

Bangchak Corporation Public Company Limited

Management Discussion and Analysis of Business Operation

For the first quarter
ended 31st March, 2017



| | | | | |
|---------------------------------|----|--------------------------------------|----|--|
| Executive Summary | 3 | Statement of Income | 6 | |
| Business Performance | 8 | 08 Refinery Business | | |
| | | 12 Marketing Business | | |
| | | 13 Green Power Business | | |
| | | 15 Bio-Based Products Business | | |
| | | 17 Exploration & Production Business | | |
| Statement of Financial Position | 18 | Cash Flows Statement | 20 | |
| | | | | |
| | | Financial Ratios | 22 | |
| | | Environment Management Accounting | 24 | |

Executive Summary

Summary of the Company and its subsidiaries' operating result for the 1st quarter ended 31st March 2017

| EBITDA Structure of the Company and its subsidiaries | Q1/2016 | Q4/2016 | Q1/2017 | YoY | QoQ |
|--|---------------|---------------|---------------|-------------|-------------|
| Total Revenue | 30,276 | 40,481 | 43,995 | 45% | 9% |
| Accounting EBITDA | 1,419 | 3,061 | 4,075 | 187% | 33% |
| <i>EBITDA Refinery Business^{1/}</i> | (645) | 2,367 | 2,226 | 445% | -6% |
| <i>EBITDA Marketing Business^{2/}</i> | 1,041 | (3) | 856 | -18% | N/A |
| <i>EBITDA Green Power Business^{3/}</i> | 855 | 568 | 706 | -17% | 24% |
| <i>EBITDA Bio-Based Product Business^{4/}</i> | 146 | 131 | 179 | 22% | 36% |
| <i>EBITDA Exploration & Production Business^{5/}</i> | 22 | 71 | 133 | 512% | 88% |
| <i>EBITDA Others^{6/}</i> | 0.3 | (73) | (25) | N/A | 66% |
| Profit attributable to owners of the Company | 269 | 909 | 2,084 | 675% | 129% |
| Basic earnings per share (Baht) | 0.20 | 0.66 | 1.51 | | |

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

For Q1/2017, Bangchak Corporation Public Company Limited (the company) and its subsidiaries recorded revenue from sale of goods and rendering of services of THB 43,995 million (+45% YoY, +9% QoQ), with Net Profit of THB 2,198 million which was **net profit attributable to owners of the Company of THB 2,084 million** (+675% YoY, +84% QoQ), or an earning per share of 1.51 Baht

The company and its subsidiaries recorded **total EBITDA of THB 4,075 million** (+187% YoY, +33% QoQ), performance has significantly improved, especially for the Refinery Business, which in March 2017, had high average crude run at 121 KBD throughout the month. Marketing Business's sales volume continues to grow. At the same time, Bio-Based Products Business performance has turned out for the better. And, the rise of crude oil price led to the Refinery Business's Inventory Gain of THB 299 million. However, the company's subsidiaries has suffered Inventory Loss of THB 2 million. While the appreciation of Thai Baht led to a gain on foreign currency forward contracts of THB 37 million and gain on foreign exchange of THB 271 million. On the other hand, in the quarter, Nido Petroleum Limited recorded a loss from impairment of assets of THB 113 million from its withdrawal from the appraisal wells program in GURITA PSC, Indonesia.

Refinery Business

Refinery Business average crude run was 109.80 KBD (+71% YoY, -4% QoQ), as in the same period of the previous year the refinery underwent its turnaround annual maintenance. As for this quarter, the Market GRM was 7.07 USD/BBL (+1.72 USD/BBL YoY, +0.58 USD/BBL QoQ) from the increased production volume. The crude oil cost was positively affected by the narrowing Dated Brent and Dubai spread (DTD/DB) which averaged at 0.65 USD/BBL, while crack spread between finished products and crude was higher. Other than this, the Refinery Business has an inventory gain of THB 299 million from the increased average crude price in the quarter, resulting in the Refinery Business recording EBITDA of THB 2,226 million (+445% YoY, -6% QoQ).

Marketing Business

Marketing Business sales volume was 1,539 million liters (+5% YoY, +3% QoQ) resulting from the increased opening of service stations from late 2016, and the contracting supply in the industrial market due to some domestic refineries going through turnaround maintenance. The increased sales figure mostly from increased Diesel and Jet fuel sales; a result of the company's plan to increase number and quality of service stations. The company was able to increase its market share and maintain its 2nd position in the market consistently.

As for the marketing margin, it was at 0.84 THB/Litre (-10% YoY, +50% QoQ), the decrease in marketing margin from the same period in the previous year was a result of the increased crude oil cost in Q1/2017. At the same time, the retail price was not able to adjust at the same pace. However, when compared to the previous quarter, marketing margin increased due to, in late 2016, the company followed through on a retail price freeze to aid consumers. Due to improving marketing margins and a decrease in selling, general and administrative expenses, Marketing Business recorded EBITDA of THB 856 million (-18% YoY) but had a significant gain when compared to the previous quarter.

Green Power Business

Power plant business which is currently under BCPG Plc., a subsidiary of the company, recorded a revenue of THB 789 million (+2% YoY, +5% QoQ), an increase from the previous year due to the commencement of the Agricultural Cooperatives solar farms and 2 solar power plant projects in Japan. Therefore the company has commercial operated capacity in Thailand and Japan of 130 MW and 30 MW, respectively.

In this quarter, electricity sales was 72.58 kWh (+6% YoY, +7% QoQ). The projects in Thailand had minor increase in electricity sales from Q1/2016, even with an increase in PPA, due to the decrease in irradiation in most of the project's perimeter, and the decrease of the average base tariff. In Japan, electricity sales saw an overwhelming increase when compared to the same period of the previous year; a result of the new project commencing operations and favorable irradiation levels. However, the expansion came with increase in selling, general and administrative expenses; leading to this quarter EBITDA record of THB 706 million (-17% YoY, +24% QoQ).

Bio-Based Products Business

The Bio-Based Products Business recorded a revenue of THB 1,902 million (+2% YoY, +31% QoQ), attributed to the Biofuel Business THB 1,639 million and the Fuel Ethanol Business THB 263 million. The Biofuel Business is still reeling from the repercussions of the government's decision to decrease the B100 portion in Diesel products since July 2016. In Q1/2017, the portion was steady at 5% throughout the period, the Biofuel Business average production rate was 571 thousands litres per day or 71% utilization rate; with sales volume of 53 million litres (-18% YoY, +34% QoQ). The increase in B100 price was due to an increase in crude palm oil price, however late in the quarter the crude palm oil price dropped leading to an inventory loss of THB 12 million; thus the Biodiesel business recorded EBITDA of THB 101 million (-24% YoY, +45% QoQ).

