volume impacted from the planned turnaround in Nov-Dec 19. Cost of sale in Q4/19 included the loss from inventory write down to net realizable value of US\$1.8 million at end Dec 2019 while it was US\$62.2 million at the end of 2018.

### Gain on Foreign Exchange

Baht to US\$ continued appreciation during Q4/19 and in 2019. This resulted to higher exchange gain in this year comparing to prior year. Baht appreciation resulted in an increase in the value of Baht denominated receivables when converted to US\$ equivalent.

### Administrative Expenses

Comparing Q4/19 with Q3/19 and Q4/18, administrative expense in Q4/19 increased to US\$31 million from US\$8 million in Q3/19 and Q4/18. The increase was mainly from a business email compromise late last year which resulted in the payment of invoices to an incorrect account. SPRC immediately involved internal and external IT experts for incident investigation and has strengthened its internal control. SPRC is working with the appropriate authorities regarding potential recovery of the payment but conservatively recorded the financial loss in Q4/19. Excluding such loss, administrative expense in Q4/19 approximated to prior quarter and same quarter of last year.

Comparing 2019 with 2018, administrative expenses was higher mainly from a business email compromise late last year. Aside from this incorrect payment, administrative expense increased US\$3 million from the provision of employee benefit from the change in Labor Protection Act recorded in 2019 and exchange rate impact from Baht appreciation.

## 4) Analysis of Financial Position

	US\$ Million				Baht Million		
	31 Dec 2019	31 Dec 2018	+ / (-)	% + / (-)	31 Dec 2019	31 Dec 2018	+ / (-)
<b>Assets</b>							
Cash & cash equivalent	1	2	(2)	-71%	20	74	(54)
Other current assets	841	781	60	8%	25,504	25,448	56
Non-current assets	949	904	44	5%	28,770	29,489	(719)
<b>Total assets</b>	<b>1,790</b>	<b>1,687</b>	<b>103</b>	<b>6%</b>	<b>54,294</b>	<b>55,011</b>	<b>(717)</b>
<b>Liabilities</b>							
Current liabilities	703	482	222	46%	21,334	15,704	5,630
Non-current liabilities	16	24	(8)	-33%	484	778	(294)
<b>Total liabilities</b>	<b>719</b>	<b>505</b>	<b>214</b>	<b>42%</b>	<b>21,818</b>	<b>16,482</b>	<b>5,336</b>
<b>Equity</b>							
Share capital & retained earnings	1,071	1,182	(111)	-9%	40,150	43,493	(3,343)
Other component of shareholders' equity					(7,674)	(4,965)	(2,709)
<b>Total equity</b>	<b>1,071</b>	<b>1,182</b>	<b>(111)</b>	<b>-9%</b>	<b>32,476</b>	<b>38,529</b>	<b>(6,052)</b>
<b>Total liabilities &amp; equity</b>	<b>1,790</b>	<b>1,687</b>	<b>103</b>	<b>6%</b>	<b>54,294</b>	<b>55,011</b>	<b>(717)</b>

## Assets

Total assets as of 31 Dec 2019 increased by US\$103 million (but decreased Baht 717 million due to the translation of US\$ to Baht at period end FX) from 31 Dec 2018.

Total current assets increased US\$59 million (Baht 3 million) mainly due to:

- a) an increase in inventory of US\$196 million (Baht 5,036 million) from increase in both inventory volume, to support refinery run after start-up from the turnaround, and inventory price.
- b) an increase in VAT receivables of US\$11 million (Baht 321 million) from high VAT on purchase of crude oil in Dec 19 to prepare for refinery run after turnaround while VAT on sale was lower due to low sale volume from refinery shutdown in Nov until mid Dec; but partly offset by
- c) a decrease in trade and other account receivables of US\$148 million (Baht 5,349 million) due to lower sale volume in Dec 19

Non-current assets increased US\$44 million (but decreased Baht 719 million due to FX translation) mainly due to an increase in deferred tax asset of US\$30 million (Baht 910 million) from 2019 operating loss carryforward, an increase in prepaid income tax of US\$7 million (Baht 173 million) from 1H19 income tax paid which will be refunded from the government, and an increase in other non-current assets of US\$8 million (Baht 231 million) from prepaid expenses. Capital investment in 2019 of US\$81 million, which include investment in refinery reliability and efficiency project, was offset by depreciation expenses in 2019.

