



Bangchak Corporation Plc.

Management Discussion & Analysis of Business Operation

For the first quarter ended March 31st, 2019



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Executive Summary

Summary of the Company and its subsidiaries' operating results for the 1st quarter ended March 31st, 2019

Unit: THB Million	Q1/2018 (Restate) ^{7/}	Q4/2018	Q1/2019	YoY	QoQ
Total Revenue	44,226	48,781	45,535	3%	-7%
Accounting EBITDA	3,023	(317)	1,959	-35%	717%
<i>Refinery and Trading Business Group</i> ^{1/}	1,279	(1,419)	517	-60%	136%
<i>Marketing Business Group</i> ^{2/}	735	465	612	-17%	32%
<i>Power Plant Business Group</i> ^{3/}	694	570	736	6%	29%
<i>Bio-Based Product Business Group</i> ^{4/}	304	66	194	-36%	194%
<i>Natural Resource Business Group</i> ^{5/}	68	94	(19)	-128%	-120%
<i>Others</i> ^{6/}	(57)	(92)	(83)	-45%	10%
Profit attributable to owners of parent	1,168	(1,546)	214	-82%	114%
Basic earnings per share (Baht)	0.85	(1.12)	0.16		

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., and share of profit from associated companies

6/ Others items and elimination

7/ The financial statement for Q1/2019 was restated due to adjustment of fair value for investment in the geothermal power plant in Indonesia.

As for Q1/2019 performance, Bangchak Corporation Plc. ("the Company") and its subsidiaries earned revenue from rendering of goods and services THB 45,535 million, an increase of 3% YoY and a decline of 7% QoQ, net profit THB 395 million; of which **net profit attributable to the owners of the parent THB 214 million**, an **earnings per share of THB 0.16**, with performance from each business unit as follow:

The performance of **Refinery and Oil Trading Business Group** was still affected by the oil price volatility in the global market. Despite the crude oil price recovery, the average crack spread between finished product and referenced crude oil price continues to decline from late 2018; particularly, the Gasoline-Dubai crack spread (UNL/DB), Jet (Kerosene)-Dubai crack spread (IK/DB), and the Gasoil-Dubai crack spread (GO/DB), causing the refinery business's market gross refinery margin to shrink. In this quarter, even though the crude oil price situation continues to improve constantly from December 2018, the cost of a proportion of crude oil that was refined within this quarter still reflects crude price sentiment from Q4/2018, leaving the refinery business with minor inventory loss (included a reversal of lower of cost or market (LCM) of THB 689 million), whereas, during Q4/2018, inventory loss was THB 2,517 million. In this quarter, the refinery's average production rate was 110.12 thousand barrels per day, as there was a maintenance of the Hydrocracking Unit's Gas Compressor in March, the refining unit was run at the optimal rate, not its full capacity. For



the oil trading business through BCP Trading Co., Ltd., the company's performance has improved from a higher transaction volume in terms of product line, and new trade partners.

Marketing Business Group has exhibited consistent increase in its retail channel sales; the main distribution channel, from the Company's strategy to enlarge its customer base, and debuted the B20 Diesel product in tandem with a special price discount campaign for the Hi-Premium diesel. The latter was to support the government sector's promotion of environmentally-friendly fuel to dissipate the pollution situation, and at the same time, support the palm plantation farmers. The Company retained its market share in terms of retail sales volume at the second place. The cumulative market share between January – March 2019 was at 15.6%. There was also service station location expansion; there was 1,176 stations at the end of Q1/2019. The Company had used several strategies to increase sales volume through various market promotional program e.g. the rebranding of the membership card "Bangchak Green Miles", and the offering of Non-oil businesses and services varieties to better meet customers' needs. Net Marketing Margin softened, as retail marketing margin declined from the rise in crude oil price in Q1/2019, which caused the finished oil products cost to increase, while the retail price was slower to adjust. Moreover, with the price fix for some periods in the quarter, the retail price was incongruous with the product cost. As for the industrial marketing, it dipped from intense market competition.

Power Plant Business Group recorded insignificant alteration in total electricity sales. The solar power plant projects in Thailand has current PPA capacity at 138.9 MW, an increase from Q1/2018 after the commercial operation commencement of the government solar project in collaboration with War Veteran Organization (WVO). On the other hand in Japan, current PPA capacity was 14.7 MW, after the commercial operation of the Gotemba project, however the Nikaho and Nagi projects were sold to the Infrastructure Fund of Japan in late September 2018, lowering the total electricity generation from the same period of the previous year. This quarter, the share of profit from the Wind Power Plant business in the Philippines was THB 29 million, improvements in performance stemmed from its High Season, while the share of profit from the geothermal power plant in Indonesia was THB 93 million.

Bio-Based Product Business Group, the **Biodiesel Production and Distribution Business** recorded a lower B100 production and sales volume. Performance was still affected by the palm oil price situation in the country which remains low. Moreover, the domestic production capacity increased by 1.20 million litres per day from the same period of the previous year, led to an intense competition. As for **Ethanol Production and Distribution Business**, its production sales volume improved, from capacity expansion of its molasses based ethanol production plant at the Bo Ploy district owned by the KSL Green Innovation Plc., from 200,000 litres per day to 300,000 litres per day. While ethanol product's gross profit declined from the lower average selling price in this quarter, due to high domestic ethanol stock, and the increasing aggregate domestic production capacity.

Natural Resources Business Group recorded soften performance though the Company still realized additional profit from the Galoc oil field divestment at THB 10 million. The Company holds 49.33% shareholding in OKEA, and started to recognize its performance from December 2018 onwards. In Q1/2019, the Company recorded a share of profit from its associate Company (OKEA AS) of THB 8 million from the production of Draugen and Gjoa oil field in the amount of 19.4 and 87.4 thousand barrels per day, respectively (8.6 and 10.5 thousand barrels per day net to OKEA respectively). In this quarter, impairment loss on technical goodwill has been recognized for Gjøa oil field acquisition following the lower gas prices. Moreover, the natural resources business group realized loss on foreign exchange of THB 99 million from loan to subsidiary, after Thai Baht appreciated against US Dollar in this quarter.



Important Events in the Quarter

- Important change in accounting policy from the International Financial Reporting Standards 15, Revenue from Contract with Customers (IFRS 15) which was enforced on the 1st of January, 2019. The Group adopted protocols from IFRS 15 by way of realizing cumulative effect from the enforcement of the protocol from the first day of adoption (the 1st of January, 2019). The Company group did not restate any of its information representing 2018, of which IFRS 15 did not have any significant effect towards the Group's other revenue accounting policy, except for the sales of steam according to the Minimum take or pay contract of an associated company's group in Indonesia. Revenue recognition according to IFRS 15 will be realized once the business has accomplished its obligations. Therefore, the Company restated its financial statement as of the 1st of January, 2019, with effect of the financial statement as follow:

Asset:	Investments in associated company declined	THB 54 million
Shareholder's equity:	Retained Earnings declined	THB 38 million
	None controlling interest declined	THB 16 million

- During January 2019, the annual general meeting of the BCP Innovation Pte. Ltd. approved a resolution to increase its registered capital from USD 42 million (attributed to 42 million shares, valued at USD 1 per share) to USD 45 million (attributed to 45 million shares, valued at USD 1 per share). The share capital has been paid up in full.

