



bangchak



Management Discussion &
Analysis of Business Operation

Bangchak Corporation
Public Company Limited

For the 3rd quarter ended September 30th, 2018



Management Discussion & Analysis of Business Operation

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Executive Summary



Summary of the Company and its subsidiaries' operating results for the quarter ended September 30th, 2018

Unit: THB Million	Q3/2017 (Restate)	Q2/2018	Q3/2018	YoY	QoQ	9M2017 (Restate)	9M2018	YoY
Total Revenue	39,009	45,558	53,461	37%	17%	125,832	143,244	14%
Accounting EBITDA	3,216	3,366	4,160	29%	24%	9,805	10,518	7%
<i>Refinery and Trading Business Group</i> ^{1/}	2,198	1,929	2,142	-3%	11%	5,340	5,349	0.2%
<i>Marketing Business Group</i> ^{2/}	474	509	468	-1%	-8%	1,999	1,712	-14%
<i>Power Plant Business Group</i> ^{3/}	417	793	1,542	270%	95%	1,912	2,999	57%
<i>Bio-Based Product Business Group</i> ^{4/}	159	171	149	-6%	-13%	397	624	57%
<i>Natural Resource Business Group</i> ^{5/}	44	36	(81)	-284%	-321%	270	24	-91%
<i>Others</i> ^{6/}	(76)	(72)	(61)			(113)	(190)	
Profit attributable to owners of the Company	1,060	1,007	1,856	75%	84%	4,137	4,009	-3%
Basic earnings per share (Baht)	0.77	0.73	1.35			3.00	2.91	

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

2/ EBITDA from Marketing Business of the Company, Bangchak Green Net Co.,Ltd., Bangchak Retail Co., Ltd., and share of profit 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 Limited, BCP Energy International Pte. Ltd. and BCP Innovation Pte. Ltd.

6/ Others items and elimination

As for the performance of the first 9 months of 2018, Bangchak Corporation Plc. ("The Company") and its subsidiaries recorded revenue from sale of goods and rendering of services THB 143,244 million (+14% YoY), with net profit of THB 4,710 million, **attributable to the owners of the company THB 4,009 million** (-3% YoY), or **earning per shares of THB 2.91**

As for Q3/2018 revenue from sale of goods and rendering of services was recorded THB 53,461 million (+37% YoY, +17% QoQ), with net profit of THB 2,216 million, **attributable to the owners of the company THB 1,856 million** (+75% YoY, +84% QoQ), or **earning per shares of THB 1.35**. The performance vastly improved mostly from the refinery business recorded high utilization rate and better GRM, as well as the power plant business realizing profit from the sales of their solar power plants assets into infrastructure fund. The performance for each business group are as follow:

The Refinery and Trading Business Group recorded an average production rate of 118.82 KBD (99% utilization rate) which is considered as a record all-time high for average production rate in any quarter in the history of the Bangchak refinery. Total GRM increased by 5% YoY and 17% QoQ from the improved Market GRM that rose due to significant increase of production after the turnaround maintenance (TAM), combined with crude cost that benefited from narrower DTD/DB spread. Within this quarter there was an inventory gain of THB 241 million from the increase in crude price, but there was a loss from the crude and product oil price hedging contract in the amount of THB 78 million. As for BCP Trading Pte. Ltd., the company recorded more revenue from the amount of trade transaction and the significant increase in oil price.



Marketing Business Group sales volume slightly increased YoY, while was at the similar level QoQ. Retail sales declined due to its low season. The company still retained its second highest rank in retail market, with a growing market share. The cumulative market share from January to August 2018 was 15.8%. The number of service station location was 1,154 stations at the end of September 2018. The company implemented various marketing programs to push thru per station; within this quarter the new version of the membership card, “Bangchak Green Miles” debuted, and Bangchak Mobile Application which provide customers with convenience and swiftness was introduced. However, net marketing margin declined from the continuous increment in global crude price, leaving the retail price unable to keep up with the cost, in addition with government policy to peg the price of Diesel.

Power Plant Business Group recorded total electricity sales at a similar level from the previous year, but decreased from the previous quarter due to transitions into the rainy season, even with the commencement of commercial operation of the government solar project in collaboration with the war veteran organization (PPA 8.94 MW). The average irradiation hours of projects in both Thailand and Japan lowered due to the higher amount of clouds and rainfall in most projects’ areas. Within this quarter, share of profit from associated companies was recorded at THB 114 million, these can be attributed into share of profit from the wind power plant business in the Philippines in the amount of THB 21 million, and share of profit from the geothermal power plant in the amount of THB 93 million which rose due to adjustment of value to coincide with fair value assessment.

Bio-based product business Group the **Biodiesel business** has shown improvements in performance compared to the same period of the previous year; sales volume of B100 product rose slightly, its mixture in Diesel fuel remains at 7% the entire quarter, Gross profit improved from the cost of crude palm oil that was used in manufacturing lowered at a faster pace than the price of B100 product. However, when compared to Q2/2018, there was a slight dip in sales, combined with repercussions from the movement of crude palm oil that was consistently in the low level, resulted in a reduced gross profit. As for the **Ethanol Business**, performance improved YoY from the amalgamation, when compared QoQ ethanol sales volume rose, as Bangchak Bioethanol (chachoengsao) Co., Ltd. resumed its production after TAM, and KSL Green Innovation Plc. recorded an increase in total sales. However, ethanol business gross profit was affected by the raw material cost, such as the rising molasses price and higher level of cassava price.

Natural Resources business Group Exploration and Production business recorded lower revenue, as sales volume was reduced to realize only Nido & Martinloc, after the company group had divested shares in Nido Production (Galoc) Pty. Ltd. which holds to 55.8% stake in the Galoc oil field. The transaction have been completed in Q3/2018, realizing profit from the provision of working capital settlement in the amount of USD 1.3 million or approximately THB 42 million coming in this quarter.

Other important events in this quarter:

- The company has issued a senior unsecured debentures to institutional investors or high net worth investors in the amount of THB 4,000 million with coupon rate of 2.13 to 3.42% and maturity of 2 to 7 years.
- BCPG Plc. sold assets from Nikaho and Nagi project (combined installed capacity of 27.6 MW) to an infrastructure fund in Japan, completed on September 28th, 2018, profit from the sales was THB 795 million recorded as other income, and subject to corporate income tax expense in the amount of THB 136 million.



