



The Bangchak Petroleum Public Company Limited

Management Discussion and Analysis of Business Operation

For the second quarter ended June 30, 2016



Summary of the Company and its subsidiaries' operating result for the second quarter ended 30th June 2016

In Q2/2016, the consolidated financial statement recorded revenue from sale of goods and rendering of services of Baht 37,262 million, and Net Profit of Baht 2,415 million which was the Net Profit attributable to owners of the Company of Baht 2,417 million, or earning per share of 1.76 Baht.

EBITDA Structure of the Company and its subsidiaries.						Unit: Million Baht	
	Q2/2015	Q1/2016	Q2/2016	YoY	QoQ	6M2015	6M2016
Total Revenue	41,357	30,276	37,262	-10%	23%	80,802	67,538
Total EBITDA	5,164	1,193	4,085	-21%	242%	7,496	5,278
<i>EBITDA Refinery</i>	3,404	(645)	2,531	-26%	493%	4,203	1,886
<i>EBITDA Marketing</i> ^{1/}	657	1,041	882	34%	-15%	1,397	1,923
<i>EBITDA Power Plant</i> ^{2/}	735	628	525	-29%	-16%	1,449	1,153
<i>EBITDA Biofuel</i> ^{3/}	99	146	113	14%	-23%	179	259
<i>EBITDA Exploration and Production</i> ^{4/}	314	22	59	-81%	171%	342	81
<i>EBITDA Others</i> ^{5/}	(45)	0	(25)	45%	N/A	(73)	(25)
Profit attributable to owners of the Company	2,794	47	2,417	-13%	N/A	3,831	2,464
Basic earnings per share (Baht)	2.03	0.03	1.76	-14%	N/A	2.78	1.79

Note: 1/ EBITDA from Marketing Business of The Company, Bangchak Greenet Co.,Ltd., and Bangchak Retail Co., Ltd.

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

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

4/ EBITDA from Nido Petroleum Limited

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

In Q2/2016, Bangchak refinery resume its full operation after the annual turnaround maintenance (TAM) in the previous quarter. The refinery's average crude run was stable around 112 KBD. The consistently high level of crude run was a result of the well-planned production process, refining logistics system management, together with the YES-R projects which enabled a consistent and smooth production process. Market GRM was increased from the previous quarter from the fully utilized production rate, the increment in Gas Oil/Dubai crack spread (GO/DB) increment, and the narrower Dated Brent/Dubai spread (DTD/DB).

The company's total sales volume continued to expand as a result of a rise in domestic oil demand, especially in retail markets which was supported by a decline in retail oil prices encouraging demand, and a growth in tourism sector. Total marketing margin remained at a high level although decline from the previous quarter from the higher competitiveness of the industrial market.

Moreover, when compared to the previous quarter, crude oil price increased by 41% (average Dubai crude oil price in Q1/2016: 30.59 \$/BBL, in Q2/2016: 43.23 \$/BBL) from the decreased oil supply. Consequently, refinery business recorded an Inventory Gain of Baht 905 million (included a reversal of allowance for lower of cost or market of inventories (LCM) of Baht 6 million), when combined with its subsidiaries, the company recorded a total Inventory Gain of Baht 941 million (included a reversal of allowance for lower of cost or market of inventories (LCM) of Baht 6 million).

In the quarter, the company and its subsidiaries recorded a gain on foreign exchange of Baht 250 million, from the strengthen value of Thai Baht since the beginning of the year, also the appreciation of Japanese Yen resulted in a gain on foreign exchange of the businesses in Japan as well. In conclusion, the company and its subsidiaries recorded a total EBITDA of Baht 4,085 million, reduced by -21% YoY, but increased by 242% QoQ.

Further, in Q2/2016, the company has set up new subsidiary companies and a joint venture company, in accordance with the company's Board of Directors Meeting, details as follows:

- Subsidiary companies:
 - Bangchak Bioethanol (Chachoengsao) Co., Ltd., with the objective to produce and sell ethanol product, with registered capital of Baht 1 million, and the company holds 85% of the shares.
 - BCP Trading Pte. Ltd. (BCPT) which established in Singapore, with the objective to trade commodities products, petrochemicals, other related chemicals, and to conduct other related businesses, with initial registered capital of USD 1 million, and the company holds 100% of the shares.
 - BCPG Biopower 1 Co., Ltd. and BCPG Biopower 2 Co., Ltd., with the objective to develop and operate biomass power plant business, with registered capital of Baht 60 million and Baht 20 million respectively, and the company holds 100% of the shares.
- Joint Venture company:
 - Bongkot Marine Services Co., Ltd., with the objective to engage in businesses related to floating storage unit (FSU), with initial registered capital of Baht 1 million, and the company holds 30% of the shares.

The brief summary of each business performance for the quarter were as follows:

Refinery business recorded an average crude run of 112 KBD as the refinery has resumed its full operation after the annual turnaround maintenance (TAM) in the previous quarter. Market GRM was recorded at 6.27 \$/BBL, an increase from the last quarter due to a higher production volume, the Gas Oil/Dubai crack spread (GO/DB) incremental, despite the contraction of other product crack spreads, and from the narrower Dated Brent/Dubai spread (DTD/DB). However, Market GRM declined from the same period of last year which was abnormally high. Nevertheless, as the crude oil price in Q2/2016 increased from the supply reduction, refinery business recorded an Inventory Gain of Baht 905 million (included a reversal of allowance for lower of cost or market of inventories (LCM) of Baht 6 million). Yet, there was a gain from crude and product oil price hedging contract of Baht 3 million. As a result, refinery business recorded an EBITDA decrease of -26% YoY but an increase of 493% QoQ.

Marketing business sales volume was 1,450 million litres, an expansion of 3% YoY, from a rise in domestic oil demand in retail markets supported by a decline in retail oil prices, a growth in tourism sector, and from the company's strategy focusing on retail market as its main priority. Sales volume however, was slightly declined from the previous quarter, mainly in the industrial markets, due to the low seasonal demand and the higher oil product supply in the industrial market. In this quarter, the company continued to maintain its 2nd rank position in retail market share. Total marketing margin was at 0.87 Baht per litre, increased by 26% YoY from the retail marketing margin, but decreased from the previous quarter due to the higher competitiveness of the industrial market. As a result, marketing business EBITDA increased by 34% YoY, but decreased by -15% QoQ.

