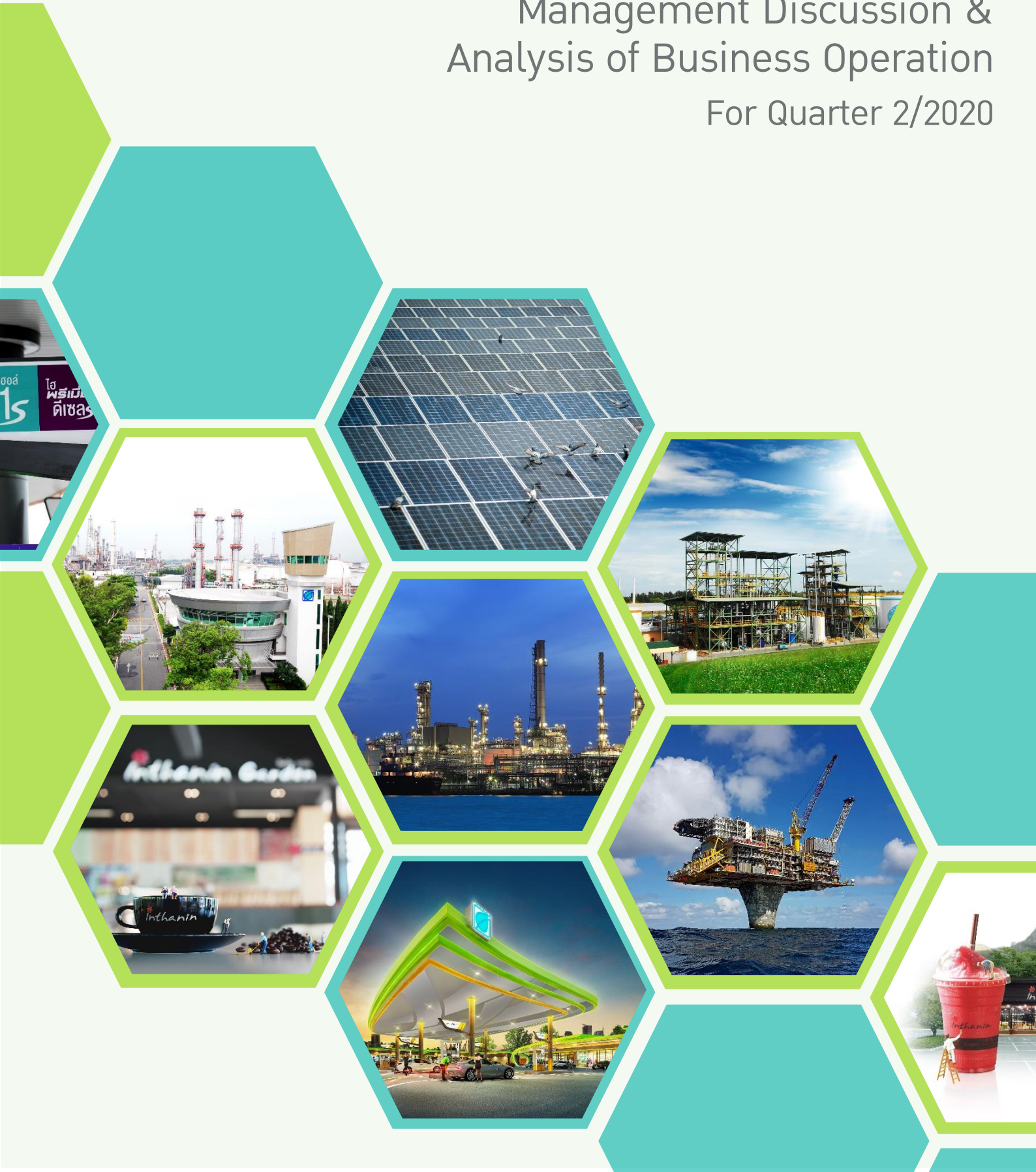




Bangchak Corporation Plc.

Management Discussion &
Analysis of Business Operation

For Quarter 2/2020



CONTENTS

03

Executive Summary

07

Statement of Income

09

Business Performance

09 - Refinery & Trading

14 - Marketing

16 - Power Plant

18 - Bio-based Products

20 - Natural Resources

21

Statement of Financial Position

23

Statement of Cash Flows

24

Financial Ratios

26

Environment Management Accounting

Executive Summary

Summary of the company and its subsidiaries' operating result for the 2nd quarter ended 30th June 2020

Unit: THB Million	Q2/2020	Q1/2020	QoQ	Q2/2019	YoY	6M2020	6M2019	YoY
Total Revenue	26,594	43,070	-38%	48,326	-45%	69,665	93,861	-26%
Accounting EBITDA	1,131	(2,546)	144%	2,189	-48%	(1,415)	4,147	-134%
<i>Refinery and Trading Business^{1/}</i>	(785)	(2,590)	70%	650	-221%	(3,375)	1,167	-389%
<i>Marketing Business^{2/}</i>	725	81	797%	630	15%	806	1,240	-35%
<i>Power Plant Business^{3/}</i>	863	770	12%	721	20%	1,633	1,458	12%
<i>Bio-Based Products Business^{4/}</i>	339	510	-34%	136	150%	848	330	157%
<i>Natural Resources Business^{5/}</i>	60	(1,227)	105%	145	-59%	(1,166)	122	N/A
<i>Others</i>	(71)	(90)	22%	(94)	25%	(161)	(170)	5%
Profit attributable to owners of the Company	(1,911)	(4,661)	59%	528	-462%	(6,571)	742	-986%
Earnings per share (Baht)	(1.50)	(3.49)		0.38		(5.02)	0.54	

Note: 1/ EBITDA from Refinery Business of the Company, BCP Trading Pte. Ltd. and share of profit from associated companies

2/ EBITDA from Marketing Business of the Company, Bangchak Green Net Co., Ltd., Bangchak Retail Co., Ltd., and share of profit from associated companies

3/ EBITDA from Power Plant Business of BCPG Plc., its subsidiaries, and share of profit from associated companies

4/ EBITDA from BBGI Plc., its subsidiaries, and share of profit from associated companies

5/ EBITDA from Natural Resources business of Nido Petroleum Pty. Ltd., BCP Energy International Pte. Ltd., BCP Innovation Pte. Ltd., BCPR Co., Ltd. and share of profit from associated companies

Performance of the first 6 months of 2020, Bangchak Corporation Plc. (The company) and its subsidiaries recorded revenue from selling of goods and rendering of service of THB 69,665 million (-26% YoY), EBITDA of THB -1,415 million (-134% YoY), Operating EBITDA of THB 3,817 million and **a net loss attributable to owners of the parent was THB 6,571 million (-986% YoY) or loss per share of THB 5.02**. The performance in first half of 2020 was affected by the COVID-19 outbreak that wreaked wide spread havoc upon economies around the world. Moreover, the border closure policies, and travel limitations to control the spread of the virus has caused demand for consumption of fuel around the world to decline with significance. This factor is putting pressure on the price of crude and finished product to drop significantly. In addition, Gross Refinery Margin was still at the low level. This has affected the performance of the petroleum related business.

However, demand for consumption of finished products see signs of recovering after passing through the bottom in April, which was the most affected. After various countries around the world started relaxing their lockdown policies and travel restriction. Combined with the government sector introducing stimulus packages, which would cause demand for fuel consumption in the industrial and transport sector to increase. Moreover, the excess of crude oil supply trends to decrease, after the OPEC and allies have jointly initiated production reduction in tandem to their agreement. This would result in improved oil price which will support oil related business to recover in the second half of 2020.



As for performance in Q2/2020, the company and its subsidiaries saw improvements from the previous quarter. However, the company was still impacted by the COVID-19 epidemic. The price of crude and finished product remain at low level. As such, average price of Dubai crude in Q2/2020 was at 30.72 \$/BBL, a decline of 19.69 \$/BBL, or a decline approaching of almost 40% from the previous quarter. This has affected the performance of the refinery business. Moreover, the Thai economy, especially businesses related to the tourism industry, which during Q2/2020 were the most affected. This quarter the company and its subsidiaries earned revenue from selling of goods and rendering of service of THB 26,594 million (-38% QoQ, -45% YoY), recorded EBITDA of THB 1,131 million (+144% QoQ, -48% YoY), however recorded Operating EBITDA of THB 2,645 million with Inventory Loss of THB 1,725 million (including reversal of losses on inventories devaluation (NRV) THB 1,635 million). And, due to the company recording impairment loss of major trade account receivable, that went into business rehabilitation under the supervision of the Central Bankruptcy Court, THB 894 million, and the asset impairments incurred from the retail business restructuring of Bangchak Retail Co., Ltd. THB 135 million. Resulting in this quarter recording **the net loss attributable to owners of the parent was THB 1,911 million** (+59% QoQ, -462% YoY) **or loss per share of THB 1.50**. The Company's performance of each business group as follow:

Note: Operating EBITDA is EBITDA excluding Inventory Gain/Loss (net NRV), one-time item and Gain/(Loss) from foreign currencies forward contract.