Statement of Income



Consolidated Statement of Income	Q3/2017	Q2/2018	Q3/2018	YoY	QoQ	9M2017	9M2018	YoY
	(Restate)					(Restate)		
Revenue from sale of goods and rendering of services	39,009	45,558	53,461	37%	17%	125,832	143,244	14%
Cost of sale of goods and rendering of services	(35,450)	(41,699)	(49,640)	40%	19%	(115,884)	(132,237)	14%
Gross Profit	3,559	3,858	3,821	7%	-1%	9,948	11,007	11%
Interest income and dividend income	45	12	11	-76%	-8%	144	39	-73%
Other income	238	181	891	274%	392%	644	1,131	76%
Selling and administrative expenses	(1,773)	(1,785)	(1,782)	1%	-0.2%	(4,837)	(5,228)	8%
Exploration and evaluation expense	(12)	(13)	(8)	-33%	-38%	(37)	(31)	-16%
Gain (loss) from crude and product oil price hedging contract	86	(136)	(95)	N/A	N/A	320	(304)	N/A
Gain (loss) from foreign currency forward contracts	(259)	95	(28)	N/A	N/A	(242)	67	N/A
Gain (loss) on foreign exchange	299	(39)	230	N/A	N/A	663	363	N/A
(loss) from impairment of assets	(1,358)	(412)	(14)	N/A	N/A	(1,441)	(425)	N/A
Share of profit of associate and JV	56	23	118	111%	413%	128	233	82%
Profit before finance costs and income tax expense	880	1,784	3,143	257%	76%	5,290	6,852	30%
Finance costs	(379)	(374)	(401)	6%	7%	(1,073)	(1,140)	6%
Profit/(loss) before income tax expense	501	1,410	2,742	447%	94%	4,217	5,712	35%
Income tax (expense) credit	630	(253)	(526)	183%	108%	257	(1,002)	490%
Profit for the period	1,131	1,157	2,216	96%	92%	4,474	4,710	5%
Owners of the Company	1,060	1,007	1,856	75%	84%	4,137	4,009	-3%
Non-controlling interests	70	150	359	413%	139%	337	701	108%
Earnings per share (Baht per Share)	0.77	0.73	1.35	75%	85%	3.00	2.91	-3%

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

In Q3/2018, the company and its subsidiaries recorded a Net Profit of THB 2,216 million, compared to Q3/2017 which increased by THB 1,085 million (+96% YoY), and when compared to Q2/2018, increased by THB 1,059 million (+92% QoQ) mainly due to the following reasons:

1. Total revenue from sales and rendering of services was THB 53,461 million, an increment of 37% and 17% QoQ, primarily from revenue related to oil petroleum businesses following higher sales volume, as well as the increased selling price per unit. Moreover, BCP Trading's sales volume rose, and there was an additional revenue realization from the Ethanol business after the business amalgamation in Q4/2017.



2. Gross Profit was THB 3,821 million, increased by 7% YoY but decreased 1% QoQ, the higher gross profit YoY was mainly attributed to the refinery business which recorded much higher production rate, and benefited from the narrower average DTD/DB spread, resulting in 8.05 \$/BBL of total GRM. Also from the higher average crude oil price in the quarter, inventory gain was recorded at THB 241 million (Inventory Gain Q3/2017: THB 450 million, Q2/2018: THB 856 million). However, Net marketing margin was effected by the sharp rise in global crude oil price, and gross profit of power plant business declined from the lower electricity generated.
3. Other income THB 891 million, primarily from BCPG Plc. recorded profit from selling of power plant assets into basic infrastructure fund in Japan at THB 795 million. Also there was a THB 42 million profit from bargain on working capital provision from the share divestment in Nido Production (Galoc) Pty. Ltd.
4. Selling, General and Administrative (SG&A) expense was THB 1,782 million, and remained at a similar level with those of Q3/2017 and Q2/2018. SG&A was mainly higher in expenses related to selling activities e.g. marketing advertisement expenses, but lower in administrative expenses such as personnel and advisory related expenses.
5. Loss from crude and product oil price hedging contract was THB 95 million, due to the fluctuation of global crude oil price during the quarter.
6. Loss from foreign currency forward contracts was THB 28 million, resulted from the foreign exchange buying forward contract used to hedge for 3E project cost in the amount of USD 36.5 million, while the forward rate was higher than the rate at the end of the quarter.
7. Gain on foreign exchange was THB 230 million. The appreciating THB resulted in the gain on foreign currency loan and account payables, but also resulted in a loss on foreign exchange from the foreign currency loan to related parties and account receivables.
8. Impairment loss from exploration and drilling inventories was THB 14 million.
9. Share of profit from associated companies was THB 118 million, comprised of 1) Star Energy Group Holdings Pte. Ltd. of THB 93 million. 2) PetroWind Energy Inc. of THB 21 million. 3) Ubon Bio Ethanol Plc. of THB -5 million. 4) Bongkot Marine Services Co., Ltd. of THB 9 million.



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	Q3/2017	Q2/2018	Q3/2018			YoY	QoQ	9M	9M	YoY
	AVG	AVG	MAX	MIN	AVG	%	%	2017	2018	%
Dubai (DB)	50.43	72.07	80.45	69.61	74.22	47%	3%	51.06	70.10	37%
Dated Brent (DTD)	52.08	74.39	83.65	68.87	75.16	44%	1%	51.84	72.13	39%
DTD/DB	1.65	2.32	3.65	-2.80	0.94	-43%	-59%	0.78	2.03	160%

Crude Oil Price Situation

Dubai crude oil price in Q3/2018 compared to Q3/2017 increased by 23.79 \$/BBL, attributed to the US backing out of the Iran Nuclear Deal and announcing new rounds of sanctions on Iran, combined with the global oil market that tightened after OPEC's continual pursuit of its oil production reduction, which left the global OECD oil stock falling below its 5 year average.

Dubai crude price in Q3/2018 on average increased by 2.15 \$/BBL when compared to Q2/2018 which was due to the reestablishment of US sanctions of Iran, as well as demanding for other countries to cease crude product imports from Iran; the sanction had been in place for 90 days since it began, this resulted in the central bank of Iran to be unable to procure adequate amounts of the dollar currency, or be able to execute international financial transaction with the dollar, thus affecting Iran's export of crude oil; their trade partner not being able to use the dollar to complete the transaction, and the second stage of the sanction is due to be completed in 180 days on November the 4th, 2018. Analysts speculate that this new round of sanctions will reduce crude oil volume by 600,000 – 1,500,000 barrels per day; from the record high figures of crude oil exported by Iran in April 2018 at 3.09 million barrels per day or approximately 3% of global crude demand, various countries have begun to reduce imports of Iran crude. On the other hand, electricity issues at the oil sands production site in Canada, the repairs progressed slowly until September, which led to crude stock in Cushing, Oklahoma to diminish consistently to its lowest levels since November 2014 at 23.7 million barrels.

When comparing the Dated Brent and Dubai spread average in Q3/2018 as oppose to Q3/2017, there was a reduction of 0.71 \$/BBL which was affected by the Iran sanction measures perpetrated by the US, leading to procurement of Heavy grade crude becoming considerably harder, due to various countries having to reduce crude purchase from Iran to avoid any potential conflicts with the US.