Solar Power business which is currently under BCPG Plc., a subsidiary of the company, recorded a slight decline in total revenue by -2% YoY and -3% QoQ. This was mainly due to the Solar Power business in Thailand, which recorded a lower total electricity sales from the higher amount of rainfall in the quarter, compared to the same period of last year where there was a draught. For Solar Power business in Japan, total electricity sales rose 9% QoQ from the superior irradiation hours after the winter season ended. In Q2/2016, BCPG Plc. has been officially awarded a right to sign the power purchase agreement with Provincial Electricity Authority, for the Free-field installations solar farms for Agricultural Cooperatives, which BCPG Plc. supports for 3 plants, with PPA totaling of 12 MW, which are expected to start the commercial operation by the end of 2016.

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

Biodiesel business recorded an average daily production rate of 387 thousand litres per day, a continued rise in production rate was due to an improvement in Biodiesel plant efficiency, to support a B100 sales volume growth, and the expansion of its customer base to support its new 2nd Biodiesel plant. Gross margin increased from the same period of last year from the increased production rate, the smooth operation of the plant, and the efficient inventory management. But the gross margin declined from the last quarter, as the price of crude palm oil increased in a larger proportion than B100 price.

Exploration and Production Business recorded a revenue decrease of -65% YoY and an increase of 28% QoQ, which move in the same direction as the global crude oil price. Further, Nido still maintain its cost saving program on both the expense related to production and Selling, General and Administrative expenses in response to the lower crude oil price environment. In the quarter, the total sales volume was 393,375 barrels (net to Nido) from the selling of 2 cargoes of crude oil.

Consolidated Statement of Income

Unit: Million Baht

	Q2/2558	Q1/2559	Q2/2559	YoY	QoQ	6M2558	6M2559
Revenue from sale of goods and rendering of services	41,357	30,276	37,262	-10%	23%	80,802	67,538
Cost of sale of goods and rendering of services	(36,390)	(29,327)	(32,986)	-9%	12%	(73,471)	(62,314)
Gross Profit	4,967	949	4,276	-14%	351%	7,330	5,224
Investment income and other income	139	126	111	-20%	-12%	243	237
Selling and administrative expenses	(1,213)	(1,212)	(1,433)	18%	18%	(2,371)	(2,645)
Gain (loss) from crude and product oil price hedging contract	47	163	(0.4)	-101%	-100%	(89)	163
Gain (loss) from foreign currency forward contracts	(8)	56	2	123%	-97%	-13	58
Gain (loss) on foreign exchange	(26)	84	250	N/A	196%	240	335
Reversal of allowance for gain/(loss) from impairment of assets	(0.3)	2	0.4	225%	-77%	10	2
Share of profit (loss) of associate	(1)	13	(6)	-461%	-146%	10	7
Profit before finance costs and income tax expense	3,905	180	3,200	-18%	N/A	5,362	3,381
Finance costs	(401)	(373)	(327)	-19%	-12%	(812)	(699)
Profit/(loss) before income tax expense	3,403	(193)	2,874	-16%	N/A	4,550	2,681
Income tax (expense) credit	(594)	167	(459)	-23%	375%	(684)	(292)
Profit for the period	2,809	(25)	2,415	-14%	N/A	3,865	2,389
Owners of the Company	2,794	47	2,417	-13%	N/A	3,831	2,464
Non-controlling interests	15	(72)	(3)	-117%	97%	34	(75)
Earnings per share (Baht per Share)	2.03	0.03	1.76	-13%	N/A	2.78	1.79

For Q2/2016 performance, the company and its subsidiaries recorded a Net Profit attributable to owners of the Company of Baht 2,417 million, a decrease of Baht 377 million (-13% YoY) when compared to Q2/2015, and an increase of Baht 2,370 million when compared to Q1/2016, with details as follows:

- 1) Total revenue from sale of goods and rendering of services of Baht 37,262 million, a decrease of 10% YoY and an increase of 23% QoQ, mainly reduced from the oil-related business, as result of the sharp decline in global crude oil price, while the company's total sales volume increased by 6% YoY and 11% QoQ.
- 2) Gross Profit was recorded at Baht 4,276 million, a decrease of 14% YoY from the lower Market GRM when compared to the same period of last year (Q2/2016: 6.27 \$/BBL, Q2/2015: 10.41 \$/BBL), as a result of the narrower crack spreads. However, gross profit increased 351% QoQ, mainly due to the higher crude run in the quarter, after the annual turnaround maintenance (TAM) in the previous quarter, and from the higher average Gas Oil/Dubai crack spread (GO/DB), resulting in the superior Market GRM (Q1/2016: 5.35 \$/BBL). Moreover, due to the increment of crude oil price during the quarter, there was an Inventory Gain of Baht 941 million.
- 3) Investment income and other income was recorded at Baht 111 million, a decrease of 20% YoY from a decrease in current investments. And a decrease of 12% QoQ, as there was a realized gain in selling the investment in ASEAN Potash Chaiyaphum Public Company Limited.

- 4) Selling and administrative expense was recorded at Baht 1,433 million, an increase of 18% YoY and 18% QoQ, mainly due to the increased expense of BCPG Plc.
- 5) Gain on foreign exchange was recorded at Baht 250 million, mainly increased from Baht 163 million gain on foreign exchange of BCPG Plc.
- 6) Finance costs was recorded at Baht 327 million, a decrease of 19% YoY and 12% QoQ from the company's partial long-term loans prepayment.
- 7) In Q2/2016, 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 Baht 344 million, which will be recorded in other comprehensive income.

Performance of each company details are as follows:

Statement of Income of the company and its subsidiaries		Unit: Baht Million
Q2/2016	Revenue from sale of goods and rendering of services	Net Profit
The Bangchak Petroleum Plc.	35,255	2,124
Bangchak Green Net Co., Ltd.	7,469	42
Bangchak Biofuel Co.,Ltd.	2,221	102
BCPG Plc. Group	759	460
Nido Petroleum Ltd.	299	(179)
Other ^{1/}	-	(28)

Note: 1/ BCP Energy International Pte. Ltd., BCP Innovation Pte. Ltd., Bangchak Retail Co., Ltd., and Bangchak Bioethanol (Chachoengsao) Co., Ltd.

