



Bangchak Corporation Plc.

Management Discussion & Analysis of Business Operation

For the 2nd quarter ended June 30th, 2019



Greenovate
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Executive Summary

Summary of the Company and its subsidiaries' operating results for the 2nd quarter ended 30th June 2019

Unit: THB Million	Q2/2018 (Restate) ^{7/}	Q1/2019	Q2/2019	YoY	QoQ	6M2019	6M2019	YoY
Total Revenue	45,558	45,535	48,326	6%	6%	89,783	93,861	5%
Accounting EBITDA	3,335	1,959	2,189	-34%	12%	6,358	4,147	-35%
<i>Refinery and Trading Business Group ^{1/}</i>	1,929	517	650	-66%	26%	3,208	1,167	-64%
<i>Marketing Business Group ^{2/}</i>	509	610	630	24%	3%	1,244	1,240	-0.3%
<i>Power Plant Business Group ^{3/}</i>	762	737	721	-5%	-2%	1,457	1,458	0.1%
<i>Bio-Based Product Business Group ^{4/}</i>	171	194	136	-21%	-30%	473	330	-30%
<i>Natural Resource Business Group ^{5/}</i>	36	(23)	145	298%	726%	104	122	18%
<i>Others ^{6/}</i>	(72)	(76)	(94)	-29%	-23%	(128)	(170)	-33%
Net profit attributable to owners of the parent	985	214	528	-46%	147%	2,153	742	-66%
Basic earnings per share (Baht)	0.72	0.16	0.38			1.56	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

6/ Others items and elimination

7/ Q2/2018 financial statement was restated due to adjustments in fair value of capital invested in geothermal power plant project in Indonesia

Performance of the first 6 months of 2019, Bangchak Corporation Plc. ("the Company") and its subsidiaries earned revenue from rendering goods and services THB 93,861 million (+5% YoY), recorded EBITDA THB 4,147 million (-35% YoY), and a net profit of THB 1,070 million, of which the **net profit attributable to owners of the parent was THB 742 million** (-66% YoY), and **earnings per share at THB 0.54**.

As for Q2/2019 performance, the Company and its subsidiaries earned revenue from sales of goods and rendering services THB 48,326 million (+6% YoY, +6% QoQ), recorded EBITDA THB 2,189 million (-34 % YoY, +12% QoQ). Net profit was recorded at THB 675 million; of which the **net profit attributable to owners of the parent was THB 528 million** (-46% YoY, +147% QoQ). **Earnings per share was THB 0.38**, with performance from each business group as follow:

Performance of **refinery and oil trading business** was still affected by the decline in most of the finished product and crude oil crack spreads, as a result of the oversupply situation in finished oil products, and the anxieties over the trade war between the US and China. Gasoline-Dubai crack spread (UNL95/DB), Jet (Kerosene)-Dubai crack spread (IK/DB), and Gasoline-Dubai crack spread (GO/DB) were especially affected. This turn of events have led the refinery business to record a lower market gross refinery margin (GRM) compared to Q2/2018. However, market GRM



slightly improved from the previous quarter, due to the recovery of Gasoline-Dubai crack spread (UNL95/DB) in this quarter. Moreover, the refinery was able to continuously maintain its normal production rate, its average crude run was at 112.67 thousand barrels per day. Furthermore, from the tumultuous disposition of crude oil price in the global market during the quarter, Dubai crude oil price increased to an average level of 70.95 \$/BBL in April, and proceeds to decline during the middle of May to early June. Thus, price of Dubai crude oil at the end of June was 61.76 \$/BBL leading the refinery business to record an inventory loss of THB 107 million (including lower of cost or market (LCM) of THB 15 million). As for the trading business operated by BCP Trading Pte., Ltd., its performance was superior from last year from the expansion both in terms of trading volume and new trade partners. Oil trading performance however, softened marginally from the previous quarter, due to the apprehension towards the trade war between the US and China that has caused market demand to contract.

Marketing Business recorded an increase in total marketing sales volume, especially through retail sales which is the principal distribution channel that has been increasing consecutively, from the customer base expansion in accordance to the Company's strategy, as well as the fact that the Company has begun distributing B20 diesel to support the Ministry of Energy's policy. The Company developed the "Hi-Diesel B20s" product that enhances the quality of B20 diesel with the Green S technology; increasing Cetane value and improves engine cleaning, allowing the engine to work at maximum performance, the Company is the first and the only company to have such a product at the moment, and the number of Bangchak service stations with B20 diesel is expanding nationwide. The Company still maintains its retail sales volume market share at the second place (according to information released by Department of Energy Business), the cumulative market share between January – June 2019 was at 15.8%. Furthermore, service station networks continue to broaden simultaneously with the development and expansion of Non-Oil business which progressed unabatingly. The number of service stations as of the end of Q2/2019 was 1,185 locations. Net Marketing Margin increased from the incessant push to enlarge proportions of retail sales, combined with crude oil price declining during the quarter leading to retail price at service stations remain optimal relative to the finished product cost.

Power Plant Business, increased in total electricity sales compared to the previous quarter, mainly attributed to electricity sales of the solar power plant projects in Japan, due to seasonal factors of which Q2 of every year is a period of clear skies with minimal mass of clouds, leading to increase solar irradiation. Meanwhile in Thailand, the wind power plant project, "Lom Ligor" at Pak Panang district, Nakhon Si Thammarat province (PPA 8.965 MW) started to realize revenue for the first quarter, from its commercial electricity sales to the Provincial Electricity Authority which commenced on 11th April 2019. Share of profit from associated companies for the quarter was recorded at THB 62 million, attributed to share of loss from the wind power plant in the Philippines at THB 12 million, and share of profit from the geothermal power plant in Indonesia at THB 74 million.

Bio-Based Product Business, by the **Biodiesel Business** reported its production and sales volume of B100 product expanded from the government sector policy promoting B20 diesel usage as a way to support palm oil farmers. However, gross profit was still affected by Thailand's heightened aggregate production capacity, which result in price competition of B100 product, combined with declining glycerin price in the global market in accordance to increasing glycerin supply entering the market. As for **Ethanol Business**, production and sales volume rose from the same period of the previous year, due to the increased capacity of the Ethanol Production plant at Bo Ploy district, Kanchanaburi province, owned by KSL Green Innovation Plc., from 200,000 liters per day to 300,000 liters per day. Also Bangchak



Bioethanol (Chachoengsao) Co. Ltd. underwent improvements in production efficiency, leading to gross profit increment even with average selling price of ethanol declining from the high domestic ethanol stock. However, when compared to the previous quarter ethanol production and sales volume declined due to planned shutdown maintenance.

Natural Resources Business, reported performance improvement after realizing increased share of profit from investments made in the associated company OKEA, of which its share of operational profit from the Draugen Field rose with production volume increment by 7% QoQ, leading to the sales of 2 cargoes of crude oil from the Draugen Field; an increase from the previous quarter which had sold 1 cargo. However, there was an impairment loss of Technical Goodwill on Gjøa Field. Moreover, during this quarter, gain from changes in investment interest in OKEA of THB 94 million was recorded from OKEA's initial public offering (IPO) of its ordinary shares, of which BCPR purchased additional ordinary share under conditions which were part of the initial investment agreement, along with the purchase of IPO shares. Furthermore, the Natural Resources Business recorded a gain from foreign exchange forward contract at THB 82 million.

Other Important Events in the Quarter

- In April 2019, the Extraordinary General Meeting of shareholders of BCP Innovation Pte. Ltd., a subsidiary of the Company, approved the increase in the registered capital from USD 45 million (divided to 45 million shares valued at USD 1 per share) to USD 46 million (divided to 46 million shares valued at USD 1 per share). The subsidiary had called up for the share subscription and received full payment at paid-up capital.

- In April 2019, the Company via Bangchak Initiative and Innovation Center or BIIC, had invested in additional Startups through BCP Innovation Pte. Ltd., a subsidiary of the Company, which has increased its investments in Bonumose, a company specializes in the production of healthy sugar from plant based material with high carbohydrate content. The technology is considered high potential, adding value to agricultural products, and able to add value to the Company's Bio-based business.