The Refinery and Oil Trading Business is still affected by Gross Refinery Margin at the low level, following the global oil demand declining. This quarter recorded Operating GRM of 3.93 \$/BBL, which improved from the previous quarter. Due to the loss of oil demand during the COVID-19 outbreak result of crude premium to adjust downward with significance. Despite the finished product and reference crude price crack spread for most products had been declining continuously from the previous quarter. However, with domestic demand for oil consumption lowering, the refinery had to adjust its production down to optimal level, average production rate was 89.3 KBD or 74% utilization rate. Also, due to severe declines in crude oil price since late Q1/2020 which continued into Q2/2020, especially in April. Resulting in this quarter, the refinery business recording Inventory Loss of THB 1,866 million (including reversal of losses on inventories devaluation (NRV)). As for the oil trading business, conducted by BCPT Trading Pte., Ltd., recorded increase in gross profit, mainly from rise in value of the Low Sulphur Fuel Oil product group which the market has demand for adhering to the IMO measures. Despite the amount of trade and transaction of crude oil and finished product declining, mostly from the gasoline product which is a result of travel limitation policy during the COVID-19 outbreak.

The Marketing Business recorded improvements in performance of 797% QoQ and 15% YoY, due to this quarter experienced Inventory Gain in the amount of THB 72 million (including reversal of losses on inventories devaluation (NRV)), whereas the previous quarter recorded Inventory Loss. Despite total sales volume of the Marketing Business declining 20% QoQ and 26% YoY. Most of the decline can be attributed to sales of oil through the industrial channel, due to it still being affected by the COVID-19 outbreak, especially during April 2020 which the outbreak was at its peak. This led to the volume sold through the retail channel in April to decline by 17% compared to the average sales volume of the previous quarter. The sales volume returned to their former state in June after the various measures have been eased. Net marketing margin per unit increasing after proportion of retail channel sales adjusting upward, which itself earns higher margins than the industrial channel. The company's cumulative market shares of throughput



per service station between the months of January - June 2020 at 15.6% (data from Department of Energy Business, Ministry of Energy). The company debuted its new Gasohol S EVO FAMILY, and simultaneously elevated its E20 S EVO to premium qualities under the same price. Furthermore, the innovative Digital Payment system was brought in to provide payment service that simultaneously allows for loyalty point collection through the Mobile EDC. Moreover, the company still retains its service station expansion strategy, despite easing on portions of the investment due to the contracting aggregate economy. Thus, the number of service stations as of the end of Q2/2020 was 1,212 locations.

Power Plant Business recorded increase in total electricity sales 34% QoQ, mainly from electricity sales by the Hydropower Plant in LAOS PDR and the Solar Power Plant projects in Japan. The projects in Laos PDR resulted from a transition of weather from El Nino to Neutral and the gradually entering high season in late of Q2/2020. Combined with this quarter being the first quarter to realize full performance of the Hydropower Plant project, “Nam San 3B”. As for the projects in Japan, they benefited from seasonal factors during the second quarter of every year that the sky is clear, with lowered clouds and fog. Whereas, the electricity sales of the “Lom Ligor” project adjusted downward, due to the second quarter is an off-season period that has weaker wind speed sweeping pass the project location. As such, this quarter the company realized share of profit from its associate company THB 102 million, attributed to share of loss from the wind power plant business in the Philippines THB 15 million, and share of profit from the geothermal power plant business in Indonesia THB 118 million.

Bio-Based Products Business, by **the Biodiesel Production and Distribution Business** saw its performance declined 69% QoQ, mainly from the B100 product price that decreased sharply from the previous quarter. In addition, the sales volume decreased due to demand for consumption of Biodiesel declining significantly during the COVID-19 outbreak, resulting in gross profit lowering. However, performance increased by 80% YoY due to the selling price of B100 products increasing significantly. As a result of the government policy to increase the proportion of Biodiesel being used by announcing B10 Diesel as the primary fuel grade and combined with other production costs lowering. Also with Glycerin price in the global market increasing, despite the sales volume of B100 products declining. **The Ethanol Production and Distribution Business**, saw performance increased 54% QoQ and 203% YoY as a result of average selling price of Ethanol products adjusting upward significantly, following the demand for Industrial Grade Ethanol to be used in the production of alcohol gel, and other disinfectant products permitted by the Excise Department. As for the amount of total Ethanol products sold, it increased QoQ, but dropped slightly YoY due to the effects of COVID-19.

Natural Resource Business saw improvements in performance 105% QoQ due to the realization of share of profit from invested capital in the associate company, OKEA in this quarter. Whereas the previous quarter realized share of loss, despite this quarter, OKEA earned less revenue due to the effects of COVID-19 which caused the price of oil and gas to adjust downward. Furthermore, the scheduled turnaround maintenance of the Draugen field shifted from September to June, lowering volume sold. However, this quarter realized gain from foreign exchange rate, due to the Norwegian Krone appreciating against the US Dollar, and recorded lower impairment.

Due to the effects of COVID-19 which was spreading across countries around the world including Thailand. Despite the situation within the country reporting lower numbers of infected patients, and various lockdown measures ease announced by the government, the company group still puts the safety and health of its employees, customers, and

related parties above all else. Measures were taken to prevent and control the spread of COVID-19 continuously. As for the operations side of the business, the situation is closely monitored and assessed to adjust its business plan accordingly, and complied the strict measures on cost reduction and capital expenditures in order to mitigate the impact. Combined with the management of adequate working capital. Anyway, the business of the company group has started recovering since June, cash flow from operation improved. Increasing the company's liquidity, allowing the business to progress continuously.

Other important events in this quarter:

- The company, in association with Krung Thai Bank Public Company Limited developed an innovative electronic payment system, the Bangchak Digital Payment. The service was piloted at the Sukhumvit 62 and Srinakarin 1 service stations since April. With this launch, the company has become the first in Thailand to provide a full service payment system for fuel that accepts transfers via QR Code by every bank's Mobile Application, including credit and debit cards; at the same time allowing users to accumulate reward points. The payment amount, the quantity of fuel filled, and the number of reward points received will be displayed on the Mobile EDC for customers to instantly view. This is all done without requiring the staff at forecourt to move between the customer vehicle and the payment point, increasing convenience and the speed of service. Also, building confidence in terms of safety, and lowering anxiety of misappropriation of personal information, as well as cutting down physical contact with cash.
- On the 8th May 2020, the company issued Unsubordinated and Unsecured Debentures with a Debentureholders' Representative in the Name-Registered Certificate to Institutional Investors and/or High Net Worth Investors in the amount of THB 8,000 million. The debentures are split into 3 series which are tenors of 2 years, 7 years, and 10 years with fixed coupon rates of 2.60%, 3.00%, and 3.40%, respectively.
- The company reported the conclusion of the treasury stock program, the number of stocks repurchased between the 6th December 2019 and the 5th June 2020 amounts to 19.238 million shares, for a value of THB 505 million, which equals to 1.40% of paid-up shares.
- The company notified the Stock Exchange of Thailand in regards to the establishment of BBGI Utility and Power Co., Limited, which 100% of its shares held by BBGI Public Company Limited (The company's subsidiary), with registered capital amounts to THB 50 million. Its objective is the production and distribution of bioenergy, electricity and public utilities.
- The company debuted Gasohol products in the S EVO FAMILY line which includes Gasohol 91, 95, E20, and E85. The E20 S EVO has been elevated to premium quality at an old price. This launch coincides with the demand for consumption of E20 products which has been constantly growing, and is expected to become the base fuel in Thailand. Bangchak's Gasohol S EVO FAMILY has incorporated the S Dual Purifier and the S Turbo Modifier additives into its formula for excellent cleaning of fuel injectors, allowing for complete combustion within the engine that allows for smooth performance with maximum clean power.