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

1) Refinery Business

Crude Oil Price								Unit: \$/BBL	
	Q2/2015	Q1/2016	Q2/2016			YoY	QoQ	6M2015	6M2016
	AVG	AVG	MAX	MIN	AVG	%	%	AVG	AVG
Dubai (DB)	61.26	30.59	48.81	33.80	43.23	-29%	41%	56.55	37.06
Dated Brent (DTD)	61.88	33.94	52.87	33.47	45.59	-26%	34%	57.84	39.81
DTD/DB	0.61	3.35	4.06	-0.33	2.36	284%	-30%	1.29	2.75

Crude Oil Price Situation

The Dubai crude oil price dropped down 18.03 \$/BBL in Q2/2016 compared to Q2/2015. It was pressured by increasing oil production of OPEC and high global oil inventories.

The average Dubai crude oil price in Q2/2016 increased by 12.64 \$/BBL compared to Q1/2016. The price was supported by concerns about supply disruption in many areas especially oil pipelines attacking in Nigeria, power shortage in Venezuela, oil worker strike in Kuwait, wildfire in Alberta of Canada, and oil field maintenance in the North Sea. Oil price was also gained by the on-going slowdown of U.S. shale oil production following continuous drop in oil rig counts since 2014.

On the contrary, the oil price was pressured by concerns that oil production could increase again if the price could stay at nearly 50 \$/BBL. In addition, OPEC meeting in April was unable to reach an agreement to maintain its production level. OPEC members especially Iraq, Saudi Arabia, Iran, Kuwait and UAE had increased its production to gain market share, especially in Asia. Oil prices were also pressured by the risky assets sold off after the UK referendum to leave the EU which adds uncertainty to the Europe, world economy and oil demand.

The spread between the average Dated Brent oil price and average Dubai oil price (DTD/DB) in Q2/2016 increased by 1.75 \$/BBL when compared to Q2/2015, as shale oil production in the U.S. declined, led to a better situation of the light crude oil oversupply. On the other hand, the heavy crude oil production from OPEC producers was increased.

When compared to Q1/2016, the spread between average Dated Brent oil price and average Dubai oil price (DTD/DB) in Q2/2016 decreased by 0.99 \$/BBL. The spread was pressured by the slower demand for West African light crude oil during the early to mid-quarter, as Chinese demand was slowdown when compared to the first quarter, due to the congestion of unloading oil cargoes in China and refinery turnarounds.

Crack Spreads								Unit: \$/BBL	
	Q2/2015	Q1/2016	Q2/2016			YoY	QoQ	6M2015	6M2016
	AVG	AVG	MAX	MIN	AVG	%	%		
UNL95/DB	19.78	18.84	17.01	11.40	14.42	-27%	-23%	17.62	16.58
IK/DB	13.46	11.70	12.99	9.39	11.16	-17%	-5%	15.23	11.42
GO/DB	13.73	9.66	12.60	7.22	10.53	-23%	9%	15.01	10.10
FO/DB	-3.54	-5.24	-5.25	-9.89	-8.74	-147%	-67%	-2.73	-7.03

Crack Spreads Situation

- An average Gasoline/Dubai crack spread (UNL95/DB) was decreased by 5.36 \$/BBL, compared to Q2/2015. The growth of gasoline demand slowed down compared to the same period last year where the demand was extraordinarily high. Moreover, as many refineries especially in China increased gasoline production and exports, regional supply was higher, while India's gasoline imports declined as refineries began to increase gasoline production to meet its domestic demand.

When compared to Q1/2016, the Gasoline/Dubai crack spread (UNL95/DB) was decreased by 4.42 \$/BBL. As in this quarter, the crack spread was pressured by a slower demand in Indonesia, the largest importer in the region, which reduced its gasoline import after the commissioning of new Residue Fluid Catalytic Cracking (RFCC) and the operation resume of the condensate splitter since the fourth quarter of last year, which made the domestic production increased. The gasoline production was also increased especially in China, after the Chinese government granted second round of petroleum products export quota to refiners in which the volume has increased 149% compared to the same period last year. Also, Europe's gasoline exports to Asia had increased. And an export-oriented refinery in Singapore returned to operation during the quarter after its shutdown in August 2015, resulting in an increase of inventories in Singapore.

- An average Jet (Kerosene)/Dubai crack spread (IK/DB) was decreased by 2.30 \$/BBL, compared to Q2/2015. As the crack spread was pressured by the slower demand due to the warmer weather than usual, while the supply increased as a result of higher crude run of refineries.

When compared to Q1/2016, the Jet (Kerosene)/Dubai crack spread (IK/DB) was decreased by 0.54 \$/BBL, as it was pressured by the slower demand after the end of winter, and high refinery run before entering the turnaround period. Chinese refiner also increased its export during the quarter. However, the spread was slightly supported by rising demand from air transportation.

- An average Gas Oil/Dubai crack spread (GO/DB) was dropped by 3.20 \$/BBL, compared to Q2/2015, from Chinese exports which remained high after the government granted more crude import and product export quota for Teapot refineries. Moreover, the new refinery expansion project in the Middle East since late of 2015 is now fully operating this year.

When compared to Q1/2016, Gas Oil/Dubai crack spread (GO/DB) increased by 0.87 \$/BBL. The crack spread was supported by refinery turnarounds in Asia, and rising gas oil/diesel import demand from India, Pakistan

and Vietnam. Drought in Asia led to the higher use of diesel for power generation in agricultural sector. The crack spread was also supported by the refinery workers strike in France resulting in the tighter supply.

- An average Fuel Oil/Dubai crack spread (FO/DB) was decreased by 5.20 \$/BBL, compared to Q2/2015. The spread was pressured by the China's deteriorated fuel oil demand after the Chinese government allowed private refineries to import and process crude oil. Moreover, the demand from Japan also declined as two nuclear power plants restarted in 2015.