As for the Fuel Ethanol Business, the Bangchak Bioethanol (Chachoengsao) Co., Ltd. had an average production rate of 127 thousands litres per day or 85% utilization rate; it had sales volume of 10.7 million liter (-4% QoQ), a decline due to BCP, its main customer, decreased orders, however Ethanol price made slight gains, which resulted in comparatively similar revenue; the Fuel Ethanol Business EBITDA was THB 58 million (+27% QoQ).



Exploration & Production Business

The Exploration and Production Business has sales revenue of THB 399 million (+71% YoY, +22% QoQ), total sales volume of 200,630 barrels (-1% YoY, -2% QoQ), the selling price in this quarter increased to 55.12 USD/BBL (+76% YoY, +24% QoQ). Following the significant increase of crude price, the Galoc Oil Field crude production site has an average production rate of 4,385 barrels per day (2,450 barrels net to Nido). In this quarter, there was a loss from assets impairment of THB 113 million (or roughly 3.21 million USD) from its withdrawal from the appraisal wells program in GURITA PSC, Indonesia. The positive increase in crude price has resulted in the Exploration and Production Business recording EBITDA of THB 133 million (+512% YoY, +88% QoQ)



Statement of Income

| Consolidated Statement of Income | Q1/2016 Restated | Q4/2016 Restated but not yet reviewed | Q1/2017 | YoY | QoQ |
|---|---------------------|---|--------------|-------------|-------------|
| Revenue from sale of goods and rendering of services | 30,276 | 40,481 | 43,995 | 45% | 9% |
| Cost of sale of goods and rendering of services | (29,333) | (36,716) | (39,969) | 36% | 9% |
| Gross Profit | 943 | 3,765 | 4,026 | 327% | 7% |
| Investment income and other income | 126 | 177 | 225 | 79% | 27% |
| Selling and administrative expenses | (1,212) | (2,071) | (1,441) | 19% | -30% |
| Gain (loss) from crude and product oil price hedging contract | 163 | (66) | 1 | -99% | 101% |
| Gain (loss) from foreign currency forward contracts | 56 | (32) | 37 | -35% | 215% |
| Gain (loss) on foreign exchange | 84 | (253) | 271 | 221% | 207% |
| Reversal of allowance for gain/(loss) from impairment of assets | 2 | 31 | (101) | N/A | -422% |
| Share of profit (loss) of associate | 13 | 16 | 18 | 41% | 14% |
| Gain (loss) from purchase price negotiation | 227 | - | - | -100% | N/A |
| Profit before finance costs and income tax expense | 401 | 1,566 | 3,035 | 656% | 94% |
| Finance costs | (373) | (415) | (355) | -5% | -15% |
| Profit/(loss) before income tax expense | 29 | 1,151 | 2,680 | N/A | 133% |
| Income tax (expense) credit | 168 | (165) | (482) | -386% | 192% |
| Profit for the period | 197 | 986 | 2,198 | N/A | 123% |
| Owners of the Company | 269 | 909 | 2,084 | 675% | 129% |
| Non-controlling interests | (72) | 77 | 114 | 259% | 48% |
| Earnings per share (Baht per Share) | 0.20 | 0.66 | 1.51 | 655% | 129% |

For Q1/2017 performance, the company and its subsidiaries recorded a Net Profit attributed to owners of the company THB 2,084 million, an increase of THB 1,815 million (+675% YoY) when compared to Q1/2016, and an increase of THB 1,175 million (+129% QoQ) in comparison to Q4/2016, mainly due to the following reasons:

1. Total revenue from sale of goods and rendering of services was THB 43,995 million, an increase of 45% YoY and 9% QoQ, mainly from petroleum related business; due to the selling price increase that coincide with the rise of crude oil price in the global market. Total sales volume increased by 12% YoY, however decreased 3% QoQ. As for other businesses, total revenue from sale of goods and rendering of services increased.
2. Gross Profit was recorded at THB 4,026 million an increase of 327% YoY and 7% QoQ, attributed mostly to the increased crude run, and Market GRM that rose to 7.07 USD/BBL (Q1/2016 5.35 USD/BBL, Q4/2016 6.49 USD/BBL). The positive movement is due to the cost of crude oil that adjusted downward from the tightened spread between Dated Brent and Dubai (DTD/DB), combined with increases of the crack spread of some



finished products. Aside from the aforementioned, the company and its subsidiaries saw an Inventory Gain of THB 297 million (Q1/2016 Inventory Loss: THB 1,315 million, Q4/2016 Inventory Gain: THB 897 million).

3. Investment income and other income was recorded at THB 225 million, an increase of 79% YoY and 27% QoQ. A result of the company receiving interest from 2006 returned tax refund from the Revenue Department of THB 49 million and realized profit from the selling of Natosi assets that operated BCPG Plc.'s Suimei project of THB 62 million.
4. Selling and administrative expenses was recorded at THB 1,441 million an increase of 19% YoY, mainly due to the expenses of Marketing Business and from Bangchak Retail Co., Ltd. , mostly from the expenses related to human resources, as there are more employees. But the Selling and administrative expenses decreased 30% QoQ, from the personnel and employees benefit expenses which is usually high during year end, combined with the advisory fee of BCPG Plc. and Bangchak Retail Co., Ltd.
5. Gains from foreign exchange was recorded at THB 271 million, an increase of 221% YoY, a decrease of 207% QoQ; due to THB appreciation in Q1/2017 compared to Q1/2016 leading to gain from foreign exchange. While the Yen's depreciation resulted in BCPG Plc. suffering foreign exchange loss.
6. Nido Petroleum Limited realized loss from asset impairment of THB 113 million, due to its withdrawal from the appraisal wells program in GURITA PSC, Indonesia.
7. In Q1/2017, the company's tax expense was made in accordance to the normal rate due to profit receive from increased performance. On the other hand in Q1/2016, recorded a deferred tax payment from the Company's tax loss, thus the company did not have tax expenses to be paid, instead being shown as tax revenue.
8. In Q1/2017 BCP Innovation Pte. Ltd., a subsidiary of the company, recorded a gain from a change in fair value of asset available for sale, LAC (Lithium Americas Corp.), of THB 111 million, which will be recorded in other comprehensive income.



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

1) Refinery Business

Crude Oil Price Situation

(Unit : USD/BBL)

| Crude Oil Price | Q1/2016 | Q4/2016 | Q1/2017 | | | YoY | QoQ |
|-------------------|---------|---------|---------|-------|-------|------|------|
| | AVG | AVG | MAX | MIN | AVG | % | % |
| Dubai (DB) | 30.59 | 48.25 | 55.41 | 48.79 | 53.03 | 73% | 10% |
| Dated Brent (DTD) | 33.94 | 49.33 | 56.30 | 49.21 | 53.69 | 58% | 9% |
| DTD/DB | 3.54 | 1.15 | 2.54 | -1.79 | 0.65 | -82% | -44% |

Crude Oil Price Situation

Average Dubai crude oil price in Q1/2017 when compared to Q1/2016 has adjusted upwards by 22.44 USD/BBL with respect to the policy of the OPEC which has changed from increasing market shares, to a joint decision with non-member countries to reduce crude production; eliminating the access supply within the market.

