

# Bangchak Corporation Public Company Limited

## Management Discussion and Analysis of Business Operation

For the second quarter  
ended 30<sup>th</sup> June, 2017



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# Executive Summary

## Summary of the Company and its subsidiaries' operating result for the 2<sup>nd</sup> quarter ended 30<sup>th</sup> June 2017

EBITDA Structure of the Company and its subsidiaries								
	Q2/2016	Q1/2017	Q2/2017	YoY	QoQ	6M2016	6M2017	YoY
<b>Total Revenue</b>	<b>37,262</b>	<b>43,995</b>	<b>42,828</b>	<b>15%</b>	<b>-3%</b>	<b>67,538</b>	<b>86,823</b>	<b>29%</b>
<b>Accounting EBITDA</b>	<b>4,085</b>	<b>4,075</b>	<b>2,514</b>	<b>-38%</b>	<b>-38%</b>	<b>5,504</b>	<b>6,589</b>	<b>20%</b>
<i>EBITDA Refinery Business<sup>1/</sup></i>	2,531	2,226	916	<b>-64%</b>	<b>-59%</b>	1,886	3,142	<b>67%</b>
<i>EBITDA Marketing Business<sup>2/</sup></i>	882	856	669	<b>-24%</b>	<b>-22%</b>	1,923	1,525	<b>-21%</b>
<i>EBITDA Green Power Business<sup>3/</sup></i>	525	706	789	<b>50%</b>	<b>12%</b>	1,379	1,494	<b>8%</b>
<i>EBITDA Bio-Based Product Business<sup>4/</sup></i>	113	179	59	<b>-48%</b>	<b>-67%</b>	259	238	<b>-8%</b>
<i>EBITDA Resource Business<sup>5/</sup></i>	59	133	93	<b>58%</b>	<b>-30%</b>	81	226	<b>181%</b>
<i>EBITDA Others<sup>6/</sup></i>	(25)	(25)	(12)	<b>54%</b>	<b>53%</b>	(25)	(37)	<b>-48%</b>
<b>Profit attributable to owners of the Company</b>	<b>2,412</b>	<b>2,084</b>	<b>993</b>	<b>-59%</b>	<b>-52%</b>	<b>2,681</b>	<b>3,076</b>	<b>15%</b>
<b>Basic earnings per share (Baht)</b>	<b>1.75</b>	<b>1.51</b>	<b>0.72</b>			<b>1.95</b>	<b>2.23</b>	

Note: 1/ EBITDA from Refinery Business of the Company, BCP Trading Pte. Ltd. and Bongkot Marine Services Co., Ltd.

2/ EBITDA from Marketing Business of The Company, Bangchak Greenet Co.,Ltd., and Bangchak Retail Co., Ltd.

3/ EBITDA from Power Plant Business of BCPG Plc. and its subsidiaries

4/ EBITDA from Bangchak Biofuel Co., Ltd., Bangchak Bioethanol (Chachoengsao) Co., Ltd., Ubon Bio Ethanol Co, Ltd., and BBP Holding Co., Ltd.

5/ EBITDA from Nido Petroleum Limited

6/ EBITDA from BCP Energy International Pte, Ltd., BCP Innovation Pte. Ltd., and others

**The operating result of the first six months of 2017**, The Bangchak Corporation Public Company Limited (the company) and its subsidiaries recorded revenue from sale of goods and rendering of services of THB 86,823 million (+29% YoY), with Net Profit of THB 3,344 million which was **net profit attributable to owners of the Company of THB 3,076 million** (+15% YoY), or **earning per shares of 2.23 THB**.

**For Q2/2017**, the company and its subsidiaries recorded revenue from sale of goods and rendering of services of THB 42,828 million (+15% YoY, -3% QoQ), with Net Profit of THB 1,145 million which was **net profit attributable to owners of the parent of THB 993 million** (-59% YoY, -52% QoQ), or **earning per shares of 0.72 THB**

The company and its subsidiaries recorded **total EBITDA of THB 2,514 million** (-38% YoY, -38% QoQ), the performance softened, especially for Refinery Business, which was affected by the continuously lowering crude oil price throughout the quarter, leading to an inventory loss. However, despite the refinery Hydrogen Production Unit and Hydrocracking Unit temporary shut down, refinery's average crude run remained high at 114.02 KBD. Marketing Business was able to increase market share and maintain its 2<sup>nd</sup> position in the market. Power Plant Business realized additional profit from Solar and Wind Power Plants. As for Biofuel Business, performance declined from crude palm oil price drop which led to inventory loss. In the quarter, the company and its subsidiaries realized inventory loss of THB 1,096 million, and gain from foreign exchange of THB 92 million from THB appreciation, but realized a few loss from Yen depreciation. The company also received income tax refund from 2007 as revenue of THB 226 million.

## Refinery Business

**Refinery Business** average crude run was 114.02 KBD (+2% YoY, +4% QoQ), the exceptionally high gross refinery margin in April was the support which pushed the refinery crude run to a high level, although the Hydrogen Production Unit and Hydrocracking Unit underwent temporarily shut down between May and June. For this quarter, the gross refinery margin was 6.38 USD/BBL (+0.11 USD/BBL YoY, -0.69 USD/BBL QoQ), even though the gross refinery margin was adversely affected by the shutdown which mentioned before, but GRM was benefited from the narrowing Dated Brent / Dubai spread (DTD/DB), and the improvement of Fuel Oil / Dubai (FO/DB) crack spread. However, due to the crude price drop in this quarter, there was an inventory loss of THB 1,010 million, leading to an EBITDA of THB 916 million (-64% YoY, -59% QoQ).

## Marketing Business

**Marketing Business** sales volume was 1,504 million liters (+4% YoY, -2% QoQ), especially increased in retail market, due to the business's policy to focus on service station throughput, and from the expansion of service stations. Also, within this quarter, diesel sales volume to agriculture sector increased. Aside from this, the company launched Hi Premium Diesel S, an innovative premium quality diesel in response to consumers with needs for high quality diesel fuel. The company was able to increase its market share and maintain 2<sup>nd</sup> position in the market consistently.

Total marketing margin was at 0.83 THB/Litre, lowered by 5% YoY, a result from lubricant product's rising cost compared to their stagnant price, combined with slight dips in retail marketing margin. Marketing margin decreased 1% QoQ, from industrial marketing margin. Aside from the aforementioned, marketing business has higher promotional expenses and expenses for the expansion of Non-oil businesses, leading to an EBITDA of THB 669 million (-24% YoY, -22% QoQ)

## Power Plant Business

**Power plant business** which is currently under BCPG Plc., a subsidiary of the company, recorded a revenue of THB 890 million (+17% YoY, +11% QoQ), an increase from the previous year due to the gradual commencement of Solar Power Plants both in Thailand and Japan. Electricity sales in this quarter was 82.48 million kWh (+21% YoY, +14% QoQ). In Thailand, electricity sales increased from the commencement of the Solar Co-op projects, while average irradiated hours maintained the same level as the previous year. In Japan, electricity sales increased from the full quarter revenue realization of Nikaho and Nagi project, and increase in average irradiation hours.

Aside from this, Power Plant business realized a share of profit from Wind Power Plant business, after BCPG acquired Wind Cooperatif U.A. which holds ownership in Wind Power Plant business in the Philippines. Other income was recorded from reversal of provisions from SunEdison acquisition in Japan in 2016, resulting in an EBITDA of THB 789 million (+50% YoY, +12% QoQ).



## Bio-based Product Business

**Bio-based Product Business** recorded a revenue of THB 1,874 million (-16% YoY, -1% QoQ), attributed to Biodiesel Business of THB 1,662 million and the Ethanol Fuel Business of THB 213 million. **Biodiesel Business** (Bangchak Biofuel Co., Ltd.) revenue soften due to a decline in average B100 product selling price; a result of the crude palm oil price drop. Sales volume rose from the previous quarter, from the government's policy to increase B100 portion in Diesel product from 5% to 7%, leading to an increase of Biofuel Business average production rate to 669 thousand litres per day, or 83% utilization rate. However, with crude palm oil price continuously declining, the business recorded an Inventory Loss of THB 80 million. Further, the Selling, General and Administrative expense increased from the same period of the previous year, from the commencement of the 2<sup>nd</sup> Biodiesel plant operations, leading to a recorded EBITDA of THB 8 million (-93% YoY, -92% QoQ).