- On 18th June 2019 OKEA ASA ("OKEA") offered its share to the initial public offering (IPO) by issuing 15,000,000 shares in the Norwegian Stock Exchange (Oslo Stock Exchange) with an offering price of NOK 21 per share. After the issuance of the new shares, OKEA has a registered share and issued and paid-up shares of OKEA totaling 101,839,050 shares. BCPR purchased additional ordinary share under conditions which were part of the initial investment agreement, along with a purchase of IPO shares. In addition to this IPO, Greenshoe option was exercised and ended on 17th July 2019. As a result, currently BCPR held 47,477,563 ordinary shares with voting rights or equivalent to 46.62% of registered share capital of OKEA.



Statement of Income

Consolidated Statement of Income (Unit: Million Baht)	Q2/2018 (Restate)	Q1/2019	Q2/2019	YoY	QoQ	6M2018	6M2019	YoY
Revenue from sale of goods and rendering of services	45,558	45,535	48,326	6%	6%	89,783	93,861	5%
Cost of sale of goods and rendering of services	(41,699)	(43,355)	(45,738)	10%	5%	(82,597)	(89,093)	8%
Gross Profit	3,858	2,181	2,588	-33%	19%	7,186	4,768	-34%
Interest income and dividend income	12	37	31	163%	-16%	28	68	142%
Other income	181	81	77	-57%	-5%	240	159	-34%
Selling and administrative expenses	(1,785)	(1,721)	(1,897)	6%	10%	(3,446)	(3,618)	5%
Exploration and evaluation expense	(13)	(4)	(0.2)			(22)	(5)	
Gain (loss) from crude and product oil price hedging contract	(136)	29	(28)			(209)	1	
Gain (loss) from foreign currency forward contracts	95	(11)	27			95	16	
Gain (loss) on foreign exchange	(39)	57	168			133	225	
Loss from impairment of assets	(412)	-	-			(412)	-	
Share of profit of associate and JV	(8)	157	156	N/A	-1%	115	314	174%
Profit/(loss) before finance costs and income tax expense	1,753	806	1,121	-36%	39%	3,710	1,928	-48%
Finance costs	(374)	(443)	(421)	13%	-5%	(739)	(864)	17%
Profit/(loss) before income tax expense	1,379	363	700	-49%	93%	2,971	1,063	-64%
Income tax (expense) credit	(253)	32	(25)	-90%	179%	(476)	7	-101%
Profit for the period	1,126	395	675	-40%	71%	2,494	1,070	-57%
Owners of the parent	985	214	528			2,153	742	
Non-controlling interests	141	181	147			341	328	
Earnings per share (Baht per Share)	0.72	0.16	0.38			1.56	0.54	

Note: Restatement of Q2/2018 financial statement due to the changes in the fair value of the interest acquired in Geothermal Power Plant project in Indonesia

Q2/2019 performance of the Company and its subsidiaries reported a consolidated net profit of THB 675 million, a decline of 40% YoY and an increase of 71% QoQ. Net profit attributable to owners of the parent company was THB 528 million, and earnings per share was THB 0.38, mainly due to the following reasons:

1. Revenue from sales of goods and rendering of services totaled at THB 48,326 million, an increase of 6% YoY, mainly from petroleum related businesses. For the Company, revenue increased from growing total sales volume of 9% attributed to the retail market and the export business. Whereas BCPT reported an increase in revenue from higher trading volume and trading parties expansion.

In comparison to Q1/2019, revenue rose 6%, mostly attributable to petroleum related businesses that rose from the higher average selling price per unit, while total sales volume was at a similar level as the previous quarter.



Revenue from the bio-based business also grew from the sales volume and average selling price of B100 products that has risen.

2. Gross profit was recorded at THB 2,588 million, a decline of 33% YoY, mainly from Total GRM which was USD 4.53 per barrel, compared to USD 12.82 per barrel in Q2/2018; the decline was due to the retracting finished product and crude oil crack spread for most products. Moreover, refinery business incurred an inventory loss of THB 107 million (including lower of cost or market (LCM) THB 15 million), a decline from Q2/2018 which enjoyed inventory gain of THB 856 million. While net marketing margin increased from THB 0.75 to THB 0.83 per liter through continuous initiatives to increase the portion of retail sales, combined with crude price that dropped during the quarter.

When compared to Q1/2019, gross profit rose 19%, mostly attributed to the refinery business that experienced improvements in its Total GRM, after Gasoline-Dubai (UNL95/DB) crack spread recovered, and recorded higher production rate as well as produced a larger proportion of high value products than the previous quarter. However, inventory loss, including LCM, was higher than in Q1/2019 from the volatile global crude oil price during the quarter.

3. Other incomes were recorded at THB 77 million, a decline of 57% YoY and 5% QoQ; most of the decline compared to last year was due to BCPG Plc. recording compensation revenue from damages caused by typhoons that swept through Japan in the amount of THB 99 million during Q2/2018.
4. Selling, general and administrative was THB 1,897 million, increased by 6% YoY. Mostly from the personnel expenses in the Company group, and the provision for retirement benefits and past service cost in accordance to the Labor Protection Act, which was amended on the 5th April 2019, to include a requirement that an employee who is terminated after having been employed by the same employer for an uninterrupted period of twenty years or more, receives severance payment of 400 days of wages at the most recent rate. There was also an increase in depreciation and amortization expense incurred by the Company and Bangchak Retail Co., Ltd. from the expansion of service stations and branches of its Non-oil businesses.

When compared to Q1/2019, selling, general and administrative expenses increased 10% from the aforementioned provision for retirement benefits, advertising promotion expenses, and utilities expenses.

5. Gains from foreign exchange was THB 168 million from the appreciation of Thai Baht in comparison to other foreign currencies, leading to most gains being generated from conversions of loans and account payables in foreign currencies of the Company.
6. Share of profit from associated companies was THB 156 million, comprising of (1) Star Energy Holdings Pte. Ltd. THB 74 million (2) PetroWind Energy Inc. THB - 12 million (3) Ubol Bio Ethanol Plc. THB - 15 million (4) Bongkot Marine Services Co., Ltd. THB 7 million (5) OKEA ASA THB 102 million.
7. Financial cost was THB 421 million, an increase of 13% YoY but declined 5% QoQ. Financial cost was higher than the previous year from the Company's THB 4,000 million debenture issuance with coupon rates of 2.13 – 3.42% with maturities between 2 – 7 years, and THB 7,000 million debenture with a coupon rate of 4.04% with maturity of 10 years in August and December 2018, respectively. However, financial cost declined QoQ from THB 4,000 million debenture which reached maturity during April 2019.



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	Q2/2018	Q1/2019	Q2/2019			YoY	QoQ	6M	6M	YoY
	AVG	AVG	MAX	MIN	AVG	+/-	+/-	2018	2019	+/-
Dubai (DB)	72.07	63.41	74.49	59.33	67.55	-4.52	4.14	68.01	65.48	-2.54
Dated Brent (DTD)	74.39	63.13	74.69	62.11	68.86	-5.53	5.73	70.58	65.95	-4.63
DTD/DB	2.33	-0.27	3.66	-2.23	1.32	-1.01	1.59	2.56	0.48	-2.09

Crude Oil Price Situation

Dubai crude price in Q2/2019 compared to Q2/2018 adjusted downward by 4.52 \$/BBL due to anxieties expressed in regards to global economic recession, which is a result from the trade war between the US and China; leading to decreased demand for oil. Thus, the International Monetary Fund (IMF) has lowered their estimated figure for global economic growth, the new estimate postulates that the global economy will grow by 3.3% in 2019; a 0.2% decline from the January 2019's estimate. Furthermore, the International Energy Agency (IEA) lowered their estimate of world oil demand in 2019 in June 2019 report, the downward adjustment was 100,000 barrels per day to 1.20 million barrels per day.

Averaged Dubai crude price in Q2/2019 rose by 4.14 \$/BBL compared to Q1/2019, with pressure from concerns that global crude supply would tighten further. After the US government canceled the waiver of Iran export sanction in May 2019, leaving Iran vowing to retaliate by force, to prevent the use of the Strait of Hormuz for oil exports. Presently, oil transported through the Strait of Hormuz accounts for roughly 19 million barrels per day or 20% of global oil supply. In addition, the US's sanction on Venezuela, and the country's economy and ever-growing tumultuous intra-political environment has led to declines in its crude exports. Meanwhile, the OPEC members and partners colluding to continue to lower production. In May 2019, OPEC member crude production has declined to its all-time lowest in 5 years, at the levels of 29.95 million barrels per day.