- The Company, via its Bangchak Initiative and Innovation Center or BIIC has invested in additional Startups through BCP Innovation Pte. Ltd., a subsidiary of the Company in January 2019. The company has invested in Enevate Corporation situated in California, USA, a reputable company of which specializes in vehicle lithium battery production technology. With its advanced innovation, it is able to sustain charges 10 times faster than normal charging.



Statement of Income

Consolidated Statement of Income (Unit: Million Baht)	Q1/2018 (Restate)	Q4/2018	Q1/2019	YoY	QoQ
Revenue from sale of goods and rendering of services	44,226	48,781	45,535	3%	-7%
Cost of sale of goods and rendering of services	(40,897)	(48,357)	(43,355)	6%	-10%
Gross Profit	3,328	424	2,181	-34%	415%
Interest income and dividend income	16	16	37	127%	128%
Other income	59	129	81	37%	-37%
Selling and administrative expenses	(1,660)	(2,148)	(1,721)	4%	-20%
Exploration and evaluation expense	(9)	(15)	(4)	-50%	-70%
Gain (loss) from crude and product oil price hedging contract	(73)	(138)	29	N/A	N/A
Gain (loss) from foreign currency forward contracts	-	95	(11)	N/A	N/A
Gain (loss) on foreign exchange	172	52	57	N/A	N/A
Loss from impairment of assets	-	(15)	-	N/A	N/A
Share of profit of associate and JV	123	21	157	28%	635%
Profit/(loss) before finance costs and income tax expense	1,956	(1,579)	806	-59%	151%
Finance costs	(365)	(405)	(443)	21%	9%
Profit/(loss) before income tax expense	1,591	(1,984)	363	-77%	118%
Income tax (expense) credit	(223)	509	32	-114%	-94%
Profit for the period	1,368	(1,475)	395	-71%	127%
Owners of the parent	1,168	(1,546)	214		
Non-controlling interests	200	71	181		
Earnings per share (Baht per Share)	0.85	(1.12)	0.16		

Note: The financial statement for Q1/2019 was restated due to adjustment of fair value for investment in the geothermal power plant in Indonesia.

The Company and its subsidiaries Q1/2019 performance recorded a Net Profit of THB 395 million, declined 71% YoY, and increased 127% QoQ, of which the net profit attributable to the owners of the parent is THB 214 million, or in earning per shares of THB 0.16 mainly due to the following reasons:

1. Total revenue from sales of goods and rendering of services was THB 45,535 million, an increase of 3% YoY mainly increased from the BCP Trading Pte Ltd.'s trading transaction expansion; both from the increased volume of transaction for the entire product line, and transactions with new trade partners that increased immensely. However, the Company's petroleum-related businesses experienced a decline in finished product selling price per unit. As well as the lack of sales revenue from the Galoc field, following the Company's divestment of Nido Production (Galoc) Pty. Ltd., an indirect subsidiary which held the rights to the Galoc field, in Q3/2018. However, when compared to Q4/2018, revenue declined 7% the decline stemmed from petroleum-related business, which recorded both volume and unit price of finished product declined.
2. Gross Profit was recorded at THB 2,181 million, decreased by 34% YoY, mainly attributed to the refinery business's Total GRM of 3.49 \$/BBL, compared to Q1/2018's 6.37 \$/BBL. The decline was brought about by most of the finished product and reference crude price crack spread sharply adjusting downward. However,



this quarter, the refinery business recorded an inventory loss of THB 9 million (included lower of cost or market (LCM) of THB 689 million) a decline from Q1/2018's inventory loss of THB 70 million. Moreover, as crude oil price surged in the quarter, marketing margin soften; attributed to the retail service station prices were unable to adjust at the same pace as the rising fuel cost.

In comparison with Q4/2018, gross profit rose 415%, mostly ascribed to the refinery business recorded improvements in its Total GRM supported by the rise in crude oil price. The Company reported a lower inventory loss than Q4/2018 inventory loss of THB 2,517 million, even though market GRM was still affected by the average finished product and reference crude price crack spread's continuous decline from late 2018. Gross profit recorded from the Bio-based business improved from the previous quarter.

3. Other Income was THB 81 million increased by 37% YoY and decreased by 37% QoQ, the majority was due to the recorded profit from the share disposal in Galoc oil field; a non-recurring item, which has been gradually recorded throughout Q4/2018 in the amount of USD 2.13 million (approximately, THB 69 million) and in Q1/2019 USD 0.3 million (approximately, THB 10 million).
4. Selling, general and administrative expenses was recorded at THB 1,721 million, an increase of 4% YoY, the increment was due in large to the depreciation and amortization cost of the Company and of Bangchak Retail Co., Ltd. which rose in accordance with expansion of service station and Non-oil branches. As well as personnel expenses that rose. However when compared against Q4/2018, the selling, general and administrative expense declined by 20% since Q4 appears to be the quarter of highest disbursement.
5. Loss from Foreign Exchange Forward Contract recorded at THB 11 million, belonging to BCPR Pte. Ltd. of NOK 408.85 million, in which the forward contract rate was higher than the end of quarter rate.
6. Gain from Foreign Exchange recorded at THB 57 million, as a result of the Thai Baht appreciating, which has yielded gains from converting foreign currency loans undertaken by BCPG Plc.
7. Share of profit from associated companies THB 157 million, comprised of (1) Star Energy Group Holdings Pte. Ltd. of THB 93 million. (2) PetroWind Energy Inc. of THB 29 million. (3) Ubon Bio Ethanol Plc. of THB 18 million. (4) Bongkot Marine Services Co., Ltd. of THB 10 million. (5) OKEA AS of THB 8 million.
8. Financial costs of THB 443 million increased 21% YoY and 9% QoQ. Mostly attributed to the Company debentures increased from the bond issuance in the amount of THB 4,000 million (tenor of 2-7 years with coupon rate of 2.13 – 3.42% per annum) issued on 10th of August 2018, and the amount of THB 7,000 million (tenor of 10 years with coupon rate of 4.04% per annum) issued on 20th of December 2018.



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

1.) Refinery and Trading Business Group

Crude Oil Price Situation (Unit: USD/BBL)

Crude oil price	Q1/2018	Q4/2018	Q1/2019			YoY	QoQ
	AVG	AVG	MAX	MIN	AVG	%	%
Dubai (DB)	63.96	68.30	68.25	51.85	63.41	-1%	-7%
Dated Brent (DTD)	66.82	68.81	68.22	53.24	63.13	-6%	-8%
DTD/DB	2.86	0.52	2.00	-2.71	-0.27	-110%	-153%

Crude Oil Price Situation

Dubai crude price in Q1/2019 compared to Q1/2018 adjusted downward by 0.55 \$/BBL due to the appreciating US Dollar, after the FED raised interest rate 4 times during 2018 to the level between 2.25 to 2.50%, essentially dwindling crude oil demand from importing countries.