For **Ethanol Fuel Business**, Bangchak Bioethanol (Chachoengsao) Co., Ltd. underwent its yearly maintenance, resulting in its lower average production rate to 92 thousand litres per day or 61% utilization rate; sales volume was recorded at 8.6 million litres (-20% QoQ); the Fuel Ethanol Business EBITDA is THB 41 million (-29% QoQ).

In June 2017, the company has informed the Stock Exchange of Thailand of the changes in shareholding structure of Bio-based Product business, and reported the Amalgamation between BBP Holding Co., Ltd. (a subsidiary of the company) and KSLGI Co., Ltd. (a subsidiary of Khon Kaen Sugar Industry Plc.) in July 2017.

## Exploration and Production Business

**Exploration and Production Business** recorded sales revenue of THB 387 million (+30% YoY, -3% QoQ), and sales volume of 205,553 barrels (-48% YoY, +1% QoQ), selling price in this quarter decreased following the decline of crude price, Galoc Oil Field crude production site has an average production of 4,079 barrels per day (2,279 barrels per day net to Nido), which decreased according to the Natural-Degradation Production Curve. This led the Exploration and Production Business to record an EBITDA of THB 93 million (+58% YoY, -30% QoQ).

BCP Energy International Pte, Ltd., a subsidiary of the company, has purchased the remaining shares of Nido from its minor shareholders, leading to BCP Energy International Pte, Ltd.'s shareholding in Nido to increase to 100%. Nido delisted its ordinary shares from the Australian Stock exchange in June 2017.

# Statement of Income

Consolidated Statement of Income	Q2/2016 (Restated)	Q1/2017	Q2/2017	YoY	QoQ	6M2016	6M2017	YoY
Revenue from sale of goods and rendering of services	37,262	43,995	42,828	15%	-3%	67,538	86,823	29%
Cost of sale of goods and rendering of services	(32,992)	(39,969)	(40,465)	23%	1%	(62,325)	(80,434)	29%
<b>Gross Profit</b>	<b>4,270</b>	<b>4,026</b>	<b>2,363</b>	<b>-45%</b>	<b>-41%</b>	<b>5,213</b>	<b>6,389</b>	<b>23%</b>
Interest income and dividend income	45	55	44	-2%	-20%	86	99	15%
Other income	67	170	236	254%	39%	151	406	168%
Selling and administrative expenses	(1,433)	(1,441)	(1,648)	15%	14%	(2,645)	(3,089)	17%
Gain (loss) from crude and product oil price hedging contract	(0)	1	233	N/A	N/A	163	234	44%
Gain (loss) from foreign currency forward contracts	2	37	(19)	N/A	-152%	58	18	-70%
Gain (loss) on foreign exchange	250	271	92	-63%	-66%	335	363	9%
Reversal of allowance for gain/(loss) from impairment of assets	0	(101)	19	N/A	-118%	2	(82)	N/A
Share of profit (loss) of associate	(6)	18	54	N/A	206%	7	72	963%
Gain (loss) from purchase price negotiation	-	-	-	N/A	N/A	227	-	-100%
<b>Profit before finance costs and income tax expense</b>	<b>3,195</b>	<b>3,035</b>	<b>1,375</b>	<b>-57%</b>	<b>-55%</b>	<b>3,596</b>	<b>4,409</b>	<b>23%</b>
Finance costs	(327)	(355)	(339)	4%	-5%	(699)	(693)	-1%
<b>Profit/(loss) before income tax expense</b>	<b>2,868</b>	<b>2,680</b>	<b>1,036</b>	<b>-64%</b>	<b>-61%</b>	<b>2,897</b>	<b>3,716</b>	<b>28%</b>
Income tax (expense) credit	(458)	(482)	109	-124%	-123%	(290)	(372)	28%
<b>Profit for the period</b>	<b>2,410</b>	<b>2,198</b>	<b>1,145</b>	<b>-52%</b>	<b>-48%</b>	<b>2,607</b>	<b>3,344</b>	<b>28%</b>
Owners of the Company	2,412	2,084	993	-59%	-52%	2,681	3,076	15%
Non-controlling interests	(3)	114	153	N/A	34%	(75)	267	458%
<b>Earnings per share (Baht per Share)</b>	<b>1.75</b>	<b>1.51</b>	<b>0.72</b>	<b>-59%</b>	<b>-52%</b>	<b>1.95</b>	<b>2.23</b>	<b>14%</b>

Q2/2017 performance of the company and its subsidiaries recorded a Net Profit attributed to owners of the company THB 993 million, a decrease of THB 1,419 million (-59% YoY) when compared to Q2/2016, and a decrease of THB 1,091 million (-52% QoQ) compared to Q1/2017, mainly due to the following reasons:

1. Total revenue from sale of goods and rendering of services was THB 42,828 million, an increase of 15% YoY, mainly rose from petroleum related business; due to finished product price increase that coincide with the rise of global crude oil price, and total sales volume increased by 5%. Also, the company received higher revenue from the power plant business. However, compared to Q1/2017, revenue decreased by 3% QoQ, mainly from the decline of finished product's average price.
2. Gross Profit was recorded at THB 2,363 million a decrease of 45% YoY and 41% QoQ, primarily due to the total GRM which soften to 4.18 USD/BBL (Q2/2016 8.79 USD/BBL, Q1/2017 7.96 USD/BBL). In this quarter,



the refinery was adversely affected by an Inventory Loss of THB 1,010 million. While in Q2/2016 and Q1/2017, there was an Inventory Gain of THB 905 million and THB 299 million, respectively. Biofuel Business suffered a decline in gross profit from the continuous decline of Crude Palm Oil price, leading to the price of the B100 product to decline as well, led to Biofuel Business's Inventory Loss THB 80 million.

3. Other Income was recorded at THB 236 million, an increase of 254% YoY and 39% QoQ, mostly attributed to BCPG realizing profit from the reversal of provisions from SunEdison acquisition in Japan at THB 140 million, and the company received compensation from oil contamination of THB 50 million. However, the company recorded a loss from selling MFC investment securities of THB 17.9 million.
4. Selling, general and administrative expenses was recorded at THB 1,648 million, an increase of 15% YoY, and 14% QoQ. The increase is mainly due to Human Resources related expense, maintenance expense of the Hydrogen Production Unit, Marketing Business's new product promotion expense and Non-Oil expansion expense, also a higher depreciation expense from higher investment in assets of every business unit.
5. Losses from foreign currency forward contracts recorded THB 19 million, mainly from USD foreign currency forward contracts made by BCPG, to hedge against from its loan facility, which will be used to invest in the Geothermal Power Plant in Indonesia, but received gains from foreign currency forward contracts for the company and its subsidiaries from the appreciating THB.
6. Gains from foreign exchange was recorded at THB 92 million, from THB appreciation, mostly from foreign exchange gain on trade account payables and USD loan. However, there was a loss from foreign exchange from JPY depreciation.
7. Share of profit from associate company recorded THB 54 million, an increase of THB 60 million YoY and THB 36 million QoQ from BCPG's acquisition in PetroWind Energy that operates Wind Power Plants in the Philippines, realizing an increase in share of profit.
8. Tax expense was credited due to the company receiving income tax refund from 2007 in the amount of THB 226 million.

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

## 1) Refinery Business

### Crude Oil Price Situation

(Unit : USD/BBL)

Crude Oil Price	Q2/2016	Q1/2017	Q2/2017			YoY	QoQ	YoY		
	AVG	AVG	MAX	MIN	AVG	%	%	6M2016	6M2017	%
Dubai (DB)	43.23	53.03	54.65	43.50	49.68	15%	-6%	37.06	51.38	39%
Dated Brent (DTD)	45.59	53.69	54.98	44.28	49.64	9%	-8%	39.81	51.72	30%
DTD/DB	2.36	0.66	2.15	-1.78	-0.04	-102%	-107%	2.75	0.33	-88%

### Crude Oil Price Situation

Average Dubai crude oil price in Q2/2017 when compared to Q2/2016 has adjusted upwards by 6.45 USD/BBL with respect to the policy switch made by OPEC members, from increasing market shares to a joint decision with non OPEC member countries to reduce crude production.