When comparing the Dated Brent and Dubai spread (DTD/DB), the average between Q2/2019 and Q2/2018 adjusted downward by 1.01 \$/BBL with pressure stemming from light sweet crude supply which has increased compared to the same period of the previous year where market was taut. The US crude production maximized its capacity and adjusted upward to 12.30 million barrels per day.

DTD/DB in Q2/2019 on average increased by 1.59 \$/BBL when compared to Q1/2019, due to Poland and Germany ceasing crude imports from Russia through the Druzhba pipeline, capable of transferring 1 million barrels of oil per day, due to contamination to the crude oil. Thus, necessitating the purchase of light sweet crude as replacement, and cargoes of diesel products were imported. Subsequently, price of light sweet crude with high diesel yield experienced the repercussion, adjusting upward. Furthermore, demand for light sweet crude in the region increased as preparations



are made for the production of low Sulphur fuel oil before the International Maritime Organization's (IMO) rule that limit the sulfur content of marine fuels to 0.5% come into effect from 1 January 2020.

Crack Spreads Situation

(Unit: USD/BBL)

Crack Spreads	Q2/2018	Q1/2019	Q2/2019			YoY	QoQ	6M	6M	YoY
	AVG	AVG	MAX	MIN	AVG	+/-	+/-	2018	2019	+/-
UNL95/DB	12.15	3.77	12.68	4.54	7.57	-4.58	3.80	12.92	5.67	-7.25
IK/DB	15.29	12.95	14.18	10.58	12.19	-3.09	-0.76	15.67	12.57	-3.09
GO/DB	14.63	12.75	13.74	10.46	12.37	-2.26	-0.39	14.69	12.56	-2.13
FO/DB	-4.45	0.54	1.44	-5.77	-2.34	2.11	-2.88	-4.71	-0.90	3.81

Crack Spreads Analysis

- Gasoline and Dubai crack spread (UNL95/DB) in Q2/2019 averaged at 7.57 \$/BBL, a decrease of 4.58 \$/BBL when compared to Q2/2018, due to the pressure from the tensions of the US and China trade war that have caused demand for Benzene to decline.

Gasoline and Dubai crack spread (UNL95/DB) crack spread increased by 3.80 \$/BBL compared to the average of 3.77 \$/BBL in the previous quarter, with support from oil traders who were able to enact export arbitrages of benzene from Asia to the US to coincide with summer season demands.

- Jet (Kerosene) and Dubai crack spread (IK/DB) in Q2/2019 averaged at 12.19 \$/BBL, a decrease of 3.09 \$/BBL compared to Q2/2018. This is in respect to China's increase in Kerosene export by 30% compared to the same period of the previous year, leading to Jet/Kerosene excess supply in Asian market.

Jet (Kerosene) and Dubai crack spread (IK/DB) retracted 0.76 \$/BBL from the average of 12.95 \$/BBL during the previous quarter. This stems from weakened demand due to the warming weather in summer. Also contributing was the export arbitrage of Jet/Kerosene fuel from Asia to the West, in order to accommodate increased air travel during the summer.

- Gasoil and Dubai crack spread (GO/DB) in Q2/2019 averaged at 12.37 \$/BBL, a decrease of 2.26 \$/BBL compared to Q2/2018 caused by supply pressure mounting within the region as China increased its export by 40% compared to the same period of the previous year, leaving diesel in an excess supply situation within Asia.

Gasoil and Dubai crack spread (GO/DB) lowered by 0.39 \$/BBL compared to the average of 12.75 \$/BBL in the preceding quarter, with respect to the increased supplies after various refineries have finished their turnaround maintenance period, and lowering demand from the Chinese fishing sector after entering the fishing ban season in the South and East China seas.

- Fuel Oil and Dubai crack spread (FO/DB) in Q2/2019 averaged at -2.34 \$/BBL, an incline adjustment of 2.11 \$/BBL compared to Q2/2018. Supported by the lowering production of the OPEC members and partners, lower heavy crude exports from Venezuela after the US government imposed sanctions, resulting in a lower quantities of fuel oil export to Singapore.



Fuel Oil and Dubai crack spread (FO/DB) lowered by 2.88 \$/BBL compared to the average of 0.54 \$/BBL of the previous quarter. With respect to pressure from slowing demand for high Sulphur vessel fuel, in preparation to the compliance for the use of Low Sulphur vessel fuel with Sulphur content not exceeding 0.5% in 2020, and Japan's decreased importation of fuel oil as more LNG being used for generating electricity.

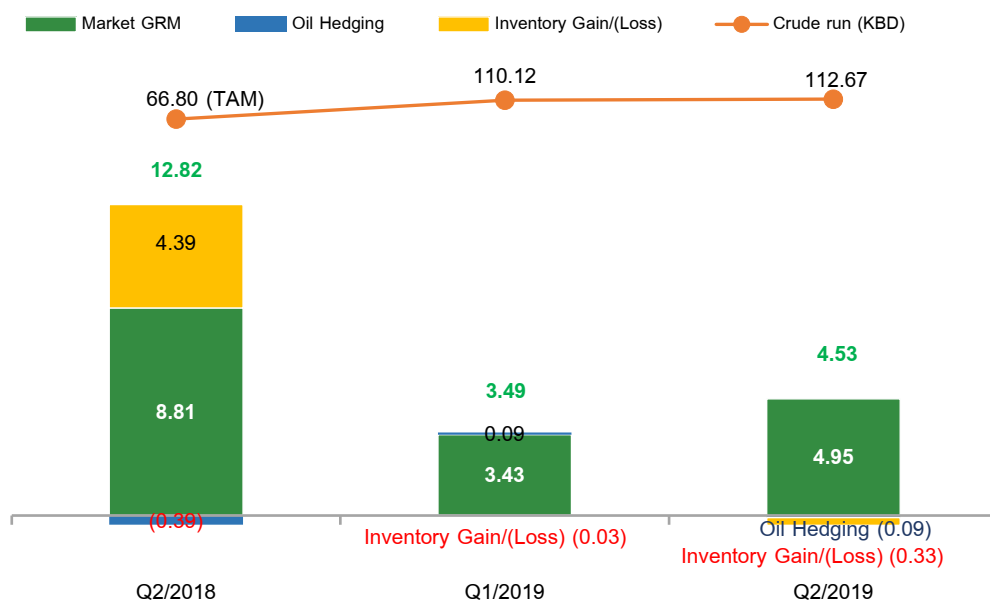
Refinery and Trading Business Group Performance

Refinery Business Performance	Q2/2018	Q1/2019	Q2/2019	YoY	QoQ	6M2018	6M2019	YoY
Average Crude Run (KBD)	66.80	110.12	112.67	69%	2%	87.96	111.40	27%
Utilization Rate (%)	56%	92%	94%			73%	93%	
Average FX (THB/USD) (Unit: Million Baht)	32.09	31.79	31.76			31.90	31.77	
Market GRM	1,719	1,080	1,611	-6%	49%	3,814	2,691	-29%
GRM Hedging	(75)	29	(28)	63%	-197%	(112)	0.88	101%
Inventory Gain/ (Loss)1/	856	(9)	(107)	-113%	N/A	787	(116)	-
								115%
Total GRM	2,501	1,100	1,476	-41%	34%	4,489	2,576	-43%
EBITDA	1,929	517	650	-66%	26%	3,208	1,167	-64%

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

GRM and Crude Run

Unit: \$/BBL



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



Unit: Million Litres

Total Sales Volume in each market category of the Company	Q2/2018	Q1/2019	Q2/2019	YoY	QoQ	6M2018	6M2019	YoY
Marketing Business								
Retail	1,008	1,032	1,093	8%	6%	2,005	2,125	6%
Industrial	447	489	449	1%	-8%	963	938	-3%
Total	1,455	1,521	1,543	6%	1%	2,969	3,064	3%
Wholesale Business								
Petroleum traders in accordance with section 7	144	138	149	3%	8%	295	286	-3%
Export	141	246	205	45%	-17%	340	450	32%
Total	285	383	354	24%	-8%	635	737	16%
Total Sales Volume	1,740	1,904	1,896	9%	-0.4%	3,604	3,801	5%