Average Dubai crude oil price in Q1/2019 adjusted downward by 4.89 \$/BBL when compared to Q4/2018 in regards to pressure from diminishing crude oil demand stemming from major maintenance of refineries over in the US, Europe, and Asia during Q1/2019. Also contributing, the trade war between the US and China which is likely to persist, even though President Trump has announced the deferment of tax on Chinese exports to the US valuing at USD 200 Billion from 10% to 25% by 90 days from the 1st of January, 2019. However, the governments have on several occasions postponed the negotiation, and has had no progress in agreement details. Thus, leaving the market once again anxious about another global recession to such a degree that the International Monetary Fund (IMF) lowered their GDP growth estimate for 2019 down by 0.2% to 3.5%. Furthermore, US crude oil stock has been increasing gradually, threatening the price of crude oil after crude production in the US reached their all-time high of 12.1 million barrels per day during late Q1/2019. However, crude oil price was supported by the production reduction of the OPEC group and their associates; combined OPEC production reduced by than 2 million barrels per day to 30.68 million barrels per day in late Q1/2019, their lowest recorded level in 4 years. Combined with diminishing crude oil exports from Venezuela, after experiencing nation-wide electrical shortcomings, led them to be unable to export crude from the nation's main port.

Average Dated Brent and Dubai spread (DTD/DB) in Q1/2019 decreased by 3.13 \$/BBL when compared to Q1/2018, pressured from the oversupply situation of light sweet crude, whereas supplies were tight during the previous year.

Average DTD/DB in Q1/2019 reduced 0.79 \$/BBL in comparison to Q4/2018, caused by lower supply of heavy crude oil after Saudi Arabia lowered its production throughout Q1/2019, raising Dubai crude oil price in comparison to Dated Brent. Whereas, Dated Brent oil price was under pressure, after Shale Oil production of 7 major blocks rose by 84,000 barrels per day and have reached its historical zenith at 8.4 million barrels per day during March 2019.



Crack Spreads Situation (Unit: USD/BBL)

Crack Spreads	Q1/2018	Q4/2018	Q1/2019			YoY	QoQ
	AVG	AVG	MAX	MIN	AVG	%	%
UNL95/DB	13.69	4.92	9.64	-0.91	3.77	-72%	-23%
IK/DB	16.05	15.74	14.22	11.46	12.95	-19%	-18%
GO/DB	14.76	14.98	15.26	9.75	12.75	-14%	-15%
FO/DB	-4.96	1.33	2.85	-0.89	0.54	111%	-59%

Crack Spreads Analysis

- Gasoline and Dubai crack spread (UNL95/DB) in Q1/2019 averaged at 3.77 \$/BBL, a decrease of 9.92 \$/BBL when compared to Q1/2018. This was due to the mounting pressure from Shale Oil production, of which 52.5% yield is Gasoline, rose by 1.1 million barrels per day, leaving the market with a surplus of Gasoline supplies.

Gasoline and Dubai crack spread (UNL95/DB) declined by 1.15 \$/BBL compared to the average 4.92 \$/BBL in the previous quarter. China's car sales during Q1/2019 plummeted to its lowest level in 7 years, leading to increased Gasoline exports from China, which in turn brought up the Gasoline stock in Singapore to a new high recorded level.

- Jet (Kerosene) and Dubai crack spread (IK/DB) in Q1/2019 averaged at 12.95 \$/BBL, a decrease of 3.10 \$/BBL compared to Q1/2018. This was a result of the warmer temperature than the year prior, which stymied Kerosene demand's growth to be lower than expected during the beginning of Q1/2019. Moreover, Japan reduced its Kerosene imports due to its Jet (Kerosene) have surpassed the country's 5 year average.

Jet (Kerosene) and Dubai crack spread (IK/DB) retracted 2.79 \$/BBL from its 15.75 \$/BBL average of the previous quarter, impacted by the surplus after the Chinese Ministry of Commerce approved the ratification of Gasoline export quotas which amounts to 5.95 million barrels to Jet/Kerosene in the amount of 2.97 million barrels.

- Gasoil and Dubai crack spread (GO/DB) in Q1/2019 averaged at 12.75 \$/BBL, a decrease of 2.01 \$/BBL compared to Q1/2018, affected by China's first round of 2019 diesel export quota of 66.31 million barrels, which surge from the same period of the previous year by 13.41 million barrels. Essentially leaving the Asian region market's diesel supplies in a surplus.

Gasoil and Dubai crack spread (GO/DB) lowered by 2.23 \$/BBL compared to the averaged 14.98 \$/BBL in the preceding quarter. The spread was pressured by China's increase in Diesel export, after their Ministry of Commerce allowed CNPC to shift their Gasoline export quota of 5.95 million barrels to Diesel in the amount of 2.98 million barrels.

- Fuel Oil and Dubai crack spread (FO/DB) in Q1/2019 averaged at 0.54 \$/BBL, an increase of 5.50 \$/BBL compared to Q1/2018, influenced by the production cut of OPEC and their associates, combined with faltering heavy sour crude export from Venezuela after the country had been sanctioned by the US. Thus lowering fuel oil exports to Singapore.



Fuel Oil and Dubai crack spread (FO/DB) in Q1/2019 lowered by 0.79 \$/BBL compared to the average of 1.33 \$/BBL of the previous quarter, an impact of decreased fuel oil demand, as the demand of High Sulphur Bunker (Sulphur content not exceeding 3.5%) decreased by 12% compared to the previous quarter. As well as the demand for fuel oil for electricity generation in Japan during the first 5 weeks of 2019 declined by 41%, after the country commenced the operation of 5 nuclear power plants, and opted more for the use of cleaner fuel.

Refinery and Trading Business Group Performance

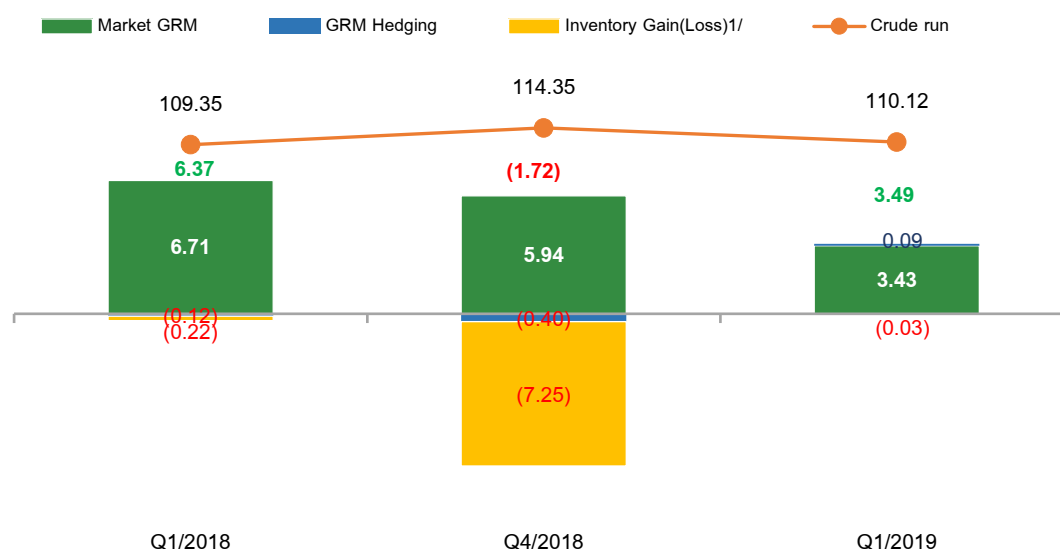
The performance of the refinery and trading business group in Q1/2019 recorded EBITDA THB 517 million.