When compared to the previous quarter, average Dubai crude oil price in Q2/2017 decreased by 3.35 USD/BBL, pressured by the high crude reserve levels in the US. US crude oil production has the tendency to rise from the gradual increment of rig counts being used in the US; leading to concerns that supply reduction measures that producers have elected to follow, will not be able to curb market excess supply. On the other hand, Libya and Nigeria, both members of OPEC that did not participate in the supply reduction measure, and has consistently increased their production which led to higher market supply. Also, oil price in Q2/2017 was stressed by the refineries turnaround maintenance, reducing crude demands.

The difference between the Dated Brent and Dubai price decreased by 2.40 USD/BBL when compared to Q2/2016, resulting from the pressure of excess supply of Light Sweet crude in the market; after production of US Shale oil increased.

Compared to the previous quarter, the difference between average Dated Brent and Dubai price decreased by 0.70 USD/BBL. This is due to the pressure from an increase in supply of Light Sweet Crude which adjusted upward from Libya, Nigeria, and the US. Also the supply for Heavy Sour Crude decreased from the efforts of OPEC and non-OPEC members to lower production.





## Crack Spreads Situation

(Unit : USD/BBL)

Crack Spreads	Q2/2016	Q1/2017	Q2/2017			YoY	QoQ	6M2016	6M2017	YoY
	AVG	AVG	MAX	MIN	AVG	%	%			%
UNL95/DB	14.42	14.70	16.57	12.37	14.17	-2%	-4%	16.58	14.44	-13%
IK/DB	11.16	11.29	12.39	9.33	10.78	-3%	-4%	11.42	11.04	-3%
GO/DB	10.53	11.83	13.19	9.86	11.34	8%	-4%	10.10	11.59	15%
FO/DB	-8.74	-3.16	1.15	-4.07	-1.78	80%	44%	-7.03	-2.48	65%

## Crack Spreads Analysis

- Average Mogas/Dubai crack spread (UNL95/DB) in Q2/2017 was 14.17 USD/BBL, decreased by 0.25 USD/BBL when compared to Q2/2016, with respect to the pressures from the softening demands, as the same period of the previous year saw high demand from the low oil price. Also, supply increased due to production adjustments of refineries in Asia which started producing more gasoline products.

When compared to Q1/2017, Mogas/Dubai crack spread (UNL95/DB) decreased by 0.53 USD/BBL. In Q2/2017 the crack spread faced pressure from excess supply; especially from Chinese exports and worries of US gasoline demands after reserves in the US surged in Q2/2017. However, demand in Indonesia and Middle Eastern countries adjusted upwards during the Ramadan month in June 2017, supporting market demands.

- Jet (Kerosene)/Dubai crack spread (IK/DB) in Q2/2017 was on average 10.78 USD/BBL, decreased 0.38 USD/BBL when compared to Q2/2016, resulted from the pressure of increased exports from South Korea and decreased Kerosene demand from India after their government lowered household subsidies to favor LPG adoption.

When compared to Q1/2017, Jet (Kerosene)/Dubai crack spread (IK/DB) decreased by 0.51 USD/BBL, due to the pressure from a decline in kerosene demand for heating oil, after the winter passed, and from supply increase from South Korean exports, who increases Jet fuel production proportion during the winter season, while demand was lower than expected leading to higher export volume. Furthermore, the entire Asia was unable to export Jet fuel to Europe, leading to higher supplies in the region.

- Gasoil/Dubai crack spread (GO/DB) in Q2/2017 was averaged at 11.34 USD/BBL, increased by 0.81 USD/BBL, compared to Q2/2016, with respect to a rise in demand from India after various refineries underwent their production upgrades to produce Diesel product that will coincide with new government regulations enforced in April 2017. Also, various Taiwanese and Singaporean refinery units shut down, lowering these countries' exports. There was also an increase in demand for diesel in China due to the rising sales of trucks and growth of their mining sector.

When compared to Q1/2017, Gasoil/Dubai crack spread (GO/DB) decreased by 0.49 USD/BBL, with pressure from decrease demand after winter season. However, refinery maintenance throughout Q2/2017 led to the region's lower supply.

- Fuel oil / Dubai crack spread (FO/DB) in Q2/2017 was on average -1.78 USD/BBL, increased by 6.96 USD/BBL when compared to Q2/2016, resulting from a decrease in fuel oil supplies due to OPEC's lowered heavy crude export after production limitation were put in place since the past January. While the closure of Japanese refineries

according to the measure to increase Cracking to CDU capacity ratio was enforced since the 1<sup>st</sup> of April, 2017, leading to lowered supplies. Moreover, Russian refineries were upgrading capacity since 2016, lowering their fuel oil production and exports.

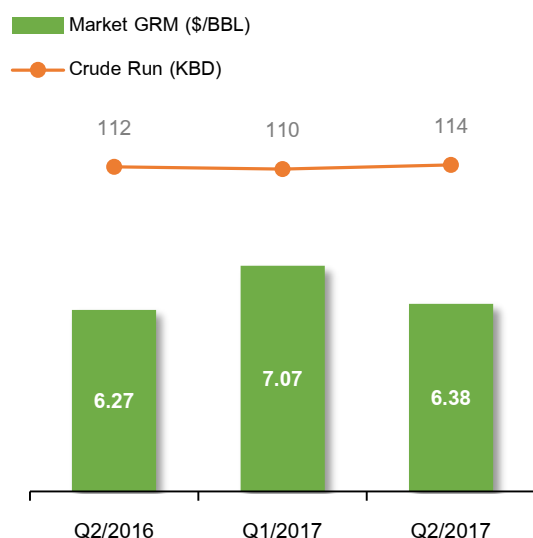
In comparison to Q1/2017 Fuel oil / Dubai crack spread (FO/DB) increased by 1.38 USD/BBL as a result from lower supplies from western countries to Asia, due to emergency shutdowns of refineries in Mexico and Venezuela, simultaneously Russian refinery underwent TAM, supplies in the region decreased from refinery maintenance, and demand for fuel oil for electricity production in the Mediterranean increased.

## Refinery Business Performance

Refinery Business Performance	Q2/2016	Q1/2017	Q2/2017	YoY	QoQ	6M2016	6M2017	YoY
Average Crude Run (KBD)	111.68	109.80	114.02	2%	4%	87.93	111.92	27%
Utilization Rate (%)	93%	92%	95%			73%	93%	
Average FX (THB/USD)	35.45	35.29	34.47			35.64	34.88	
<b>(Unit: Million Baht)</b>								
Market GRM	2,258	2,465	2,280	1%	-7%	3,378	4,745	40%
GRM Hedging	3	10	225	N/A	N/A	175	235	34%
Inventory Gain/ (Loss) <sup>1/</sup>	905	299	(1,010)	-212%	-438%	(437)	(711)	-63%
<b>Total GRM</b>	<b>3,166</b>	<b>2,774</b>	<b>1,495</b>	<b>-53%</b>	<b>-46%</b>	<b>3,116</b>	<b>4,269</b>	<b>37%</b>
<b>EBITDA</b>	<b>2,531</b>	<b>2,226</b>	<b>916</b>	<b>-64%</b>	<b>-59%</b>	<b>1,886</b>	<b>3,142</b>	<b>67%</b>

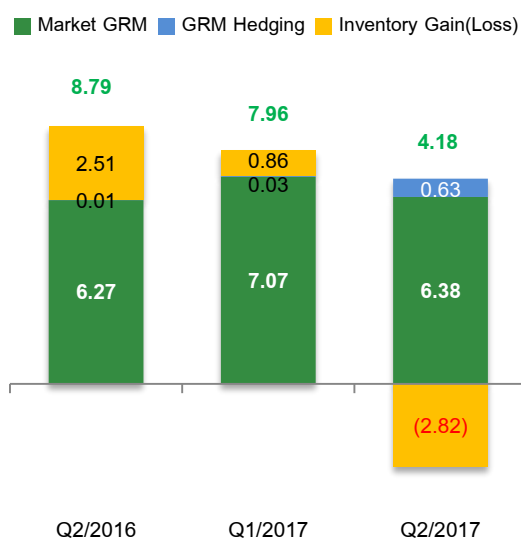
Note: 1/ Inventory Gain/ (Loss) in Q2/2017 was included a reversal of LCM.