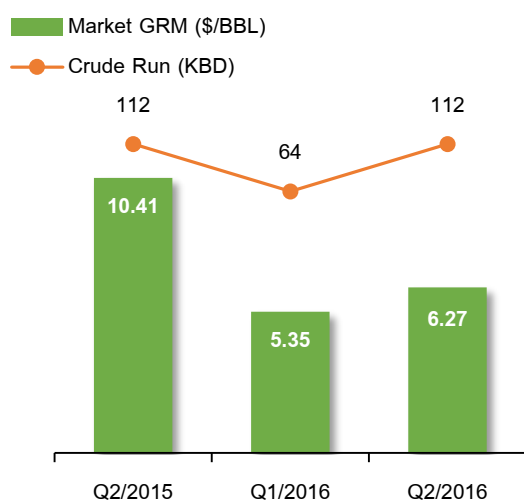
When compared to Q1/2016, Fuel Oil/Dubai crack spread (FO/DB) decreased by 3.50 \$/BBL, driven by the higher fuel oil export from America, Europe and the Middle East to Asia, especially the export from Iran to Asia which increased after the sanctions were lifted in the first quarter of this year. Fuel oil inventories in Singapore showed its record high during the quarter after Chinese reduced its fuel oil import and demand for electricity sector in North Asia declined following the end of winter season. However, the crack spread was supported by stronger demand from bunkering sector.

Refinery Business Performance

Refinery Business Performance							
	Q2/2558	Q1/2559	Q2/2559	YoY	QoQ	6M2558	6M2559
Average Crude Run (KBD)	111.93	64.18	111.68	0%	74%	110.29	87.93
Utilization Rate (%)	93%	54%	93%	0%	74%	92%	73%
Average FX (THB/USD)	33.41	35.80	35.45	6%	-1%	33.11	35.64
						(Unit: Million Baht)	
Market GRM	3,544	1,120	2,258	-36%	102%	6,811	3,378
GRM Hedging	47	172	3	-94%	-98%	(89)	175
Inventory Gain/ (Loss) ^{1/}	457	(1,342)	905	98%	167%	(1,309)	(437)
Total GRM	4,048	(51)	3,166	-22%	6328%	5,413	3,116
EBITDA	3,404	(645)	2,531	-26%	493%	4,203	1,886

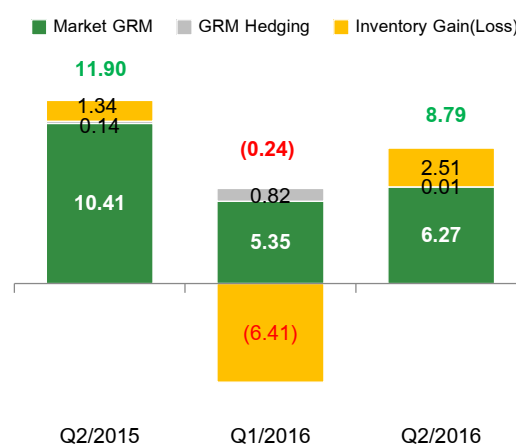
Note: 1/ Inventory Gain/ (Loss) in Q1/2016 was included a reversal of LCM.

Market GRM and Crude Run



Total GRM

Unit: \$/BBL



Total Sales Volume in each market category of the Company

Unit: Million Litre

Marketing Business	Q2/2558	Q1/2559	Q2/2559	YoY	QoQ	6M2558	6M2559
Retail	849	887	921	8%	4%	1,631	1,808
Industrial	555	578	529	-5%	-9%	1,117	1,107
Total	1,404	1,465	1,450	3%	-1%	2,748	2,915
Wholesale Business							
Petroleum traders in accordance with section 7	169	52	236	40%	352%	342	288
Export	219	206	222	1%	8%	464	429
Total	388	258	458	18%	77%	805	717
Total Sales Volume	1,792	1,723	1,908	6%	11%	3,553	3,632

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

The performance in Q2/2016 compared to Q2/2015, Bangchak refinery's average crude run was stable around 112 KBD or approximately 93% of the total refining capacity, after the annual turnaround maintenance (TAM) in the previous quarter. The consistently high crude run was a result of the well-planned production process, refining logistics system management, together with the YES-R projects which enabled a consistent and smooth production process.

Market GRM decreased Baht 1,286 Million (-36%) when compared to the same period last year, from the contraction in all products crack spreads. Gasoil/Dubai spread (GO/DB) and Gasoline/Dubai spread (UNL95/DB) were narrower due to the supply glut from China, while the compress in Fuel Oil/Dubai spread (FO/DB) was affected by the continuously weakening demand from both China and Japan. This resulted in a decrease of the margin per unit of refined products. In Q2/2015, however, the Market GRM was abnormally high due to a steep drop in crude oil price over the supply glut issue while there were still oil demand, as a result, the overall crack spreads were high and crude cost for the period was low.

When compared to Q1/2016, an average crude run was increased by 74% as the refinery resume its operation at a consistently high rate after TAM. Market GRM was increased Baht 1,138 million (+102%), from a higher production volume, and from the Gas Oil/Dubai crack spread (GO/DB) increment supported by the refinery turnarounds in Asia and the rise in diesel import demand from India, Pakistan and Vietnam, regardless of the contraction of other product crack spreads when compared to the previous quarter. Moreover, Dated Brent/Dubai spread (DTD/DB) was narrowed to 2.36 \$/BBL, contributed to the increase in Market GRM.

Crude oil price was supported by the concerns about supply disruption in many oil producer countries, the oil field maintenance in the North Sea, and the contraction of the U.S.'s oil production. Consequently, refinery business recorded an Inventory Gain of Baht 905 (included a reversal of allowance for lower of cost or market of inventories (LCM) of Baht 6 million). Yet, there was a gain from crude and product oil price hedging contract of Baht 3 million. As a result, total GRM was recorded at Baht 3,166 million. EBITDA is recorded at Baht 2,531 million.