Note: 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 in Q2/2019 Refinery Business Group recorded EBITDA of THB 650 million, a decline of THB 1,278 million when compared to Q2/2018, with factors affecting performance as follow:

- Bangchak refinery's average production in Q2/2019 was at 112.67 barrels per day or a utilization rate of 94%. The rate increased 69% YoY since the refinery underwent its maintenance from 30th April to 13th June 2018, a total of 45 days.
- Within this quarter Total GRM was THB 1,476 million, or 4.53 \$/BBL, a decline of 41% compared to Q2/2018 which had Total GRM of THB 2,501 million, or 12.82 \$/BBL, mainly due to the following reasons:
 - Market GRM declined by THB 108 million, compared to the Q2/2018 due to the contraction of referenced finished oil product and crude oil crack spreads, due to excess supply situation of the finished oil products, and anxieties towards the trade war between the US and China. With the average UNL95/DB cracks spread declined by 4.58 \$/BBL, the average IK/DB crack spread declined by 3.09 \$/BBL, and the average GO/DB crack spread declined by 2.26 \$/BBL.
 - During this quarter, the refinery business recorded loss from crude and product oil price hedging contract by THB 28 million, from the price of Dubai crude oil price increasing at a higher rate than Brent crude oil price during the quarter, leading to the loss.
 - Refinery business in this quarter recorded inventory loss in the amount of THB 107 million (including lower of cost of market (LCM) THB 15 million) due to the state of crude oil price volatility in the global market during this quarter. As such, crude oil price rose to an average of 70.95 \$/BBL in April and adjusted downward in the middle of May to early June, of which average Dubai crude price of June was at 61.76 \$/BBL. Whereas in Q2/2018, the refinery experienced Inventory Gain of THB 856 million from the increasing levels of average crude price throughout the quarter.
- BCP Trading Co., Ltd. (BCPT) recorded higher gross profit than in Q2/2018, the company had expanded its transaction volume and new trade partners. During this quarter, BCPT transacted the purchasing and selling of crude oil and finished oil products by 4.85 million barrels, an increase of 0.31 million barrels compared to Q2/2018. The main product traded during this quarter are fuel oil, Benzene, and crude oil, for instance.



Performance comparison between Q2/2019 and Q1/2019, the refinery business group EBITDA increased by THB 133 million, with the following factors affecting performance as follow:

1. The refinery's average production rate increased 2% from the previous quarter. Due to in Q1/2019 an irregularity with the Gas Compressor in the Hydrocracking Unit was discovered during March. Thus, the unit's production was temporarily halted for inspection and maintenance on the mentioned component was carried out.
2. The refinery business's Total GRM increased THB 376 million, when compared with Q1/2019, mainly due to the following reasons:
 - Market GRM rose by THB 531 million, due to the average UNL95/DB crack spread increasing by 3.80 \$/BBL in respect to demand for Benzene during the summer in the US, even with the FO/DB crack spread declined from the previous quarter. Also, the refinery was able to continuously produce at a normal rate leading to high production rate and an increase the yield of high value products from the previous quarter.
 - During this quarter, refinery business recorded loss from crude and product oil price hedging contract at THB 28 million. Meanwhile in Q1/2019, there was a gain of THB 29 million.
 - Refinery business recorded inventory loss during this quarter in the amount of THB 107 million (including lower of cost of market (LCM) THB 15 million). At the beginning of the quarter, average Dubai oil price continuously rose comparing to the previous quarter, however, in the middle of May to early June 2019, average Dubai oil price turn around and started declining. As such, in Q1/2019 the refinery recorded an inventory loss of THB 9 million (including reversal of LCM THB 689 million).
3. BCP Trading Co., Ltd. (BCPT) recorded a decline in gross profit from Q1/2019, mainly from demand for fuel in the global market that declined from the trade war situation between the US and China during this quarter; leaving BCPT with trading transactions of finished oil products and crude oil down by 2.06 million barrels compared to Q1/2019. However, the company continues to expand its trade transactions with new trade partners within this quarter in accordance to the company's strategy for business expansion.



2.) Marketing Business Group

Marketing Business

Sales Volume (Million Litre)	Q2/2018	Q1/2019	Q2/2019	YoY	QoQ	6M/2018	6M/2019	YoY
Retail (Service Stations)	1,008	1,032	1,093	8%	6%	2,005	2,125	6%
Industrial	447	489	449	1%	-8%	963	938	-3%
Total	1,455	1,521	1,543	6%	1%	2,969	3,064	3%
Sales volume in each product category (Million Litre)								
LPG	40	34	36	-10%	3%	77	70	-9%
Gasoline	8	8	7	-10%	-15%	17	15	-13%
Gasohol	412	412	428	4%	4%	816	841	3%
Jet Fuel	215	212	242	13%	14%	424	454	7%
Diesel	735	814	792	8%	-3%	1,538	1,607	4%
Fuel Oil and Others	45	40	37	-17%	-8%	98	78	-20%
Total Sales Volume	1,455	1,521	1,543	6%	1%	2,969	3,064	3%
Total Marketing Margin (Baht/Litre)	0.75	0.71	0.83	10%	17%	0.79	0.77	-3%
EBITDA (Million Baht)	509	610	630	24%	3%	1,244	1,240	-0.3%

Note: marketing margin of Bangchak only

As for performance in Q2/2019, Marketing Business Group recorded EBITDA of THB 630 million, an increase of THB 120 million compared to Q2/2018 with the following factors affecting performance:

1. Total sales volume of the marketing business increased 6% YoY, mainly from increases in retail sales 8% YoY of which retail sales still maintains continuous growth from expanding its customer base as part of company strategy. Furthermore, the Company has supported the Ministry of Energy's policy by retailing B20 diesel product at Bangchak service stations under the "Bangchak B20 for diesel vehicles, Lowering Pollution, and Saving Money" project and the product retails 5 THB per liter cheaper than ordinary diesel, meant to stimulate the use of quality fuel, lower combustion emission, and to support palm farmers. Subsequently, this has caused retail market sales volume to increase, whereas the industrial market volume remains similar to the level of Q2/2018 from an intense industrial market competition.
2. Net marketing margin increased compared to the same period of the previous year. This is in respect to efforts to increase sales proportion to retail market continuously, combined with declining crude oil price throughout the quarter, which has led to retail prices at service stations aligning at an appropriate level to the cost of finished oil products. While marketing margin in Q2/2018 was highly affected by the sharp rise in global crude oil price during June 2018, prompting the Company to prolong service station price adjustment to relief consumer burden.
3. The Company is still able to retain its second place market share in terms of retail sales through service station (data from Department of Energy Business, Ministry of Energy), of which has been increasing successively. The cumulative market share between January and June 2019 was at 15.8%, whereas the cumulative share



between January and June 2018 was 15.5%. The number of BCP service stations as of Q2/2019 amounts to 1,185 locations, with 60 new service stations commencing operations compared to Q2/2018. Most of the new standard service stations are situated in areas with high potential to push sales volume per station. Furthermore, BCP has developed the “Hi-Diesel B20s” product to raise the quality of B20 fuel with the Green S technology that increases Cetane value, increasing engine power and the ability to clean the engine, bringing out the full power of the engine. BCP is the first and only brand, at present, to make such a product available at its service stations and at the same price as ordinary B20, to provide the consumers with quality fuel on a budget, and stimulates increment in B20 diesel usage.

4. As for this quarter, the selling, general and administrative expense increased 6% YoY. As Marketing Business booked the an increase of provision for retirement benefits of THB 65 million, according to the Labor Protection Act that was revised on 5 April 2019.
5. The Non-oil business under the supervision of Bangchak Retail Co., Ltd. (“BCR”) is still developing and expanding its business continuously. As of Q2/2019, the number of SPAR convenient stores was 46 locations (an increase of 11 branches YoY), and the number of Inthanin Coffee Shop was 541 locations (an increase of 50 locations YoY). From the branches expansion, better management of the stores, and cost controlling of SPAR stores, Inthanin coffee shops as well as the head office, BCR’s revenue increased by 28% YoY, and EBITDA rose by 8%.