The spread between Dated Brent and Dubai price in Q3/2018, on average decreased by 1.38 \$/BBL when compared to Q2/2018 due to high pressure from increasing demand for Dubai crude during the Summer season in the Middle East, combined with a drought of Heavy grade crude supplies from Iran and Venezuela working in tandem as catalyst for Dubai's crude price to rise.



Crack Spreads Situation

(Unit: USD/BBL)

Crack Spreads	Q3/2017	Q2/2018	Q3/2018			YoY	QoQ	9M	9M	YoY
	AVG	AVG	MAX	MIN	AVG	%	%	2017	2018	%
UNL95/DB	16.10	12.15	15.85	8.09	11.52	-28%	-5%	15.00	12.45	-17%
IK/DB	13.13	15.29	15.75	12.95	14.48	10%	-5%	11.74	15.27	30%
GO/DB	13.83	14.63	17.41	11.05	14.34	4%	-2%	12.34	14.57	18%
FO/DB	-1.35	-4.45	0.68	-6.05	-2.48	-84%	44%	-2.10	-3.96	-89%

Crack Spreads Analysis

- The Mogas/Dubai crack spread (UNL95/DB) in Q3/2018 averaged at 11.52 \$/BBL which decreased by 4.58 \$/BBL from Q3/2017, due to the demand pressure for Mogas product during the summer travel season in the Americas and Europe retracting below that of the levels of the same period in the previous year due to high gas price. Also, the crack spread was under pressure from market supplies which increased significantly from China's exports.

The Mogas/Dubai crack spread (UNL95/DB) decreased by 0.63 \$/BBL compared to the 12.15 \$/BBL averaged in Q2/2018, a result of decrease in demand from the Northern Asia region which encountered typhoons, and lower Indian imports of Mogas during the rainy season. As well as, the new Vietnamese refinery, "Nghi Son" has begun to export Mogas for the first time. However, Indonesia's rise in imports of Mogas during July and August helped supported the market.

- Jet (Kerosene) / Dubai crack spread crack spread in Q3/2018 averaged at 14.48 \$/BBL which increased by 1.35 \$/BBL compared to Q3/2017 due to pressures from demand in the tourism travel sector during the summer, therefore increasing the amount of air travel.

Jet (Kerosene) / Dubai crack spread decreased by 0.81 \$/BBL, compared to the average 15.29 \$/BBL in the previous quarter, the difference was the consequence of pressure from supplies that increased after various refineries resumed operation after their TAMs near the end of Q2/2018, combined with increase in exports from South Korea, and Asia was unable to export a lot of Jet fuel to the Americas and Europe, leaving the stock in the region at a high level.

- Gas oil / Dubai crack spread in Q3/2018 averaged at 14.34 \$/BBL an increase of 0.51 \$/BBL when compared to Q3/2017 which is substantiated by the water levels of the Rhine; the river is used as a transport route for fuel to countries in Europe, which decreased far below its 5 year average due to warmer weather compared to the previous year. This led to tightening supplies of Diesel in Europe. However, there was still pressure from India's diesel export that increased during their rainy season.



Gas oil / Dubai crack spread decreased by 0.29 \$/BBL compared to the average 14.63 \$/BBL in the previous quarter with pressure from decreased supplies, after Hydrocracker Unit explosions at the Mumbai, India refinery, and the Replan refinery in Brazil, as well as the Vohberg refinery in Germany, which could take up to 2 - 3 months before becoming operational again. However, demand from the Chinese fishery sector increased after the end of their seasonal ban on fishing in the South and Eastern China Sea, combined with increase in number of mines operational in Australia has also help contributed to the market.

- Fuel oil / Dubai crack spread in Q3/2018 was on average -2.48 \$/BBL, a decrease of 1.13 \$/BBL compared to Q3/2017, due pressure from the increase in supplies of FO from the production and export of Heavy Crude by the OPEC group to compensate for missing supplies from Venezuela and Iran.

Fuel oil / Dubai crack spread increased by 1.97 \$/BBL compared to the average -4.45 \$/BBL in the previous quarter which was affected by the demand from the electricity generation sector that increased during the unusually long summer season in the Middle East. As well as exports from Europe, the US, and the Middle East to Singapore decreased from their normal levels, thus leading to FO volume reserves in Singapore being at their all-time low in 9 years.

Refinery and Trading Business Group Performance

The performance of the Refinery and Trading Business group in Q3/2018 recorded EBITDA of THB 2,142 million, attributed to the operations of the Bangchak refinery THB 2,131 million, to BCP Trading Co., Ltd. THB 37 million, and shares of profit from the Bongkot Marine Service Co., Ltd. in the amount of THB 9 million.

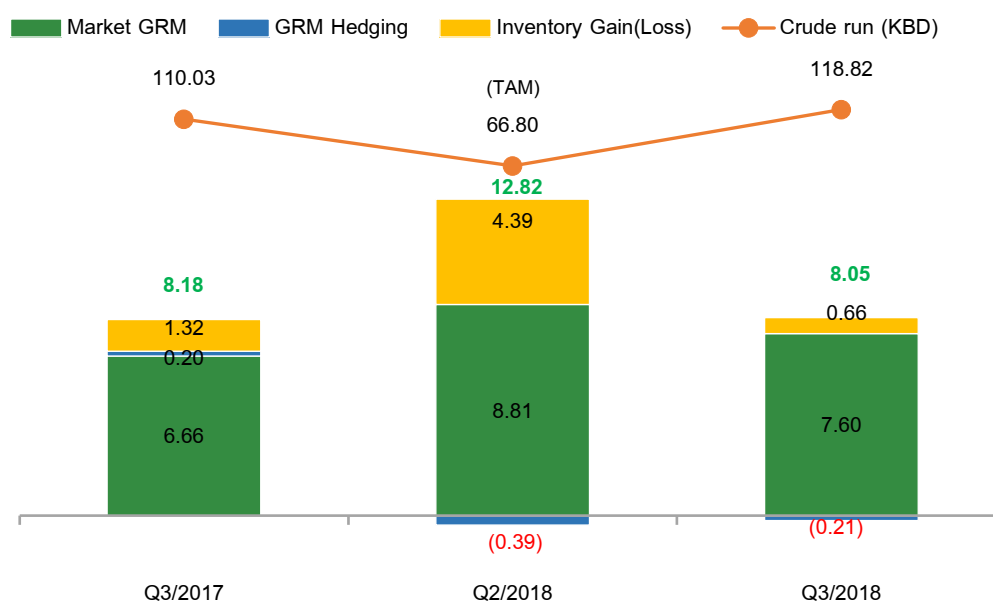
Refinery Business Performance	Q3/2017	Q2/2018	Q3/2018	YoY	QoQ	9M2017	9M2018	YoY
Average Crude Run (KBD)	110.03	66.80	118.82	8%	78%	111.28	98.36	-12%
Utilization Rate (%)	92%	56%	99%			0.93	0.82	
Average FX (THB/USD)	33.55	32.09	33.15			34.44	32.31	
(Unit: Million Baht)								
Market GRM	2,261	1,719	2,752	22%	60%	7,006	6,566	-6%
GRM Hedging	68	(75)	(78)	-214%	-3%	303	(190)	-163%
Inventory Gain/ (Loss) ^{1/}	450	856	241	-46%	-72%	(261)	1,028	494%
Total GRM	2,779	2,501	2,916	5%	17%	7,048	7,404	5%
EBITDA	2,198	1,929	2,142	-3%	11%	5,340	5,349	0.2%