Statement of Income

Consolidated Statement of Income (THB Million)	Q2/2020	Q1/2020	QoQ	Q2/2019	YoY	6M2020	6M2019	YoY
Revenue from sale of goods and rendering of services	26,594	43,070	-38%	48,326	-45%	69,665	93,861	-26%
Cost of sale of goods and rendering of services	(26,036)	(44,287)	-41%	(45,738)	-43%	(70,323)	(89,093)	-21%
Gross Profit	558	(1,216)	146%	2,588	-78%	(658)	4,768	-114%
Other income	187	105	78%	108	72%	292	227	29%
Selling and administrative expenses	(1,585)	(1,763)	-10%	(1,897)	-16%	(3,348)	(3,618)	-7%
Exploration and evaluation expense	-	-	N/A	(0.2)	N/A	-	(5)	N/A
Gain (loss) from derivatives	283	(360)	N/A	(1)	N/A	(77)	17	N/A
Gain on foreign exchange	132	326	N/A	168	N/A	459	225	N/A
Loss from impairment of assets	(83)	(1,404)	N/A	-	N/A	(1,487)	-	N/A
Profit (loss) from operating activities	(508)	(4,311)	88%	965	-153%	(4,819)	1,614	-399%
Finance costs	(517)	(464)	12%	(421)	23%	(981)	(864)	14%
Impairment gain and reversal of impairment loss (impairment loss) determined in accordance with TFRS 9	(895)	5	N/A	-	N/A	(890)	-	N/A
Share of profit (loss) of associates and joint ventures	169	(1,082)	116%	156	8%	(913)	314	-391%
Profit (loss) before income tax expense	(1,751)	(5,852)	70%	700	-350%	(7,603)	1,063	-815%
Tax income (expense)	26	1,536	-98%	(25)	205%	1,562	7	N/A
Profit (loss) for the period	(1,725)	(4,316)	60%	675	-355%	(6,042)	1,070	-665%
Owners of parent	(1,911)	(4,661)		528		(6,571)	742	
Non-controlling interests	185	345		147		530	328	
Basic earnings (loss) per share (Baht)	(1.50)	(3.49)		0.38		(5.02)	0.54	

The Company and its subsidiaries Q2/2020 performance recorded a net Loss for the period of THB 1,725 million, of which the net loss attributable to the owners of the parent is THB 1,911 million, or in basic loss per shares of THB 1.50 mainly due to the following reasons:

1. Revenue from sales of goods and rendering of services was THB 26,594 million, a decrease of 38% QoQ mostly be attributed to petroleum related business. The company was affected by the significant decline in average selling price of global oil price by 40% QoQ which lowered average selling price significantly. Moreover, total quantity of products sold by the company declined 15% QoQ, from the COVID-19 outbreak especially in April 2020 which effectively lowered the amount of demand for consumption of finished product. And, when compared to Q2/2019, revenue declined by 45%, mostly attributed to declining revenue of petroleum related businesses from average selling price per unit and the total amount of oil products sold.



2. Gross profit was recorded at THB 558 million, an increase of 146% QoQ, mainly contributed by petroleum related businesses. The Refinery business group recorded higher Total Gross Refinery Margin (Total GRM) by 2.94 \$/BBL from a loss of 6.16 \$/BBL in Q1/2020 to a loss of 3.22 \$/BBL, mainly due to the improving Operating GRM. Also, an Inventory Loss of THB 1,866 million in this quarter (including reversal of losses on inventories devaluation (NRV)), declined from the previous quarter which recorded Inventory Loss of THB 2,774 million (including losses on inventories devaluation (NRV)). Furthermore, the marketing business group recorded higher net marketing margin by 0.11 Baht /Liter, and an Inventory Gain of THB 72 million (including losses on inventories devaluation (NRV)), while there was an Inventory Loss of THB 591 million (including losses on inventories devaluation (NRV)) in the previous quarter.

When compared to Q2/2019, Gross Profit declined 78% YoY, primarily decreasing from refinery business group which recorded a lower Total GRM due to the lower finished oil product demand following the COVID-19 outbreak. Moreover, in Q2/2019, Inventory Loss was recorded at THB 107 million.

3. Selling and administrative expenses was recorded at THB 1,585 million, a decrease of 10% QoQ and 16% YoY due to strict measures to control expenses during the COVID-19 pandemic situation.
4. Gain from derivatives recorded at THB 283 million, attributed to the derivative measurement under TFRS 9 in regards to Financial Instruments standards which were put in effect on the 1st January 2020.
5. Gain on foreign exchange recorded at THB 132 million. Due to the appreciation of Thai Baht in compared to foreign currencies, resulting in a gain on foreign exchange from conversion of foreign currency accounts payable and loans.
6. Loss from impairment of assets recorded at THB 83 million, mainly from impairment assets of marketing business THB 135 million and a reversal of provision for the decommissioning cost in natural resource business at THB 52 million.
7. Impairment loss determined in accordance with TFRS 9 at THB 895 million mostly from the higher amount of expected credit loss (ECL) of trade account receivable since the major trade account receivable went into business rehabilitation process under the supervision of the Central Bankruptcy Court.
8. Share of profit of associates and joint ventures accounted for using equity method increased when compared to Q1/2020, as the Company realized a share of loss from OKEA at THB 1,199 million in the previous quarter, due to the state of decline in oil price and natural gas price.



Summary of the Company and its subsidiaries' performance by Business unit

1.) Refinery and Oil Trading Business Group

Crude Oil Price Situation (Unit: \$/BBL)

Crude Oil Price	Q2/2020			Q1/2020	QoQ	Q2/2019	YoY	6M	6M	YoY
	MAX	MIN	AVG	AVG	+/-	AVG	+/-	2020	2019	+/-
Dubai (DB)	43.35	13.55	30.72	50.41	-19.69	67.55	-36.83	40.72	65.48	-24.75
Dated Brent (DTD)	43.61	13.24	29.56	50.10	-20.54	68.86	-39.31	40.07	65.95	-25.88
DTD/DB	0.25	(0.31)	(1.16)	(0.31)	-0.85	1.32	-2.48	(0.65)	0.48	-1.13

Crude Oil Price Situation

Dubai crude price in Q2/2020 on average declined by 19.69 \$/BBL when compared to Q1/2020, due to pressure from demand for fuel remaining at the low level amidst the COVID-19 crisis. As well as, concerns over a second outbreak, after the number of new infected patients increasing sharply after the easing of lockdowns. Whereas crude oil stock across the globe remains high, despite the Organization of the Petroleum Exporting Countries (OPEC) and their allies strictly enacting their oil production reduction plan. The agreement between OPEC and their allies states that the amount of oil produced is to be lowered by 9.7 million barrels per day in May and June 2020. Simultaneously, Saudi Arabia announced to cut oil output by an extra 1.0 million barrels per day in June 2020, the said amount is separate from what was agreed upon.

Dubai crude in Q2/2020 compared to Q2/2019 declined by 36.83 \$/BBL with respect to pressure stemming from concerns over the contracting world economy in the manufacturing sector, the industrial sector, the infrastructure sector, and the transport sector due to the COVID-19 pandemic. As such, the June 2020 monthly report published by the International Energy Agency (IEA) expects that global oil demand in 2020 will be at 91.7 million barrels per day, a decline of 8.1 million barrels per day from the previous year. Furthermore, the IEA asserted that the number of airplane flights that have declined will limit demand for fuel to not return to the pre-pandemic level until 2022; becoming a factor putting pressure on the price of crude oil.

Dated Brent and Dubai spread (DTD/DB) in Q2/2020 on average declined by 0.85 \$/BBL when compared to Q1/2020 due to pressure generated after Saudi Arabia increased its efforts to secure a larger portion of the Heavy crude market share. Saudi Aramco announced discounts of its Official Selling Price (OSP) for crude oil delivered to customers in every country. Also pressure from the COVID-19 pandemic, leaving demand for finished product, especially Jet fuel decline significantly. Thus leaving Light crude, which provided high yield of Jet fuel and Diesel fuel was left in a state of oversupply.

Dated Brent and Dubai spread (DTD/DB) average in Q2/2020 declined by 2.48 \$/BBL when compared to Q2/2019 due to pressure from the supply of Light crude being in a state of oversupply due to the COVID-19 pandemic. This led to various refineries cutting down on production to compensate for the dwindling demand, while the same quarter of the previous year, supplies were in a tight state.



Crack Spreads Situation (Unit: \$/BBL)

Crack Spreads	Q2/2020			Q1/2020	QoQ	Q2/2019	YoY	6M	6M	YoY
	MAX	MIN	AVG	AVG	+/-	AVG	+/-	2020	2019	+/-
UNL95/DB	7.14	(4.88)	2.57	6.54	-3.97	7.57	-5.00	4.58	5.67	-1.09
IK/DB	4.23	(8.05)	(0.02)	8.46	-8.48	12.19	-12.21	4.29	12.57	-8.28
GO/DB	11.69	0.85	5.83	11.00	-5.17	12.37	-6.53	8.46	12.56	-4.10
FO/DB	6.52	(5.60)	(1.54)	(7.30)	5.76	(2.34)	0.80	(4.47)	(0.90)	-3.57

Crack Spreads Analysis

- Gasoline and Dubai crack spread (UNL95/DB) in Q2/2020 averaged at 2.57 \$/BBL, a decline of 3.97 \$/BBL compared to the previous quarter. Due to pressures from demand for Gasoline dwindling significantly, after various countries around the world still enforce countrywide lockdown measures to curb the spread of COVID-19.