Q2/2019 performance compared to Q1/2019, Marketing Business Group recorded an increase in EBITDA of THB 20 million with factors affecting operations as follow:

1. Total sales volume of marketing business group was at the similar level as the previous quarter, retail market sales volume increased by 6% QoQ due to consistent sales volume push and an increase in B20 diesel sales. The Company has consistently increased the number of service stations providing B20 diesel countrywide. Additionally, on 26th June 2019, the Company debuted a new product, elevating the standards of B20 diesel to “Hi-Diesel B20s”, to be sold in Bangchak service stations. Industrial market sales volume declined 8% QoQ from intense competition in the industrial market.
2. Net marketing margin increased from the previous quarter, the increment is attributed to retail market benefited from the decline of crude oil price during the quarter, leaving retail prices at service stations at an optimal level in relations to finished oil product cost. While in Q1/2019, crude oil price increased sharply, driving up finished oil product cost while service station prices were able to adjust more slowly. Moreover in the previous quarter, the Company stagnated price as a gifting gesture to travelling Thais during the New Year season, and initiated the lowering of price for Hi Premium Diesel to support the government’s policy, further distorting retail price relative to oil product cost.
3. The number of service stations as of Q2/2019 totals at 1,185 stations, 11 new stations were open compared to the previous quarter, and the Company recorded cumulative retail sales volume market share between January and June 2018 at 15.8%.



4. Selling, General and Administrative expense increased 13% compared to the previous quarter, as marketing business recorded an increase in the provision for retirement benefits of THB 65 million.
5. Bangchak Retail Co., Ltd. has constantly maintained development and expansion of its SPAR convenience stores and Inthanin Coffee Shops. Inthanin coffee shops has been expanded both within and outside of Bangchak's service stations, in order to further grow its customer base. Inthanin also aims to promote its eco-brand image, being an environmental friendly coffee shop brand by using biodegradable cups. From the branches expansion, better management of the stores, and cost controlling of SPAR stores, Inthanin coffee shops as well as the head office, BCR's revenue increased by 7% QoQ, and EBITDA rose by 14% QoQ.

3.) Power Plant Business

Power Plant Business Performance	Q2/2018 (Restate)	Q1/2019	Q2/2019	YoY	QoQ	6M2018	6M2019	YoY
Solar Power Business – Thailand	66.70	71.88	73.33	10%	2%	132.73	145.21	9%
<i>Phase 1-3 (118 MW – Adder 8 THB)</i>	61.77	63.58	64.23	4%	1%	123.29	127.81	4%
<i>Cooperative Solar (12 MW – FIT 5.66 THB)</i>	4.92	4.49	5.03	2%	12%	9.44	9.52	1%
<i>Government Solar (8.94 MW – FIT 4.12 THB)</i>	N/A	3.54	3.77	N/A	6%	N/A	7.31	N/A
<i>Solar rooftop (0.80 MW)</i>	N/A	0.25	0.31	N/A	21%	N/A	0.56	N/A
Solar Power Business – Japan (14.7 MW)	14.89	4.09	5.38	-64%	31%	24.04	9.47	-61%
Wind Power Business – Thailand (9.0 MW - Adder 3.5 THB)	N/A	N/A	2.54	N/A	N/A	N/A	2.54	N/A
Total Electricity Sales (Million kWh)	81.58	75.97	81.25	-0.4%	7%	156.77	157.22	0.3%
Revenue (Million Baht)	874	808	848	-3%	5%	1,675	1,655	-1%
Share of profit (loss) from associated companies								
Wind Power Plant	(6)	29	(12)	-105%	-141%	8	17	111%
Geothermal Power Plant	(6)	93	74	N/A	-20%	80	167	109%
EBITDA (Million Baht)	762	737	721	-5%	-2%	1,457	1,458	0.1%

Note: Q2/2018 financial statement was restated due to adjustments in fair value of capital invested in geothermal power plant project in Indonesia

Power Plant business performance in Q2/2019 recorded revenue of THB 848 million, a decline of THB 26 million compared to Q2/2018, and recorded EBITDA of THB 721 million which declined by THB 40 million, with the following factors affecting operations as follow:

1. Solar power plant projects in Thailand recorded a rise in total electricity sales by 10% YoY, mainly from increasing average irradiation hours at every project sites, due to clear skies and decreased rainfall from the previous year. Furthermore, production capacity rose from the commercial operation debut of 2 solar projects in collaboration with the War Veteran Organization (WVO) (PPA 8.94 MW) since July 2018.
2. Solar power plant projects in Japan recorded a decrease in electricity sales by 64% YoY, mainly attributed to a reduction in production after the divestment of the Nikaho and the Nagi project (total PPA 19.3 MW) to



Infrastructure Fund in Japan during September 2018. While the 5 remaining solar power plant projects (total PPA 14.7 MW) reported electricity sales at a similar level to Q2/2018.

3. Wind power plant project based in Thailand, “Lom Ligor”, PPA 8.965 MW (installed capacity of 10 MW) located at Pak Panang district, Nakhon Si Thammarat province, commenced commercial selling of its electricity to the Provincial Electricity Authority since 11th April 2019, and receives electricity rate as base tariff plus adder (adder at the rate of 3.50 THB per unit) for the duration of 10 years. Within this quarter the volume of electricity sales was at 2.5 Million kWh.
4. Realized share of profit from investment in associated companies in the amount of THB 62 million; an increase from the same period of the previous year by THB 74 million, due to the following factors:
 - Share of loss from the wind power plant in the Philippines in the amount of THB 12 million, comprised of share of loss from operation THB 4 million and amortization in right in agreement to sell electricity in amount of THB 8 million. Share of profit from operation declined from the same period of the previous year by THB 6 million, mainly due to the wind speed which slightly soften from the previous year, combined with the interest rate increment according to the Philippines government’s policy. However, the associated company has already negotiated the interest rate to be back to the similar level as before.
 - Share of profit from the geothermal power plant in Indonesia was THB 74 million, attributed to share of profit from operation THB 170 million, and amortization in right in agreement to sell electricity THB 95 million. Share of profit from operation declined by THB 43 million, as in Q2/2019 some sectors of the geothermal power plant project had undergone maintenance. However, net share of profit improved due to Q2/2018 recorded full amortization of deferred issuance cost resulted from refinancing activity in the amount of THB 123 million.
5. Power plant business recorded a gain from foreign exchange at THB 31 million. Mainly due to Thai Baht appreciating against foreign currencies, thus the value of the foreign currency debt is lowered when converted back to Thai Baht.

Performance comparison between Q2/2019 and Q1/2019 power plant business recorded an increase in revenue by THB 40 million, but EBITDA decreased by THB 15 million, with the following factor affecting operation as follow:

1. Solar power plant projects in Thailand recorded increased electricity sales 2% QoQ compared to the previous quarter. Throughout the quarter average irradiation hours of every project improved, and rainfall decreased, resulting in a continuously clear sky.
2. Solar power plant projects in Japan recorded an increase of electricity sales by 31% QoQ in alignment with seasonal factors, of which during Q2/2019 is a period when the sky is clear with little presence of clouds. Consequently, yielding improved irradiation, whereas Q1/2019 was still in the winter season and overcast sky.
3. Wind power plant project based in Thailand, “Lom Ligor”, recorded electricity sales of 2.5 Million kWh from commencement of commercial selling of its electricity since 11th April 2019.
4. Share of profit from investments in associated companies lowered than the previous quarter by THB 59 million due to the following factors:



- Share of profit from the wind power plant business in the Philippines declined by THB 41 million, attributed to a decline in share of profit from operations, mainly due to seasonal influence. Q2/2019 is off-monsoon season, reducing wind speed, whereas in Q1/2019 would encounter monsoons and depressions.
 - Share of profit from the geothermal power plant business in Indonesia declined THB 18 million, as some parts of the geothermal power plant project underwent maintenance.
5. Power plant business recorded a decrease in selling, general and administrative expenses by 8% QoQ, the expenses went back to its normal level, after the previous quarter recorded additional personnel expenses incurred in the previous year.

4.) Bio-Based Product Business

As for the performance of the Bio-based Product Business Group in Q2/2019 EBITDA was recorded in total THB 136 million.