### Market GRM and Crude Run



### Total GRM

Unit: USD/BBL



Total Sales Volume in each market category of the Company						(Unit: Million litres)		
Marketing Business	Q2/2016	Q1/2017	Q2/2017	YoY	QoQ	6M2016	6M2017	YoY
Retail	921	932	952	3%	2%	1,808	1,884	4%
Industrial	529	607	552	4%	-9%	1,107	1,160	5%
<b>Total</b>	<b>1,450</b>	<b>1,539</b>	<b>1,504</b>	<b>4%</b>	<b>-2%</b>	<b>2,915</b>	<b>3,044</b>	<b>4%</b>
Wholesale Business								
Petroleum traders in accordance with section 7	236	185	178	-24%	-4%	288	363	26%
Export	222	203	287	29%	41%	429	490	14%
<b>Total</b>	<b>458</b>	<b>388</b>	<b>465</b>	<b>1%</b>	<b>20%</b>	<b>717</b>	<b>853</b>	<b>19%</b>
<b>Total Sales Volume</b>	<b>1,908</b>	<b>1,928</b>	<b>1,969</b>	<b>3%</b>	<b>2%</b>	<b>3,632</b>	<b>3,897</b>	<b>7%</b>

Note: Total sales volume figures excluding the swap amount between petroleum traders in accordance with section 7 and the sales volume of crude

Q2/2017 when compared to Q2/2016, Bangchak refinery average crude run was recorded at 114.20 KBD or 95% utilization rate. Crude run was still considerably high despite the Hydrogen Production Unit and Hydrocracking Unit temporary shutdown during the quarter, from an impressive gross refinery margin in April which supported the refinery's production at a higher level.

Gross refinery margin increased by THB 22 Million (+1%) when compared to the same period of the previous year, as a result of an upward adjustment of crack spread between various finished products and crude oil, especially the Gas oil/Dubai crack spread which rose from the increase in demand from India. Also, gasoil supply was lowered due to problems with refinery units of some Taiwanese and Singaporean refineries. This occurred in concurrent with an increase in Fuel oil/Dubai crack spread from the decrease of fuel oil supply, from the lowered production and exports of heavy crude from OPEC members and gradual shutdown of Japanese refineries following the measures to increase Cracking to CDU capacity ratio. Gross refinery margin was also supported by the declining crude cost benefiting from the Dated Brent/Dubai crack spread in the quarter averaging at -0.04 USD/BBL, while in Q2/2016 saw an average of 2.36 USD/BBL leading to margin per unit of finished product moving upward.

Compared to Q1/2017, the refinery's average crude run increased by 4% from the previous quarter. At the same time, gross refinery margin decreased by THB 185 Million (-7%) due to the crack spread between finished products and crude oil mostly narrowed in. Mogas/Dubai crack spread endured pressure from increased supplies from China. Kerosene/Dubai crack spread was also pressured by the lower demand for kerosene as heating source since the end of winter season, and an increase supply in the market from South Korean exports. The Gasoil/Dubai's demand lowered after winter and refinery maintenance during the quarter. The combination of events resulted in the gross refinery margin slightly decreased from the previous quarter.

Crude oil price in Q2/2017 was volatile and drastically decreased in the latter part of the quarter, leading to some part of the cost of crude refined in Q2/2017 still reflect the crude cost of Q1/2017, resulting in inventory loss for the quarter in the amount of THB 1,010 million (included LCM THB 7 million). However, there was a gain from crude and finished product hedging contract of THB 225 million, led to the total gross refinery margin of THB 1,495 million and an EBITDA of THB 916 million (with contribution from the oil trading business of THB 9 million), decreased by THB 1,615 million (-64%) YoY and decreased by THB 1,310 million (-59%) QoQ.

## 2) Marketing Business

Marketing Business								
Sales Volume (Million Litre)	Q2/2016	Q1/2017	Q2/2017	YoY	QoQ	6M2016	6M2017	YoY
Retail (Service Stations)	921	932	952	3%	2%	1,808	1,884	4%
Industrial	529	607	552	4%	-9%	1,107	1,160	5%
<b>Total</b>	<b>1,450</b>	<b>1,539</b>	<b>1,504</b>	<b>4%</b>	<b>-2%</b>	<b>2,915</b>	<b>3,044</b>	<b>4%</b>
Sales volume in each product category (Million Litre)								
LPG	21	14	15	-26%	13%	47	29	-38%
Gasoline	10	12	15	47%	28%	20	27	38%
Gasohol	412	400	420	2%	5%	811	820	1%
Jet Fuel	211	244	188	-11%	-23%	410	432	5%
Diesel	745	813	819	10%	1%	1,527	1,632	7%
Fuel Oil and Others	52	57	46	-11%	-20%	100	104	3%
<b>Total</b>	<b>1,450</b>	<b>1,539</b>	<b>1,504</b>	<b>4%</b>	<b>-2%</b>	<b>2,915</b>	<b>3,044</b>	<b>4%</b>
<b>Total Marketing Margin (Baht / Litre)</b>	<b>0.87</b>	<b>0.84</b>	<b>0.83</b>	<b>-5%</b>	<b>-1%</b>	<b>0.90</b>	<b>0.83</b>	<b>-8%</b>
<b>EBITDA (Million Baht)</b>	<b>882</b>	<b>856</b>	<b>669</b>	<b>-24%</b>	<b>-22%</b>	<b>1,923</b>	<b>1,525</b>	<b>-21%</b>

Note: Marketing Margin figure was the attributable to the Company only.

Q2/2017 performance when compared to Q2/2016 recorded an increase in total marketing sales volume by 54 million liters (+4%), with an increment from both retail and industrial markets. Retail sales volume rose from an increase in number of service stations, while the industrial sales volume saw an increase from demand in the market returning to normal conditions after the drought in 2016 affected oil usage in the agriculture sector, thus Diesel sales increased by 10% YoY.

Retail sales volume (service station) increased 31 million liters (+3%) from an increase in customer base following the company's main strategy that adopts the policy of sell through service stations as the main priority. The majority of the increase in sales volume came from Gasohol 95 and Diesel product. Within this quarter, the company introduced the Hi Premium Diesel S product, a new innovative premium diesel fuel to cater to vehicles that requires high quality diesel fuel, which will help increase sales volume in the future. The number of service stations as of the end of the quarter was 1,082 stations, with 12 new locations; large size station with modernized aesthetic, along with non-oil businesses to increase service station customers. The company closed down service stations that sold under target and were coming to the end of their contract, and made renovations to existing locations to increase throughput per stations. Overall, the company was able to increase its market share and was able to retain its position as 2<sup>nd</sup> in the market; with cumulative market share from Jan - Jun 2017 at 15.3% which is 15% at same time last year.

Industrial sales volume increased by 23 million liters (+4%) due to the same period of the previous year where Thailand experienced a severe drought which significantly reduced fuel demand in the agriculture sector. However, this year, agricultural fuel demand have rose back to normal level. In the quarter, the company also benefit from diesel supply shortage at the beginning of the quarter.

When compared to Q1/2017, total marketing sales volume decreased 35 million liters (-2%) QoQ, mainly from industrial sales volume which was lower by 55 million litres (-9%), as in Q1/2017 industrial market sales volume spiked

from emergency shutdowns of various domestic refineries, tightening domestic market supply. However, within this quarter, market supplies went back to their normal levels, increasing market competition. Nevertheless, retail sales volume (service stations) increased by 20 million liters (+2%) QoQ, as in Q2/2017, the company still be able to push further its sales volume, and agricultural industry still exhibited high demands, increasing sales figures for the company's cooperative service stations. By these factors, coupled with the travelling season during the long period of holiday in the quarter, and reduction of retail price late in the quarter, the company's retail sales volume expanded.

Marketing margin was at 0.83 Baht per liter, 5% lower YoY, due to lubricant product's rising cost compared to their stagnant price, combined with slight dips in retail marketing margin. When compared QoQ total marketing margin decreased 1%, from industrial marketing margin, as in Q1/2017 marketing margin temporarily soared due to tight supply in the market.

With the company's strategy to pursue more Non-oil business endeavors in order to offer modern consumers more convenience when using service stations; the company has done so with the expansion of Inthanin coffee shops, mini marts, etc.; under the Bangchak Retail Co., Ltd., who is established to manage and increase the retail business's competitiveness. As of the end of Q2/2017 there are 404 Inthanin coffee shops and 18 SPAR mini marts, with goals to continually expand branches.

Marketing business performance in Q2/2017 recorded EBITDA of THB 669 million, a decrease of THB 213 million (-24%) YoY from the lower marketing margin, and declined by THB 187 million (-22%) QoQ, due to lower sales volume and marketing margin. In addition, marketing business faced higher selling, general and administrative expenses from advertisement and promotional expenses, round up with expansion expenses from Non-Oil businesses.