Gasoline and Dubai crack spread (UNL95/DB) declined by 5.00 \$/BBL, compared to the average of 7.57 \$/BBL in Q2/2019, this is due to pressure from the level of Gasoline stock soaring upward in every region, and Gasoline stock in the US has reached a new high after Gasoline demand dropped significantly. Furthermore, the US, which is one of the largest global Gasoline consumer saw domestic demand for Gasoline lowered by almost half of its daily consumption volume due to the COVID-19 pandemic.

- Jet (Kerosene) and Dubai crack spread (IK/DB) in Q2/2020 averaged at -0.02 \$/BBL, a decline of 8.48 \$/BBL compared to the previous quarter. Due to pressure from the COVID-19 outbreak and countrywide lockdown causing airlines across the globe to cancel flights, resulting in demand for air travel and air freight to decline.

Jet (Kerosene) and Dubai crack spread (IK/DB) declined by 12.21 \$/BBL compared to the average of 12.19 \$/BBL in Q2/2019. This is due to pressure from the airline industry which was adversely impacted by the COVID-19 pandemic. This resulted in many airline operators around the globe having to cancel flights, causing demand for air travel and air freight to decline.

- Gasoil and Dubai crack spread (GO/DB) in Q2/2020 averaged at 5.83 \$/BBL, a decline of 5.17 \$/BBL compared to the previous quarter due to pressure from demand for Gasoil consumption to decline from the lockdown measures adopted by countries across the world, resulting in the economy and various industrial activities to experience slowdowns. Furthermore, oil traders were still unable to export excess Gasoil from Asia to Europe (closed arbitrage), causing Gasoil stock level in Singapore to move beyond its 5-year average level.

Gasoil and Dubai crack spread (GO/DB) declined by 6.53 \$/BBL compared to the average 12.37 \$/BBL in Q2/2019, due to Gasoil demand within the region not increasing with significance in accordance to previous market projections for preparing the adoption of the bunker oil with Sulphur content not exceeding 0.5% in 2020. Due to the Low Sulphur Fuel Oil priced lower than Gasoil, and its supplies available for market consumption, traders decided to switch their reserves to Low Sulphur Fuel Oil instead of Gasoil. Moreover, demand for Gasoil declined after receiving pressure from the spread of the COVID-19 outbreak and the accompanying lockdown measures adopted by various countries around the world.

- Fuel Oil and Dubai crack spread (FO/DB) in Q2/2020 averaged at -1.54 \$/BBL, an increase of 5.76 \$/BBL compared to the previous quarter, this is supported by the decline in crude oil price which dropped in proportion that exceeded the Fuel Oil price. The excessive decline is due to pressure from Saudi Arabia discounting the OSP of Heavy crude, combined with supply of High Sulphur Fuel Oil declining from regional refineries lowering utilization rate due to slumping Gross Refinery Margin. Meanwhile, demand for High Sulphur Fuel Oil is still present amongst ship fleets that have installed scrubbers and still has demand for electricity generation from Middle East.

Fuel Oil and Dubai crack spread (FO/DB) increased by 0.80 \$/BBL compared to the average of -2.34 \$/BBL in Q2/2019. This is due to pressure from tight supplies because of refineries within the region lowering their production utilization rate. Whereas demand for High Sulphur Fuel Oil is still present amongst ship fleets that have installed scrubbers.

Refinery and Trading Business Group Performance

	Q2/2020	Q1/2020	QoQ	Q2/2019	YoY	6M2020	6M2019	YoY
EBITDA (THB Million)	(785)	(2,590)	70%	650	-221%	(3,375)	1,167	-389%
Average Crude Run (KBD)	89.3	104.3	-14%	112.7	-21%	96.8	111.4	-13%
Utilization Rate (%)	74%	87%		94%		81%	93%	
Average FX (THB/USD)	32.12	31.45		31.76		31.78	31.77	
<i>(Unit: \$/BBL)</i>								
Operating GRM	3.93	2.87	1.06	4.95	-1.02	3.36	4.20	-0.84
Oil Hedging	0.001	0.26	-0.26	(0.09)	0.09	0.14	0.001	0.14
Inventory Gain/ (Loss) ^{1/}	(7.15)	(9.29)	2.15	(0.33)	-6.82	(8.29)	(0.18)	-8.11
Total GRM	(3.22)	(6.16)	2.94	4.53	-7.75	(4.78)	4.02	-8.80
Total Sales Volume in each market category of the Company ^{2/} (Million Liters)								
Marketing Business	1,144	1,426	-20%	1,543	-26%	2,569	3,064	-16%
Petroleum traders in accordance with section 7	153	186	-18%	149	3%	339	286	18%
Export	258	218	19%	205	26%	476	450	6%
Total Sales Volume	1,555	1,829	-15%	1,896	-18%	3,385	3,801	-11%

Note: 1/ Inventory Gain/(Loss) in the table included (Reversal of) losses on inventories devaluation (NRV)

2/ Sales volume does not include oil swaps between major oil companies (petroleum traders in accordance with section 7) and sales of crude oil products

Performance for Q2/2020, the Refinery and Trading Business Group recorded EBITDA of THB -785 million, an increase of THB 1,805 million compared to Q1/2020 and recorded Operating EBITDA of THB 869 million, with the following factors affecting performance as follow:

1. The Bangchak refinery averaged its production in Q2/2020 at 89.3 KBD or 74% utilization rate, which is lower than the previous quarter's average production rate. This is due to the COVID-19 outbreak that has affected demand for oil consumption across the world declining significantly. This has led to the majority of finished product and reference crude price crack spread decline continuously from the previous quarter. Also, demand for domestic fuel consumption declined from the lockdown measure, thus the production was adjusted down to optimal level.



2. During this quarter, the refinery's Total Gross Refinery Margin (Total GRM) recorded a loss of THB 3.22 \$/BBL, an increase of 2.94 \$/BBL, when compared to the previous quarter, mainly due to the following reasons.

- Operating GRM was recorded at 3.93 \$/BBL, an increase of 1.06 \$/BBL when compared to the previous quarter, due to various refineries cut down the production following the declined demand during the COVID-19 outbreak, resulting in demand for crude oil adjusting downward. Moreover, Saudi Aramco announced a discount for their Official Selling Price (OSP), leading to the Crude Premium plummeting with significance. Despite, the finished product and reference crude price crack spread for most products lowering successively from the previous quarter due to the COVID-19 outbreak.
- During this quarter the refinery recorded gains from crude and product oil price hedging contract 0.001 \$/BBL whereas the previous quarter realized gain in the amount of 0.26 \$/BBL.
- Due to the demand of crude oil is still shrink, as a result of the COVID-19 crisis that has spread across various countries in the world. This has caused crude oil price in the global market to sharp deteriorate since late Q1/2020 continuing into Q2/2020, especially in April, the average price of Dubai crude adjusted down to 20.39 \$/BBL. Thus, the Refinery Business is still suffering from an Inventory Loss of THB 1,866 million or 7.15 \$/BBL (including reversal of losses on inventories devaluation (NRV)). Whereas Q1/2020 recorded inventory loss of THB 2,774 million or 9.29 \$/BBL (including losses on inventories devaluation (NRV)).

3. BCP Trading Pte. Ltd. ("BCPT") recorded trade transaction of crude oil and petroleum product which totaled at 7.03 million barrels, a decline of 0.99 million barrels (-12%) compared to the previous quarter. This is due to demand for oil in the global market declining after the COVID-19 pandemic crisis, the majority of the decline can be attributed to the gasoline product group from various countries adopting measures to limit travel. However, during this quarter, BCPT recorded increase in gross profit, mainly due to add more value to the Low Sulphur Fuel Oil product group. This is in relation to lesser supply of the Fuel Oil product group entering the region, leaving the market in a taut state compared to other product groups. Whereas, the market still has demand for consumption of IMO complied products, despite demand for Bunker Fuel being lower overall. Aside from this the company saw increase in revenue from the trade of a new product such as Unconverted Oil (UCO).

4. Selling and Administrative expenses declined from the previous quarter, due to strict measures to control expenses during the COVID-19 pandemic situation. It has positively affected EBITDA.

Performance comparison between Q2/2020 and Q2/2019, the Refinery and Trading Business Group recorded EBITDA decline of THB 1,435 million, with the following factors affecting performance:

1. The Bangchak refinery's average production rate decreased 21% YoY due to lowered production rate to an optimal level to coincide with the lowered demand. As well as the Gross Refinery Margin which was still at low level from shrinking demand for finished product in the global market during the COVID-19 outbreak.