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



GRM and Crude Run

Unit: \$/BBL



Total Sales Volume in each market category of the Company								
Marketing Business (Million Litre)	Q3/2017	Q2/2018	Q3/2018	YoY	QoQ	9M2017	9M2018	YoY
Retail	934	1,008	990	6%	-2%	2,818	2,996	6%
Industrial	483	447	460	-5%	3%	1,643	1,424	-13%
Total	1,417	1,455	1,451	2%	-0.3%	4,461	4,420	-1%
Wholesale Business (Million Litre)								
Petroleum traders in accordance with section 7	170	144	178	4%	23%	533	473	-11%
Export	295	141	352	19%	150%	785	692	-12%
Total	465	285	530	14%	86%	1,318	1,165	-12%
Total Sales Volume	1,883	1,740	1,981	5%	14%	5,780	5,585	-3%

Note: Sales volume does not include oil swaps between major oil companies and sales of crude oil products

Performance comparison between Q3/2018 and Q3/2017 of Refinery Business group recorded a decrease in EBITDA of THB 56 million, with factors affecting operation as follow:

1. Bangchak Refinery average production rate was at 118.82 KBD or 99% utilization rate of refinery capacity (+7%, YoY) which was recorded as the all-time high average production rate, supported by positive factors from the refinery margin, also the refinery was able to maintain maximum utilization after undergoing its turnaround maintenance in the previous quarter.
2. In this quarter, Total GRM was THB 2,916 million an increase of 5% compared to Q3/2017 which had a Total GRM of THB 2,779 million.



- Market GRM increased by THB 491 million compared to Q3/2017 due to increased production rate, combined with the increase in average IK/DB and GO/DB crack spread that increased by 10% and 4%, respectively. In addition, crude cost benefitted from the average DTD/DB spread which narrowed by 43% from the previous year.
 - Within the quarter, the Refinery Business suffered a loss from crude and product oil price hedging contract in the amount of THB 78 million, while in Q3/2017 recorded gain by THB 68 million.
 - The refinery business had an Inventory Gain in the amount of THB 241 million from the average crude price level that rose in Q3/2018, in which there was a significant increase in September 2018 or towards the end of the quarter, although during July and August 2018, crude price adjusted downward, whereas in Q3/2017 there was an inventory gain in the amount of THB 450 million (including reversal LCM of THB 7 Million) from increasing crude oil price throughout the quarter.
3. BCP Trading Co., Ltd. recorded a revenue of THB 11,902 million in revenue, the notable growth from Q3/2017 was from the 4.47 million barrels of oil trading transactions, the main product contributing to the transaction were gasoline, crude oil, fuel oil, and naphtha. The increase in revenue was for new countries such as Brunei and Qatar, trading of new product in the market such as MTBE, additional revenue from logistics management and freight trading, furthermore the fostering of strong ties with trade partners and market conditions facilitated increase transaction volume.

Performance in Q3/2018 compared to Q2/2018, the Refinery and Trading Business Group record an increased EBITDA by THB 213 Million, with the following factors affecting performance:

1. Bangchak refinery average production rate increased from Q2/2018 (+43%, QoQ), as in the previous quarter, the refinery underwent its turnaround maintenance (TAM), thus leaving production average in the low level.
2. The refinery business had Total GRM in the amount of THB 2,916 million, an increase of 17% when compared to Q2/2018 of which Total GRM was THB 2,501 million.
 - Market GRM increased by THB 1,033 million compared to Q2/2018, from the significantly higher production volume after the TAM, in tandem with the lowered crude cost; average DTD/DB spread lowered by 59% from the previous quarter.
 - Within this quarter the refinery suffered loss from crude and product oil price hedging contract by THB 78 million, while in Q2/2018 losses were THB 75 million.
 - The refinery business recorded an inventory gain of THB 241 million from the increasing level of average crude oil price from Q2/2018, while in Q2/2018 recorded an inventory gain in the amount of THB 856 million. This was a result of the product inventory in March and April at average Dubai price of 65 \$/BBL, and sell in May at average Dubai price of 74 \$/BBL during the refinery's TAM.
3. In Q3/2018, BCP Trading Co., Ltd. recorded a revenue increment by 4% QoQ, from the crude and finished product price.



2.) Marketing Business Group

Marketing Business Group Q3/2018 performance recorded EBITDA of THB 468 million, attributed to the Bangchak marketing business in the amount of THB 481 million.

Marketing Business								
Sales Volume (Million Litre)	Q3/2017	Q2/2018	Q3/2018	YoY	QoQ	9M2017	9M2018	YoY
Retail (Service Stations)	934	1,008	990	6%	-2%	2,818	2,996	6%
Industrial	483	447	460	-5%	3%	1,643	1,424	-13%
Total	1,417	1,455	1,451	2%	-0.3%	4,461	4,420	-1%
Sales volume in each product category (Million Litre)								
LPG	23	40	45	99%	14%	52	122	137%
Gasoline	7	8	4	-40%	-40%	35	21	-38%
Gasohol	427	412	424	-1%	3%	1,247	1,240	-1%
Jet Fuel	200	215	209	5%	-3%	632	633	0.1%
Diesel	714	735	723	1%	-2%	2,346	2,261	-4%
Fuel Oil and Others	47	45	45	-4%	-1%	151	142	-5%
Total	1,417	1,455	1,451	2%	-0.3%	4,461	4,420	-1%
Total Marketing Margin (THB/Lt.)	0.73	0.75	0.70	-5%	-7%	0.80	0.76	-5%
EBITDA (Million Baht)	474	509	468	-1%	-8%	1,999	1,712	-14%

Note: marketing margin of Bangchak only

Performance in Q3/2018 compared to Q3/2017, the marketing business recorded a decrease in EBITDA in the amount of THB 6 million, with the following factors affecting performance as follow:

1. Marketing Business sales volume rose by 2% YoY, from the expansion of their customer base, along with the push into retail sales as the main channel; by increasing the number of service stations and aggrandizing thrupt per station. The sales volume in the retail market still display continuous growth.
2. Net Marketing Margin decreased compared to the previous year, mainly from the retail channel which is the main sales channel. This was a result of the sharp spikes in global crude oil price in Q3/2018, especially during September, which led to retail prices adjustment being more laggard than the increasing oil products cost, coupled with the government's measure to peg retail Diesel price at THB 30 per liter, in order to alleviate tension for consumers and businesses in the transport sector during times of high fuel price; although there was a government subsidy for retail Diesel price through the use of oil fund, it was not match with diesel product's increasing cost.
3. As of Q3/2018, the total number of BCP service stations was 1,154 branches, there was 71 new branches added compared to the end of Q3/2017; most of which are standard service stations with modern aesthetics, situated in locations with high prospect. The company has always been pushing its thrupt per station, through the debuting of the new member card, "Bangchak Green Mile" which can be used to collect points from the purchase of every petroleum product and goods and services under Bangchak banner, and the development of the Bangchak Mobile Application for Bangchak member card holders to spend their points in the form of E-coupon through the application, vastly improving convenience and duration. Also, there was a test run of the



service station with the overhead digital fuel dispenser, in order to increase consumers' convenience and maximize servicing space.

- The company's retail sales market share remains in the second place and continues to grow, thus far the cumulative market share from January to August 2018 was at 15.8%, an increase of 0.5%, YoY.
- As for the Non-oil business under the Bangchak Retail Co., Ltd. continues to develop and expand business both within and outside the service stations. These businesses include the supermarket business and convenience store, "SPAR", as well as the Inthanin coffee business, which as of the end of Q3/2018, the total number of Inthanin franchises was 492 branches and the total number of SPAR franchise was 38 branches. Although the Bangchak Retail Co., Ltd. have shown to recorded an increasing revenue from the growth of locations in the Non-oil business by 36% YoY, however it still incurs in high selling, general & administrative expenses, thus causing Bangchak Retail Co., Ltd. to still record a negative EBITDA.

Q3/2018 performance compared to Q2/2018, the Marketing Business Group recorded a decreased EBITDA of THB 42 million with factors affecting operations as follow:

- The Marketing Business's sales volume was at a similar level to the previous quarter, a result of the lower sales in the retail market due to it being in the low season; where car usage and tourism travel declined from the continuous rainfall that lasted through the quarter.
- Net marketing margin decreased, compared to the previous quarter, as the retail price was unable to keep up with the velocity of rising cost, combined with the government's policy to peg Diesel price throughout the quarter.
- The number of service stations as of Q3/2018 totals at 1,154 branches with the opening of 16 new service stations from the previous quarter.

3.) Power Plant Business

Power Plant Business Performance	Q3/2017	Q2/2018	Q3/2018	YoY	QoQ	9M2017	9M2018	YoY
Solar Power Business – Thailand	65.38	66.70	64.24	-2%	-4%	199.45	194.33	-3%
Phase 1-3 (118 MW – Adder 8 THB)	60.69	61.77	57.08	-6%	-8%	186.70	180.37	-3%
Cooperative Solar (12 MW – FIT 5.66 THB)	4.69	4.92	4.52	-4%	-8%	12.75	13.96	9%
Government Solar (8.94 MW – FIT 4.12 THB)	N/A	N/A	2.65	N/A	N/A	N/A	2.65	N/A
Solar Power Business – Japan (34 MW)	12.85	14.89	13.87	8%	-7%	34.01	37.91	11%
Total Electricity Sales (Million kWh)	78.24	81.58	78.12	-0.2%	-4%	233.46	234.89	1%
Revenue (Million Baht)	854	874	830	-3%	-5%	2,542	2,505	-1%
Share of profit (loss) from associated companies								
Wind Power Plant	(5)	(6)	21	558%	449%	39	29	-25%
Geothermal Power Plant	46	25	93	101%	272%	46	173	274%
EBITDA	417	793	1,542	270%	95%	1,912	2,999	57%



Power Plant Business performance in Q3/2018 compared to Q3/2017 recorded revenue of THB 830 million, a decrease of THB 24 million, and recorded EBITDA of THB 1,542 million, an increase of THB 1,125 million, with the following factors affecting operations as thus:

1. Solar power plant projects in Thailand recorded total electricity sales slightly lower than the same period of the previous year, mainly due to lower average irradiation hours which adjusted downward for most projects. Due to this quarter, there was a high volume of clouds and rainfall in the vicinity of where majority of the projects are situated. However, in late July 2018 the government solar project in collaboration with the war veteran organization (PPA of 8.94 MW) commenced its commercial operation.
2. The solar power plant project in Japan recorded an increase in electricity sales from the same period of the previous year, primarily due to the commercial operation commencement of Gotemba Project (PPA of 4.4 MW) in January 2018, while average irradiation hours being in the near level as the prior period.
3. Realized share of profit from investment in associated companies in the amount of THB 114 million; an increment from the same period of the previous year, with respect to the following factors:
 - Share of profit from the wind power plant in the Philippines in the amount of THB 21 million, comprised of profit from operation THB 29 million which improved from Q3/2017 where losses were realized from operation in the amount of THB 5 million, mainly from better wind speed from the typhoon that reached the country within the quarter, while last year there was a much less than usual seasonal monsoons, resulting in a light wind speed.
 - Share of profit from the Geothermal Power Plant business recorded THB 93 million, profit from operation was THB 193 million, an increase from Q3/2017 which recorded share of profit at THB 46 million (due to the restatement following the completion of fair value assessment on July 2018, also there was a profit realization for the full quarter performance)
4. Sales of the Nikaho and Nagi project assets (combined installed capacity of 27.6 MW) to Infrastructure Fund in Japan was completed on the 28 September 2018. The company recorded profit from the sales of assets in the amount of THB 795 million as other income. However, there was a tax expense resulting from the sales profit at THB 136 million recorded in corporate income tax expense. As a result, the company recorded a net profit after tax from the sale of assets into Infrastructure Fund in Japan at THB 658 million.
5. The Power Plant business recorded a decrease in selling, general & administrative expense by 26% compared to the previous year, as there was a decrease in expense associated with financial advisory related to Geothermal power plant business acquisition in Q3/2017.
6. Also in Q3/2018, the power plant business recorded gain from foreign exchange in the amount of THB 69 million, due to the appreciating THB compared to JPY, resulting in the conversion of foreign currency debt (with the majority in JPY) to THB having less value.