2) Marketing Business

Marketing Business Performance						Unit: Million Litre	
Sales Volume (Million Litre)	Q2/2015	Q1/2016	Q2/2016	YoY	QoQ	6M2015	6M2016
Retail (Service Stations)	849	887	921	8%	4%	1,631	1,808
Industrial	555	578	529	-5%	-9%	1,117	1,107
Total	1,404	1,465	1,450	3%	-1%	2,748	2,915
Sales volume in each product category (Million Litre)							
LPG	13	26	21	61%	-21%	23	47
Gasoline	11	9	10	-5%	12%	26	20
Gasohol	373	399	412	10%	3%	737	811
Jet Fuel	175	200	211	20%	5%	335	410
Diesel	785	782	745	-5%	-5%	1,526	1,527
Fuel Oil and Others	47	49	52	10%	6%	101	100
Total	1,404	1,465	1,450	3%	-1%	2,748	2,915
Total Marketing Margin (Baht / Litre)	0.69	0.93	0.87	26%	-6%	0.72	0.90
EBITDA (Million Baht)	657	1,041	882	34%	-15%	1,397	1,923

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

In Q2/2016, when compared to Q2/2015, Total marketing business sales volume was increased by 46 million litres (+3%), as a result of a rise in domestic oil demand, especially in retail markets which was supported by a decline in retail oil prices encouraging demand, and a growth in tourism sector from the incremental numbers of Chinese, CLMV and South Korean tourists. Sales volume of gasohol product and Jet Fuel was increased by 10% YoY and 20% YoY respectively.

Retail market (service stations) sales volume increased by 72 million litres (+8% YoY) and continued to grow as a result of the company's strategy focusing on retail market as its main priority. Majority of the volume increase were from gasohol products, especially gasohol 95 and gasohol E20. Diesel sales volume also increased. The number of service stations at the end of the quarter was 1,075 stations. There were 18 newly opened service stations during the quarter, most of which were standard stations with modern image and include other non-oil businesses such as Inthanin coffee shops, minimarts, etc., in order to meet with customers' need. The company also improves quality and appearance of existing service stations, and closes down 17 service stations with less than target sales volume. The company continued to maintain its 2nd rank position in retail market share.

Industrial market sales volume decreased by 26 million litres (-5%) as the low season resulted in the high competition, and the effect of the draught during the year resulting in a decrease in Diesel sales volume. However, Jet fuel sales volume continued to increase from airways customers' demand growth, as the number of tourists increased, and from the company's marketing strategy to expand its market share in the jet fuel product.

When compared to Q1/2016, total sales volume slightly decreased (-1%), from the sales volume in industrial markets which decreased by 49 million litres (-9%) due to the low seasonal demand and over supply, as most companies reserved the finished oil products to sell during other domestic refinery's maintenance period. However, the retail market sales volume continued to grow, due to a high demand in the tourism sector which still maintain in the quarter. An

extended decline of retail oil product prices also supported retail sales volume by inducing oil usage demand. As a result of the company's strategy to focus on retail market, the sales volume through retail market (service stations) increased by 34 million litres (+4%)

Total marketing margin was at 0.87 Baht per litre, increased by 26% YoY from the Retail and Lubricant marketing margin, but decreased when compared to the Q1/2016, due to the higher competition of the industrial market, from the oil oversupply. In Q2/2016, marketing business recorded an EBITDA of Baht 882 million, an increase of Baht 225 million (+34%) YoY from the higher sales volume, the superior marketing margin, and the higher income of Non – Oil business from the strategy to expand into the market segment. However, marketing business recorded an EBITDA decrease of Baht 159 million (-15%) QoQ from the oil excess supply situation resulting in the lower industrial sales volume.

3) Solar Power Business

Solar Power Business Performance							
	Q2/2015	Q1/2016	Q2/2016	YoY	QoQ	6M2015	6M2016
Revenue (Million Baht)	775	783	759	-2%	-3%	1,527	1,542
Electricity Sales (Million kWh)							
Solar Power Business – Thailand (PPA of 118 MW)	68.16	65.34	65.03	-5%	-0.5%	133.33	130.37
Solar Power Business – Japan (PPA of 11 MW)	N/A	3.14	3.44	N/A	9%	N/A	6.58
Total Electricity Sales	68.16	68.48	68.47	0%	0%	133.33	136.95
EBITDA (Million Baht)	735	628	525	-29%	-16%	1,449	1,153

In Q2/2016 when compared to Q2/2015, Solar Power business recorded a decline in total revenue by Baht 15 million (-2%). Solar Power business in Thailand (PPA of 118 MW) recorded a lower total electricity sales by 3.13 MW (-5%), as a result of a decrease of irradiation hours of all the 3 phases when compared to the same period of last year. This was due to the higher amount of rainfall, especially in June and in the north eastern region of Thailand, which is the area where most of the Solar Power Plants phase 3 are situated in. In contrast to the same period of last year, there was a draught from the El Niño phenomenon, led to the higher than normal irradiation hours during the period. For Solar Power business in Japan (operating plant with PPA of 11 MW), total electricity sales from the operating projects was 3.44 million kWh during the quarter.

When compared to Q1/2016, total revenue from Solar Power business was decreased by Baht 23 million (-3%). For Solar Power business in Thailand, total electricity sales was slightly lower. Electricity sales of Phase 1 and 2 were higher from the seasonal increase in irradiation hours; however, electricity sales of Phase 3 was reduced, as irradiation hours of Phase 3 was increased by the lower extent than the other phases, due to the higher rainfall in the area. Even though irradiation hours generally improved, the hot temperature during the quarter resulted in an inferior production efficiency. For Solar Power business in Japan, total electricity sales rose from the superior irradiation hours after the winter season ended.

Nevertheless, Solar Power business in Japan still record the costs incurred from the preparation of other projects under construction and development and the higher Selling, General and Administrative expense from the acquisition of the entire solar power business of SunEdison in Japan. Additionally, there was a gain on foreign exchange of Baht 163 million, from the appreciation of the Japanese Yen. As a result, Solar Power business recorded an EBITDA of Baht 525 million, a decrease of Baht 210 million (-29%) YoY, and a decrease of Baht 103 million (-16%) QoQ.