### 3) Green Power Business

Power Plant Business Performance	Q2/2016	Q1/2017	Q2/2017	YoY	QoQ	6M2016	6M2017	YoY
<b>Revenue (Million Baht)</b>	<b>759</b>	<b>798</b>	<b>890</b>	<b>17%</b>	<b>11%</b>	<b>1,542</b>	<b>1,688</b>	<b>9%</b>
<b>Electricity Sales (Million kWh)</b>								
Solar Power Business – Thailand								
Phase 1-3 (130 MW)	65.03	63.34	62.67	-4%	-1%	130.37	126.01	-3%
Cooperative Solar Project (12 MW)	N/A	2.66	5.40	N/A	103%	N/A	8.06	N/A
Solar Power Business – Japan (30 MW)	3.39	6.59	14.41	325%	119%	6.53	20.99	221%
<b>Total Electricity Sales</b>	<b>68.42</b>	<b>72.58</b>	<b>82.48</b>	<b>21%</b>	<b>14%</b>	<b>136.90</b>	<b>155.06</b>	<b>13%</b>
Share of profit (loss) from investment in Wind Power Plant	N/A	N/A	43	N/A	N/A	N/A	43	N/A
<b>EBITDA</b>	<b>525</b>	<b>706</b>	<b>789</b>	<b>50%</b>	<b>12%</b>	<b>1,379</b>	<b>1,494</b>	<b>8%</b>

Business performance comparison between Q2/2017 and Q2/2016 the power plant business saw an increase in revenue by THB 131 million (+17%), this is due to the gradual commercial operation commencements in various Solar Power projects in Thailand and Japan. In Thailand, electricity sales increased 3 Million kWh (+5%) from the Solar Co-op projects (PPA 12 MW) which completed commercial operation commencement of all phases in March 2017,

increasing the total PPA of the solar power plant projects in Thailand to 130 MW from 118 MW, with the average irradiation hours recorded at the same level compared to the same period of the previous year.

The solar power plant business in Japan recorded an increase in electricity sales by 11 Million kWh (+325%) from the commercial operation commencement of the solar power plant projects (Nikaho project and Nagi project, of which PPA 8.8 and 10.5 MW, respectively). Therefore, the total PPA of the projects in Japan increased to 30 MW from the previous 11 MW. Aside from this, the average irradiation hours for every project in Japan adjusted upward from the previous year, as Japan was experiencing the longer than usual snowfall last year. At the same time, Nagi project which has just commenced its commercial operation, is situated in the southern part of Japan with the highest average irradiation hours than other operating projects.

Q2/2016 performance compared to Q1/2017, the power plant business recorded revenue increment by THB 92 million (+11%), mainly due to the realization of higher revenue from solar power plant projects in Thailand and Japan, which have gradually started operations in Q1/2017. In Thailand, electricity sales increased by 2 Million kWh (+3%) due to the full quarter revenue realization of the third Solar Co-op project (PPA 5 MW), combined with the average irradiation hours increased from longer daylight hours in the season despite increase rainfall from the previous quarter.

The solar power plant business in Japan saw an increase in electricity sales by 8 Million kWh (+119%) from an increase in average irradiation hours, as Japan is approaching Summer, leading to lower snowfall, combined with the Nagi commercial project (PPA 10.5 MW) which started its operation in March, realizing its revenue from electricity production for the full quarter.

Additionally in May 2017, BCPG Plc. fulfilled condition precedent in its share purchase agreement with CAIF III Pte. Ltd. and received the shares of CapAsia ASEAN Wind Holdings Cooperatief U.A. (later renamed BCPG Wind Cooperatief U.A.). Resulting in BCPG Wind Cooperatief U.A. having 40 percent stake in the PetroWind Energy Inc. which is operating wind power plants in the Philippines (wind power plant of 36 MW in operation, and 14 MW in development). As such, power plant business recorded share of profit from the wind power plant during January to June 2017 in total of THB 43 Million altogether in this quarter. The wind power plant electricity sales during January to June 2017 was totalling of 54.6 GWh. However, under normal circumstances, May - June is the period that wind speed decreases in the region where the power plant is situated, therefore electricity sales in the period will be at the lowest level in the year.

Nonetheless, in Q2/2017 power plant business reported an increase in other income through gains from the reversal of provisions from SunEdison acquisition in Japan of THB 140 Million. However, there was an increase in selling, general and administrative expenses compared to previous quarter, mainly due to financial advisory expenses. Also, BCPG Plc. recorded an unrealized loss on foreign exchange of THB 64.9 Million, as JPY depreciated from the previous quarter. As a result, power plant business recorded an increase EBITDA of THB 264 Million when compared to the same period of the previous year (+50%, YoY) and an increase of THB 83 Million when compared to the previous quarter (+12%, QoQ)

Furthermore, the extraordinary general shareholder meeting of BCPG Plc. in June 2017 approved the share acquisition of Star Energy Group Holdings Pte. Ltd. (SEGHPL) from Star Energy Investments Ltd. (SEIL) in the amount of 280,000 shares, or one third (33.3%) of the of the total issued and paid-up shares of SEGHPL, at a price not more than USD 357.50 Million, for joint investment in geothermal power plant in Indonesia with installed capacity, net to BCPG plc. of 181.5 MW. Such SEGHPL shares have already been transferred to BCPG Plc. as of 26<sup>th</sup> July 2017.

#### 4) Bio-Based Products Business

The biofuel business in Q2/2017 recorded EBITDA of THB 59 million which can be attributed to the EBITDA of the Bangchak Bioethanol (Chachoengsao) Co., Ltd. THB 41 million, the EBITDA of Bangchak Biofuel Co., Ltd. THB 8 million, and a share of profit from Ubon Bio Ethanol Co., Ltd. of THB 9 Million.

##### Biodiesel business performance by Bangchak Biofuel. Co., Ltd

Biodiesel Business Performance								
	Q2/2016	Q1/2017	Q2/2017	YoY	QoQ	6M2016	6M2017	YoY
Revenue (Million Baht)	2,221	1,639	1,662	-25%	1%	4,088	3,301	-19%
Utilization Rate (%)	108%	71%	83%			107%	77%	
Average Daily Production Rate (Thousands of litres per day)	387	571	669	73%	17%	365	621	70%
B100 Sales Volume (Million litre)	67	53	61	-9%	16%	132	114	-14%
<b>EBITDA (Million Baht)</b>	<b>119</b>	<b>101</b>	<b>8</b>	<b>-93%</b>	<b>-92%</b>	<b>253</b>	<b>110</b>	<b>-57%</b>

Average Sales Price (Source: Department of Energy Business, Ministry of Energy)								
	Q2/2016	Q1/2017	Q2/2017	YoY	QoQ	6M2016	6M2017	YoY
B100 (Baht / Litre)	36.55	34.20	29.80	-18%	-13%	34.60	32.00	-8%
Crude Palm Oil (CPO) (Baht / Kg.)	34.04	30.67	25.72	-24%	-16%	31.69	28.26	-11%

When comparing performance between Q2/2017 and Q2/2016, Biodiesel business reported a decrease in sales revenue by THB 560 million (-25%), in part due the average selling price per unit of B100 product that decreased drastically from the same period of the previous year (-18%) coinciding with plummeting crude palm oil price that went down from the excess supply of oil palm in the year. Another factor that contributed to the lower revenue was B100 sales volume which declined by 6 million liters (-9%) resulted from the government announcement to the change in portion of B100 mixed in Diesel product from 5% to 7% from 8<sup>th</sup> May 2017, leading to only 54 days with 7% mixing portion of B100 in diesel products in this quarter, while in Q2/2016 the mixing portion was 7% throughout the quarter. However, due to the commercial operation of the 2<sup>nd</sup> Biodiesel plant commenced in July 2016, the average daily production rate in Q2/2017 increased to 669 thousands of litres per day (+73%) YoY, or at a utilization rate of 83% of the total production of 810 thousands of litres per day.

When compared to Q1/2017, Biodiesel business sales recorded a revenue increment by THB 22 Million (+1%), mainly due to an increase of B100 product sales volume by 8 million litres (+16%), from the government's decision to increase B100 portion mixed in Diesel product during the quarter. While in Q1/2017 the portion was 5% throughout the quarter, leading to Biodiesel business increasing its utilization rate by 17%, however the crude palm oil price drop from the excess supply of crude palm oil in the market resulting in the average price per unit of B100 products to decline by 13% from the previous quarter.