Biodiesel Business

Biodiesel Business Performance	Q2/2018	Q1/2019	Q2/2019	YoY	QoQ	6M2018	6M2019	YoY
B100 Production Volume (Million Litre)	61.47	67.26	74.11	21%	10%	132.30	141.37	7%
B100 Sales Volume (Million Litre)	68.28	71.15	82.07	20%	15%	141.02	153.22	9%
Revenue (Million Baht)	1,608	1,275	1,453	-10%	14%	3,325	2,728	-18%
Gross Profit (Million Baht)	94	59	59	-37%	-1%	224	118	-47%
Average Sales Price (Source: Department of Energy Business, Ministry of Energy)								
B100 (Baht/Litre)	25.02	20.79	21.20	-15%	2%	24.80	20.98	-15%
Crude Palm Oil (CPO) (Baht/Kg.)	20.88	16.04	17.26	-17%	8%	20.60	16.61	-19%

Q2/2019 performance of Bio-Based Business Group performance compared to Q1/2019, the Biodiesel Production and Distribution Business recorded revenue of THB 1,453 million, declined by THB 154 million, with the following factors affecting performance:

1. B100 product production volume in Q2/2019 was at 74.11 million liters, an increase of 21% YoY, corresponding to the increased sales volume. This was a result of the Ministry of Energy's approach towards assisting palm oil farmers by promoting the use of B20 Diesel which is a type of high speed Diesel with a 20% mixture of Biodiesel fuel suitable for use with pick-up trucks, heavy transport vehicles, and mass transit vehicles. Furthermore, the B20s are also subsidized to make its selling price THB 5 lower than normal Diesel until 30 September 2019.
2. Average selling price for B100 products decreased from the same period of the previous year, which correlates with the trajectory of the declining price of crude palm oil, which the price situation remains stable in the low levels, due to a rising influx of oil palm into the market.



- Gross profit in Q2/2019 recorded at THB 59 million, decreased by 37% YoY. Even though the volume of B100 product sold adjusted upward by 20% YoY, however the increase in the country's aggregate production has led to B100 product price competition. Moreover, price of glycerin in the global market declined when compared to the same period of the previous year, as a result of Indonesia, the biggest glycerin exporter in Asia and second in the world, had enacted its policy that transitioned B20 diesel usage to B25 diesel during this year. Hence, this has led to increased production of B100 products, resulting in a torrent of crude glycerin reaching the market, respectively, effectively reducing gross profit.

Performance compared between Q2/2019 and Q1/2019, the biodiesel business recorded an increased revenue of THB 178 million due to the following factors that affected operations as follow:

- B100 production volume in Q2/2019 rose by 10% compared to the previous quarter, corresponding to the increase in B100 product sales volume, due to government policy promoting B20 diesel usage which was greatly sought after by the transportation sector; leading to Bangchak's B20 diesel volume to continuously grow.
- Average selling price of B100 products adjusted upward from the previous quarter in tandem with crude palm oil price, which is a result of measures to adjust domestic palm oil equilibrium. The cabinet resolved to have the Electricity Generating Authority of Thailand (EGAT) to buy and utilize crude palm oil as fuel for generating electricity. Moreover, the Ministry of Energy also promoted B20 diesel use, lowering the volume of domestic palm oil stock, therefore impacted the price of domestic crude palm oil to rise from the previous quarter.
- Gross profit was comparable to the previous quarter. With increases in B100 volume sold, however, crude glycerin selling price contracted during the quarter, which is consistent with the increase in crude glycerin volume entering the market.

Ethanol Business

Ethanol Business Performance	Q2/2018	Q1/2019	Q2/2019	YoY	QoQ	6M2018	6M2019	YoY
Production Volume (Million Litre)								
Bangchak Bioethanol (Chachoengsao)(BBE)	8.76	11.60	9.25	6%	-20%	20.39	20.85	2%
KSL Green Innovation (KGI)	30.55	42.37	34.44	13%	-19%	60.62	76.81	27%
Ethanol Sales Volume (Million Litre)	35.44	47.89	45.84	29%	-4%	70.38	93.73	33%
Revenue (Million Baht)	836	1,071	1,002	20%	-6%	1,702	2,072	22%
Gross Profit (Million Baht)	71	106	74	5%	-30%	214	180	-16%
Average Sales Price (Source: Department of Energy Business, Ministry of Energy)								
Ethanol (Baht / Litre)	23.59	22.33	21.96	-7%	-2%	24.05	22.15	-8%

Performance comparison between Q2/2019 and Q2/2018, ethanol business earned THB 1,002 million in revenue, an increase of THB 166 million, with factors that affected operations as follow:



1. Total production volume of ethanol product was at 43.69 million liters, an increase of 11% YoY, attributed to KSL Green Innovation Plc.'s ethanol production at 34.44 million liters, an increase of 13% YoY, from the molasses-based ethanol production plant at Bo Ploy district, Kanchanaburi province enhancing its production capacity from 200,000 liters per day to 300,000 liters per day. Also, Bangchak Bioethanol (Chachoengsao) Co., Ltd. (BBE) produced 9.25 million liters of ethanol, an increase of 6% YoY, due to improvements made to production process efficiency.
2. Total ethanol product sales volume was 45.84 million liters, an increase of 29% YoY, mainly attributed to increased sales volume from KSL Green Innovation Plc. (KGI), due to the expansion of their production capacity, the company is capable of support increased Thai ethanol demands, which coincides with the trend of Gasohol usage that is expanding with every year.
3. Average selling price of ethanol products declined from the same period of the previous year, due to domestic ethanol stock remaining at a high level. However, due to increased sales volumes, sale revenue for the quarter was increased by 20%, YoY.
4. Gross profit of the ethanol business rose 5%, YoY. This is due to the total sales volume of ethanol adjusting up by 29% from the same period of the previous year, in respect to molasses-based ethanol plant at Bo Ploy district increasing its production capacity, amidst average ethanol selling price shrinkage.

Performance comparison between Q2/2019 and Q1/2019, ethanol business recorded a revenue decrease by THB 69 million, due to the following factors that affected operations as follow:

1. Total production volume of ethanol product lowered by 19%, QoQ, as Bangchak Bioethanol (Chachoengsao) Co., Ltd. recorded a lower ethanol production by 20%, compared to the previous quarter, due to its turnaround maintenance scheduled from 2nd to 30th May 2019. As for KSL Green Innnovation Plc. production lowered by 19% due to the plants located in Bo Ploy district, Kanchanaburi province and Nam Pong district, Khon Kaen province had both undergone scheduled maintenance in April 2019.
2. Total ethanol sales volume lowered by 4% QoQ, a result of the turnaround maintenance undergone by Bangchak Bioethanol (Chachoengsao) Co., Ltd.
3. Average selling price of ethanol products in this quarter slightly declined by 2% from the previous quarter, attributed to high levels of domestic ethanol stock, additionally, ethanol product sales volumes declined, resulting in this quarter's sales revenue to be lower by 6% QoQ.
4. Gross profit from ethanol business declined 30% from the previous quarter, due to the downward adjustment of the average selling price of ethanol products. Furthermore, ethanol product sales volume lowered due to the turnaround maintenances taking pace during this quarter. However, Bangchak Bioethanol (Chachoengsao) Co., Ltd. had managed to lower its raw material cost which is estimated to improve the performance of the second half of this year.

5.) Natural Resources Business Group

Petroleum Production and Exploration	Q2/2018	Q1/2019	Q2/2019	YoY	QoQ
EBITDA (THB Million)	36	(23)	145	298%	726%
Production Volume – Net to OKEA (KBD)					
Draugen Field	N/A	8.64	9.24	N/A	7%
Gjøa Field	N/A	10.49	10.50	N/A	0.1%
Realized Liquids price (USD/BBL)	N/A	56.20	60.70	N/A	8%
Realized Gas price (USD/m ³)	N/A	0.24	0.15	N/A	-38%
Share of profit from OKEA (THB Million)	N/A	8	102	N/A	N/A

On 18th June 2019, OKEA offered its share to the initial public offering (IPO) by issuing 15,000,000 shares in the Norwegian Stock Exchange (Oslo Stock Exchange) with the price of NOK 21 per share out of which BCPR acquired 2,891,574 shares at an offering price. After the issuance of the new shares, OKEA has a registered share and issued and paid-up shares totaling 101,839,050 shares. On the IPO date BCPR also purchased an additional 4,171,570 ordinary shares under conditions which were part of the initial investment agreement at NOK 0.1 per share. BCPR paid for new share acquisition total of NOK 61 million (equivalent to Baht 226 million). As a result, BCPR held 47,610,894 ordinary shares, equivalent to 46.75% of the share capital of OKEA.