However, in Q2/2016, BCPG Plc. has been officially awarded a right to sign the power purchase agreement with Provincial Electricity Authority, for the Free-field installations solar farms for Agricultural Cooperatives, which BCPG Plc. supports for 3 plants, with PPA totaling of 12 MW, which are expected to start the commercial operation by the end of 2016, and comprised of:

1. Wiset Chai Chan Agriculture Cooperative Limited (PPA of 5 MW)
2. Bang Pa-In Agricultural Cooperative Limited (PPA of 5 MW)
3. Phanakhonsri Ayutthaya Agricultural Cooperative Limited (PPA of 2 MW)

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

4. Biofuel Business

In Q2/2016, Biofuel business recorded an EBITDA of Baht 113 million, which comprised of an EBITDA from Bangchak Biofuel Co, Ltd. of Baht 119 million and a share of loss from Ubon Bio Ethanol Co, Ltd of Baht 6 million.

Biodiesel business performance by Bangchak Biofuel. Co., Ltd								
	Q2/2015	Q1/2016	Q2/2016	YoY	QoQ	6M2015	6M2016	YoY
Revenue (Million Baht)	1,430	1,867	2,221	55%	19%	2,665	4,088	53%
Utilization Rate (%)	103%	107%	108%	5%	1%	101%	107%	6%
Average Daily Production Rate (Thousands of litres per day)	371	385	387	5%	1%	363	386	6%
B100 Sales Volume (Million litre)	53	64	67	27%	5%	89	132	47%
EBITDA (Million Baht)	100	134	119	19%	-11%	169	253	50%

Average Sales Price (Source: Department of Energy Business, Ministry of Energy)								
B100 (Baht / Litre)	30.24	32.61	36.55	21%	12%	33.54	34.60	3%
Crude Palm Oil (CPO) (Baht / Kg.)	26.63	29.56	34.04	28%	15%	30.11	31.69	5%

In Q2/2016, when compared to Q2/2015, Biodiesel business recorded a revenue increase of Baht 791 million (+55%) from a growth in B100 sales volume of 14 million litres (+27%) and the B100 average price which was higher by 21%. The B100 average price moved in the same direction as crude palm oil (CPO) price, which rose from the lower than expected palm oil supply due to the draught last year, while domestic palm oil demand was higher than the same period of last year, as in Q2/2015 the government announced a reduction in the portion of B100 mixing with diesel from 7% to 4% during the quarter. This also result in an increment in B100 sales volume in this quarter, when compared to the same period of last year. The growth in sales volume was as well due to the expansion of customer base in preparation for the new 2nd Biodiesel Plant (an average production capacity of 450 thousands litres per day), which will start its commercial operation within the 2nd half of this year. Moreover, Biodiesel business has also improved its Biodiesel plant efficiency, which enabled it to raise the average daily production rate to 387 thousand litres per day (108% utilization rate) an increase of +5% YoY.

When compared to Q1/2016, Biodiesel business recorded an increase in revenue of Baht 355 million (+19%), partly caused by the higher B100 sales volume by 3 million litres (+5%) from the expansion of customer base in preparation for the new 2nd Biodiesel Plant. The greater revenue was also due to the B100 average price which was higher by 12%, due to the rise in crude palm oil price as the crude palm oil stock in Thailand was lessened. In this quarter, Biodiesel business still maintain its Biodiesel plant efficiency, enable it to slightly raise the average daily production rate by 1% QoQ.

In Q2/2016, Biodiesel business recorded an increase of Gross Margin when compared to the same period of last year, from the greater B100 sales volume as a result of the increased production rate, the smooth operation of the plant, and the efficient inventory management. However, Gross Margin was lower when compared to Q1/2016, as the price of crude palm oil (which is one of the main raw material of B100 product) increased in a larger proportion than B100 price. Moreover, in Q2/2016, there was an Inventory Gain of Baht 12 million. All in all, Biofuel business recorded an EBITDA of Baht 119 million, an increase of Baht 19 million (+19%) YoY, and a decrease of Baht 15 million (-11%) QoQ.

4) Exploration and Production Business

Exploration and Production Business Performance							
	Q2/2015	Q1/2016	Q2/2016	YoY	QoQ	6M2015	6M2016
Production Volume ^{1/} (barrels per day net to Nido)	3,575	3,112	2,861	-20%	-8%	3,039	3,003
Sales Volume (barrels net to Nido)	396,793	202,128	393,375	-1%	95%	673,958	595,503
Revenue (Million Baht)	849	233	299	-65%	28%	1,351	532
EBITDA (Million Baht)	314	22	59	-81%	171%	342	81

Note: 1/ production volume of Galoc oil field only

In Q2/2016, Galoc oil field recorded an Uptime of 99.93%, and a production volume of 5,120 barrels per day (2,861 barrels per day net to Nido). The details of crude oil selling during the quarter, as disclosed by the Nido Petroleum Limited (NIDO) in the Australian Securities Exchange (ASX) were as follows:

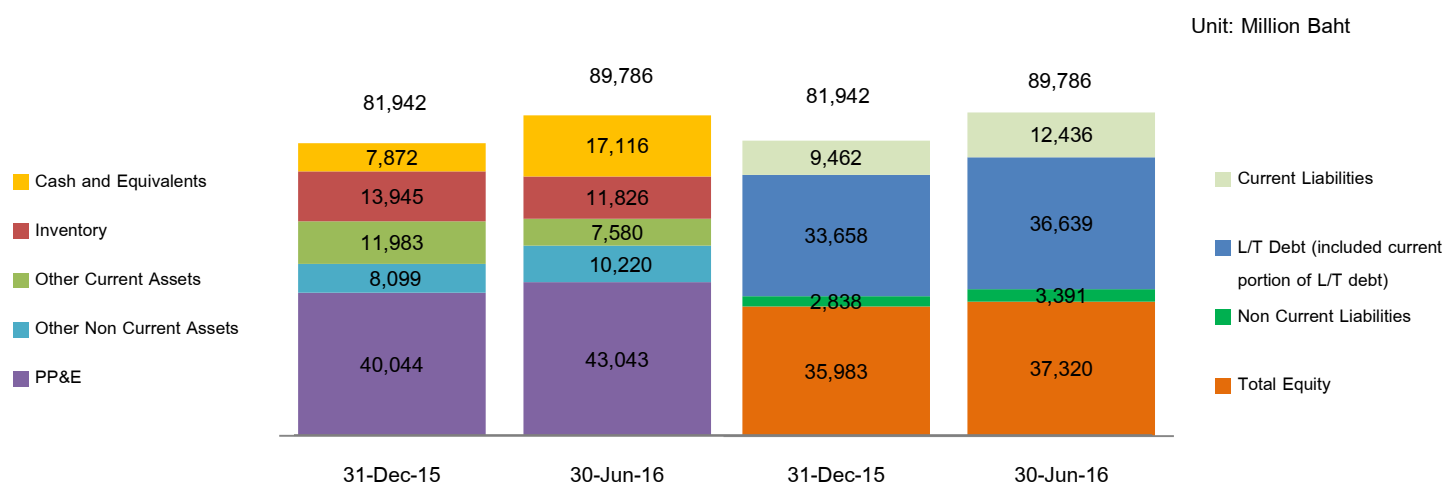
- Galoc oil field in April sold 1 cargo totaling of 351,861 barrels (196,618 barrels net to Nido) and in June sold 1 cargo totaling of 334,670 barrels (187,012 barrels net to Nido) with FOB price of 40.53 and 48.15 \$/BBL respectively.
- Nido & Matinloc oil field totaling 38,162 barrels (9,745 barrels net to Nido).