Refinery Business Performance	Q1/2018	Q4/2018	Q1/2019	YoY	QoQ
Average Crude Run (KBD)	109.35	114.35	110.12	1%	-4%
Utilization Rate (%)	91%	95%	92%		
Average FX (THB/USD)	31.71	32.98	31.79		
(Unit: Million Baht)					
Market GRM	2,095	2,060	1,080	-48%	-48%
Oil Hedging	(37)	(138)	29	178%	121%
Inventory Gain/ (Loss) ^{1/}	(70)	(2,517)	(9)	87%	-100%
Total GRM	1,988	(595)	1,100	-45%	285%
EBITDA	1,279	(1,419)	517	-60%	-136%

Note: 1/ Inventory Gain/(Loss) in the table included LCM

GRM and Crude Run

Unit: \$/BBL



Note: 1/ Inventory Gain/(Loss) included LCM



Total Sales Volume in each market category of the Company	Q1/2018	Q4/2018	Q1/2019	YoY	QoQ
Marketing Business					
Retail	997	1,025	1,032	4%	1%
Industrial	517	501	489	-5%	-2%
Total	1,514	1,526	1,521	0.5%	-0.3%
Wholesale Business					
Petroleum traders in accordance with section 7	151	149	138	-9%	-8%
Export	199	334	246	23%	-26%
Total	350	483	383	10%	-21%
Total Sales Volume	1,864	2,009	1,904	2%	-5%

Note: Sales volume does not include oil swaps among major oil companies M.7 and sales of crude oil products

Performance comparison between Q1/2019 and Q1/2018 of refinery business recorded a decrease in EBITDA of THB 762 million, with factors affecting operation as follow:

1. The Bangchak refinery averaged its production in Q1/2019 at 110.12 KBD or 92% utilization rate, within this quarter most finished product and reference crude price crack spreads decreased significantly compared to the same period of the previous year, especially for the gasoline (UNL/DB) crack spread which has consistently decline since the end of 2018 thus the production was reduced to the optimal level. Furthermore, during the quarter the refinery identified an abnormal condition in Hydrocracking Unit's gas Compressor, which led to a temporary halt of the unit to assess and maintain the mentioned equipment in March. Currently, the unit has returned to normal working conditions. However its average production rate in this quarter rose marginally from the same period of the previous year.
2. Within this quarter, the refinery's Total Gross Refinery Margin (Total GRM) was THB 1,100 million, decreased 45% in comparison to Q1/2018 which had Total GRM of THB 1,988 million, mainly from the following reasons:
 - Market GRM decreased by THB 1,015 million compared to Q1/2018, due to most finished product and reference crude price crack spreads adjusted downward from the supply surplus. Average Gasoline Dubai crack spread (UNL95/DB) decreased 72%, and the average Jet (Kerosene) to Dubai crack spread (IK/DB) tumbled by 19%, with average Gasoil to Dubai crack spread (GO/DB) also decreasing by 14% from the previous year. In addition, Bangchak refinery in this quarter went through maintenance of its Gas Compressor in Hydrocracking Unit.
 - Within this quarter, refinery business recorded gains from crude and product oil price hedging contracts in the amount of THB 29 million, in contrast with Q1/2018 where item incurred a loss of THB 37 million.
 - Refinery business recorded an inventory loss of THB 9 million (including a reversion of lower of cost of market (LCM) THB 689 million). Although the crude oil price gradually improved in this quarter from December 2018's level, portions of the crude feed in Q1/2019 still reflects the oil price in Q4/2018 which has a higher average price than this quarter, thus exposing the refinery to inventory loss. For Q1/2018, an inventory loss of THB 70 million.
3. BCP Trading Pte., Ltd. revenue increased of 283% from Q1/2018 due to its trading transactions expansion in terms of volume for all products and new trade partners. In March 2019, the shipment peaked ever since the company's inception. BCP Trading transacted trade of petroleum product 6.91 million barrels in Q1/2019, an



increase of 5.25 million barrels compared to Q1/2018. The majority of products that were traded for example includes crude oil, naphtha, fuel oil, and gasoline products.

Performance comparison between Q1/2019 and Q4/2018, refinery business group EBITDA increased by THB 1,936 million, with the following factors affecting performance as follow:

1. The refinery's average production rate declined by 4% from Q4/2018, due to the declining of finished product and reference crude price crack spreads and maintenance of equipment in the hydrocracking unit, which resulted in the refinery did not operate at its full capacity.
2. The refinery business's Total GRM increased THB 1,695 million, when compared with Q4/2018, mainly due to the following reasons:
 - Market GRM declined by THB 980 million compared to the previous quarter, due to finished product and reference crude price crack spread declined, combined with the lower average utilization rate compared to the previous quarter.
 - During this quarter, the refinery business gained from crude and product oil price hedging contract THB 29 million. While in Q4/2018, there was a loss of THB 138 million.
 - The refinery business recorded inventory loss in the amount of THB 9 million (including a reversion of lower of cost of market (LCM) THB 689 million) as the cost of crude oil inventory was higher than the market price. Whereas in Q4/2018, inventory loss was THB 2,517 million (including loss of cost of market (LCM) THB 689 million) after experiencing sharp decline of global crude price between November to December 2018.
3. BCP Trading Pte., Ltd. increased its revenue by 37% from Q4/2018 from increased trading transaction of petroleum product and crude oil by 2.27 million barrels compared to the previous quarter. As well as, the price of crude oil and finished product adjusting upward compared to the previous quarter. The increased transaction in this quarter was the result of its expansion in terms of volume of trade between every product and increase transactions with new trade partners, which the company has consistently persevered to develop.



2.) Marketing Business Group

Marketing Business Group's performance in Q1/2019 recorded EBITDA of THB 612 million.