In addition to this IPO, Greenshoe option was exercised. IPO underwriter borrowed shares from existing shareholders, which BCPR portion was 1,500,000 shares, to offer to public and the underwriter will consider repurchase shares from the Stock Exchange to stabilize the shares price of OKEA after the IPO. At the end of the stabilization period on 17th July 2019, the underwriter redelivered 1,366,669 shares back to BCPR, resulting in BCPR to hold 47,477,563 shares or equivalent to 46.62% of register share capital of OKEA.

Performance comparison between Q2/2019 and Q2/2018, natural resources business group recorded EBITDA of THB 145 million, an increase of THB 109 million, due to the following operating factors:

- During this quarter, share of profit from investments in associated company, OKEA was recorded at THB 102 million, which can be segregated into:
 - Share of profit from operations at THB 30 million from the Draugen Field and the Gjøa Field with average production rates of 20.7 and 87.5 thousand barrels per day, respectively (net to OKEA 9.24 and 10.5 thousand barrels per day, respectively). During this quarter, sales of crude oil from the Draugen Field consist of 2 cargoes, and there was an impairment loss on Technical Goodwill at the Gjøa Field, which according to Norwegian operations guideline, impairment test of Technical Goodwill on investments in the Draugen Field and Gjøa Field must be done every quarter.
 - Share of profit declined THB 22 million from the revision of fair value of purchase price allocation (PPA) of assets and liabilities of the Gjøa Field.
 - Share of profit rose from the gain from changes in investment interest at THB 94 million from the IPO and the purchase of additional ordinary share under conditions which were part of the initial investment agreement in OKEA.



2. Natural Resources Business Group recorded a gain on foreign exchange forward contract at THB 82 million. Whereas in Q2/2018 no foreign exchange contracts were made.

Performance comparison between Q2/2019 and Q1/2019, Natural Resources Business Group recorded increased EBITDA of THB 169 million, mainly due to the following factors:

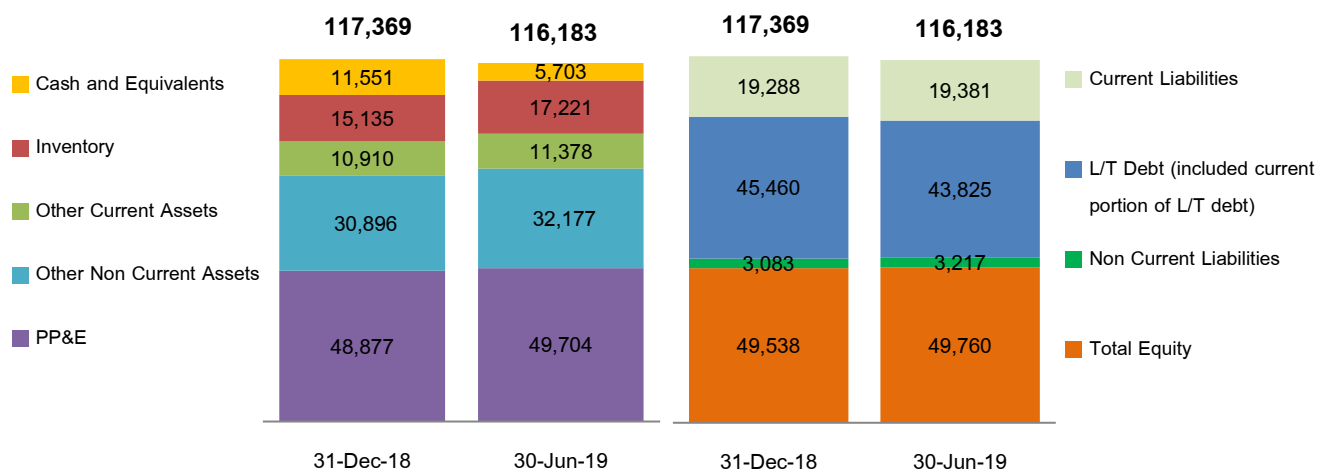
1. When compared to the previous quarter, share of profit from investments in OKEA rose by THB 95 million from the changes in investment interest at THB 94 million, share of profit from operations rose by THB 22 million, as the production volume of the Draugen Field increased by 7%, QoQ, leading to the sales of 2 cargoes of crude oil from the Draugen Field; higher from the previous quarter which had sold 1 cargo. However, there was an impairment loss of Technical Goodwill on Gjøa Field increased from the previous quarter.
2. Natural Resources Business Group recorded gain from foreign currency forward contract at THB 82 million, whereas in the previous quarter the gain was recorded THB 11 million.



Statement of Financial Position

Financial Position of the Company and its subsidiaries (Consolidated)

Unit: THB million



Assets

As of 30th June 2019, the Company and its subsidiaries recorded Total Assets in the amount of THB 116,183 million, a decrease of THB 1,185 million compared to 31st December 2018, changes in assets are as follow:

- Cash and cash equivalents decreased by THB 5,847 million. Details are stated in analysis of the Cash Flow Statement.
- Inventory increased by THB 2,086 million, mainly from the Company increasing its oil products inventory in preparation for the Hydrocracking unit maintenance at the beginning of 3rd quarter.
- Other current assets increased THB 468 million, mainly from:
 - Trade account receivables increased by THB 831 million, mainly attributed to BCPT's trade account receivables, due to its higher trading transaction, both in terms of volume and new trade partners. Moreover, the Company's jet fuel sales volume rose in June 2019, when compared to December 2018.
 - Oil fund subsidy receivables decreased by THB 447 million, majority of which was received from the government repaying its long-held outstanding oil fund subsidies as of the end of the year.
- Other non-current assets rose by THB 1,282 million, mainly due to:
 - Investment in associated companies and joint ventures increased by THB 223 million, primarily from (1) BCPR additional investment of THB 226 million, after OKEA's initial public offering (IPO) of its ordinary shares, and BCPR has purchased additional ordinary shares under conditions which were part of the initial investment agreement, along with the purchase of IPO shares. (2) Realized share



of profit at THB 314 million. (3) Decreased from effects of exchange differences on translating financial statement and others at THB 317 million.

- Long term loan to related parties increased by THB 702 million, mostly from long term loan to LAC, according to contractual obligations.
 - Other long term investments increased by THB 413 million, primarily from the Company's subsidiaries adjusting net fair value on available-for-sale investment (LAC) rose by THB 298 million (Fair value on available-for-sale investment (LAC) rose THB 384 million, and Effect of movement in exchange rate decreased by THB 86 million). LAC share price increased from CAD 4.31 as of 31st December 2018 to CAD 5.28 as of 30th June 2019. There were additional investments in 2 start-up businesses valued at USD 4 million, or approximately THB 126 million.
5. Property, plant and equipment net increased by THB 827 million, investment was mostly made in Efficiency, Energy, and Environment Enhancement Project (3E) in the amount of THB 1,313 million, power plant business (BCPG) both in Japan and Thailand of THB 1,189 million, Bio-based products business of the BBGI group's additional investment of THB 166 million to expand the ethanol production plant's capacity and the construction of its refined glycerin plant. Meanwhile, depreciation for the period was recorded at THB 2,208 million.

Liabilities

As of 30th June 2019, the Company and its subsidiaries has Total Liabilities of THB 66,423 million, a decrease of THB 1,408 million, changes in liabilities are as follow:

1. Current Liabilities increased by THB 94 million, mainly contributed by:
 - Short term loan from financial institution reduced by THB 365 million, primarily from the Company's portion decreased by THB 168 million (an effect of foreign currency exchange rate), and BBGI Plc. portion decreased by THB 197 million.
 - Trade Accounts Payable increased by THB 2,231 million, predominantly from the crude payment which was paid early in December 2018 since the payment term fell due during the New year holiday, reducing the account payable at year end.
 - Other current liabilities decreased THB 1,051 million, mainly from a reduction in construction expenses payables and accrued expenses.
 - Excise Tax and Oil fund expense payable decreased by THB 802 million, as sales volume of refinery oil products sold in June 2019 was lower than in December 2018.
2. Long term loans from financial institutions and debentures (including current portion of long term debt) decreased by THB 1,635 million, comprised of debenture repayment at maturity by THB 4,000 million, loan repayment by THB 1,144 million, and the Company and its subsidiaries loan drawdown by THB 3,790 million. There was also adjustments for the effects of exchange differences on translating financial statement resulted in a gain of THB 281 million.