Compared Q2/2016 to Q2/2015, Exploration and Production business recorded a revenue of Baht 299 million, a decrease of Baht 551 million, from the decline in the selling price when compared to the same period of last year, following the drop in global crude oil price (average Dubai crude oil price in Q2/2016 declined by 29% YoY). The sales volume and production volume was lower according to the Natural-Divide Production Curve.

When compared to Q1/2016, Exploration and Production business recorded a revenue increment of Baht 65 million, as a result of the recovery of the global crude oil price which has led to the higher selling price per cargo. The higher sales volume was from the higher numbers of cargoes sold (corresponding to the selling cycle of Nido which ordinarily sells its crude oil every other month). However, as the cargo sold in June was subject to the DES (Delivery Ex Ship) condition, Nido will not realize the revenue from the cargo until July 2016.

Further, Nido still maintain its cost saving program on both the expense related to production and Selling, General and Administrative expenses in response to the lower crude oil price environment. As a result, Exploration and Production Business recorded an EBITDA of Baht 59 million, a decrease of Baht 255 million (-81%) YoY, and an increase of Baht 37 million (+171%) QoQ.

Financial Position of the Company and its subsidiaries (Consolidated)



Assets

As of June 30, 2016, Total Assets of the Company and its subsidiaries were Baht 89,786 million, an increase of Baht 7,844 million when compared to the end of 2015. The changes in assets were mainly from:

- Cash and cash equivalents was increased by Baht 9,244 million. Details are stated under Analysis of the Cash Flow Statement.
- Current Investment was decreased by Baht 4,500 million from the maturity of the company's short term fixed deposits in financial institutions.
- Trade Accounts Receivable was decreased by Baht 204 million, due to a lower total sales volume in Q2/2016, compared to Q4/2015, although the selling price per unit was slightly higher.
- Other Accounts Receivable was increased by Baht 475 million, mainly from the insurance compensation receivable of Baht 103 million, and prepaid expense of Baht 347 million.
- Inventory was decreased by Baht 2,119 million, mainly from the lower volume of finished oil inventory from 3.25 million barrels to 1.80 million barrels, as in the end of 2015, the company accumulated its inventory to support its annual turnaround maintenance in Q1/2016. Price per unit was also decreased.
- Oil fuel fund subsidies receivable was increased by Baht 268 million, from the increase in Gasohol E20 and E85.
- Other current asset was decreased by Baht 268 million, as the company had a corporate income tax receivable in December 2015, compare to the corporate income tax payable in June 2016.
- Investment in subsidiaries increased by Baht 3,557 million, primarily from the capital increase of BCPG Plc. of Baht 3,300 million. However, the elimination of related parties transaction resulted in the consolidated financial statement showing total investment in subsidiaries of Baht 0.
- Other long-term investments increased by Baht 492 million, from the investment in Fuel Pipeline Transportation Co., Ltd. of Baht 84 million, and the increase in fair value of an investment in Lithium Americas Corp. (prior: Western Lithium USA Corporation) by Baht 405 million.

- Property, plant and equipment was increased by Baht 2,999 million, primarily from Baht 2,098 million investment in refinery machinery and equipment of the company and of Bangchak Biofuel Co, Ltd., Marketing and office equipment of Baht 458 million. For BCPG Plc., the increment was from an acquisition of solar power business of Baht 1,532 million, and construction work in progress of Baht 620 million. Depreciation was recorded at Baht 2,117 million, and a foreign currency translation differences for foreign operations resulted in an increase in the value of assets by Baht 222 million.

Liabilities

As of June 30, 2016, Total Liabilities of the Company and its subsidiaries was Baht 52,466, and increase of Baht 6,507 million, mainly from:

- Trade Accounts Payable was increased by Baht 3,380 million, from the higher value of crude oil purchase in June 2016 than in December 2015.
- Other payables was decreased by Baht 602 million, from the lower hedging contracts liabilities by Baht 145 million, and the lower accrued expenses at the end of quarter by Baht 382 million, and other payables by Baht 74 million.
- Long-term loans from financial institutions (including current portion of long-term loans) was increased by Baht 2,981 million, primarily due to an increment from the long term loans of BCPG Plc. and Bangchak Biofuel Co., Ltd., but decreased by the company's long-term loan repayment.
- Other non-current liabilities was increased by Baht 553 million, mostly from the Contingent Liability of BCPG Plc.

Equities

As of June 30, 2016, Total Equity attributable to owners of the Company was Baht 36,936 million, an increase of Baht 1,455 million, from Net Profit attributable to owners of the Company of Baht 2,464 million, dividend payment of Baht 1,376 million, and other component of equity of Baht 368 million (loss from foreign currency translation differences for foreign operations of Baht 42 million, and change in fair value of available for sale assets of Baht 410 million.) The Consolidated book value was Baht 26.82 per share.