When compared to the previous quarter, average Dubai crude price in Q1/2017 increased by 4.78 USD/BBL, this is with respect to OPEC and non-OPEC countries' joint decision to lower production for 6 months. However, the increase in crude price has led to the increase in US oil rigs going back into production. Together with the successive increase of crude production, led to US crude oil reserve be at an all-time high during the quarter.

Dated Brent/Dubai crack spread when compared to Q1/2016 decreased by 2.89 USD/BBL, resulting from the pressure of the increased production of Shale Oil in the United States; after crude oil price rise. This in turn led to an access supply of Light Sweet crude oil in the market.

When compared to the previous quarter, the average Dated Brent/Dubai crack spread decreased by 0.50 USD/BBL. This is due to the pressure from decrease in supply of Heavy Sour Crude through the cooperation between the OPEC group and non-OPEC countries lowering production, and the increase in production of Light Sweet Crude in Libya, Nigeria, and the United States; this is also accompanied by Iran's oil production sanction being lifted.

Crack Spreads Situation

(Unit : USD/BBL)

| Crack Spreads | Q1/2016 | Q4/2016 | Q1/2017 | | | YoY | QoQ |
|---------------|---------|---------|---------|-------|-------|------|------|
| | AVG | AVG | MAX | MIN | AVG | % | % |
| UNL95/DB | 18.84 | 14.59 | 17.62 | 10.49 | 14.70 | -22% | 1% |
| IK/DB | 11.70 | 12.27 | 12.33 | 10.32 | 11.29 | -3% | -8% |
| GO/DB | 9.66 | 12.04 | 12.84 | 11.01 | 11.83 | 22% | -2% |
| FO/DB | -5.24 | -1.63 | -0.06 | -5.09 | -3.16 | 40% | -93% |



Crack Spreads Analysis

- In Q1/2017 the average Mogas/Dubai crack spread was 14.70 USD/BBL, when compared to Q1/2016 saw a decrease of 4.14 USD/BBL, with respect to the pressures from the US Mogas reserves that is at a historical high and the stagnated demand of Mogas after the price rose.

When compared to Q4/2016, Mogas/Dubai crack spread increased by 0.11 USD/BBL, from the expanded import demand in Indonesia, due to emergency shut down and maintenance of refineries in the country, accompanied by increase in demand during the Chinese new year holiday, and also the supply decrease from within the UAE due to emergency shut downs of its Residue Fluid Catalytic Cracker (RFCC) unit.

- An average of Jet (Kerosene)/Dubai crack spread in Q1/2017 was 11.29 USD/BBL, a decrease of 0.41 USD/BBL when compared to Q1/2016, as a result of the sluggish demands due to unusually warm weather. At the same time, supply of kerosene was increased as Northern Asia refineries built up the stocks in preparation for maintenance in Q2/2017.

When compared to Q4/2016, an average of Jet (Kerosene)/Dubai crack spread decreased by 0.98 USD/BBL, pressured from the decrease in demand in Japan, as kerosene is being substituted by LPG and electricity for heat production. Moreover, winter storms in the beginning of January 2017 were causing Japanese airlines to cancel some of their flights.

- An average of Gasoil/Dubai crack spread was 11.83 USD/BBL. When compared to Q1/2016, the spread increased by 2.17 USD/BBL with respect to the increase in demand from Indonesia and Australia's mining sector and the decrease in supplies from the emergency shutdowns of Middle Eastern refineries.

When compared to Q4/2016 Gasoil/Dubai crack spread decreased by 0.21 USD/BBL, from the increase in Chinese exports due to the decrease in demands during Chinese New Year season. This was supported by an unusually warm winter which were slowing down demand, and the increase in GO reserves in Singapore.

- An average of Fuel Oil/Dubai crack spread was -3.16 USD/BBL. When compared to Q1/2016, the crack spread increased by 2.08 USD/BBL due to the increased demand in Japan and South Korea, from the maintenance of Nuclear power plants earlier in the quarter, along with the gradual shutdown of Japanese refineries to raise the Cracking to CDU capacity ratio.

In comparison to Q4/2016 Fuel Oil/Dubai crack spread decreased by 1.53 USD/BBL, from the decrease in fuel oil demand freight logistics from the New Year and Chinese New Year in January. Aside from that, the Middle East and Europe has significantly increased their fuel oil export to Asia throughout the quarter, with the UAE being the most prominent exporter due to their emergency shutdown of their secondary refineries.

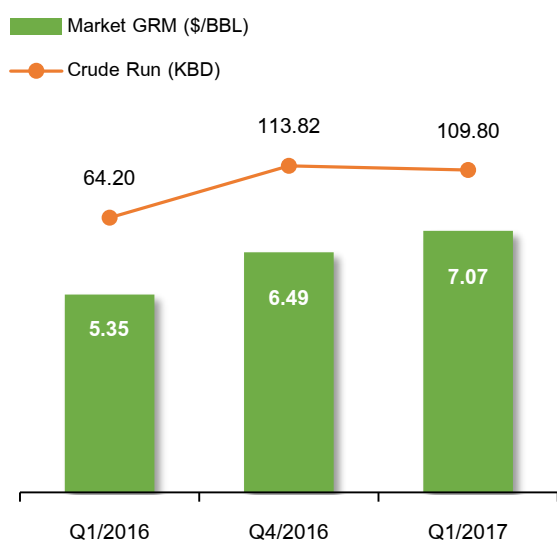


Refinery Business Performance

| Refinery Business Performance | Q1/2016 | Q4/2016 | Q1/2017 | YoY | QoQ |
|--------------------------------------|--------------|--------------|--------------|-------------|-------------|
| Average Crude Run (KBD) | 64.20 | 113.82 | 109.80 | 71% | -4% |
| Utilization Rate (%) | 54% | 95% | 92% | 41% | -3% |
| Average FX (THB/USD) | 35.80 | 35.57 | 35.29 | -1% | -1% |
| (Unit: THB Million) | | | | | |
| Market GRM | 1,120 | 2,416 | 2,465 | 120% | 2% |
| GRM Hedging | 172 | (74) | 10 | -94% | 113% |
| Inventory Gain/ (Loss) ^{1/} | (1,342) | 907 | 299 | 122% | -67% |
| Total GRM | (51) | 3,250 | 2,774 | N/A | -15% |
| EBITDA | (645) | 2,367 | 2,226 | 445% | -6% |

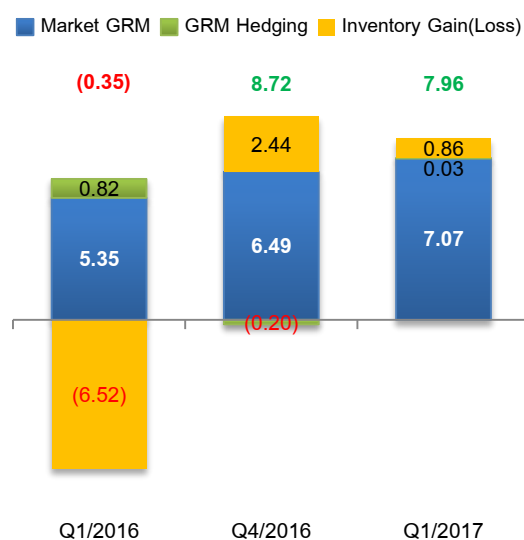
Note: 1/ Inventory Gain/ (Loss) in Q1/2017 was included a reversal of LCM.