2. Total Gross Refinery Margin (Total GRM) declined 7.75 \$/BBL compared to Q2/2019, mainly due to the following reasons:



- Operating GRM declined by 1.02 \$/BBL when compared to Q2/2019, mainly attributed to the finished product and reference crude price crack spread declining due to lowered demand for finished product after the COVID-19 outbreak.
- During this quarter the Refinery Business recorded gains from crude and product oil price hedging contract 0.001 \$/BBL whereas Q2/2019 recorded loss of 0.09 \$/BBL.
- The Refinery Business recorded inventory loss of THB 1,866 million or 7.15 \$/BBL (including reversal of losses on inventories devaluation (NRV)) from the state of the crude oil price in the global market making severe decline since late previous quarter. Whereas, Q2/2019 experienced inventory loss of THB 107 million or 0.33 \$/BBL (including losses on inventories devaluation (NRV)).

3. BCPT recorded increased gross profit from Q2/2019 due to trade transactions of crude oil and petroleum products increasing by 2.17 million barrels (+45%). Mainly, from the increase in trade of crude oil and Low Sulphur Fuel Oil products that has been refined to add more value to the product (IMO Low Sulfur Fuel Oil). Furthermore, the company earned incremental revenue partially from logistic service. As such, BCPT is still going forward momentum expanding its trade transactions with new partners and products in accordance to the planned strategy for the company's business expansion.

4. Selling and Administrative expenses lowered from Q2/2019, due to lease expenses declining under TFRS 16 Lease which was enforced since the 1st January 2020. Furthermore, the company had expense controlling measures during period affected by the COVID-19 outbreak.



2.) Marketing Business Group

Marketing Business Performance	Q2/2020	Q1/2020	QoQ	Q2/2019	YoY	6M2020	6M2019	YoY
EBITDA (THB Million)	725	81	797%	630	15%	806	1,240	-35%
Net Marketing Margin (Baht / Liter)	0.90	0.79	15%	0.83	9%	0.84	0.77	9%
Sales Volume (Million Liters)								
Retail (Service Stations)	971	1,020	-5%	1,093	-11%	1,991	2,125	-6%
Industrial	173	405	-57%	449	-62%	578	938	-38%
Total	1,144	1,426	-20%	1,543	-26%	2,569	3,064	-16%
Sales volume in each product category (Million Liters)								
LPG	30	39	-22%	36	-16%	69	70	-2%
Gasoline	9	15	-40%	7	29%	23	15	58%
Gasohol	345	395	-13%	428	-19%	740	841	-12%
Jet Fuel	7	216	-97%	242	-97%	223	454	-51%
Diesel	708	715	-1%	792	-11%	1,422	1,607	-11%
Fuel Oil and Others	45	47	-4%	37	21%	92	78	18%
Total	1,144	1,426	-20%	1,543	-26%	2,569	3,064	-16%

Note: Net Marketing Margin of Bangchak only (excluding Inventory Gain/(Loss) and NRV)

Performance in Q2/2020 of the Marketing Business Group recorded EBITDA of THB 725 million, an increase of THB 644 million compared to Q1/2020; with Operating EBITDA of THB 653 million, in which performance is affected by the following factors:

1. Total sales volume of the marketing business lowered 20% QoQ, the amount of fuel sold through the industrial market, which has severely affected, recorded a decline of 57% QoQ. As for the retail market decline of 5% QoQ was recorded. Due to this quarter still affected by the COVID-19 outbreak, especially in April 2020 when the outbreak was severe. This has caused economic activities to grind to a halt, and the government announced a range of different measures to curb the outbreak such as the lockdown measures, the announcement of the state of emergency, and closing off the country. This led to travel limitations, and affected the demand for consumption of fuel to adjust downward. The tourism industry and various airlines were adversely affected causing the amount of Jet fuel sold to decline by 97% QoQ. Moreover, the volume sold through the retail channel in April declined by 17% compared to the average sales volume of the previous quarter. The sales volume returned to their former state in June after the various measures have been eased.

2. During this quarter, the Marketing Business Group recorded an inventory gain of THB 72 million (including reversal of losses on inventories devaluation (NRV)). Whereas, the previous quarter experienced inventory loss THB 591 million (including losses on inventories devaluation (NRV)).

3. Net marketing margin per unit increased 15% QoQ, due to the proportion of retail channel sales increasing, which itself earns higher margins than the industrial channel. Thus, net marketing margin per unit of this quarter saw an increase in comparison to the previous quarter.



4. The company still retains its service station expansion strategy, despite easing on portions of the investment due to the contracting aggregate economy. As of Q2/2020 the total number of service stations was 1,212 stations, within this quarter there was a total of 10 new stations opened. The company's cumulative market shares of throughput per service station between the months of January - June 2020 at 15.6% (data from Department of Energy Business, Ministry of Energy). During this quarter the company debuted the new Gasohol S EVO Family, and simultaneously upgraded its E20 S EVO to premium qualities under the same price to coincide with the demand for consumption of E20 that has been growing continuously, and to meet the policy of the government sector to appoint it as the standard fuel for Thailand. As a way for consumers to test the product, the company held the E20 S EVO Full Tank fuel up for THB 20 event at 20 Bangchak service stations, allowing 100 vehicles to participate per station within Bangkok Metropolitan Area and various major cities upcountry. Furthermore, the company has adopted the Digital Payment innovation to serve as payment channels in service stations that allow for simultaneous loyalty point collection via the Mobile EDC that is connected to the Bangchak membership database. This program is piloted in 2 Bangchak service stations and aims to expand its services to 50 locations in the Bangkok Metropolitan Area.

5. Bangchak Retail Co., Ltd. ("BCR") is still continuously developing and expanding the Inthanin coffee shop business. During this quarter, the number of Inthanin coffee shop are 618 branches, where a total of 18 branches were opened, all of which are located in high potential areas both inside and outside the perimeters of service stations. With the COVID-19 outbreak, some branches of the Inthanin coffee shop had to suspend operations temporarily to adhere to the policies of the properties owners, as well as the government's measure advocating people to stay home. This has caused sales figures to lower, despite the online and in-store promotions that were launched, this includes business alliances for sales promotion with AirPay, and Shopee, to name a few. During this quarter, BCR recorded lower revenue by 15% QoQ. Furthermore, in late Q2/2020, BCR made restructured its business which incurred loss on write-off asset, and other expenses in order to accommodate the said restructuring, causing EBITDA to decrease.

Performance comparison between Q2/2020 and Q2/2019 the Marketing Business Group recorded EBITDA increase of THB 95 million, with factors affecting operations as follow:

1. Total sales volume of the marketing business group declined by 26% YoY, due to sales volume of fuel through the industrial market and the retail market declined by 62% and 11% YoY, respectively. A repercussion from the COVID-19 outbreak that has caused various economic activities to cease. Moreover, the announced policies of lockdowns and border closure has led to domestic demand for consumption of fuel to adjust downward. Especially, sales through the industrial channel which has severely affected, as such the industrial market has high degrees of competition.

2. The Marketing Business Group recorded inventory gain of THB 72 million (including reversal of losses on inventories devaluation (NRV)) in accordance to the company's allocation policy that was enacted since Q1/2020.

3. Net marketing margin per unit increased 9% YoY, due to the proportion of sales through the retail market increasing. Of which the retail market has higher marketing margin than sales through the industrial market. Thus, leaving net marketing margin per unit higher when compared to the same period of the previous year.

4. The company's cumulative retail market share between January - June 2020 was 15.6%, whereas the cumulative retail market share between January - June 2019 was 15.8% (data from Department of Energy Business, Ministry of Energy), and 44 new service stations commenced operation compared to Q2/2019.

5. As for the Non-oil business under the supervision of BCR, these businesses are still undergoing continuous development and expansion. Of which in Q2/2020, the Inthanin coffee shop opened an additional 110 branches YoY, with consecutive sales promotion activities carried out such as the addition of the online distribution channel, and the collaboration with the company's business alliance, to name a few. However, due to the COVID-19 outbreak, BCR saw slightly increase in revenue from the same period of the previous year. Meanwhile, EBITDA was recorded lower by 33% YoY, due to late Q2/2020, BCR restructures its business, thus incurring loss on write-off asset, and other expenses in order to accommodate the restructuring.

6. Selling and Administrative expenses lowered from Q2/2019, due to lease expenses declining under TFRS 16 Lease which was enforced since the 1st January 2020. Furthermore, the company had expense controlling measures during period affected by the COVID-19 outbreak.