3. Provision for retirement benefits and past service cost increased THB 183 million in accordance to the Labor Protection Act, which was amended on the 5th April 2019, to include a requirement that an employee who is terminated after having been employed by the same employer for an uninterrupted period of twenty years or more, receives severance payment of 400 days of wages at the most recent rate.

Equities

As of 30th June 2019, the Company and its subsidiaries' total equity was THB 49,760 million, increased by THB 223 million. The increment was mainly from the net profit for the period of THB 1,070 million, paid dividend by THB 880 million, effects from change in accounting policy resulting in a reduction of retained earnings by THB 54 million, while other components of equity increased by THB 65 million (a result of differences in net fair value change in available-for-sale investment (LAC) which increased by THB 384 million, and decreased from exchange differences on translating financial statement of THB 319 million). Total equity attributable to owners of the parent was THB 42,815 million, and book value per share was THB 31.09.

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

For the first 6 months of 2019, the Company and its subsidiaries had net cash received from operating activities of THB 2,001 million, net cash used in investing activities of THB 4,242 million, net cash used in financing activities of THB 3,378 million, and decrease from the effects of exchange rate conversion on balances held in foreign currencies in the amount of THB 228 million. As a result, net cash and cash equivalents decreased by THB 5,847 million. There was cash in the amount of THB 11,551 million as of 1st January 2019, resulting in remaining cash as of 30th June 2019 to be recorded at THB 5,703 million. Details for each activity are as follow:

Cash Flows (Unit: Million Baht)	30 June 18	30 June 19
Net cash received (used in) operating activities	(1,421)	2,001
Net cash received (used in) investing activities	(3,887)	(4,242)
Net cash received (used in) financing activities	1,708	(3,378)
Effect of exchange rate changes on balances held in foreign currencies	27	(228)
Net increase (decrease) in cash and cash equivalents	(3,573)	(5,847)
Cash and cash equivalents as at 1 January	10,106	11,551
Cash and cash equivalents as at 30 June	6,533	5,703

Details of cash received and used are as follows:

- Net cash received from operational activities in the amount of THB 2,001 million, mainly attributed to:
 - Cash received from operating activities was THB 3,600 million, which was generated from Net Profit of THB 1,070 million, added back Non-Cash Expenses of THB 1,672 million, added back Financial Costs and Tax expense of THB 857 million.
 - Net cash used for operating assets and liabilities of THB 1,298 million, mainly from (1) trade account receivable increased by THB 988 million (2) other receivables decreased by THB 476 million (3) inventory increased by THB 1,406 million (4) trade account payables increased by THB 2,392 million (5) other payables and other liabilities decreased by THB 1,773 million (primarily from a decrease in excise tax and oil fund payables.)
 - Corporate income tax paid was THB 300 million.
- Net Cash used in investing activities of THB 4,242 million, mainly from:
 - Cash paid for investment in associated companies, joint ventures and other investments of THB 353 million, comprising of BCP's additional investment in OKEA by NOK 61 million, or approximately THB 226 million, and additional investment in 2 start-up businesses in the amount of USD 4 million, or approximately THB 126 million.



- Cash paid for investment in Property, Plant and Equipment was THB 3,022 million. Mostly are works in progress on the Efficiency, Energy, and Environment Enhancement Project (3E), power plant business, and bio-based product business.
 - Cash paid for loan to related parties was THB 733 million, mainly comprised of loans to LAC, under contractual obligation.
 - Cash paid for the right to lease and Intangible assets by THB 234 million.
3. Net cash used in financing activities was THB 3,378 million, mainly from:
- Cash paid as financial cost in the amount of THB 968 million.
 - Dividend payment was THB 880 million, comprising of the Company's at THB 688 million, BCPG Plc.'s dividend payment to non-controlling interests in the amount of THB 191 million.
 - Cash received through short term loans from financial institutions decreased by THB 197 million, mainly attributed to BBGI Plc.'s loan draw down of THB 2,551 million, and loan repayment of THB 2,748 million.
 - Cash paid for debenture repayments at maturity THB 4,000 million.
 - Cash received from long term loans from financial institution amounted to THB 3,790 million which is attributed to the Company THB 2,550 million, BCPG Plc.'s THB 815 million, and to BBGI Plc.'s THB 424 million.
 - The Company and its subsidiaries repaid long term loans owed to financial institutions THB 1,144 million.



Financial Ratios

Financial Ratios (Consolidated)

Profitability Ratios (%)	Q2/2018 (Restate)	Q1/2019	Q2/2019	6M2018	6M2019
Gross Profit Margin	8.47%	4.79%	5.35%	8.00%	5.08%
EBITDA Margin	7.32%	4.30%	4.53%	7.08%	4.42%
Net Profit Margin	2.47%	0.87%	1.40%	2.78%	1.14%
Return on Equity ^{1/} (ROE)	10.94%	3.43%	2.41%		
Return on Assets (ROA)	6.52%	3.56%	2.99%		

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

	30 June 18 (Restate)	31 Mar 19	30 June 19
Liquidity Ratios (Times)			
Current Ratio	1.26	1.35	1.59
Quick Ratio	0.52	0.67	0.71
Financial Policy Ratios (Times)			
Interest bearing Debt to Equity	0.89	1.00	0.97
Net Interest bearing Debt to Equity	0.76	0.80	0.85
	Q2/2018 (Restate)	Q1/2019	Q2/2019
DSCR ^{2/} (Times)	3.56	1.56	1.34

2/ DSCR Calculation is not including long term debt prepayment

Note: Q2/2018 financial statement was restated due to adjustments in fair value of capital invested 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 Company / Revenue from sale of goods and rendering of services
▪ Return on Equity (%)	=	Profit attributable to owners of the Company (Yearly) / Total Equity attributable to owners of the Company (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	=	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)

Having the environmental concerns and social responsibilities, 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. The Environmental Cost Accounting report covers refinery business unit, Bangchak and Bang Pa-in Oil distribution Centre.

(Unit: Million Baht)

Environment Management Accounting : EMA	Q2/2018	Q2/2019	Δ
Material Costs of Product Outputs : Crude oil, ethanol, biodiesel, chemical, energy and utilities in production	17,449	27,123	9,674
Material Costs of Non-Product Outputs : Consist of slop and sludge oil, waste water, chemical surplus	76.47	11.01	(65.46)
Waste and Emission Control Costs : Maintenance cost of environmental control equipment and depreciation and other fees	64.87	86.98	22.11
Prevention and Other Environmental Management Costs : Monitoring and measurement cost, environmental management system expenses	3.28	3.52	0.24
Total Expenses	17,594	27,225	9,631
Benefit from by-product and waste recycling (Negative number means revenue)	(1.86)	(5.26)	3.40

Total environmental cost in Q2/2019 increased from Q2/2018 by approximately THB 9,631 million (+55% YoY) mainly due to Material Cost of Product Output which was higher by THB 9,674 million, with respect to the higher average production rate from 66.80 KBD in the same period of previous year to 112.67 KBD in the quarter. However, global crude oil price declined 2% from last year. Material Costs of Non-Product Outputs was lowered by THB 65.46 million, in accordance with the products that were below quality standard decreased.

Waste and Emission Control Costs increased by THB 22.35 million (+33% YoY), primarily from the environmental control equipment depreciation cost which increased THB 26.39 million, as there was procurements of refinery equipment for last year's turnaround maintenance. Moreover, monitoring and measurement cost increased by THB 1.78 million, while waste management cost and management system operational cost decreased by THB 4.35 million, and THB 1.54 million, respectively.

Benefits from by-products and waste recycling inclined by THB 3.40 Million (+183% YoY), mostly due to amount of sellable liquid sulfur which increased.

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.