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

In Q2/2016, the Company and its subsidiaries had net cash received from operating activities of Baht 9,803 million, net cash used in investing activities of Baht 2 million, net cash used in financing activities of Baht 522 million. As a result, the Company and its subsidiaries had an increase in Cash and cash equivalents of Baht 9,279 million, as there was Cash and cash equivalents of Baht 7,872 million on January 1, 2016 and an effect of exchange rate changes on balances held in foreign currencies of Baht -34 million, resulting in Cash and cash equivalents as of June 30, 2016 at Baht 17,116 million.

Details of cash received and used are as follows:

Cash Flows		Unit: Million Baht	
Cash Flows	30-Jun-15	30-Jun-16	
Net cash received (used in) operating activities	9,664	9,803	
Net cash received (used in) investing activities	(9,223)	(2)	
Net cash received (used in) financing activities	1,417	(522)	
Net increase (decrease) in cash and cash equivalents	1,858	9,279	
Cash and cash equivalents as at 1 January	7,954	7,872	
Effect of exchange rate changes on balances held in foreign currencies	42	(34)	
Cash and cash equivalents as at 30 June	9,854	17,116	

Cash received and used details are as follows:

- 1) The Company and its subsidiaries had net cash received from operating activities of Baht 9,803 million, mainly from
 - Net cash received from operating activities of Baht 5,240 million which was from Net Profit of Baht 2,389 million added back Non-Cash Expenses of Baht 1,859 million, Finance Costs and Income Tax credit of Baht 992 million.
 - Cash used in the operating assets decreased by Baht 2,447 million, mainly from a decrease in Inventory of Baht 2,218 million, a decrease in Trade Accounts Receivable of Baht 217 million, a decrease in Other Receivables of Baht 177 million, and an increase in Other Assets of Baht 165 million.
 - Cash used in operating liabilities decreased by Baht 2,199 million, mainly from an increase in Trade Accounts Payable of Baht 3,348 million, a decrease in Other Payables of Baht 1,035 million and a decrease in Other liabilities of Baht 114 million.
 - Income Tax Paid of Baht 83 million.

- 2) Net Cash used in investing activities of Baht 2 million, mainly from
 - Investment in property, plant and equipment of Baht 3,277 million, which were from an investment in refinery machinery and equipment, marketing and office equipment of the company of Baht 2,281 million, an investment

in Biodiesel plant machinery and equipment of Baht 387 million, construction work in progress in solar power plant of BCPG Plc. of Baht 619 million, and others decreased by Baht 10 million.

- Other long-term investments increased by Baht 84 million.
- Current investment decreased by Baht 4,499 million.
- Net cash outflow on acquisition of subsidiary of Baht 963 million, from the acquisition of solar power business of SunEdison in Japan.
- Received cash from interest received of Baht 118 million, from the disposal of other investment in ASEAN Potash Chaiyaphum Public Company Limited of Baht 203 million, and from dividend received of Baht 3 million.
- Leasehold right of service stations increased by Baht 166 million, and purchase of intangible assets increased by Baht 335 million.

3) Net cash used in financing activities of Baht 522 million, mainly from

- Received cash from long-term loan from financial institutional of the company's subsidiaries of Baht 5,719 million.
- Received short-term loans from financial institutional of Baht 36 million.
- Dividend payment of 1,422 million.
- Financial costs of Baht 805 million.

Financial Ratios (Consolidated)

Profitability Ratios (%)					
	Q2/2015	Q1/2016	Q2/2016	6M2015	6M2016
EBITDA Margin	12.49%	3.94%	10.96%	9.28%	7.81%
Profit Margin	6.79%	-0.08%	6.55%	4.78%	3.58%
Return on Equity (ROE) ^{1/}	4.72%	9.07%	7.45%		
Return on Assets (ROA)	3.72%	6.11%	5.11%		

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

Liquidity and Financial Policy Ratios (times)			
	30-Jun-15	31-Mar-16	30-Jun-16
Liquidity Ratios			
Current Ratio	3.32	2.84	2.35
Quick Ratio	2.08	1.87	1.59
Financial Policy Ratios			
Interest bearing Debt to Equity	0.89	0.92	0.98
Net Interest bearing Debt to Equity	0.50	0.55	0.52
	Q2/2015	Q1/2016	Q2/2016
DSCR	2.42	2.03	1.53

Financial Ratios Calculation

▪ EBITDA Margin (%)	=	EBITDA / Revenue from sale of goods and rendering of services
▪ Profit Margin (%)	=	Net Profit (Loss) / Revenue from sale of goods and rendering of services
▪ Return on Equity (%)	=	Net Profit (Loss) attributable to the 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.

Environment Management Accounting: EMA		Unit: Million Baht		
	Q2/2015	Q2/2016	Δ	
Material Costs of Product Outputs : Consist of crude oil, ethanol, biodiesel, chemical, energy and utilities in production	24,976	19,402	(5,574)	
Material Costs of Non-Product Outputs : Consist of slop and sludge oil, waste water, chemical surplus	11	28	17	
Waste and Emission Control Costs : Consist of maintenance cost of environmental control equipment and depreciation and other fees	97	71	(27)	
Prevention and Other Environmental Management Costs : Consist of monitoring and measurement cost, environmental management system expenses	4	7	3	
Total Expenses	25,088	19,508	(5,580)	
Benefit from by-product and waste recycling	(1)	(4)	(3)	

In Q2/2016, total expenses related to environment decreased by Baht 5,580 million (-22%) compared to same period of last year. The main reason was due to the large decline in oil price (-29%), while the refinery's crude run was around the same level (111.68 KBD in Q2/2016, compared to 111.93 KBD in Q2/2015). However, the Material Costs of Non-Product Outputs was increased by Baht 17 million. Meanwhile, Waste and Emission Control Costs and Prevention and Other Environmental Management Costs was reduced by Baht 24 million (-23%), mainly due to the Baht 34 million lower depreciation of environmental control equipment.

Benefit from by-product and waste recycling increased by Baht 3 million during the quarter, as liquid sulfur and glycerin value was higher by Baht 1 million, and the sellable residue metal scrap value were higher by Baht 2 million.