Performance comparison between Q3/2018 and Q2/2018 saw the Power Plant Business recorded a decline in revenue in the amount of THB 44 million and recorded an increase EBITDA of THB 750 million, with the following factor affecting operation as follow:

1. The solar power plant projects in Thailand recorded a decrease in total electricity sales compared to the previous quarter. Within this quarter the average irradiation hour for every project adjusted downward from the amount of rainfall that rose coinciding with the season.
2. The solar power plant project in Japan recorded a decrease in electricity sales from lower average irradiation hours at every sites, due to Japan entering its rainy season, and there was also typhoons throughout the country. Moreover, there was some solar cells disassembled for maintenance in Nagi project, after those solar cells were damaged from the typhoon during late 2017. The maintenance was a preparation for the sale of such project to infrastructure fund.
3. Realized higher share of profit from investment in associated companies from the previous quarter due to:
 - Share of profit from the Wind Power Plant in the Philippines increased as a result of the better electricity generated from the higher wind speed.
 - Share of profit from the Geothermal Power Plant increased from the previous quarter due to the full quarter performance realization. (In Q3/2017 there was only 2 months performance realized following the acquisition completion in July 2017.)
4. Within this quarter, the power plant business recorded profit from the selling of assets in the in the Solar Power Plant project to the infrastructure fund in Japan. Thus, within this quarter the power plant business recorded an increased EBITDA more than the previous quarter.



4.) Bio-Based Product Business

As for the Bio-Based Business Group performance in Q3/2018, recorded EBITDA totaled at THB 149 million, mainly attributed to the Biodiesel Business THB 111 million and to the Ethanol Business THB 65 million, with performance as follow:

Note: BBGI Plc. is in the process of filing for its initial public offering with the The Securities and Exchange Commission.

Biodiesel Business

Biodiesel Business Performance	Q3/2017	Q2/2018	Q3/2018	YoY	QoQ	9M2017	9M2018	YoY
Average Daily Production Volume(K.L./day) (Production Capacity 930 K.L./day)	689	675	681	-1%	1%	644	714	11%
B100 Sales Volume (Million litre)	63	68	66	5%	-3%	177	207	17%
Revenue (Million Baht)	1,653	1,608	1,460	-12%	-9%	4,954	4,785	-3%
Average Sales Price (Source: Department of Energy Business, Ministry of Energy)								
B100 (Baht / Litre)	26.39	25.02	25.18	-5%	1%	30.13	24.93	-17%
Crude Palm Oil (CPO) (Baht / Kg.)	22.40	20.88	20.23	-10%	-3%	26.27	20.47	-22%

Q3/2018 performance compared to Q3/2017 performance, the Biodiesel business earned a revenue of THB 1,460 million, a decrease of THB 193 million, with factors that affected operations as follow:

1. Average production rate was at 681 thousand litres per day (-1% YoY).
2. Average B100 products sales volume increased slightly in this quarter compared to the same period of the previous year, the B100 mixture in Diesel product was at 7% throughout the quarter.
3. Gross profit increased YoY, Crude Palm Oil price stabilized at a lower level than the previous year, due to higher amounts of palm oil product arriving in the market, while domestic crude palm oil stock was at a high level. The price of B100 product decreased in relation to the price of crude palm oil, causing revenue to diminish, while the gross profit increases.

Performance compared between Q3/2018 and Q2/2018, the Biodiesel business recorded a decreased revenue of THB 147 million due to the following factors that affected operations:

1. Average production rate rose by 1% QoQ
2. Sales volume of B100 product was marginally lower, following the lower fuel demand during the low season.
3. Gross profit was still affected by the repercussion from crude palm oil price crisis, due to the excess supply of palm product in the market and overwhelming amount of B100 in the system.



Ethanol Business

Ethanol Business	Q3/2017	Q2/2018	Q3/2018	YoY	QoQ	9M2017	9M2018	YoY
Average Daily Production Volume (K.L./day)								
Bangchak Bioethanol (Chachoengsao)(BBE) (Production capacity 150 K.L./day)	129	96	129	-0.1%	34%	116	118	2%
KSL Green Innovation (KGI) (Production capacity 150 K.L./day)	N/A	336	333	N/A	-1%	N/A	334	N/A
Ethanol Sales Volume (Million litre)	11	36	48	334%	36%	30	119	291%
Revenue (Million Baht)	279	836	1,156	314%	38%	754	2,858	279%
Average Sales Price (Source: Department of Energy Business, Ministry of Energy)								
Ethanol (Baht / Litre)	25.13	23.59	23.40	-7%	-1%	24.78	23.83	-4%

Performance comparison between Q3/2018 and Q3/2017, the Ethanol business recorded a revenue of THB 1,156 million, an increase of THB 877 million with factors affecting operations are as follow:

1. In Q3/2018, the Bangchak Bioethanol (Chachoengsao) Co., Ltd. average daily production rate was 129 thousand litres per day, and KSL Green Innovation Plc. average daily production rate was 333 thousand litres per day.
2. Ethanol sales volume increased. This year there was an additional revenue realized from the performance of KSL Green Innovation Plc. after the amalgamation on the 31 October 2017.
3. Average selling price of Ethanol product decreased while raw material cost made from cassava increased significantly, due to the insufficient supplies for the demand. While China was also increasing cassava imports in replacement of corns to produce ethanol. This resulted in a lower gross profit for Bangchak Bioethanol (Chachoengsao) Co., Ltd.'s in this quarter.

Performance comparison between Q3/2018 and Q2/2018, the Ethanol business recorded a revenue increased by THB 320 million, with the following factors affecting operations:

1. Bangchak Bioethanol (Chachoengsao) Co., Ltd. average daily production rate increased from the previous quarter, after undergoing its annual maintenance during the 6-24 May 2018, while KSL Green Innovation Plc's daily production rate dipped slightly after their Nampong factory underwent its annual maintenance during the 16 September – 15 October 2018.
2. Sales volume of Ethanol product overall increased from the previous quarter, as Bangchak Bioethanol (Chachoengsao) Co., Ltd. resumed operation and sales went back to normal after its annual maintenance in the previous quarter. KSL Green Innovation Plc. also recorded an increase in total sales volume, although within this quarter the Nampong factory underwent maintenance, but the Bo-Ploy factory raised increased their sales of ENA grade ethanol.

- Gross profit per unit for Ethanol product produced from cassava slightly increased, as the farmers harvesting the crop prematurely, combined with concentrated rainfall in the planting areas, making the yields not reaching standard. However, the gross profit per unit of the Ethanol produce from molasses decreased from the raw material price adjustment following the molasses price announcement.