Market GRM and Crude Run



Total GRM

Unit: USD/BBL



| Total Sales Volume | | | | (Unit: Million litres) | |
|--|--------------|--------------|--------------|------------------------|-------------|
| Marketing Business | Q1/2016 | Q4/2016 | Q1/2017 | YoY | QoQ |
| Retail | 887 | 921 | 932 | 5% | 1% |
| Industrial | 578 | 570 | 607 | 5% | 7% |
| Total | 1,465 | 1,492 | 1,539 | 5% | 3% |
| Wholesale Business | | | | | |
| Petroleum traders in accordance with section 7 | 52 | 258 | 185 | 254% | -28% |
| Export | 206 | 247 | 203 | -1% | -18% |
| Total | 258 | 505 | 388 | 50% | -23% |
| Total Sales Volume | 1,723 | 1,997 | 1,928 | 12% | -3% |

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

Q1/2017 when compared to Q1/2016 had an impressive improvement in Bangchak's refinery performance. This was the result of the refinery's turnaround annual maintenance in the previous year. In this quarter, the average crude run was 109.80 KBD, or around 92% utilization rate. In March 2017, Bangchak's refinery production reached an all-time high production level of 121.64 KBD, due to the exceptional gross refinery margin acting as a launch pad for production increase, coinciding with the increase in sales numbers by the marketing business, and planning and production management by the refinery that kept production levels high.

Market GRM increased by THB 1,345 Million (+120%) when compared to the same period of the previous year, as a result of an increase in production volume, and upward adjustment of crack spread between various finished product and crude oil, especially the Gasoil/Dubai crack spread that rose from the increase in demand from Indonesia and Australia, and the reduced supply from emergency shut downs in the Middle East. Fuel Oil/Dubai crack spread also rose from the increase in demand for Fuel Oil in Japan and South Korea, together with the narrower Dated Brent/Dubai spread to be at 0.65 USD/BBL from the previous year's 3.54 USD/BBL leading to an increase in margin per unit of finished products.

When compared to Q4/2016, average crude run declined by 4% in Q1/2017. At the same time the gross refinery margin increased by THB 49 Million (+2%) with the decrease in crude oil costs from the lowered Dated Brent/Dubai crack spread compared to the previous quarter's 1.15 USD/BBL, along with the marginal increase in UNL95/Dubai crack spread; all culminating in the slight increase of Market GRM from the previous quarter.

Crude oil price in Q1/2017 increased throughout the quarter, even with the slight dip at the end of the quarter, however the crude oil price used for Q1/2017 production partially reflects the crude oil price from late Q4/2016 leading to inventory gain of THB 299 million. Moreover, there was a gain from hedging contracts for crude oil and finished product of THB 10 million. Thus, the total gross refinery margin was recorded at THB 2,774 million with an EBITDA of THB 2,226 million.



2) Marketing Business

| Sales Volume (Million Litre) | Q1/2016 | Q4/2016 | Q1/2017 | YoY | QoQ |
|---|--------------|--------------|--------------|-------------|------------|
| Retail (Service Stations) | 887 | 921 | 932 | 5% | 1% |
| Industrial | 578 | 570 | 607 | 5% | 7% |
| Total | 1,465 | 1,492 | 1,539 | 5% | 3% |
| Sales volume in each product category (Million Litre) | | | | | |
| LPG | 26 | 14 | 14 | -48% | -4% |
| Gasoline | 9 | 11 | 12 | 28% | 6% |
| Gasohol | 399 | 416 | 400 | 0% | -4% |
| Jet Fuel | 200 | 225 | 244 | 22% | 8% |
| Diesel | 782 | 771 | 813 | 4% | 5% |
| Fuel Oil and Others | 49 | 55 | 57 | 17% | 5% |
| Total | 1,465 | 1,492 | 1,539 | 5% | 3% |
| Total Marketing Margin (Baht / Litre) | 0.93 | 0.56 | 0.84 | -10% | 50% |
| EBITDA (THB Million) | 1,041 | (3) | 856 | -18% | N/A |

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

Q1/2017 performance when compared to Q1/2016 had an increase in sales volume by 75 million liters (+5%) with contribution from both retail and industrial markets, as a result of an increase in number of service stations since the end of previous year, and stagnating supply due to domestic refinery maintenance. Further, during the quarter, Jet fuel product sales increased by 22%, YoY.

Retail market sales volume (service stations) increased 45 million liters (+5%) from an increase in customer base following the company's main strategy of using service stations as the main channel. The majority of the increase in sales volume came from the Diesel, Gasohol 95 and Gasohol E85 product. The number of service stations as of the end of the quarter was 1,075 stations, with 7 new locations; large size station, in strategic location with modernized aesthetic, along with non-oil businesses to increase service station customers. However, the company closed down some service stations which has under target sales volume and were in unfavorable locations. Bangchak also 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 2nd in the market; with cumulative market share from Jan - Mar 2017 at 15.2%.

Industrial market sales figure increased by 29 million liters (+5%) from turnaround maintenance of other refineries in the country in March, causing supplies to become tight, while the company was able to well manage and procure oil products. The majority of the volume increase can be attributed to Jet fuel, Fuel oil, and Diesel.

When compared to Q4/2016, total sales volume increased (+3%), from both retail and industrial markets. Retail sales volume (Service Stations) increased 11 million litres (+1% QoQ), as a result of the continuous service stations refurbishments, and the higher sales volume from the service stations which are newly opened since the end of 2016. Moreover, Diesel sales volume increased from the higher factories Diesel intake, and Jet fuel sales volume rose from the supply shortage situation, resulting in Industrial sales volume increment by 37 million litres (+7%) QoQ.