In Q2/2017, Biodiesel business gross profit declined from both the same period in the previous year and quarter, due to the continuous decline in crude palm oil price from the 1<sup>st</sup> quarter, as there are higher oil palm supply in the market from the higher rainfall, leading to the continuous drop in B100 product price, and the gross profit per unit of B100 product decreased, although gross profit per unit for glycerin products adjusted upward. In the quarter, the government asked for cooperation from B100 producers to reserve more crude palm oil, to support palm oil price. As a

result, Biodiesel business was affected by the higher inventory level which led to inventory loss in Q2/2017 of THB 80 Million (including a reversal of allowance for loss on decline in value of inventories (LCM) of Baht 20 million). While Q2/2016 recorded inventory gain of THB 11 Million, and in Q1/2017 an inventory loss of THB 12 Million. Aside from the aforementioned, Biodiesel business's selling, general and administrative expenses increased from the same period of the previous year from the commencement of the 2<sup>nd</sup> Biodiesel plant. Therefore, in Q2/2017 Biodiesel business recorded EBITDA of THB 8 million, THB 110 million lower (-93%) YoY, and decreased THB 93 million (-92%) QoQ.

#### Ethanol Fuel business performance by Bangchak Bioethanol (Chachoengsao) Co., Ltd.

Ethanol Fuel business performance by Bangchak Bioethanol (Chachoengsao) Co., Ltd.								
Fuel Ethanol business performance	Q2/2016	Q1/2017	Q2/2017	YoY	QoQ	6M2016	6M2017	YoY
Revenue (Million Baht)	N/A	263	213	N/A	-19%	N/A	475	N/A
Utilization Rate (%)	N/A	85%	61%			N/A	73%	
Average Daily Production Rate (Thousands of litres per day)	N/A	127	92	N/A	-27%	N/A	109	N/A
Ethanol Sales Volume (Million litre)	N/A	10.7	8.6	N/A	-20%	N/A	19	N/A
<b>EBITDA (Million Baht)</b>	<b>N/A</b>	<b>58</b>	<b>41</b>	<b>N/A</b>	<b>-29%</b>	<b>N/A</b>	<b>99</b>	<b>N/A</b>

Average Sales Price (Source: Department of Energy Business, Ministry of Energy)								
Ethanol (Baht / Litre)	Q2/2016	Q1/2017	Q2/2017	YoY	QoQ	6M2016	6M2017	YoY
Ethanol (Baht / Litre)	N/A	24.14	25.06	N/A	4%	N/A	24.60	N/A

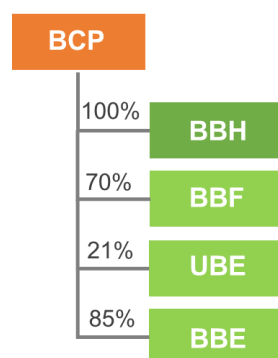
Q2/2017 performance compared to Q1/2017, Ethanol Fuel business by Bangchak Bioethanol (Chachoengsao) Co., Ltd. underwent its yearly maintenance according to plan from 4<sup>th</sup> May to 11<sup>th</sup> June 2017, leading to average production declined to 92 thousand litres per day or 61% utilization rate. This caused the Fuel Ethanol business sales volume to lower by 2 million liters (-20%) and revenue decreased by THB 50 Million (-19%). However, Ethanol price increased from the previous quarter following the same direction of molasses' price which is the main raw material in domestic Ethanol production, due to a decrease in sugarcane market supply.

In Q2/2017, the Ethanol Fuel businesses' gross profit was lower than the previous quarter, due to the decline in ethanol sales volume and a slight increase in unit production cost from the lowered average production rate due to its yearly maintenance. However, the gross margin was maintained at the similar level with the previous quarter, from the decreases in cassava price which is the main ingredient in the company's production; this is due to higher supply of cassava in the market during the rainy season. From the mentioned factors, Ethanol Fuel business recorded EBITDA of THB 41 Million, a decrease of THB 17 Million (-29%) QoQ.

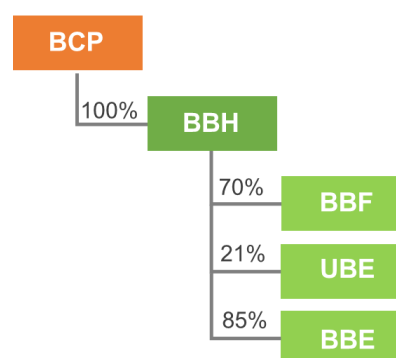
Furthermore, in June 2017, the company has informed the Stock Exchange of Thailand, of the changes in shareholding structure of the Biofuel Product business in subjection for flexibility in management with the Company retaining both direct and indirect shareholding as follows:



### Pre-Restructuring



### Post-Restructuring



**Note:**

BBH: BBP Holding Co., Ltd.

BBF: Bangchak Biofuel. Co., Ltd.

UBE: Ubon Bio Ethanol Co., Ltd.

BBE: Bangchak Bioethanol (Chachoengsao) Co., Ltd.

Also, as of 19<sup>th</sup> July 2017, the board of directors has resolved to approve the amalgamation of BBP Holding Co., Ltd. (a subsidiary of the company, “BCP”) and KSLGI Co., Ltd. (a subsidiary of Khon Kaen Sugar Industry Plc. “KSL”), The shareholding of BCP in the amalgamated company will be 60% and that of KSL will be 40%, respectively. The amalgamation is estimated to be completed within 2017. The new company will be the biggest producer and seller of Biofuel in Thailand, extending the capacity and strengthening business operations, and at the same time supporting raw materials and related products; leading to opportunities for growth in the future.

## 5) Exploration & Production Business

E&P Business Performance	Q2/2016	Q1/2017	Q2/2017	YoY	QoQ	6M2016	6M2017	YoY
Production Volume <sup>1/</sup> (barrels per day net to Nido)	2,861	2,450	2,279	-20%	-7%	2,986	2,364	-21%
Sales Volume (barrels net to Nido)	393,375	202,750	205,553	-48%	1%	595,503	408,303	-31%
Revenue (Million Baht)	299	399	387	30%	-3%	532	786	48%
<b>EBITDA (Million Baht)</b>	<b>59</b>	<b>133</b>	<b>93</b>	<b>58%</b>	<b>-30%</b>	<b>81</b>	<b>226</b>	<b>181%</b>

Note: 1/ production volume of Galoc oil field only

In Q2/2017, the Galoc oil field production had an Uptime of 99.92% and an average production rate of 4,079 barrels per day (2,279 barrels net to Nido). The details of crude oil sold during the quarter are as follow:

- Galoc oil field sold 1 cargo in April totaling of 353,475 barrels (197,520 barrels net to Nido)
- Nido & Matinloc oil field totaling of 8,033 barrels net to Nido.

Q2/2017 performance when compared to Q2/2016, Exploration and Production business has sales revenue of THB 387 Million, an increase of THB 88 Million due to the increase in crude oil price. Average selling price was 54.89 USD/BBL, while in Q2/2016 average selling price was 41.78 USD/BBL. While the volume sold decreased 187,822 Barrel, (-48% YoY), with the production numbers decreasing according to the Natural-Divide Production Curve.