5.) Natural Resources Business Group

As for the performance of the Natural Resources Businesses Group in Q3/2018, EBITDA was recorded THB -81 million, mainly attributed to the Exploration and Production Business, with performance as follow:

The Exploration and Production Business by Nido Petroleum Limited

E&P Business Performance	Q3/2017	Q2/2018	Q3/2018	YoY	QoQ	9M2017	9M2018	YoY
Production Volume1/ (barrels per day net to Nido)	2,156	1,829	1,764	-18%	-4%	2,294	1,859	-19%
Sales Volume (barrels net to Nido)	203,807	203,521	3,447	-98%	-98%	614,508	402,408	-35%
Revenue (Million Baht)	336	505	16	-95%	-97%	1,122	946	-16%
EBITDA (Million Baht)	44	59	194	344%	231%	270	344	27%

Note: 1/ production volume of Galoc oil field only

Q3/2018 performance compared to Q3/2017, the exploration and production business earned THB 16 million in revenue, a decrease of THB 320 million and recorded EBITDA of THB 194 million, an increase of THB 150 million, with the factors affecting operations as follow:

- The Galoc oil field production had an Uptime of 100% and an average production volume of 3,157 barrels per day (1,764 barrels per day net to Nido, 18% lower than the previous year according to the Natural Decline Curve.)
- Sales revenue decreased due to there being only volume from the Nido & Martinloc portion in the amount of 3,447 barrels, as the company group divested shares in Nido Production (Galoc) Pty. Ltd. which owns 55.8% of Galoc field, leaving no further contribution from the Galoc oil field.
- In Q3/2018, Nido had a lower selling general & administrative expense compared YoY, and recorded profit from share divestment of Nido Production (Galoc) Pty. Ltd., to which the mentioned item had no effect on the consolidated financial statement.

Performance compared to Q2/2018, the exploration and production business recorded a decrease in revenue by THB 489 million, however recorded an increase EBITDA of THB 135 million, with the factors affecting operations as follow:

- Average production volume (net to Nido) declined 4% from the previous quarter according to the Natural decline curve.

2. Revenue from sales decreased following cessation of sales from the Galoc field.
3. In the quarter, Nido recorded an increase in selling, general & administrative expense, and recorded profit from the divestment of Nido Production (Galoc).

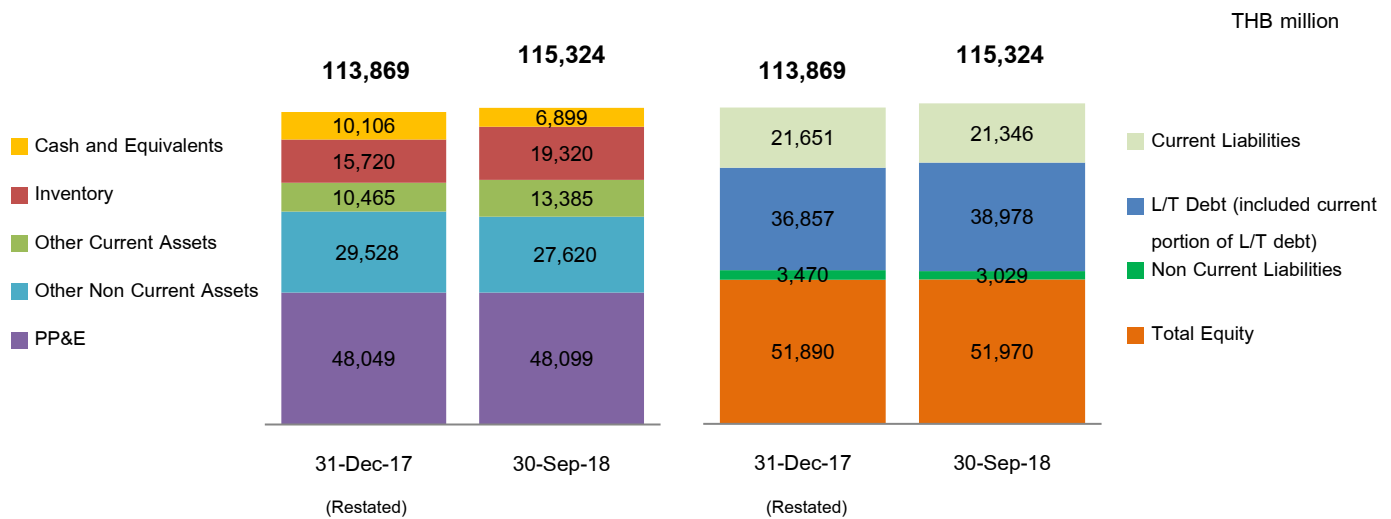
On 12 July 2018, the company group signed a contract to sell stakes in Nido Production (Galoc) Pty. Ltd., which is an indirect subsidiary in the company group that holds the 55.8% right in the Galoc oil field, to Tamarind Galoc Pte. Ltd. valued in the amount of USD 20 million (or THB 660 million). The share divestment and payment has been completed in Q3/2018 and recorded profit from the provision of working capital settlement in the amount of USD 1.3 million or approximately THB 42 million.



Statement of Financial Position



Financial Position of the Company and its subsidiaries (Consolidated)



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

Assets

As of September 30th 2018, the company and its subsidiaries has Total Assets in the amount of THB 115,324 million, an increase of THB 1,455 million when compared to December 31st, 2017, changes in assets are as follow:

- Cash and cash equivalents decreased by THB 3,207 million. Details are stated in Analysis of the Cash Flow Statement
- Net Trade Account Receivable increased THB 2,611 million, primarily from the company's trade account receivables, following selling price per unit. Also, oil trading business recorded a higher transaction volume.
- Other receivables increased by THB 435 million, mainly from the company's prepaid excise tax of THB 367 million.
- Inventory increased by THB 3,600 million, mainly from the higher crude oil and oil product reserves volume by about 0.6 barrels, as well as the crude oil price and oil product price was higher.
- Other long term investment decreased by THB 1,917 million, primarily from the change in net fair value changes in available-for-sale investment (LAC) of which share price reduced from CAD 11.18 as of 31st December 2017, to be CAD 6.19 as of 30th June 2018.
- Property, plant and equipment net increased by THB 50 million, investment was made primarily in 1.) land of THB 162 million. 2.) refinery machinery of THB 3,319 million, 3.) sales equipment, and office equipment at THB 1,303 million, 4.) power plant work in progress at THB 1,365 million, 5.) business acquisition in Lom Ligor of BCPG Plc. at THB 174 million. However, there was a sale of assets of the company and its subsidiaries



in the amount of THB 2,593 million. Depreciation for the period recorded at THB 3,291 million. Impairment in petroleum exploration and production assets at THB 412 million.

Liabilities

As of September 30th 2018, the Company and its subsidiaries recorded total liabilities in the amount of THB 63,353 million, increased by THB 1,375 million, changes in liabilities were as follow:

- Short term loan increased by THB 1,696 million, mainly from the company increased by THB 1,476 million, and from the company's subsidiaries increased by THB 220 million.
- Trade Accounts Payable increased by THB 1,686 million, primarily from oil trading business of THB 2,570 million.
- Excise Tax and Oil fund expense payable decreased by THB 2,940 million according to the lower oil products sales volume, and the excise tax prepayment made in September 2018.
- Loans from financial institutions decreased by THB 1,877 million, from the company's subsidiaries loan drawdown by THB 1,650 million, while repaid by THB 3,487 million. Loan issuance cost increased by THB 19 million. There was also adjustments to the effects of foreign currency conversion of financial statement in the amount of THB 59 million.
- Debentures increased from the bond issuance of THB 4,000 million with maturity of 2 - 7 years and coupon of 2.13 - 3.42% per annum, on 10 August 2018.