3.) Power Plant Business Group

Power Plant Business Performance (THB Million)						6M2020	6M2019	YoY
	Q2/2020	Q1/2020	QoQ	Q2/2019	YoY			
EBITDA	863	770	12%	721	20%	1,633	1,458	12%
Revenue from sale and rendering of services	970	886	9%	848	14%	1,856	1,655	12%
Share of profit (loss) from associated companies								
Wind Power Plant	(15)	24	-162%	(12)	-25%	9	17	-47%
Geothermal Power Plant	118	67	75%	74	58%	185	167	11%
Electricity Sales (Million KWh)								
Solar Power Business – Thailand (142.5 MW)	71.93	71.33	1%	73.33	-2%	143.26	145.21	-1%
Wind Power Business – Thailand (9.0 MW)	1.72	3.86	-56%	2.54	-32%	5.58	2.54	119%
Solar Power Business – Japan (14.7 MW)	4.79	3.13	53%	5.38	-11%	7.92	9.47	-16%
Hydropower Business – Laos (114.0 MW)	73.02	34.35	113%	N/A	N/A	107.37	N/A	N/A
Total Electricity Sales	151.45	112.67	34%	81.25	86%	264.12	157.22	68%

Performance comparison between Q2/2020 and Q1/2020 of the Power Plant Business recorded EBITDA of THB 863 million, an increase of THB 93 million, with the following factors affecting operations as follow:

- Solar power plant projects in Thailand recorded total electricity sales at a similar level to the previous quarter.
- Wind power plant project based in Thailand, "Lom Ligor" recorded decline in total electricity sales by 56% QoQ, as the second quarter in each year is an off-season with lower average wind speed that sweeping through the project location, resulting decrease in electricity generated by the project compared to the previous quarter.
- Solar power plant projects in Japan recorded an increase in total electricity sales by 53% QoQ, due to seasonal factors during the second quarter of every year that the sky is clear with little presence of clouds and fog. Whereas, the first quarter was the winter season with overcast sky.
- The Hydropower Plant project in Laos PDR recorded higher total electricity sales by 113% QoQ, from a transition of weather from El Nino to Neutral and the gradually entering high season in late of Q2/2020. Moreover, this is the first quarter to realize full performance of the Hydropower plant "Nam San 3B", after investing in the project in February 2020.



5. Realized share of profit from investments in associated companies THB 102 million, an increase from the previous quarter THB 11 million, due to the following factors.

- Net share of loss from the Wind Power Plant business in the Philippines was THB 15 million, a decline from the previous quarter THB 39 million, as this is an off-season quarter, resulting in a drop of monsoon typhoons moving through the project location.
- Net share of profit from the Geothermal Power Plant business in Indonesia was THB 118 million, an increase from the previous quarter by THB 50 million. Although, the share of profits from operation declined due to a slightly decreased of electricity offtake by electricity distributor in Indonesia (PLN) from COVID-19 pandemic situation led to a drop of electricity demand. However, electricity offtake still standing above Take-or-pay condition in agreement. Anyway, net share of profit improved due to Q1/2020 recorded the one-time expense of THB 67 million.

Performance comparison between Q2/2020 and Q2/2019 for the Power Plant Business recorded EBITDA increase of THB 142 million, with the following factor affecting operation as follow:

1. Solar Power Plant projects in Thailand recorded a decline in total electricity by 2% YoY, due to lower average irradiation hours, which is a result of decreased in clear weather compared to the same period of the previous year.

2. Wind Power Plant project in Thailand, the “Lom Ligor”, recorded a decline in total electricity sales by 32% YoY, from decline wind speed that sweeping through the project location compared to the same period of last year.

3. Solar Power Plant projects in Japan recorded a decrease in total electricity sales by 11% YoY, primarily from an effect of the reduction of electric power purchased (curtailment) from the Japan Electric Power Company due to the lower demand. The projects expected that there will be limited impact from curtailment in 2H/2020 because a curtailment in 1H/2020 have almost reach maximum limit base on agreement. Furthermore, less favorable weather from higher rainfall when compared to the same period of last year.

4. Hydropower Plant project in Laos PDR recorded total electricity sales 73.02 million KWh from the realization of revenue from the electricity sales made by the “Nam San 3A” and “Nam San 3B” project, after BCPG Plc. acquired 100% share of the projects in September 2019 and February 2020, respectively.

5. Recorded an increase in shares of profit from investments in associated companies from the same period of the previous year by THB 40 million, with details as follow:

- Net share of profit from the Wind Power Plant business in the Philippines slightly declined by THB 3 million. Due to lower wind force compared to the same quarter of the previous year.
- Net share of profit from the Geothermal Power Plat business in Indonesia increased by THB 43 million. The improved performance is from the average number of days for planned maintenance being lower than the same period of the previous year.



4.) Bio-Based Products Business Group

As for the performance of the Bio-based Products Business Group in Q2/2020 total EBITDA was recorded THB 339 million, a decline of THB 171 million when compared to Q1/2020, and an increase of THB 203 million when compared to Q2/2019.

Biodiesel Production and Distribution Business

Biodiesel Production and Distribution Business Performance	Q2/2020 vs Q1/2020					6M2020 vs 6M2019		
	Q2/2020	Q1/2020	QoQ	Q2/2019	YoY	6M2020	6M2019	YoY
Revenue (THB Million)	1,542	2,489	-38%	1,453	6%	4,031	2,728	48%
Gross Profit (THB Million)	105	339	-69%	59	80%	445	118	277%
B100 Production Volume (Million Liters)	59.77	60.50	-1%	74.11	-19%	120.27	141.37	-15%
B100 Sales Volume (Million Liters)	63.24	68.54	-8%	82.07	-23%	131.79	153.22	-14%

Performance comparison between Q2/2020 and Q1/2020 are as follow:

1. B100 product production volume in Q2/2020 was at 59.77 million liters, and the B100 product sales volume was at 63.24 million liters. Both the production and sales volume declined with respect to demand for consumption of Diesel fuel. A repercussion from the COVID-19 outbreak, especially in April when the outbreak was at its peak. This has resulted in economic activities grinding to a halt. Furthermore, the government announced various measures to curb the outbreak, thus leading to domestic demand for consumption of biodiesel to decline successively.

2. Revenue from sales within this quarter was THB 1,542 million, a decline of 38% QoQ, and gross profit declined 69% QoQ, mainly attributed to the decline of average selling price of B100 products that dropped from the previous quarter. In addition, the sales volume decreased due to the demand for Biodiesel declined sharply during the aforementioned COVID-19 outbreak.

Performance comparison between Q2/2020 and Q2/2019 are as follow:

1. B100 production volume declined by 19% YoY, which correlates with the direction of the sales of B100 product that declined by 23% YoY, due to the COVID-19 outbreak lowering demand for fuel consumption. In conjunction with the national production capacity increased 8% YoY, resulting in more intense competition within the biodiesel business.

2. Revenue from selling increased 6% YoY, due to the average selling price of B100 products in this quarter rising from the same period of the previous year. As a result of government policy to increase the proportion of Biodiesel being used by announcing the B10 Diesel as the primary fuel grade since the 1st January 2020, together with various manufacturing cost lowering. Furthermore, global Glycerin price increased, due to the amount of B100 being produced was lowered during the COVID-19 outbreak, making less Glycerin available in the global market. Thus, resulting in the Biodiesel Production and Distribution Business recording increases in gross profit up to 80% YoY, despite the sales volume of B100 products adjusting downward.



Ethanol Production and Distribution Business

Ethanol Production and Distribution Business Performance						Ethanol Production and Distribution Business Performance		
	Q2/2020	Q1/2020	QoQ	Q2/2019	YoY	6M2020	6M2019	YoY
Revenue (THB Million)	1,098	941	17%	1,002	10%	2,039	2,072	-2%
Gross Profit (THB Million)	224	146	54%	74	203%	370	180	106%
Ethanol Production Volume (Million Liters)	47.31	48.27	-2%	43.69	8%	95.59	97.66	-2%
Ethanol Sales Volume (Million Liters)	43.50	40.21	8%	45.84	-5%	83.71	93.73	-11%

Performance comparison between Q2/2020 and Q1/2020 are as follow:

1. Total production volume of Ethanol products was at 47.31 million liters, a decline of 2% QoQ, due to this quarter the Bangchak Bioethanol (Chachoengsao) Co., Ltd. (“BBE”) underwent its annual maintenance, and the KSL Green Innovation Plc. (“KGI”) plant at Nam Pong district, Khon Kaen province remains under maintenance from the previous quarter. Hence, total sales volume of Ethanol products was at 43.50 million liters, an increase of 8% QoQ, due to the government sector allowing Ethanol manufacturing plants to sell industrial grade Ethanol as raw material in the production of alcohol gels, and other disinfectant products permitted by the Excise Department. In order to meet the demand of the public during the COVID-19 outbreak. Thus, leading to an increase in the sales volume of Ethanol from the previous quarter.