Marketing Business

Sales Volume (Million Litre)	Q1/2018	Q4/2018	Q1/2019	YoY	QoQ
Retail (Service Stations)	997	1,025	1,032	4%	1%
Industrial	517	501	489	-5%	-2%
Total	1,514	1,526	1,521	0.5%	-0.3%
Sales volume in each product category (Million Litre)					
LPG	37	41	34	-7%	-16%
Gasoline	9	10	8	-15%	-23%
Gasohol	404	432	412	2%	-5%
Jet Fuel	209	204	212	2%	4%
Diesel	802	795	814	1%	2%
Fuel Oil and Others	53	43	40	-23%	-5%
Total	1,514	1,526	1,521	0.5%	-0.3%
Net Marketing Margin (Baht / Litre)	0.83	0.85	0.71	-14%	-17%
EBITDA (Million Baht)	735	465	612	-17%	32%

Note: marketing margin of Bangchak only

Performance comparison between Q1/2019 and Q1/2018, marketing business recorded THB 123 million decrease in EBITDA, with the following factors affecting performance:

1. Total sales volume of marketing business increased marginally, as a result of 4% increase in retail sales which still maintains continuous growth from expanding its customer base as part of the Company's strategy. Additionally, the Company has supported the Ministry of Energy's promotion of environmentally friendly fuel to reduce inherent air pollution, which led way to the debut of the B20 diesel products in BCP service station in accordance with the "B20 for Large Vehicles, Lowering Pollution, and Saves Money" campaign. The Company also implemented a special campaign that discounted the price of premium diesel sold in retail market channel by 1 THB/litre, during the 6th to 28th of February, 2019, effectively increasing the volume of the diesel product group sold through the retail channel. In contrary, the volume sold through the industrial market channel lowered by 5% due to the intense competition within the industrial market channel. Moreover, the refinery undergoing maintenance of its hydrocracker unit within this quarter, lowering the main finished products yield. As a result, the Company needed to manage stock and volume sold through the industrial market channel, in order to not affect the volume sold through the retail channel which is the main channel.
2. Net marketing margin declined compared to the same period of the previous year. Essentially, the net marketing margin of the retail marketing channel decreased in Q1/2019 from the rise of crude price, which caused the cost of products to increase, while the service station prices were not able to keep up with pace. Additionally, the Company had freeze the fuel prices between the 27th of December, 2018 and the 3rd of January, 2019 as a gift for commuting Thais during the New Year period, combined with the mentioned decrease in high premium diesel price by 1 THB/litre, essentially leading to retail price not corresponding with the rise in cost. As for the industrial marketing margin, it dropped in tandem with intense market competition. On the other hand, crude price during Q1/2018 retracted, which led to lower product cost, resulting in higher marketing margin.



3. The Company is still able to retain its second place market share in terms of thruput per station, of which has been increasing successively. The cumulative market share between January and March 2019 was at 15.6%, whereas the cumulative share between January and March 2018 was 15.5%. The number of BCP service station as of Q1/2019 amounts to 1,176 locations, 75 new service stations commenced operation compared to Q1/2018, where most of the new standard service stations are situated in the areas with high potential to push sales volume per station, and BCP has begun to offer B20 diesel in service stations to assist in alleviating pollution and at the same assisting oil palm tree farmers.
4. As for the Non-oil business, under the supervision of the Bangchak Retail Co., Ltd., it is still developing and expanding its business. As of Q1/2019, the number of Inthanin branches is 529 (an increase of 71 branches) and the number of SPAR branches is 47 (an increase of 12 branches) compared to Q1/2018. Revenue increased from branch expansion in the Non-Oil business 31% YoY, however, selling, general, and administrative cost continues to rise. The cost within this quarter rose from improvements made to logistics for the distribution of goods to SPAR branches. Along with the number of current SPAR branches have not been able to generate economies of scale, which led to the Bangchak Retail Co., Ltd. soften performance.

Q1/2019 performance compared to Q4/2018, Marketing Business Group recorded an increase in EBITDA of THB 148 million with factors affecting operations as follow:

1. Total sales volume of marketing business group lowered slightly, the volume sold in the retail market increased by 1.0% QoQ. With the debut of B20 diesel in Bangchak service stations and the discount of Hi-Premium diesel product which has EURO5 standard, in order to alleviate the pollution situation, and to support the government's policy to aid oil palm farmers, has in turn increased sales of diesel fuel. While Q4/2018 was a high season for oil product consumption, and also a travel season, resulting in a higher domestic demand for fuel than in Q1/2019, and thus a slowdown in retail sales growth in this quarter. In final, the retail channel sales increased slightly. On the other hand, industrial channel sales soften by 2% from the previous quarter; due to Bangchak refinery went through maintenance for an equipment in the Hydrocracker unit, leading to limited fuel supply. Consequently, stock management had to be put in effect as to not affect the retail channel, which is the main sales channel.
2. Net marketing margin declined from the previous quarter, due to crude price adjusting upward during the quarter, leading to increasing product cost. Meanwhile, the retail market price adjustment was not able to keep pace, essentially lowering retail marketing margin, in opposite to Q4/2018 where crude price dipped throughout the quarter. Furthermore, the price peg during the New Year period, and the discount of Hi-Premium diesel; to support government policy to alleviate the pollution problem, serves to lower retail marketing margin.
3. The number of service stations as of Q1/2019 totals at 1,176 stations, 10 new stations were opened in this quarter, and maintains service station market share sales in the second place.
4. Selling, General and Administrative expense decreased when compared to the previous quarter, as Q4/2018 incurred high amounts of disbursement for expenses related to personnel, marketing promotion, and annual service station refurbishment during the end of the year, resulting in increased EBITDA during this quarter.
5. Bangchak Retail Co., Ltd. has constantly maintained the development and expansion of its business, as of Q1/2019 the number of Inthanin Coffee branches increased by 6 locations, and the SPAR convenience store increased by 2 locations, compared to the previous quarter. Within this quarter, 2 more Inthanin Coffee locations

were opened for service in Cambodia, therefore, currently, there are 5 Inthanin Coffee locations in Cambodia; all locations are tied under the same concept of “More than just a high quality coffee” with the intent to bring over high quality Thai brand coffee to Cambodia and Laos PDR, thus further increasing the Company’s capabilities to expand the Inthanin Coffee business abroad.

3.) Power Plant Business Group

Power Plant Business Performance	Q1/2018 (Restate)	Q4/2018	Q1/2019	YoY	QoQ
Solar Power Business – Thailand	66.03	73.03	71.88	9%	-2%
Phase 1-3 (118 MW – Adder 8 THB)	61.52	64.53	63.58	3%	-1%
Cooperative Solar (12 MW – FIT 5.66 THB)	4.51	4.89	4.49	-0.5%	-8%
Government Solar (8.94 MW – FIT 4.12 THB)	N/A	3.55	3.54	N/A	-0.3%
Solar rooftop (0.80 MW)	N/A	0.06	0.25	N/A	317%
Solar Power Business – Japan (14.7 MW)	9.16	3.92	4.09	-55%	4%
Total Electricity Sales (Million kWh)	75.19	76.95	75.97	1%	-1%
Revenue (Million Baht)	801	815	808	1%	-1%
Share of profit (loss) from associated companies (Million Baht)					
Wind Power Plant	14	11	29	108%	166%
Geothermal Power Plant	86	(8)	93	8%	N/A
EBITDA (Million Baht)	694	570	736	6%	29%

Note: The financial statement for Q1/2019 was restated due to adjustment of fair value for investment in the geothermal power plant in Indonesia.