Marketing margin was at 0.84 Baht per litre, 10% lower YoY, due to the large increase of crude oil price in Q1/2017 compared to Q1/2016, while the retail price takes longer time to adjust to the price change. Further, in Q1/2016, there were maintenance shutdown of several refineries, led to supply tightening situation, resulting in marketing margin for retail and industrial market for this quarter to be lower than the same period of the previous year. However, when compared to the previous quarter, the total marketing margin increased by 50% after the company ended its price freeze policy that was meant to cater to consumers in late 2016 while the crude oil price was rising at the time, bringing retail marketing margin in Q4/2016 to be inferior.

With the company electing to pursue more Non-oil business endeavors in order to meet the modern customers' convenience when using service stations; the company has done so with the expansion of Inthanin coffee shops, mini marts, etc. In 2016, the company established a subsidiary, Bangchak Retail Company Limited to increase potential to compete in the Non-oil business. As of the end of Q1/2017 there were an expansion of 11 Inthanin coffee shops and expansion of 3 SPAR mini marts, with goals to increase the branches continuously.

Consequently, marketing business performance in Q1/2017 recorded an EBITDA of THB 856 million, lower by THB 185 million (-18%) YoY from lower marketing margin. However, when compared to Q4/2016 marketing business EBITDA increased by THB 860 million, from higher of both sales volume and marketing margin, and the lower expenses when compared to the previous quarter.

3) Green Power Business

| Power Plant Business Performance | Q1/2016 | Q4/2016 | Q1/2017 | YoY | QoQ |
|---|--------------|--------------|--------------|-------------|------------|
| Revenue (THB Million) | 783 | 757 | 798 | 2% | 5% |
| Electricity Sales (Million kWh) | | | | | |
| Solar Power Business – Thailand (PPA of 130 MW) | 65.34 | 63.02 | 65.99 | 1% | 5% |
| Solar Power Business – Japan (PPA of 30 MW) | 3.14 | 4.90 | 6.59 | 109% | 34% |
| Total Electricity Sales | 68.48 | 67.93 | 72.58 | 6% | 7% |
| EBITDA | 855 | 568 | 706 | -17% | 24% |

Note: the company employed an independent party to assess fair value of assets and liabilities from the purchase of the SunEdison group in Japan, which completed in Q4/2016. The fair value was adjusted to have shown that the merger was completed as though it was done on January 1st, 2016. This led to restatement of Q1/2016 and Q4/2016 financial statements, leading to Q1/2016 EBITDA to increase and Q4/2016 EBITDA to be lower.

Business performance comparison between Q1/2017 and Q1/2016 recorded an increase in revenue by THB 15 million (+2%), this is due to the commercial operation commencing of Agricultural Cooperatives Solar farms, and 2 projects of Solar Power business in Japan (Nikaho project, PPA of 8.8 MW and Nagi project, PPA of 10.5 MW), led to Solar Power business in Japan's PPA capacity increase to 30 MW from 11 MW in the same period of last year, resulting in the electricity sales of solar power business in Japan to increase by 3.44 Million kWh (+109% YoY). Aside from the aforementioned, the average irradiation hours of the 11 MW's worth at the Japanese site in operation since Q1/2016 increased due to lower rain and snowfall in this quarter.



As for the Solar Power business in Thailand (PPA of 130 MW) in Q1/2017 saw a marginal increase in electricity sales (+1% YoY) mainly due to the successive opening of commercial projects to generate electricity for Agricultural Cooperatives solar farms, with PPA of 12 MW from late 2016 to this current quarter. Phase 1 to 3, however, saw lowered revenue due to lower electricity sales from decrease in irradiation in most of the project's vicinity, combined with the average base tariff which was lowered to 3.11 THB/kWh in Q1/2017, from 3.38 THB/kWh in Q1/2016 (the average base tariff exclude Adders).

In comparison to Q4/2016, the power plant business revenue increased by THB 41 million (+5%), the amount of electricity sold increased for both the Japanese and Thai projects. For the Solar Power business in Japan, the amount of electricity increased by 1.68 Million kWh (+34%) attributed to the weather in Japan which has entered spring, resulting in an increase in average irradiation hour. Moreover, there was a commencement of the Nagi commercial projects (PPA of 10.5 MW) in March 2017.

The solar power business in Thailand has an increase in electricity sales by 2.97 Million kWh (+5%) from the solar farms for Agricultural Cooperatives commencing commercial operation for an additional of 1 plant (PPA of 5 MW), and an increase in average irradiation hour compared to the previous quarter which was the winter season.

In Q1/2017, the power plant business recorded a THB 62 million gain from selling of assets of Natosi which operates Suimei project. The selling, general and administrative expenses was able to be tightened, resulting in the Green Power business recorded EBITDA of THB 706 million, lower THB 149 million (-17% YoY), but increased by THB 138 million (+24% QoQ).

In March 2017, BCPG Plc. entered into an agreement with CAIF III Pte. Ltd. to acquire all interests in CapAsia ASEAN Wind Holdings Cooperatief U.A., Netherlands, which is holding equity in PetroWind Energy Inc. who operates wind power plants in the Philippines (Operating wind power plants with PPA of 36 MW, and developing plants with PPA of 14 MW) at the amount not exceeding 28.5 USD (approximately THB 1,004 million), its objective is to expand renewable energy investment to regional levels. The transfer of interest and the payment shall be made once the parties have satisfied the condition precedence as specified in the Sale and Purchase Agreement.

4) Bio-Based Products Business

In Q1/2017, Bio-Based Products business recorded an EBITDA of THB 179 million, which can be attributed to Bangchak Biofuel Co., Ltd. THB 101 million, Bangchak Bioethanol (Chachoengsao) Co., Ltd. THB 58 million, and a share of profit from Ubon Bio Ethanol Co., Ltd. THB 20 million.

In March 2016, the Board of Directors of the Company resolved to establish BBP Holding Co., Ltd., for the purpose of bio-based products business operation and organizational restructuring, with initial registered capital of THB 700 million, and the Company holds 100% shares.

Biodiesel business performance by Bangchak Biofuel. Co., Ltd

| Biodiesel Business Performance | Q1/2016 | Q4/2016 | Q1/2017 | YoY | QoQ |
|---|------------|-----------|------------|-------------|------------|
| Revenue (THB Million) | 1,867 | 1,189 | 1,639 | -12% | 38% |
| Utilization Rate (%) | 107% | 49% | 71% | -34% | 43% |
| Average Daily Production Rate (Thousands of litres per day) | 385 | 398 | 571 | 48% | 43% |
| B100 Sales Volume (Million litre) | 64.16 | 39.16 | 52.66 | -18% | 34% |
| EBITDA (THB Million) | 134 | 70 | 101 | -24% | 45% |

| Average Sales Price (Source: Department of Energy Business, Ministry of Energy) | | | | | |
|---|-------|-------|-------|----|----|
| B100 (Baht / Litre) | 32.61 | 33.58 | 34.20 | 5% | 2% |
| Crude Palm Oil (CPO) (Baht / Kg.) | 29.56 | 30.13 | 30.67 | 4% | 2% |

When comparing performance between Q1/2017 and Q1/2016, Biodiesel business saw a decrease in sales revenue by THB 227 million (-12%), mainly due to the reduction in B100 product sales volume by 11 million liters (-18 %) having to do with government announcement to lower the portion of B100 in Diesel product; in Q1/2017 the portion was 5% while in Q1/2016 it was 7%. However, B100 average price increased by 5% compared to the same period of the previous year, as there was a flood situation in the Southern region of Thailand during January, causing problems for oil palm harvesting, which led to an elevated crude palm oil price. Moreover, there was a commencement of the 2nd Biodiesel plant that yields 810 thousands litre per day during the previous years, resulting in an increment in average rate of production in Q1/2017 to be at 571 thousands litre per day (+48%) YoY or, at a utilization rate of 71%.