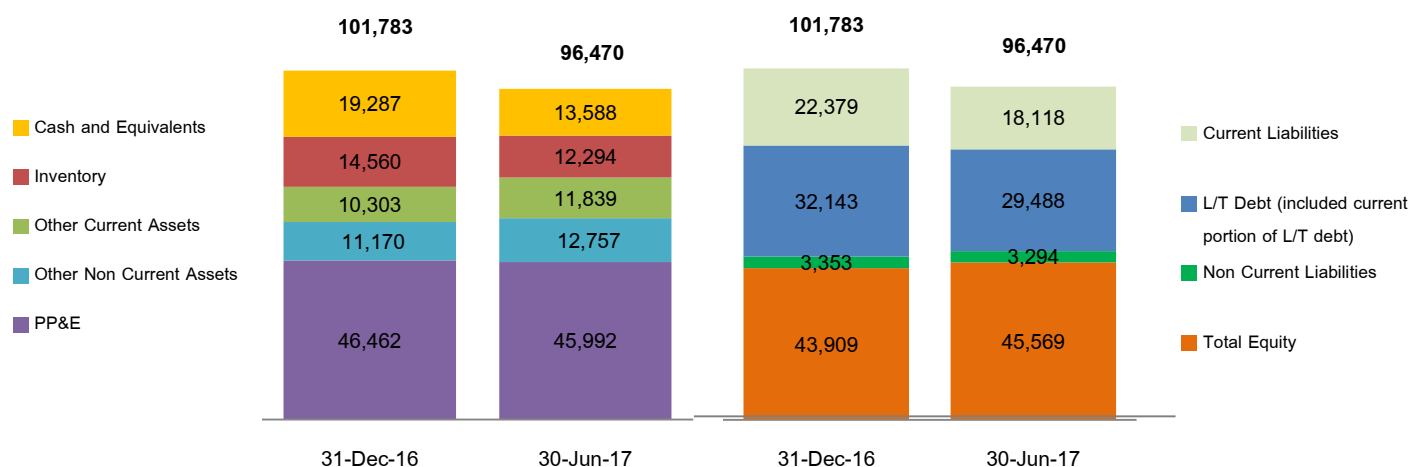
Performance compared to Q1/2017, Exploration and Production business sales revenue decreased by THB 12 Million due to the decline in crude oil price. Average selling price in this quarter was slightly lower than Q1/2017, while the sales volume increased marginally by 1% QoQ.

Nido Petroleum Ltd. recorded higher cost of goods sold; however, selling, general and administrative expenses were better managed leading to Exploration and Production Business to record EBITDA of THB 93 Million (+58% YoY, -30% QoQ). Further, Bangchak has purchased remaining shares of Nido from its minor shareholders, leading to the Bangchak's shareholding in Nido to increase to 100%. Nido delisted its ordinary shares from the Australian Stock exchange in June 2017.

# Statement of Financial Position

## Financial Position of the Company and its subsidiaries (Consolidated)

unit: THB million



### Assets

As of June 30, 2017, Total Assets of the Company and its subsidiaries were THB 96,470 million, a decrease of THB 5,313 million when compared to December 31, 2016. The changes in assets are as follow:

- Cash and cash equivalents were decreased by THB 5,699 million. Details are stated in Analysis of the Cash Flow Statement.
- Net Trade Account Receivable increased by THB 866 million, as the company's Account Receivable expanded from an increase in crude sales. As for other products, Trade Account Receivable decreased following a decline in sales volume. Aside from this, the increment can be attributed to a rise of BCPT sales.
- Inventory decreased by THB 2,266 million, mainly due to crude oil inventory decreased by THB 2,043 million, as crude oil inventory volume decreased, and price per unit was lower from the declining global crude oil price. While subsidiaries saw inventory levels increasing.
- Oil Fuel Fund subsidy receivable increased by THB 234 million, mainly from a longer period for the company to receive the subsidy payment, and from the government LPG subsidy which increased from the price ceiling, whereas world LPG price is on the rise.
- Investment in subsidiaries increased by THB 1,115 million. There was an establishment of BBP Holding Ltd. with registered capital of THB 1,700 million to operate biofuel businesses and to support structural changes to the business group, and the company sold its investment in ordinary shares in the amount of 70% of Bangchak Biofuel Co., Ltd. and 85% of Bangchak Bioethanol (Chachoengsao) Co., Ltd to BBP Holding Ltd. in the amount of THB 622 million. Aside from this, BCPE raised capital in the amount of THB 37 million, however, the elimination of related parties' transaction resulted in the consolidated financial statement showing total investment in subsidiaries of THB 0.
- Investment in associates and joint ventures increased by THB 1,004 million, from the increased investment in Bongkot Marine Services Co., Ltd. by THB 29 million and realized a share of profit from Ubon Bio Ethanol Co,



Ltd. by THB 29 million, but received dividends of THB 21 million. Furthermore, BCPG Plc., a subsidiary of the company, has acquired ownership in CapAsia ASEAN Wind Holdings Cooperatief U.A, which holds a stake in 40% of PetroWind Energy Inc., a company which operates Wind Power Plants in the Philippines, at THB 925 million, and realized gains from the Wind Power Plant of THB 43 million in this quarter.

- Property, plant and equipment decreased by THB 470 million. The company has invested mainly in refinery machinery, sales equipment, and office equipment at THB 1,403 million. BCPG Plc., increased investment in construction work in progress of solar power plant in Japan by THB 280 million, purchased other assets at THB 244 million. Nido Petroleum Ltd.'s asset lowered by THB 115 million from the difference in converting its financial statements. Depreciation for the first half of 2017 was THB 2,304 million.
- Leasehold right increased by THB 191 million, due to the leasehold for company operations and service stations increased by THB 275 million, with amortization of THB 84 million.
- Intangible Assets increased by THB 152 million, due to investment in exploration and appraisal expense of THB 412 million, but reduced due to asset impairment for the expenses used in the exploration and production of the Gurita PSC by THB 112 million, and lowered from the difference in converting financial statement by THB 169 million and amortization by THB 57 million, the remaining is the purchase of software and investment in grid connection.
- Other Non-current asset increased by THB 200 million, mostly from the deposit import tax for the import of petroleum products.

## Liabilities

As of June 30, 2017, Total Liabilities of the Company and its subsidiaries was THB 50,900 million, a decrease of THB 6,974 million, mainly from:

- Trade Accounts Payable were decreased by THB 2,217 million, mainly from the decrease of the Company's Trade Account Payable of THB 2,436 million, as crude purchase slightly declined, and crude oil price lowered. Average Dated Brent oil price in June 2017 was 46.52 USD/BBL, compared to 53.60 USD/BBL in December 2016, also finished oil product orders decreased, combined with unit price also revising downward. Aside from this, Trade Accounts Payable of Bangchak Biofuel Co., Ltd. increased by THB 139 million, due to the higher purchase volume of Crude Palm Oil in order to help alleviate farmers encountering the low Crude Palm Oil crisis. Together with Trade Account Payable of Nido Petroleum Limited increased by THB 222 million from drilling appraisal well
- Other payables were decreased by THB 1,128 million, mainly from a decline in accrued expenses by THB 503 million, mostly from Human Resource related expenses. And other payables decreased by THB 652 million from the payment for construction expenses payable and payment of the remaining liabilities from SunEdison acquisition in Japan by BCPG Plc. and payment accrued tax expense for imported oil.
- Loans from financial institutions and debentures (including current portion of long-term loans) decreased by THB 3,065 million, mostly from the repayment of short term loans and long term loan from financial institution by THB 3,097 million. Additional loan draw down during the quarter by THB 413 million, and reduced from the effect of THB appreciation by THB 395 million.

## Equities

As of June 30, 2017, the company and its subsidiaries' Total Equity was THB 45,569 million, Total Equity attributable to owners of the Company was THB 41,174 million, an increase of THB 1,631 million, mostly from the Net Profit for the quarter of THB 3,076 million, paid dividend of THB 1,377 million, and loss from other component of equity by THB 100 million (change of FX translation differences for foreign operations and fair value change in available-for-sale investment) with book value THB 29.90.

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

In Q2/2017, the Company and its subsidiaries had net cash received from operating activities of THB 3,778 million, net cash used in investing activities of THB 4,350 million, net cash used in financing activities of THB 5,139 million. As a result, the Company and its subsidiaries had a decrease in Cash and cash equivalents of THB 5,711 million, as there was cash and cash equivalents of THB 19,287 million on January 1, 2017 and an effect of exchange rate changes on balances held in foreign currencies of THB 12 million, resulting in Cash and cash equivalents as of June 30, 2017 at THB 13,588 million.

Details of cash received and used are as follows:

Cash Flows (Unit: THB Million)	30 Jun 16	30 Jun 17
Net cash received (used in) operating activities	9,802	3,778
Net cash received (used in) investing activities	(2)	(4,350)
Net cash received (used in) financing activities	(522)	(5,139)
<b>Net increase (decrease) in cash and cash equivalents before the effect of exchange rate</b>	<b>9,278</b>	<b>(5,711)</b>
Effect of exchange rate changes on balances held in foreign currencies	(34)	12
<b>Net increase (decrease) in cash and cash equivalents</b>	<b>9,245</b>	<b>(5,699)</b>
Cash and cash equivalents as at 1 January	7,872	19,287
<b>Cash and cash equivalents as at 30 June</b>	<b>17,116</b>	<b>13,588</b>

1) Net cash received from operating activities of THB 3,778 million, mainly from

- Net cash received from operating activities of THB 6,506 million which was from Net Profit of THB 3,344 million added back Non-Cash Expenses of THB 2,096 million, Finance Costs and Income Tax credit of THB 1,066 million.