Power Plant Business performance in Q1/2019 recorded revenue at the similar level to Q1/2018, and recorded EBITDA of THB 736 million, increased by THB 42 million, with the following factors affecting operations as follow:

1. The solar power plant projects in Thailand recorded increased total electricity sales from the previous year 9%. Mainly from the increased average irradiation hours at every project, due to clear skies and decreased rainfall compared to the previous year. Also, there was a commencement of commercial operation of the government solar project in collaboration with the War Veteran Organization (WVO) (PPA 8.94 MW) during the end of July 2018.
2. The solar power plant project in Japan recorded 55% decrease in electricity sales from the same period of the previous year, due to the sales of Nikaho and the Nagi project (Total PPA 19.3 MW) to the Infrastructure Fund of Japan during September 2018. For the 5 remaining solar power plant projects (Total PPA of 14.7 MW), the electricity sales was at similar levels to Q1/2018.
3. Realized share of profit from investment in associated companies in the amount of THB 122 million; an increase from the same period of the previous year by THB 22 million, due to the following factors
 - Share of profit from the wind power plant in the Philippines in the amount of THB 29 million, comprised of profit from operation THB 37 million and amortization in rights to electricity sales contract THB 8 million. The share of profit improved from the same period of the previous year by THB 15 million, as it was a high season in Q1/2019, resulting in the increased wind speed within the project’s area.



- Share of profit from the geothermal power plant in Indonesia was THB 93 million, attributed to profit from operation THB 188 million, and amortization of rights to electricity sales THB 95 million, of which the share of profit remains close to the amount received during the same period of the previous year.
4. In Q1/2019, power plant business recorded net gains from foreign exchange THB 38 million. Mainly due to the Thai Baht appreciating against the Japanese Yen, resulting in the conversion of debt which was mostly in Japanese Yen, to Thai Baht to have lower value.

Performance comparison between Q1/2019 and Q4/2018, the power plant business recorded the similar level of revenue, but increase EBITDA THB 166 million, with the following factor affecting operation as follow:

1. The solar power plant projects in Thailand recorded total electricity sales not majorly changed from the previous quarter.
2. The solar power plant project in Japan recorded a slight increase in electricity sales (4% QoQ), as in Q4/2019 weather experienced dense clouds and fogs condition, thus increasing the average irradiation hours of the project this quarter.
3. Share of profit from investments in associated companies increased THB 119 million due to the following factors:
 - Share of profit from the wind power plant in the Philippines increased THB 18 million, due to improvements of operations, as this quarter encountered increased storms and monsoon in the project area, combined with the project entering high season, allowing the project to improve electricity production.
 - Share of profit from the geothermal power plant in Indonesia increased THB 101 million, due to Q4/2018 recorded tax provision in the amount of THB 84 million, which is in the process of tax returns filing (in the future, should the amount be reverted, it would be recorded as realized income).



4.) Bio-Based Product Business Group

For the Bio-Based Business Group performance in Q1/2019, EBITDA was recorded THB 194 million.

Biodiesel Production and Distribution Business

Biodiesel Business Performance	Q1/2018	Q4/2018	Q1/2019	YoY	QoQ
B100 Production Volume (Million Litre)	70.84	69.11	67.26	-5%	-3%
B100 Sales Volume (Million Litre)	72.74	73.99	71.15	-2%	-4%
Revenue (Million Baht)	1,718	1,401	1,275	-26%	-9%
Gross Profit (Million Baht)	130	43	59	-54%	37%
Average Sales Price (Source: Department of Energy Business, Ministry of Energy)					
B100 (Baht/Litre)	24.59	21.85	20.79	-15%	-5%
Crude Palm Oil (CPO) (Baht/Kg.)	20.33	16.94	16.04	-21%	-5%

As for Q1/2019 compared to Q1/2018, the Biodiesel Production and Distribution business recorded revenue of THB 1,275 million, a decrease of THB 443 million with the following factors affecting performance as follow:

1. B100 production in Q1/2019 was at 67.26 million litres which decreased by 5% YoY, correlating with the decline in sales volume. The decline was caused by the aggregate Biodiesel production capacity which have increased by 1.2 million litres per day from the same period of the previous year, resulting in the higher competition in the market. Nevertheless, the Ministry of Energy introduced a policy to increase B20 usage as an alternative fuel, which in turn would increase B100 mixing proportion in diesel product, by offering 5 Thai Baht discount. However market demand for B100 product has not grown as fast as increased aggregate production capacity.
2. Average selling price for B100 product decreased from the previous year, coinciding with the downward trajectory of crude palm oil price. Crude palm oil price remains in the low level due to torrents of palm oil products entering the market, combined with the policy to restrict palm oil trading in global market, resulting in the global palm oil stocks to rise; while Thailand palm oil situation was also heading in the same direction as well.
3. Gross profit declined from the same period of the previous year, in response to declining B100 product sales volume, following the higher domestic production capacity, and the decline glycerin price in the global market compared to the same period of the previous year.

Performance compared between Q1/2019 and Q4/2018, the biodiesel production and distribution business recorded a decreased revenue of THB 126 million due to the following factors that affected operations as follow:

1. B100 production output in Q1/2019 declined by 3% compared to the previous quarter, in correlation to diminishing sales of B100 products due to the higher domestic production capacity.
2. B100 average selling price correspond with the price of crude palm oil that adjusted down from the previous quarter, as a result of excess palm oil yield entering the market, brandishing the country with a higher surpluses of crude palm oil. Moreover, B100 was also effected by the global palm oil price.
3. Gross profit compared QoQ increased 37%. Although the B100 sales volume in Q4/2019 was higher than that of the current quarter, the profit was affected by significant dips in crude palm oil price.



Ethanol Production and Distribution Business

Ethanol Business	Q1/2018	Q4/2018	Q1/2019	YoY	QoQ
Production Volume (Million Litre)					
Bangchak Bioethanol (Chachoengsao)(BBE)	11.63	12.34	11.60	-0.3%	-6%
KSL Green Innovation (KGI)	30.07	13.96	42.37	41%	203%
Ethanol Sales Volume (Million Litre)	34.94	32.31	47.89	37%	48%
Revenue (Million Baht)	867	744	1,071	23%	44%
Gross Profit (Million Baht)	143	5	106	-26%	N/A
Average Sales Price (Source: Department of Energy Business, Ministry of Energy)					
Ethanol (Baht / Litre)	24.49	23.31	22.33	-9%	-4%

Performance comparison between Q1/2019 and Q1/2018, the ethanol production and distribution business earned THB 1,071 million in revenue, an increase of THB 204 million, with factors that affected operations as follow:

1. KSL Green Innovation Plc., produced 42.37 million litres of ethanol, an increase 41% YoY, in accordance to the ethanol plant in Bo-Ploy district, Karnchanaburi Province's production capacity increase from the previous 200,000 litres per day to 300,000 litres per day, and has begun the plant test run in the quarter.
2. Total ethanol product sales volume was 47.89 million litres, an increase of 37% YoY, mainly attributed to KSL Green Innovation Plc's increased sales volume following its production volume increase, enabling the company to better serve the demand for ethanol.
3. Average ethanol product price declined from the same period of the previous year, due to high domestic ethanol stock, and a rise of the ethanol production capacity domestically. However, with the ethanol sales surge, has resulted in this quarter earned an increased revenue by 23% YoY.
4. Gross profit of the ethanol production and distribution business declined by 26% YoY, even though ethanol sales volume grew during the quarter, but the average selling price of ethanol dropped from the same period of last year. Therefore, leading to this quarter's gross profit declining from Q1/2018.