Comparing to Q4/2016, the Biodiesel business sales revenue increased by THB 451 million (+38%), in part due to an increase in B100 product sales volume by 14 million litre (+34%), from the decreased mandatory portion of B100 used in Diesel product to 3% during October – November, while in Q1/2016, B100 portion was mandated at 5% throughout the quarter. Further, in the quarter, there was an increased domestic Diesel demand, and the price of B100 product to adjust upward as well as the crude palm oil price.

In Q1/2017, the Gross margin of Biodiesel business declined from that of the same period of last year, but increased from the previous quarter, in part due to the amount of mandatory B100 mixture in Diesel product that changed according to the government announcement, and the reduction in crude palm oil price and average B100 product price near the end of the quarter, as oil palm supply expanded, leading to inventory losses of THB 12 million in Q1/2017

(including a reversal of allowance for loss on decline in value of inventories (LCM) of THB 5 million). While Q1/2016 saw inventory gain of THB 27 million, and in Q4/2016 an inventory loss of THB 28 million. Within this quarter, Biodiesel business's selling, general and administrative expenses increased from the same period of the previous year from the commencement of the 2nd Biodiesel plant. As a result, in Q1/2017 Biodiesel business recorded EBITDA of THB 101 million, a THB 32 million lower (-24%) YoY, but increased THB 31 million (+45%) QoQ.

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

| Fuel Ethanol business performance | Q1/2016 | Q4/2016 | Q1/2017 | YoY | QoQ |
|---|---------|---------|---------|-----|-----|
| Revenue (THB Million) | N/A | 263 | 263 | N/A | 0% |
| Revenue (THB Million) | N/A | 83% | 85% | | |
| Utilization Rate (%) | N/A | 125 | 127 | N/A | 2% |
| Average Daily Production Rate (Thousands of litres per day) | N/A | 11.08 | 10.66 | N/A | -4% |
| Ethanol Sales Volume (Million litre) | N/A | 46 | 58 | N/A | 27% |

Average Sales Price (Source: Department of Energy Business, Ministry of Energy)

| | | | | | |
|------------------------|-----|-------|-------|-----|----|
| Ethanol (Baht / Litre) | N/A | 23.11 | 24.14 | N/A | 4% |
|------------------------|-----|-------|-------|-----|----|

Q1/2017 performance compared to Q4/2016, the Fuel Ethanol business by Bangchak Bioethanol (Chachoengsao) Co., Ltd. earned roughly the same revenue level as the previous quarter. Sales volume decreased by 0.4 million litres (-4%), however Ethanol price adjusted upward offsetting the sales loss. The decrease in sales volume is attributed to the lower ethanol orders from Bangchak Corporation Plc.; the main customer, in tandem with the decline in its Gasohol products sales. However, average Ethanol production in the quarter is heightened to 127 thousands litres per day, or 85% utilization rate. The increase in Ethanol price is positively correlated with molasses price, which is the main ingredient in domestic Ethanol production, from a decrease of market supply of sugarcane when compared to the previous year.

In Q1/2017, the Fuel Ethanol businesses' gross margin is higher than the previous quarter, due to the cost of production adjusting downward coinciding with cassava price, as the market has an excess supply of cassava during February to March 2017, and cassava export slowed down. Whereas Ethanol price adjusted upwards. As a result, Fuel Ethanol business recorded EBITDA of THB 58 million which increased THB 12 million (+27%) QoQ.

5) Exploration & Production Business

| E&P Business Business Performance | Q1/2016 | Q4/2016 | Q1/2017 | YoY | QoQ |
|---|-----------|-----------|------------|-------------|------------|
| Production Volume1/ (barrels per day net to Nido) | 3,112 | 2,631 | 2,450 | -21% | -7% |
| Sales Volume (barrels net to Nido) | 202,128 | 203,903 | 200,630 | -1% | -2% |
| Revenue (THB Million) | 233 | 327 | 399 | 71% | 22% |
| EBITDA (THB Million) | 22 | 71 | 133 | 512% | 88% |

Note: 1/ production volume of Galoc oil field only

In Q1/2017, the Galoc oil field production recorded an Uptime of 99.9% and an average production rate of 4,385 barrels per day (2,450 barrels net to Nido). The details of crude oil sold during the quarter, as disclosed by the Nido Petroleum Limited (NIDO) to the Australian Securities Exchange (ASX) are as follow:

- Galoc oil field in November sold 1 cargo in January totaling of 350,056 barrels (194,448 barrels net to Nido) with FOB price of 55.12 USD/BBL.
- Nido & Matinloc oil field totaling 20,211 barrels (5,020 barrels net to Nido).

Q1/2017 performance when compared to Q1/2016, the Exploration and Production business recorded sales revenue of THB 399 million, an increase THB 166 million due to the increase in crude oil price. FOB price in Q1/2017 was at 55.12 USD/BBL, an increase from Q1/2016's price of 31.27 USD/BBL. While the volume sold saw slight decreases, around -1% YoY, with the production volume decreasing according to the Natural-Dcline Production Curve.

Performance compared to Q4/2016, the Exploration and Production business sales revenue increased by THB 72 million due to the rise in crude oil price. FOB price in this quarter is higher than Q4/2016's 44.62 USD/BBL, while the sales volume decreased by -2% QoQ.

Nido Petroleum Limited better managed its selling, general and administrative expenses leading to the Exploration and Production Business to record EBITDA of THB 133 million (+512% YoY, +88% QoQ), however, there was a loss from assets impairment of THB 113 million (or around USD 3.21 million) from Nido's withdrawal from the appraisal wells program in GURITA PSC, Indonesia.