2. Revenue from sales was recorded at THB 1,098 million and gross profit was recorded at THB 224 million, an increase of 17% and 54% QoQ, respectively. A result of the increase in total sale volume of Ethanol products, and the average selling price of Ethanol products adjusting upward with respect to increase in demand for consumption of industrial grade Ethanol.

Performance comparison between Q2/2020 and Q2/2019 are as follow

1. Total production volume of Ethanol products increased 8% YoY, due to the annual maintenance of the BBE plant and KGI plant at Nam Pong district during this quarter as mentioned earlier. Whereas, in Q2/ 2019, maintenance of 3 plants were being carried out concurrently. However, the volume of total Ethanol products sold declined by 5% YoY as a consequence of the COVID- 19 outbreak. Resulting in demand for consumption of Gasohol products in the energy sector declining, but there were additional sales of industrial grade Ethanol. Thus, there was only a minor decline in sales volume compared to the same period of the previous year.

2. Revenue from sales increased by 10% YoY, due to the average selling price of Ethanol products increasing with respect to raw material cost, as a result of the drought. This has led to lower volume of cassava yield and lower number of sugar cane entering the mill. Moreover, the selling price of Ethanol rose, in relation to increased demand for consumption of industrial grade Ethanol. This has resulted in the Ethanol business recording an increase in gross profit by 203% YoY, despite the sales volume of Ethanol adjusting downward.



5.) Natural Resources Business Group

Natural Resource Business Group Performance	Q2/2020	Q2/2019	QoQ	Q2/2019	YoY	6M2020	6M2019	YoY
EBITDA (THB Million)	60	(1,227)	105%	145	-59%	(1,166)	122	N/A
Share of profit (loss) OKEA (THB Million)	60	(1,199)	105%	102	-41%	(1,139)	110	N/A
Production Volume - Net to OKEA (KBD)	16.05	19.10	-16%	20.05	-20%	17.57	19.77	-11%
Sales Volume - Net to OKEA (KBD)	14.63	15.81	-7%	25.91	-44%	15.22	23.10	-34%

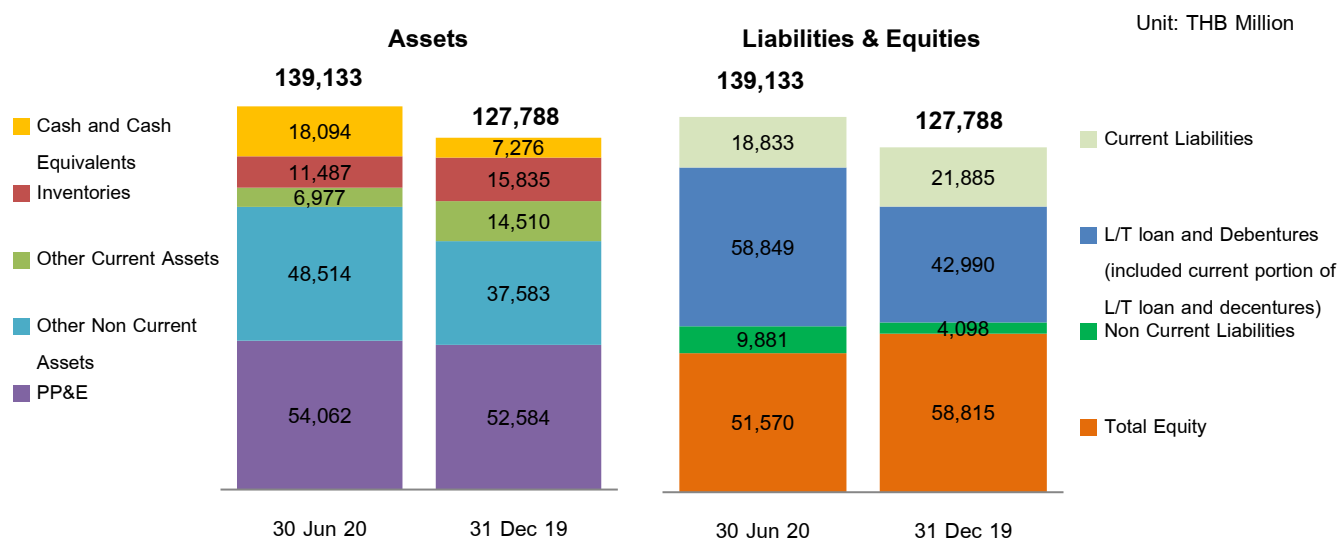
Performance of Natural Resources Business in Q2/2020 recorded an EBITDA of THB 60 million, an increase from Q1/2020 THB 1,287 million, due to the realization of share of profit from invested capital in the associate company, OKEA in this quarter. Whereas share of loss was realized in the previous quarter. With the following major factors affecting operations:

- During this quarter, OKEA earned less revenue due to the price of oil and natural gas adjusting down from the previous quarter because of the impact of the COVID-19 virus, in conjunction with the scheduled turnaround maintenance of the Draugen field shifted from September to June, and the planned maintenance at the Gjøa field during May. This has caused the sales volume netted to OKEA declining by 7% QoQ. However, other factors mentioned below has led to improvements in performance of OKEA.
- Realized gain from foreign exchange in this quarter, mostly attributed to the conversion of loans in foreign currencies due to the appreciation of the Norwegian Krone (NOK) against the US Dollar. Whereas, realized loss on foreign exchange in the previous quarter.
- This quarter impairment was recorded, mainly from the delayed production plan, and the increase in investment capital for the Yme field. As well as the reduction in the reserve amount of the Gjøa field. However, this quarter recognized a relatively lower amount of impairment when compared to the previous quarter that saw the price of crude oil and natural gas dropping significantly.

Performance comparison between Q2/2020 and Q2/2019 of the Natural Resources Business recorded EBITDA declining by THB 85 million, due to realization of share of profit from invested capital in the associate company decreased. With the following major factors affecting operations.

- During this quarter, OKEA received less revenue due to the effects of COVID-19, which impacted demand for energy consumption, the price of oil and natural gas adjusting downward. In addition, the aforementioned planned maintenance resulted in lower sales volume 44% YoY. Sales of crude oil from the Draugen field amounted 1 cargo, while the same period of the previous year 2 cargoes were sold.
- Recorded impairment relate to Yme asset under development and Technical Goodwill of the Draugen and Gjøa fields, which this quarter recorded higher amount compared to Q2/2019.

Statement of Financial Position of the Company and its subsidiaries



Assets

As of the 30th June 2020, the Company and its subsidiaries has Total Assets in the amount of THB 139,133 million, an increase of THB 11,345 million when compared to the 31st December 2019, changes in assets are as follow:

1. Cash and cash equivalents increased by THB 10,818 million. Details are stated in Analysis of the Cash Flow Statement.
2. Inventories decreased by THB 4,348 million, mostly due to the declining average cost per unit of remaining crude oil and finished product.
3. Other current assets decreased THB 7,533 million, mainly contributed from:
 - Trade and other current receivables decreased THB 6,411 million, mostly from the decline of trade account receivables attributed to the company and BCPT in respect to declining price and quantity of finished products.
 - Oil fuel fund subsidies receivable dropped by THB 579 million
4. Other non-current assets rose by THB 10,930 million, mainly due to:
 - Right-of-use assets and Leasehold rights increased by THB 7,592 million from adoption of the Thailand Financial Reporting Standards 16 (TFRS 16).
 - Goodwill and Intangible assets increased by THB 223 million and 1,938 million respectively, from BCPG Plc. investing in the Hydropower plant project owned by Nam San 3B Power Sole Co., Ltd. in Laos PDR, through the acquisition of 100% share during late February 2020.
 - Deferred tax assets increased by THB 1,735 million from net loss on taxes and impairment assets.



- Investments in associates and joint ventures decreased by THB 2,183 million, primarily from realizing a share of loss from associated company OKEA, and the effects of translation financial statement of BCPG Plc's associated companies.
5. Property, plant and equipment net increased by THB 1,478 million (Depreciation for the period was THB 2,056 million) There were investments in Refinery assets of THB 2,840 million in Efficiency, Energy, and Environment Enhancement Project (3E), investment in power plant business (BCPG) in Japan and Thailand of THB 401 million, and Bio-based products business additional investment of THB 621 million for the construction of the refined glycerin plant and Ethanol plant modification.