## Liabilities

Total liabilities as of 31 Dec 19 increased US\$214 million (Baht 5,336 million) from 31 Dec 2018. The increase is mainly from:

- a) an increase in S-T borrowing of US\$225 million (Baht 6,819 million) to support movement in working capital and turnaround spending;
- b) an increase in trade and other account payables of US\$75 million (Baht 1,441 million) from crude purchase for refinery start up in Dec 19 and higher crude price;
- c) an increase in employee benefit obligation of US\$6 million (Baht 156 million) due to the provision of employee benefit impacted from the change in Thai Labor Act severance pay; but partially offset by
- d) a decrease in excise tax payable of US\$75 million (Baht 2,520 million) due to the change in excise tax regulation on the payment date of excise tax and fund; and
- e) a decrease in deferred tax liabilities of US\$14 million (Baht 449 million). Due to 2019 operating loss carry forward, deferred tax was presented net in deferred tax asset.

## Shareholders' Equity

Shareholders' equity as of 31 Dec 2019 decreased US\$111 million (Baht 6,052 million) from 31 Dec 2018 resulted from the net loss in 2019 and dividend payment for 1H/19 profit.

## 5) Statement of Cash Flow

	US\$ Million		Baht Million	
	2019	2018	2019	2018
Net cash generated from operating activities	(123)	204	(3,726)	6,483
Net cash used in investing activities	(83)	(25)	(2,599)	(804)
Net cash used in financing activities	205	(243)	6,207	(7,811)
<b>Net increase (decrease) in cash and cash equivalents</b>	<b>(2)</b>	<b>(64)</b>	<b>(118)</b>	<b>(2,132)</b>
<b>Cash and cash equivalents at the beginning of the period</b>	<b>2</b>	<b>66</b>	<b>74</b>	<b>2,171</b>
Adjustments from foreign exchange translation	0	1	64	35
<b>Cash and cash equivalents at the end of the period</b>	<b>1</b>	<b>2</b>	<b>20</b>	<b>74</b>

SPRC cash and cash equivalents slightly decreased from US\$2 million (Baht 74 million) at 31 Dec 2018 to US\$1 million (Baht 20 million) at 31 Dec 2019.

Details of cash flow activities in 2019 are as follow.

- a) Net cash used in operating activities of US\$123 million (Baht 3,726 million) which was primarily due to:
  - a. 2019 net loss of US\$94 million (Baht 2,809 million) and non-cash items of US\$19 million (Baht 596 million);
  - b. cash used in operating assets of US\$9 million (Baht 289 million), mainly from an increase in inventory US\$135 million (Baht 4,217 million) from higher inventory volume and an increase in other assets of US\$20 million (Baht 627 million) but offset by a decrease in trade receivables of US\$146 million (Baht 4,556 million) due to lower sale volumes
- b) Net cash used in investing activities of US\$83 million (Baht 2,599 million), primarily on projects spending to increase refinery capacity, reliability, and efficiency.
- c) Net cash provided from financing activities of US\$205 million (Baht 6,207 million) from short term borrowing of US\$222 million (Baht 6,728 million) primarily to support working capital and major turnaround spending but partially offset by dividend payment for 1H/19 net income of US\$17 million (Baht 521 million).

## 6) Financial Ratios

		Q4/19	Q3/19	Q4/18	2019	2018
Current Ratio	(Time)	1.2	1.6	1.6	1.2	1.6
Net Profit Margin	(%)	(10.7)	(2.1)	(7.1)	(1.7)	1.1
Debt to Equity ratio	(Time)	0.7	0.4	0.4	0.7	0.4
Net Interest-Bearing Debt to Equity ratio	(Time)	0.2	0.0	0.0	0.2	0.0

### Note:

Current Ratio	= Current Assets / Current Liabilities	(Time)
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' Equity	(Time)