Nido Petroleum Limited disclosed its crude reserve figure at the end of the year to the Australian Securities Exchange (ASX) in its annual report as follow:

| Reserves Position | | Unit: Million Barrel | | |
|---|---------|----------------------|--------|--|
| SC 14C1: Galoc Oil Field | FY 2015 | FY 2016 | Change | |
| Proved (1P) | 2.65 | 1.54 | (1.11) | |
| Proved plus Probable (2P) | 4.14 | 2.60 | (1.54) | |
| Proved plus Probable plus Possible (3P) | 5.91 | 4.22 | (1.69) | |

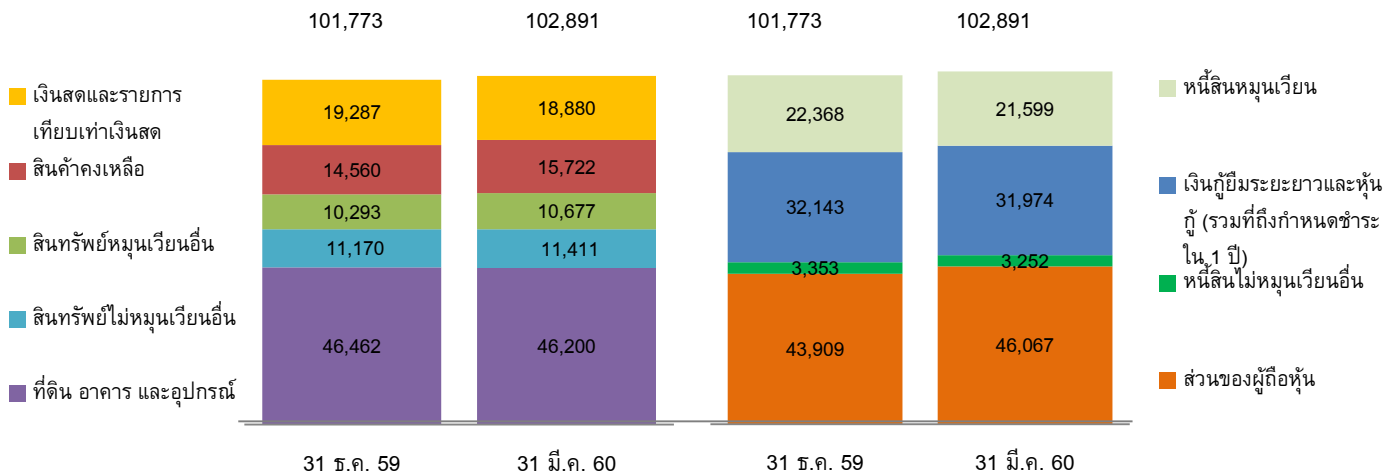
Note: Nido has yet to assess its reserve volume at the Galoc-77/ST oil field as of the 31st December, 2016 due to the eminent exploration in Q1/2017; the assessment will occur after the exploration concludes.



Statement of Financial Position

Financial Position of the Company and its subsidiaries (Consolidated)

unit: THB million



Assets

As of March 31, 2017, Total Assets of the Company and its subsidiaries were THB 102,891 million, an increase of THB 1,109 million when compared to December 31, 2016.

- Cash and cash equivalents were decreased by THB 406 million. Details are stated in Analysis of the Cash Flow Statement.
- Net Trade Account Receivable increased by THB 186 million due to BCP Trading Pte. Ltd. increased sales volume, while at the same time Account Receivable for the Company decreased due to the increase of sales in cash.
- Inventory increased by THB 1,162 million, mainly due to inventory of petroleum products; crude and finished product inventory increased by 64 million litres, valued about THB 1,169 million. While subsidiaries had inventory levels decrease.
- Other Accounts Receivable decreased by THB 201 million, mainly decreased due to the receive a refund of advanced payment from the preparation for the Solar Power Plant Project in Japan at the amount of THB 353 million. Advanced tax payment for imported products decreased by THB 154 million, however advanced payment for Nido Petroleum Ltd.'s joint venture operation at the Galoc Oil Field increased by THB 380 million, and an increase in the refinery's property tax and computer software license and maintenance fee.
- Oil Fuel Fund subsidy receivable increased by THB 389 million, mainly from Gasohol subsidy receivable which increased by THB 248 million and LPG subsidy which increased by THB 140 million due to an increase in LPG price in the global market, while the government retained retail price, therefore leading them to subsidize the LPG Oil Fuel Fund.
- Investment in subsidiaries increased by THB 700 million from entire amount share payments for establishing BBP Holding Co., Ltd. which the company holds 100% shares, with the purpose to operate Bio-Based Products

businesses. 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 46 million from investment in Bongkot Marine Services Co., Ltd. by THB 29 million and realized profit from Ubon Bio Ethanol Co, Ltd. by THB 19 million.
- Property, plant and equipment decreased by THB 262 million, which are primarily investment in refinery machinery and equipment of the company at THB 682 million. For BCPG Plc., the increment was from the construction work in progress of THB 228 million. However, Nido Petroleum Ltd.'s selling of assets lowered by THB 46 million from the difference from conversion of financial statements. Depreciation for the quarter was THB 1,137 million.
- Intangible Assets decreased by THB 89 million, due to loss of asset impairment in the appraisal well of Gurita PSC by THB 113 million (USD 3.2 million). At the same time, investment in exploration and appraisal expense increased by THB 97 million, and investments in electricity grid connection of THB 83 million. Other than this, the decrease can be attributed to the difference in converting financial statement by THB 102 million and amortization by THB 57 million.

Liabilities

As of March 31, 2017, Total Liabilities of the Company and its subsidiaries was THB 56,824 million, a decrease of THB 1,050 million, mainly from:

- Trade Accounts Payable were increased by THB 107 million, mainly from the decrease of the Company's Trade Account Payable of THB 437 million, as crude oil price lowered. Average Dated Brent oil price in March 2017 was 51.56 USD/BBL, compared to 53.60 USD/BBL in December 2016. However, Trade Account Payable of Nido Petroleum Limited and BCPT increased by THB 321 million, and THB 155 million, respectively.
- Other payables were decreased by THB 682 million, for the Company, other payables reduced from the accrued expenses in the end of 2016, but there was an increase in interest expense payable for debentures of THB 164 million. For Bangchak Biofuel Co., Ltd., construction costs payable for the 2nd biodiesel plant decreased by THB 166 million, but there was a dividend payable to UAC Global Plc. of THB 45 million. For BCPG Plc., accrued expenses and other payables decreased by THB 168 million.
- Short term loans and long term loans from financial institutions (including current portion of long-term loans) decreased by THB 540 million, as the Company and its subsidiaries repaid short term loans and long term loans by THB 402 million, but increased THB 138 million from the short term loan draw down of BCPG Plc. Also, there was a decrease from the effect of foreign exchange of THB 280 million due to the appreciation of THB, and an amortization of finance costs of THB 4 million.

Equities

As of March 31, 2017, Total Equity was THB 46,067 million, Total Equity attributable to owners of the Company was THB 41,641 million, an increase of THB 2,098 million from the Net Profit for the quarter of THB 2,084 million, and Other component of equity of THB 15 million (from foreign currency translation differences for foreign operations operations, and change in fair value of available for sale assets). The Consolidated book value was THB 30.24 per share.