Liabilities

As of the 30th June 2020, the Company and its subsidiaries has Total Liabilities THB 87,563 million, an increase of THB 18,590 million, changes in liabilities are as follow:

1. Current Liabilities (exclude current portion of long-term loans from financial institutions and debentures) decreased by THB 3,052 million, mainly contributed from:
 - Trade and other current payables decreased by THB 8,436 million, mainly from decreasing in trade payables attributed to the company and BCPT from the quantity and price of crude purchased lowering in June 2020 compared to December 2019.
 - Short-term loan from financial institutions net increased by THB 2,773 million.
 - Current portion of lease liabilities increased by THB 1,516 million from adoption of the Thailand Financial Reporting Standards 16 (TFRS 16).
2. Loans from financial institutions and debentures (including current portion of long-term loans from financial institutions and debentures) increased by THB 15,859 million, due to the bond issuance of THB 8,000 million, loan drawdown increased by THB 9,002 million, and loan repayment by THB 1,094 million. There were also the adjustments for the effects of foreign currency conversion of financial statement resulted in a gain of THB 34 million and the amortized issuance cost of loans and bond by THB 14 million.
3. Other non-current liabilities increased by THB 5,783 million mainly attributed to lease liabilities by THB 6,128 million from adoption of the Thailand Financial Reporting Standards 16 (TFRS 16).

Equities

As of 30th June 2020, the Company and its subsidiaries' total equity was THB 51,570 million which decreased by THB 7,245 million. Mainly change from the net loss for the period of THB 6,042 million, paid dividends by THB 575 million, effects from changes in accounting policies resulting in a reduction of retained earnings by THB 20 million, other comprehensive income decreased by THB 285 million, an increased in treasury stock of THB 74 million and coupon payment on perpetual subordinated debentures of THB 251 million. Total equity attributable to owners of the parent was THB 44,381 million, and book value per share (exclude perpetual subordinated debentures) was THB 25.36.



Statement of Cash Flows of the Company and its subsidiaries

As of 30th June 2020, the Company and its subsidiaries had Cash and cash equivalents in the amount of THB 18,094 million, details are as follow:

Cash Flows (THB Million)	30-Jun-20	30-Jun-19
Net cash received (used in) operating activities	3,406	2,001
Net cash received (used in) investing activities	(8,291)	(4,242)
Net cash received (used in) financing activities	15,919	(3,378)
Effect of exchange rate changes on cash and cash equivalents	(214)	(228)
Net increase (decrease) in cash and cash equivalents	10,818	(5,847)
Cash and cash equivalents at 1 January	7,276	11,551
Cash and cash equivalents at 30 June	18,094	5,703

Details of cash received and used are as follows:

Net cash received from operating activities in the amount of THB 3,406 million are mainly attributed to cash received from operating activities of THB 180 million. Cash used in net operating assets and liabilities of THB 2,724 million, mainly from (1) Trade accounts receivable and other receivables decreased by THB 6,001 million (2) Inventories decreased by THB 4,295 million. (3) Other assets increased by THB 337 million. (4) Trade accounts payable and other payables decreased by THB 8,542 million (5) Other liabilities increased by THB 1,307 million and tax received by THB 502 million.

Net Cash used in investing activities of THB 8,291 million, mainly from cash received from interest income and dividend in the amount of THB 82 million. Net cash outflow from payment for investment in subsidiaries in the amount of THB 4,318 million. Acquisition of Property, Plant and Equipment by THB 3,759 million. Mostly are work in progress of Efficiency, Energy, and Environment Enhancement Project (3E), power plant business and bio-based products business.

Net Cash received from financing activities of THB 15,919 million, mainly from short term loans from financial institution increased by THB 2,773 million. Proceed from issuance debentures by THB 8,000 million. Proceed from long-term loans from financial institutions by THB 9,002 million. Cash paid for financial cost, coupon payment on perpetual subordinated debentures and dividends by THB 1,785 million. Repayment of long-term loans from financial institutions by THB 1,094 million and payment of lease liabilities by THB 905 million.



Financial Ratios of the Company and its subsidiaries (Consolidated)

Profitability Ratios (%)	Q2/2020	Q1/2020	Q2/2019	6M2020	6M2019
Gross Profit Margin	2.10%	-2.82%	5.35%	-0.94%	5.08%
EBITDA Margin	4.25%	-5.91%	4.53%	-2.03%	4.42%
Net Profit Margin	-6.49%	-10.02%	1.40%	-8.67%	1.14%
Return on Equity ^{1/} (ROE)	-12.80%	-7.06%	2.41%		
Return on Assets (ROA)	-3.36%	-1.48%	2.99%		

1/ Profit and Total equity attributable to owners of the parent

	30-Jun-20	31-Mar-20	30-Jun-19
Liquidity Ratios (Times)			
Current Ratio	1.37	1.18	1.59
Quick Ratio	0.85	0.61	0.71
Financial Policy Ratios (Times)			
Interest bearing Debt to Equity	1.44	1.32	0.97
Net Interest bearing Debt to Equity	1.09	1.12	0.85



Financial Ratios Calculation

▪ Gross Margin (%)	=	Gross Profit / Revenue from sale of goods and rendering of services
▪ EBITDA Margin (%)	=	EBITDA / Revenue from sale of goods and rendering of services
▪ Profit Margin (%)	=	Profit attributable to owners of the parent / Revenue from sale of goods and rendering of services
▪ Return on Equity (%)	=	Profit attributable to owners of the parent (Yearly) / Total Equity attributable to owners of the parent (Average)
▪ Return on Assets (%)	=	EBIT (Yearly) / Total Asset (Average)
▪ Current Ratio (Times)	=	Current Asset / Current Liabilities
▪ Quick Ratio (Times)	=	(Cash & Equivalents + Short term investments + Trade Account Receivable) / Current Liabilities
▪ Interest Bearing Debt to Equity (Times)	=	Interest bearing Debt / Total equity
▪ Net Interest Bearing Debt to Equity (Times)	=	(Interest bearing Debt – Cash and cash equivalents – Current investments) / Total equity

Note:

1/ Average Total Equity attributable to owners of the parent

- Yearly = (Total Equity attributable to owners of the parent of the year before + Total Equity attributable to owners of the Company of this year) / 2
- Quarterly = (Total Equity attributable to owners of the parent of the quarter of the year before + Total Equity attributable to owners of the parent of the quarter this year) / 2

2/ Average Total Assets

- Yearly = (Total Assets of the year before + Total Assets of the Company of this year) / 2
- Quarterly = (Total Assets of the Company of the quarter of the year before + Total Assets of the Company the quarter this year) / 2

3/ The numerator of ROE is defined as the Profit attributable to owners of the parent and have to be annualized.

4/ The numerator of ROA is defined as EBIT and have to be annualized.

5/ Interest Bearing Debt defined as Short-term loans + Long-term loans (including current portion of long-term loans) + Debentures (including current portion of long-term debentures) + Lease liabilities (including current portion of lease liabilities)



Environment Management Accounting (EMA)



The Company has prepared the environmental management accounting report since 2005, aiming to enable the benefit of its usage for other organizations as well as for the Company. The environmental cost accounting helps the Company to keep track with the information which is useful for enhancing the environmental management effectiveness and resource utilization, together with financial management.

Currently, EMA report covers refinery business unit, Bangchak and Bang Pa-in Oil distribution Centre.

Environment Management Accounting : EMA (Unit: THB Million)	Q2/2020	Q2/2019	△
Material Costs of Product Outputs			
: Consist of crude oil, ethanol, biodiesel, chemical, energy and utilities in production	(13,474)	(27,123)	13,649
Material Costs of Non-Product Outputs			
: Consist of slop and sludge oil, waste water, chemical surplus	(9)	(11)	2
Waste and Emission Control Costs			
: Consist of maintenance cost of environmental control equipment and depreciation and other fees	(62)	(87)	25
Prevention and Other Environmental Management Costs			
: Consist of monitoring and measurement cost, environmental management system expenses	(2)	(4)	2
Total Expenses	(13,547)	(27,225)	13,678
Benefit from by-product and waste recycling	3	5	(2)

Total environmental cost in Q2/2020 decreased from Q2/2019 by approximately THB 13,678 million (-50% YoY) mainly due to a dramatic decrease in crude price in 2020 (Dubai crude price on average Q2/2020: 30.72 \$/BBL Q2/2019: 67.55 \$/BBL). This resulted in Material Cost of Product Output reduced by THB 13,649 million and a slight fall in Material Costs of Non-Product Outputs followed by the quantity of product that was below quality standard decreased. Moreover, the demand of fuel consumption dropped due to the pressure from the COVID-19 outbreak. Therefore, the company adjusted production plan by decreasing in the crude run from 112.67 KBD in Q2/2019 to 89.30 KBD in this quarter. Also, the company operated by cost control measure. This caused to reduction in Waste and Emission Control Costs and Prevention and Other Environmental Management Costs.

Benefits from byproducts and waste recycling declined by THB 2 Million (-41% YoY), mostly due to amount of sellable liquid sulfur declined.

Air quality from the refinery's flue

To monitor the environment, the Company has been constantly measuring air quality emitted from the refinery's various flues, to which the amount of pollutant such as dust, nitrogen oxide, and sulfur dioxide emitted is far below the required standard set by the Thai Ministry of Industry.