Performance compared between Q1/2019 and Q4/2018, the ethanol production and distribution business recorded a revenue increase of THB 327 million due to the following factors that affected operations as follow:

1. Bangchak Bioethanol (Chachoengsao) Co., Ltd. reported a lower ethanol production rate by 6%. While KSL Green Innovation Plc. recorded an ethanol production increase after finishing their Q4/2018 annual maintenance.
2. Total ethanol sales volume rose by 48%, mainly attributed to KSL Green Innovation Plc. expand its production capacity and had the plant test run in the quarter.
3. Average selling price of ethanol product in this quarter reduced 4% from the previous quarter, a result of the high domestic ethanol stock, following the increased domestic ethanol production capacity.
4. Gross profit of the ethanol production and distribution business increased from the previous quarter, as in Q4/2018 KSL Green Innovation Plc. went through annual maintenance, while in Q1/2019 there was a production ramp up from the capacity expansion, resulting in a higher sales volume.

5.) Natural Resources Business Group

Performance comparison between Q1/2019 and Q1/2018, the natural resources business group recorded EBITDA loss of THB 19 million, a decrease of THB 86 million. In the quarter, there was no sales revenue recorded from Galoc oil field, after the Company divested its position in Nido Production (Galoc) Pty. Ltd. to Tamarind Galoc Pte. Ltd. in Q3/2018, though the Company still realized additional profit from the share divestment transaction at THB 10 million. The Company holds 49.33% shareholding in OKEA, and started to recognize its performance from December 2018 onwards. In Q1/2019, the company recorded a share of profit from its associate company (OKEA AS) of THB 8 million from the production of Draugen and Gjoa oil field in the amount of 19.4 and 87.4 thousand barrels per day, respectively (8.6 and 10.5 thousand barrels per day net to OKEA respectively). In this quarter, impairment loss on technical goodwill has been recognized for Gjøa oil field acquisition following the lower gas prices. In accordance to Norwegian code of conduct, OKEA needs to perform impairment tests of technical goodwill which arisen from Draugen and Gjoa acquisition every quarter. Moreover, the group realized loss on foreign exchange of THB 99 million from loan to subsidiary, after Thai Baht appreciated against US Dollar in this quarter,

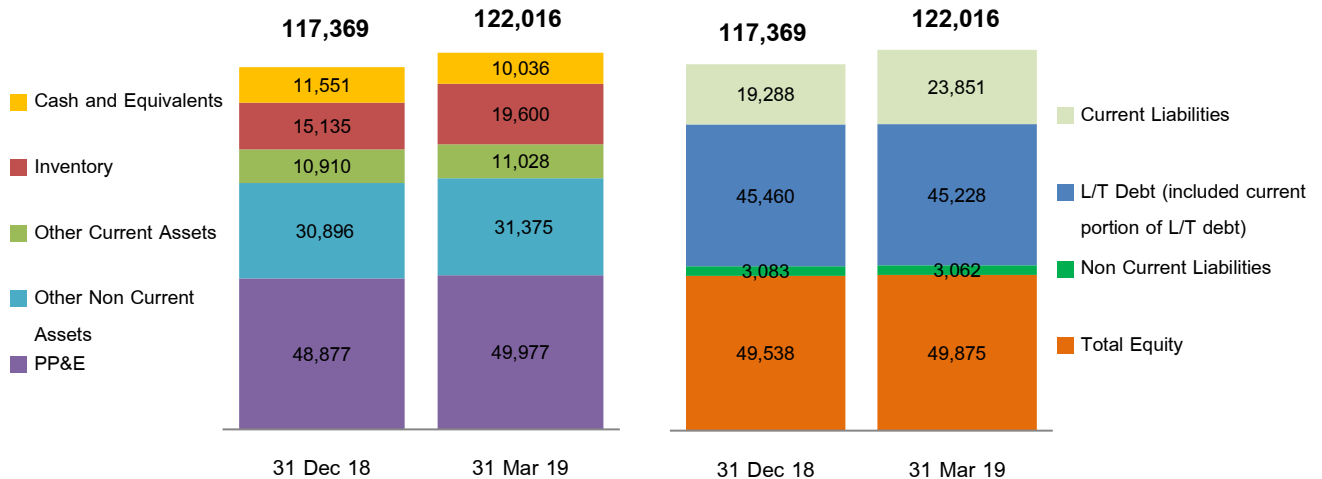
For performance comparison with the previous quarter, natural resources business group EBITDA decreased THB 112 million, as in Q4/2018, profit from Galoc oil field divestment was recorded at THB 69 million.



Statement of Financial Position

Financial Position of the Company and its subsidiaries (Consolidated)

Unit: Million Baht



Assets

As of the 31st of March 2019, the Company and its subsidiaries has Total Assets in the amount of THB 122,016 million, an increase of THB 4,648 million when compared to the 31st of December 2018, changes in assets are as follow:

- Cash and cash equivalents decreased by THB 1,514 million. Details are stated in Analysis of the Cash Flow Statement.
- Inventory increased by THB 4,465 million, chiefly from crude oil and oil products reserves, after the gas compressor unit within the hydrocrack unit was subject to maintenance.
- Other current assets increased THB 118 million, mainly contributed from:
 - 1) Trade Account Receivable increased THB 887 million, attributed to the group's higher oil sales volume in March 2019, when compared to December 2018.
 - 2) Other Receivable increased THB 296 million, primarily from the higher prepaid expenses
 - 3) Oil fund subsidy receivable decreased by THB 1,025 million, majorly from the government sector hastening its payment of long-held outstanding oil fund subsidies at the end of the year.
- Other non-current assets rose by THB 479 million, mainly due to:
 - 1) Long term loan to related parties increased
 - 2) Other long term investments increased by THB 333 million, primarily from the Company's subsidiaries adjusting net fair value on available-for-sale investment (LAC) of which share price increased from CAD 4.31 as of 31st of December 2018, to CAD 5.06 as of 31st of March 2019. Compounded with additional investments in start-up businesses.



- Property, plant and equipment net increased by THB 1,100 million, investment was made essentially in Efficiency, Energy, and Environment Enhancement Project (3E) in the amount of THB 1,114 million, and power plant business of THB 944 million. Meanwhile, depreciation for the period was recorded at THB 1,093 million.

Liabilities

As of the 31st of March 2019, the Company and its subsidiaries has Total Liabilities THB 72,141 million, an increase of THB 4,310 million, changes in liabilities are as follow:

- Current Liabilities increased by THB 4,563 million, mainly contributed from:
 - 1) Trade Accounts Payable increased by THB 6,298 million, predominantly from the higher volume of crude oil purchase, and an increase in the oil trading business's transaction volume.
 - 2) Other current liabilities decreased by THB 646 million, mainly from reduction in accrued expenses.
 - 3) Excise Tax and Oil fund expense payable decreased by THB 847 million deriving from lower refinery oil products sold in March 2019 compared to December 2018, from the maintenance of gas compressor unit in hydrocracking unit.
- Loans from financial institutions and debentures (including current portion of long term debt) decreased by THB 232 million, due to loan repayment by THB 361 million, and the Company's subsidiaries loan drawdown by THB 277 million. There was also adjustments for the effects of foreign currency conversion of financial statement resulted in a gain of THB 156 million, and the amortized issuance cost of THB 7 million.