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

In 1Q/2017, the Company and its subsidiaries had net cash received from operating activities of THB 1,283 million, net cash used in investing activities of THB 1,098 million, net cash used in financing activities of THB 525 million. As a result, the Company and its subsidiaries had a decrease in Cash and cash equivalents of THB 341 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 -66 million, resulting in Cash and cash equivalents as of March 31, 2017 at THB 18,880 million.

Details of cash received and used are as follows:

| Cash Flows (Unit: THB Million) | 31 Dec 16 | 31 Mar 17 |
|--|---------------|---------------|
| Net cash received (used in) operating activities | 6,037 | 1,283 |
| Net cash received (used in) investing activities | 1,761 | (1,098) |
| Net cash received (used in) financing activities | (2,227) | (525) |
| Net increase (decrease) in cash and cash equivalents before the effect of exchange rate | 5,571 | (341) |
| Effect of exchange rate changes on balances held in foreign currencies | (70) | (66) |
| Net increase (decrease) in cash and cash equivalents | 5,501 | (406) |
| Cash and cash equivalents as at 1 January | 7,872 | 19,287 |
| Cash and cash equivalents as at 31 March | 13,373 | 18,880 |

- 1) The Company and its subsidiaries had net cash received from operating activities of THB 1,283 million, mainly from
- Net cash received from operating activities of THB 4,109 million which was from Net Profit of THB 2,198 million added back Non-Cash Expenses of THB 1,074 million, Finance Costs and Income Tax credit of THB 836 million.
 - Cash used in the operating assets of THB 1,759 million, from Inventory increase of THB 1,181 million, Trade Accounts Receivable increase of THB 456 million, Other Receivables increase of THB 156 million, and Other Assets decrease of THB 34 million.
 - Cash from operating liabilities increased by THB 1,108 million, mainly increased from Trade Accounts Payable of THB 156 million, Other Payables decrease of THB 583 million, and other liabilities decrease of THB 370 million.
 - In the quarter, there was a change in Corporate Income Tax of THB 40 million, from the receive of Income tax refund from the Revenue Department of THB 44 million, and Income Tax paid of THB 3 million.

2) Net Cash used in investing activities of THB 1,098 million, mainly from

- Investment in property, plant and equipment of THB 1,228 million, an investment in refinery machinery and equipment, marketing and office equipment of the company of THB 713 million, an investment in Biodiesel plant machinery and equipment of THB 181 million, construction work in progress in solar power plant of BCPG Plc. of THB 321 million. However, there was cash received from selling of assets of THB 497 million, mainly from the selling of assets in Suimei project of BCPG Plc. of THB 495 million.
- Net cash outflow on the purchase of shares in joint venture Bongkot Marine Services Co., Ltd. of THB 29 million.
- Net cash paid for the leasehold right of service stations increased by THB 105 million,
- Net cash paid for the purchase of intangible assets by THB 272 million, mostly for the appraisal well program expense of Exploration and Production business.
- Received cash from interest received of THB 18 million, and proceeds from disposal of other investments of THB 19 million.

3) Net cash used in financing activities of THB 525 million, mainly from

- Cash paid for finance costs of THB 172 million.
- BCPG Plc.'s dividend payment for other shareholders which are not the Company and its subsidiaries of THB 88 million.
- Received cash from short-term loan from financial institution of THB 43 million, from BCPG Plc. of THB 138 million, but there was THB 95 million paid for short term debt repayment.
- Long-term loan from financial institution repayment of THB 307 million (of BCPG Plc. and Bangchak Biofuel Co., Ltd.).

Financial Ratios

Financial Ratios (Consolidated)

| Profitability Ratios (%) | Q1/2016 | Q4/2016 | Q1/2017 |
|--------------------------|---------|---------|---------|
| Gross Profit Margin | 3.12% | 9.30% | 9.15% |
| EBITDA Margin | 4.69% | 7.56% | 9.26% |
| Net Profit Margin | 0.65% | 2.44% | 5.00% |
| Return on Equity (ROE) | 9.68% | 12.73% | 17.02% |
| Return on Assets (ROA) | 6.36% | 7.51% | 10.28% |

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

| | 31 Mar 16 | 31 Dec 16 | 31 Mar 17 |
|-------------------------------------|----------------|----------------|----------------|
| Liquidity Ratios | | | |
| Current Ratio | 2.84 | 1.69 | 1.79 |
| Quick Ratio | 1.87 | 1.13 | 1.17 |
| Financial Policy Ratios | | | |
| Interest bearing Debt to Equity | 0.91 | 0.86 | 0.80 |
| Net Interest bearing Debt to Equity | 0.54 | 0.38 | 0.36 |
| | Q1/2559 | Q4/2559 | Q1/2560 |
| DSCR | 2.08 | 1.80 | 1.24 |

* DSCR Calculation is not including 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) | = | (Current Asset – Inventory) / 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: THB Million

| Environment Management Accounting : EMA | 2016 | 2017 | △ |
|---|---------------|---------------|---------------|
| Material Costs of Product Outputs | 11,226 | 24,638 | 13,411 |
| : Consist of crude oil, ethanol, biodiesel, chemical, energy and utilities in production | | | |
| Material Costs of Non-Product Outputs | 21 | 21 | 0.01 |
| : Consist of slop and sludge oil, waste water, chemical surplus | | | |
| Waste and Emission Control Costs: Consist of maintenance cost of environmental control equipment and depreciation and other fees | 80 | 69 | (11) |
| Prevention and Other Environmental Management Costs | 4 | 2 | (2) |
| : Consist of monitoring and measurement cost, environmental management system expenses | | | |
| Total Expenses | 11,332 | 24,730 | 13,398 |
| Benefit from by-product and waste recycling | (5) | (4) | (0.73) |

The environmental expenses in Q1/2017 has overall increased from Q1/2016 by about THB 13,399 million or about 118%, mainly from the Material Costs of Product Outputs which increased by THB 13,411 million, from the global oil price which rose from the previous year, combined with the refinery's increased crude run from 64.20 KBD in 2016 to 109.80 KBD this year. The Material Costs of Non-Product Outputs was on par with previous year. While, Waste and Emission Control Costs decreased by THB 11 million (-14% YoY), primarily from the reduction in depreciation of emission control equipment by THB 13 million. Prevention and Other Environmental Management Costs slightly decreased by THB 2 million from lower cost in monitoring and detection

Benefits from by-products and waste recycling decreased by THB 0.73 million (-14% YoY) due to sellable residue steel and aluminum scrap decreased by THB 1.16 million, as in Q1/2016 there was a turnaround annual maintenance of the refinery. Glycerin lowered by THB 0.03 million. While Liquid Sulfur value increased by THB 0.46 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.