- Cash received from the operating assets of THB 435 million, from the reduce in Inventory by THB 2,215 million, Trade Accounts Receivable increased by THB 923 million, Other Receivables increased by THB 606 million, and Other Assets decrease of THB 250 million.
- Cash used in operating liabilities of THB 2,937 million, due to a decrease in Accounts Payable of THB 2,153 million, Other Payables decrease to THB 612 million, and other liabilities decrease to THB 172 million.
- In the quarter, there was a change in Corporate Income Tax of THB 226 million, after receiving income tax refund from the Revenue Department of THB 50 million, and Income Tax paid of THB 276 million.

2) Net Cash used in investing activities of THB 4,350 million, mainly from

- Investment in property, plant, and equipment of THB 2,300 million, an investment in refinery machinery and equipment, marketing and office equipment of the company of THB 1,342 million, and construction work in progress in solar power plant of THB 1,312 million. However, there was cash received from selling of property, plant and equipment of THB 499 million, mainly from the selling of assets in Suimei project.
- Net cash outflow on the purchase of shares in joint venture of Bongkot Marine Services Co., Ltd. of THB 29 million.
- Net cash paid from BCPG Plc. of THB 1,447 million, for ownership acquisition in CapAsia ASEAN Wind Holdings Cooperatief U.A. which holds a 40% stake in PetroWind Energy Inc. which operates Wind Power Plant in the Philippines.
- Net cash paid for the leasehold right of service stations of THB 275 million.
- Net cash paid for the purchase of intangible assets by THB 525 million, mostly for the appraisal well program expense of Exploration and Production business.
- Received cash from interest received of THB 113 million, and dividends from associates of THB 22 million.
- Cash received from proceeds from disposal of other investments of THB 58 million, from the auto redemption of CORE Flexible open-end fund.

3) Net cash used in financing activities of THB 5,139 million, mainly from

- Cash paid for finance costs of THB 748 million.
- Cash paid for dividend payment of THB 1,688 million, for the company of THB 1,377 million, and dividend paid to shareholders outside of the group for BCPG Plc. of THB 266 million, and for Bangchak Biofuel Co., Ltd. of THB 45 million.
- Net cash from short-term loan from financial institution decreased by THB 45 million, from the repayment of short-term loan from financial institution of THB 135 million, but increased by THB 90 million for short term loan financial institution draw down.
- Cash paid for the purchase of remaining shares of Nido Petroleum from minor shareholders of THB 35 million.
- Cash received from shares options exercised for BCPG Plc. at THB 14 million.
- Cash paid for debenture repayment of the company of THB 2,000 million.

- Cash repayment for long-term loans from financial institutions of THB 962 million (of the company, BCPG Plc. and Bangchak Biofuel Co., Ltd.)
- BCPG Plc received cash from long-term loan from financial institution of THB 323 million.

## Financial Ratios

### Financial Ratios (Consolidated)

Profitability Ratios (%)	Q2/2016	Q1/2017	Q2/2017	6M2016	6M2017
Gross Profit Margin	11.46%	9.15%	5.52%	7.72%	7.36%
EBITDA Margin	10.96%	9.26%	5.87%	8.15%	7.59%
Net Profit Margin	6.47%	5.00%	2.67%	3.86%	3.85%
Return on Equity (ROE)	8.17%	17.02%	13.22%		
Return on Assets (ROA)	5.36%	10.28%	8.28%		

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

	30 Jun 16	31 Mar 17	30 Jun 17
<b>Liquidity Ratios</b>			
Current Ratio	2.35	1.79	1.92
Quick Ratio	1.59	1.17	1.29
<b>Financial Policy Ratios</b>			
Interest bearing Debt to Equity	0.98	0.80	0.80
Net Interest bearing Debt to Equity	0.52	0.36	0.45
	<b>Q2/2016</b>	<b>Q1/2017</b>	<b>Q2/2017</b>
DSCR	1.50	1.24	1.19

\* DSCR Calculation is not including debt prepayment



## Financial Ratios Calculation

- Gross Margin =  $\text{Gross Profit} / \text{Revenue from sale of goods and rendering of services}$
- EBITDA Margin (%) =  $\text{EBITDA} / \text{Revenue from sale of goods and rendering of services}$
- Profit Margin (%) =  $\text{Profit attributable to owners of the Company} / \text{Revenue from sale of goods and rendering of services}$
- Return on Equity (%) =  $\text{Profit attributable to owners of the Company (Yearly)} / \text{Total Equity attributable to owners of the Company (Average)}$
- Return on Assets (%) =  $\text{EBIT (Yearly)} / \text{Total Asset (Average)}$
- Current Ratio (times) =  $\text{Current Asset} / \text{Current Liabilities}$
- Quick Ratio (times) =  $(\text{Current Asset} - \text{Inventory}) / \text{Current Liabilities}$
- DSCR =  $\text{EBITDA (Yearly)} / (\text{Paid for long-term debt} + \text{Finance cost})$
- Interest bearing Debt to Equity (times) =  $\text{Interest bearing Debt} / \text{Total equity}$
- Net Interest bearing Debt to Equity =  $(\text{Interest bearing Debt} - \text{Cash and cash equivalents} - \text{Current investments}) / \text{Total equity}$

Note:

1/ Average Total Equity attributable to owners of the Company

- Yearly =  $(\text{Total Equity attributable to owners of the Company of the year before} + \text{Total Equity attributable to owners of the Company of this year}) / 2$
- Quarterly =  $(\text{Total Equity attributable to owners of the Company of the quarter of the year before} + \text{Total Equity attributable to owners of the Company the quarter this year}) / 2$

2/ Average Total Assets

- Yearly =  $(\text{Total Assets of the year before} + \text{Total Assets of the Company of this year}) / 2$
- Quarterly =  $(\text{Total Assets of the Company of the quarter of the year before} + \text{Total Assets of the Company the quarter this year}) / 2$

3/ The numerator of ROE is defined as the Profit attributable to owners of the Company 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 + 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: THB Million

Environment Management Accounting : EMA	Q2/2016	Q2/2017	△
<b>Material Costs of Product Outputs</b>			
: Consist of crude oil, ethanol, biodiesel, chemical, energy and utilities in production	19,402	24,120	4,718
<b>Material Costs of Non-Product Outputs</b>			
: Consist of slop and sludge oil, waste water, chemical surplus	28.44	18.00	(10.44)
<b>Waste and Emission Control Costs:</b> Consist of maintenance cost of environmental control equipment and depreciation and other fees	70.55	66.95	(3.60)
<b>Prevention and Other Environmental Management Costs</b>			
: Consist of monitoring and measurement cost, environmental management system expenses	7.36	4.86	(2.51)
<b>Total Expenses</b>	<b>19,508</b>	<b>24,210</b>	<b>4,701</b>
<b>Benefit from by-product and waste recycling</b>	(3.90)	(2.41)	(1.49)

The environmental cost in Q2/2017 has overall increased from Q2/2016 by THB 4,702 million (+24% YoY), mainly from the Material Costs of Product Outputs which increased by THB 4,718 million, from the global oil price which increased by 24% from the previous year, combined with the refinery's increase crude run from 111.68 KBD in Q2/2016 to 114.02 KBD in Q2/2017. However, the Material Costs of Non-Product Outputs lowered by THB 10.44 Million following the volume of below quality standard product that lowered in value to THB 10.66 Million. While, Waste and Emission Control Costs decreased by Baht 6.10 million (-8% YoY), primarily from waste disposal, and cost in monitoring and reduction lowered to THB 4.16 million and THB 3.50 million, respectively.

Benefits from by-products and waste recycling decreased by THB 1.49 Million (-38%, YoY) due to sellable residue steel and aluminum scrap decreased by THB 1.64 Million and Glycerin lowered by THB 0.05 Million. While Liquid Sulfur value increased by THB 0.21 Million.

## Air quality from the refinery's flue

To monitor environment, the Company has been constantly measuring air quality from the various refinery's flue. The amount of pollutant such as dust, nitrogen oxide, and sulfur dioxide, are better than the requirement from the Ministry of Industry of Thailand.