Equities

As of September 30th 2018, the company and its subsidiaries' Total Equity was THB 51,970 million, Total Equity attributable to owners of the Company was THB 45,103 million, a decrease of THB 376 million, mostly increased from the Net Profit for the period of THB 4,009 million, paid dividend of THB 2,685 million, while decreased in other component of equity by THB 1,726 million (result of differences in net fair value reduced in available-for-sale investment (LAC)). Book value per share was THB 32.76.



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



As for the performance of the first 9 months of 2018, the Company and its subsidiaries had net cash received in operating activities of THB 348 million, net cash used in investing activities of THB 3,313 million, and net cash used from financing activities of THB 295 million. As a result, net cash and cash equivalents decreased by THB 3,260 million, as there was cash in the amount of THB 10,106 million as of January 1st, 2018, and the effects of exchange rate conversion on balances held in foreign currencies in the amount of THB 53 million, resulting in remaining cash as of September 30th 2018 in the amount of THB 6,899 million, details for each activity are as follow:

Cash Flows (Unit: Million Baht)	9M2017	9M2018
Net cash received (used in) operating activities	7,278	348
Net cash received (used in) investing activities	(18,396)	(3,313)
Net cash received (used in) financing activities	1,362	(295)
Net increase (decrease) in cash and cash equivalents	(9,756)	(3,260)
Cash and cash equivalents as at 1 January	19,287	10,106
Effect of exchange rate changes on balances held in foreign currencies	(211)	53
Cash and cash equivalents as at 30 September	9,319	6,899

Details of cash received and used are as follows:

- 1) Net cash received in operational activities in the amount of THB 348 million are mainly attributed to:
 - Cash received from operating activities of THB 9,953 million, which was from Net Profit of THB 4,710 million, added back Non-Cash Expenses of THB 3,101 million, added back Financial Costs and Tax expense of THB 2,143 million.
 - Net cash used in operating assets and liabilities of THB 8,484 million, mainly from (1) Inventory increased by THB 3,861 million (2) Trade account receivables increased THB 2,608 million (3) Other liabilities increased by THB 499 million (4) Trade account payable increased by THB 2,046 million (5) Other short term liabilities reduced by THB 3,036 million, primarily from a decrease in excise tax and oil fund payables.
 - Net income tax paid of THB 1,122 million

- 2) Net Cash used in investing activities of THB 3,313 million, mainly from:
 - Cash received from interest and dividends in the amount of THB 78 million.
 - Cash paid for share purchase in Lom Ligor Co., Ltd. to invest in wind power plant by THB 204 million.
 - Cash received from the selling of power plant assets into infrastructure fund in Japan of THB 3,046 million, and from the divestment of investment in subsidiary of THB 619 million.



- Cash paid for investment in property, plant and equipment in the amount of THB 6,134 million, mainly attributed to investment in refinery machinery and equipment, and selling and office equipment.
 - Cash paid for the right to lease by THB 504 million.
- 3) Net Cash used in financing activities of THB 295 million, mainly from:
- Cash paid for financial cost in the amount of THB 1,177 million
 - Dividend paid in the amount of THB 2,971 million, attributed to the company THB 2,685 million and BCPG Plc. paid dividend for non-controlling interest in the amount of THB 286 million.
 - Cash received from short term loans from financial institution in the amount of THB 1,692 million.
 - Cash received from debentures and long term loans in the amount of THB 5,650 million
 - The company and its subsidiaries repaid long term loans from financial institutions by THB 3,542 million.



Financial Ratios



Financial Ratios (Consolidated)

Profitability Ratios (%)	Q3/2017	Q3/2018	Q3/2018	9M2017	9M2018
Gross Profit Margin	9.12%	8.47%	7.15%	7.91%	7.68%
EBITDA Margin	8.24%	7.39%	7.78%	7.79%	7.34%
Net Profit Margin	2.90%	2.54%	4.14%	3.56%	3.29%
Return on Equity ^{1/} (ROE)	12.46%	11.33%	12.30%		
Return on Assets (ROA)	6.73%	6.74%	8.17%		

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

	30-Sep-17	30-Jun-18	30-Sep-18
Liquidity Ratios			
Current Ratio	1.61	1.26	1.43
Quick Ratio	0.85	0.52	0.69
Financial Policy Ratios			
Interest bearing Debt to Equity	0.94	0.81	0.78
Net Interest bearing Debt to Equity	0.70	0.68	0.65
	Q3/2017	Q2/2018	Q3/2018
DSCR ^{2/}	2.36	3.62	2.53

2/ DSCR Calculation is not including long term debt prepayment

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
▪ DSCR	=	EBITDA (Yearly) / (Paid for long-term debt + Finance cost)
▪ 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

Note:

1/ Average Total Equity attributable to owners of the Company

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

Environment Management Accounting : EMA	Q3/2017	Q3/2018	change
Material Costs of Product Outputs			
: Consist of crude oil, ethanol, biodiesel, chemical, energy and utilities in production	21,774	31,295	9,521
Material Costs of Non-Product Outputs			
: Consist of slop and sludge oil, waste water, chemical surplus	29.46	11.35	(18.11)
Waste and Emission Control Costs			
: Consist of maintenance cost of environmental control equipment and depreciation and other fees	67.12	68.39	1.27
Prevention and Other Environmental Management Costs			
: Consist of monitoring and measurement cost, environmental management system expenses	2.3	1.26	(1.04)
Total Expenses	21,872	31,376	9,504
Benefit from by-product and waste recycling	(3.13)	(6.29)	(3.16)

Total environmental cost in Q3/2018 increased from Q3/2017 by approximately THB 9,504 million (+44% YoY) mainly due to Material Cost of Product Output which was higher by THB 9,521 million, with respect to the global crude oil price which rose 41% from the same period of last year, also the average production rate increased from 110.03 KBD in Q3/2017 to 118.82 KBD in Q3/2018 following the completion of the refinery's turnaround annual maintenance in the 2nd quarter. Material Costs of Non-Product Outputs was lower by THB 18.11 million in accordance with the quantity of product that is below quality standard which decreased by THB 18.17 million. Waste and Emission Control Costs increased by THB 1.27 million, primarily from waste management cost increased by THB 3.67 million, although environmental control equipment depreciation cost decreased by THB 4.84 million. Aside from the aforementioned, Prevention and Other Environmental Management Costs declined by THB 1.04 million from the increase in monitoring and measurement cost which increased by THB 1.4 million.

Benefits from by-products and waste recycling inclined by THB 3.16 Million (+101%), mostly due to amount of sellable iron and aluminum scrap which increased by THB 3.68 million.

Air quality from the refinery's flue

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