Equities

As of the 31st of March 2019, the Company and its subsidiaries' total equity was THB 49,875 million, increased by THB 338 million. Majority of the increment was from the net profit for the period of THB 395 million, while other components of equity decreased by THB 4 million (a result of differences in net fair value change in available-for-sale investment (LAC) which increased by THB 267 million, and decreased from exchange differences on translating financial statement of THB 271 million). Total equity attributable to owners of the parent was THB 42,888 million, and book value per share was THB 31.15.

Cash Flows Statement of the Company and its subsidiaries (Consolidated)

As of 31st of March 2019, the Company and its subsidiaries had net cash received from operating activities of THB 1,918 million, net cash used in investing activities of THB 2,689 million, net cash used in financing activities of THB 605 million, and decrease from the effects of exchange rate conversion on balances held in foreign currencies in the amount of THB 139 million. As a result, net cash and cash equivalents decreased by THB 1,514 million, as there was cash in the amount of THB 11,551 million as of 1st of January 2019, resulting in remaining cash as of 31st of March, 2019 in the amount of THB 10,036 million, details for each activity are as follow:

Cash Flows (Unit: Million Baht)	31 Mar 18 (Restate)	31 Mar 19
Net cash received (used in) operating activities	(1,124)	1,918
Net cash received (used in) investing activities	(1,155)	(2,689)
Net cash received (used in) financing activities	(754)	(605)
Effect of exchange rate changes on balances held in foreign currencies	(46)	(139)
Net increase (decrease) in cash and cash equivalents	(3,079)	(1,514)
Cash and cash equivalents as at 1 January	10,106	11,551
Cash and cash equivalents as at 31 Mar	7,027	10,036

Note: Restatement of financial statement of Q1/2018 due to the changes in the fair value of the interest acquired in Geothermal Power Plant project in Indonesia

Details of cash received and used are as follows:

- 1) Net cash received from operational activities in the amount of THB 1,918 million are mainly attributed to:
 - Cash received from operating activities of THB 1,193 million, which was from Net Profit of THB 395 million, added back Non-Cash Expenses of THB 387 million, added back Financial Costs and Tax expense of THB 411 million.
 - Net cash received from operating assets and liabilities of THB 844 million, mainly from (1) Trade account receivable increased by THB 882 million. (2) Other receivables decreased by THB 738 million. (3) Inventory increased by THB 3,763 million. (4) Other assets decreased by THB 60 million. (5) Trade account payable increased by THB 6,282 million (6) Other payables and other liabilities decreased by THB 1,592 million (primarily from a decrease in excise tax and oil fund payables.)
 - Corporate Income Tax paid by THB 120 million.
- 2) Net Cash used in investing activities of THB 2,689 million, mainly from:
 - Cash received from interest income in the amount of THB 33 million.



- Cash paid for investment in Property, Plant and Equipment by THB 2,154 million. Mostly are work in progress of Efficiency, Energy, and Environment Enhancement Project (3E), and power plant business.
- Cash paid for the right to lease and Intangible assets by THB 91 million.
- Cash paid for loan to related parties of THB 414 million.

3) Net Cash used in financing activities of THB 605 million, mainly from:

- Cash paid for financial cost in the amount of THB 379 million.
- Cash received from short term loans from financial institution decreased by THB 144 million, mainly attributed to BBGI Plc.'s loan draw down of THB 1,307 million, and loan repayment of THB 1,451 million.
- Cash received from long term loans from financial institution in the amount of THB 277 million of BBGI Plc.
- The Company and its subsidiaries repaid long term loan from financial institution of THB 361 million.



Financial Ratios

Financial Ratios (Consolidated)

Profitability Ratios (%)	Q1/2018 (Restate)	Q4/2018	Q1/2019
Gross Profit Margin	7.53%	0.87%	4.79%
EBITDA Margin	6.84%	-0.65%	4.30%
Net Profit Margin	3.09%	-3.02%	0.87%
Return on Equity ^{1/} (ROE)	10.82%	5.59%	3.48%
Return on Assets (ROA)	6.20%	4.56%	3.59%

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

	31 Mar 18 (Restate)	31 Dec 18	31 Mar 19
Liquidity Ratios (Times)			
Current Ratio	1.67	1.47	1.35
Quick Ratio	0.72	0.80	0.67
Financial Policy Ratios (Times)			
Interest bearing Debt to Equity	0.78	1.02	1.00
Net Interest bearing Debt to Equity	0.64	0.78	0.80
	31 Mar 18 (Restate)	31 Dec 18	31 Mar 19
DSCR ^{2/} (Times)	2.21	1.77	1.56

2/ DSCR Calculation is not including long term debt prepayment

Note: Restatement of financial statement of Q1/2018 due to the changes in the fair value of the interest acquired in Geothermal Power Plant project in Indonesia



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 Recievable) / Current Liabilities
▪ Interest bearing Debt to Equity (Times)	=	Interest bearing Debt / Total equity
▪ Net Interest bearing Debt to Equity	=	(Interest bearing Debt – Cash and cash equivalents – Current investments) / Total equity
▪ DSCR (Times)	=	EBITDA (Yearly) / (Paid for long-term debt + Finance cost)

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) + Finance lease liabilities (including current portion of finance 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: Million Baht)	Q1/2018	Q1/2019	Δ
Material Costs of Product Outputs			
: Crude oil, ethanol, biodiesel, chemical, energy and utilities in production	24,910	24,988	78
Material Costs of Non-Product Outputs			
: Consist of slop and sludge oil, waste water, chemical surplus	14.20	9.91	(4.29)
Waste and Emission Control Costs			
: Maintenance cost of environmental control equipment and depreciation and other fees	62.59	89.81	27.22
Prevention and Other Environmental Management Costs			
: Monitoring and measurement cost, environmental management system expenses	3.22	4.31	1.09
Total Expenses	24,990	25,092	102
Benefit from by-product and waste recycling (Negative number means revenue)	(5.14)	(3.57)	(1.58)

Total environmental cost in Q1/2019 increased from Q1/2018 by approximately THB 102 million (+0.41% YoY) mainly due to Material Cost of Product Output which was higher by THB 78 million, with respect to the average production rate increment from 109.35 KBD in the same period of last year, to 110.12 KBD in this quarter. However, crude oil price decreased 1%, while Material Costs of Non-Product Outputs was declined by THB 4.29 million, in accordance with the quantity of product that is below quality standard which decreased by THB 3.92 million. Waste and Emission Control Costs and Prevention and Other Environmental Management Costs increased by THB 28.31 million (+43% YoY), primarily from the increment in environmental control equipment depreciation cost of THB 22.23 million, following an additional investment in equipment after the turnaround maintenance last year. Maintenance cost of Environmental equipment, and cost of monitoring and measuring increased by THB 2.60 million, and THB 2.80 million, respectively.

Benefits from by-products and waste recycling declined by THB 1.58 Million (-31% YoY), mostly due to amount of sellable iron and aluminum scrap which decreased by THB 2.5 million, while amount of sellable liquid sulfur increased by THB 0.95 million.

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.

