

Bangchak Corporation Plc.

Management Discussion & Analysis of Business Operation

For the 3rd quarter ended September 30th, 2021





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Executive Summary



Summary of the company and its subsidiaries' operating result for the 3rd quarter ended 30th September 2021

Unit: THB Million	Q3/2021	Q2/2021	QoQ	Q3/2020	YoY	9M2021	9M2020	YoY
Total Revenue	47,649	43,775	9%	33,652	42%	132,655	103,317	28%
Accounting EBITDA	7,531	4,269	76%	2,769	172%	16,537	1,354	>1000%
<i>Refinery and Trading Business^{1/}</i>	1,891	1,976	-4%	606	212%	6,279	(2,770)	327%
<i>Marketing Business^{2/}</i>	562	827	-32%	766	-27%	2,359	1,572	50%
<i>Power Plant Business^{3/}</i>	1,179	997	18%	1,138	4%	3,155	2,771	14%
<i>Bio-Based Products Business^{4/}</i>	890	296	201%	390	128%	1,607	1,238	30%
<i>Natural Resources Business^{5/}</i>	3,112	276	>1000%	(58)	>1000%	3,418	(1,224)	379%
<i>Others</i>	(102)	(103)	1%	(73)	-41%	(281)	(233)	-21%
Profit attributable to owners of the Company	1,820	1,765	3%	(647)	381%	5,868	(7,219)	181%
Earnings (Loss) per share (Baht)	1.25	1.21		(0.57)		4.05	(5.59)	

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

2/ EBITDA from Marketing Business of the Company, Bangchak Green Net Co., Ltd., Bangchak Retail Co., Ltd., and share of profit from associated companies

3/ EBITDA from Power Plant Business of BCPG Plc., its subsidiaries, and share of profit from associated companies

4/ EBITDA from BBGI Plc., its subsidiaries, and share of profit from associated companies

5/ EBITDA from Natural Resources Business of OKEA ASA, BCP Innovation Pte. Ltd., and NIDO Petroleum Pty. Ltd.

Performance of the first 9 months of 2021, Bangchak Corporation Plc. (The company) and its subsidiaries recorded revenue from sales and rendering of service in the amount of THB 132,655 million (+28% YoY), with EBITDA of THB 16,537 million (>1,000% YoY). The performance was supported by economic recovery and the expansion of oil demand, due to the progress in global COVID-19 vaccine rollout which has continue to push up crude oil and finished product price. The average Dubai crude price for 9M/2021 was 66.36 \$/BBL, an increase of 24.91 \$/BBL, or 60% YoY. This led to the company group recording an Inventory gain of THB 5,159 million. In addition, the Refinery Business achieved stabilized Operating GRM with a positive trend. However, the refinery continued to increase crude run and product yield of Unconverted Oil (UCO) to support refinery margin. Meanwhile, the performances of the Marketing and Bio-Based Products Business Group were impacted by the worsening COVID-19 outbreaks due to the Delta variant which resulted in demand destruction for finished product, especially during Q3/2021 when the government tighten COVID-19 control measure and declared highest lockdown measures in the maximum and strict controlled areas. In addition, net marketing margin was pressured due to the fact that the company was not able to increase retail price proportionately with the rise in market price of finished product and biodiesel (B100). Additionally, the performance has incorporated the change in recording method of investment in OKEA from associated company to subsidiary since 1st July 2021. In the consolidated financial statement, OKEA's EBITDA was approximately THB 3,000 million, reversal from impairment of investment in OKEA THB 400 million, and gain from fair value adjustment of investment in Ubon Bio Ethanol Public Company Limited ("UBE") THB 616 million due to initial public offering (IPO) of UBE. Resulting in 9M/2021 recording the **net profit attributable to owners of the parent at THB 5,868 million** (+181% YoY) **or earning per share of THB 4.05**.



During Q4/2021, many countries experienced energy crisis which was the culmination of long winter in Europe, declined in crude oil production in the US due to hurricane Ida, and recovery in demand for oil from the improved COVID-19 cases. In addition, persistent high natural gas and coal prices has pushed many factories and power plants to switch to using oil as fuel. These supported crude oil and finished product price increasing which possibly benefit the Refinery and Oil Trading Business Group, and Natural Resources Business Group. Although the demand for oil has recovered after the government has further eased lockdown measures, the Marketing Business Group performance is high likely to absorb the pressure from the government's policy of diesel price which caps the price of domestic diesel to no more than 30 baht per liter to reduce price impact to consumers and help economic recovery.

As for performance in Q3/2021, the company and its subsidiaries recorded revenue from sales and rendering of service in the amount of THB 47,649 million (+9% QoQ), with EBITDA of THB 7,531 million (+76% QoQ). EBITDA increased from the previous quarter, mostly from the change in recording method of investment in OKEA, resulted in OKEA's EBITDA recognition of approximately THB 3,000 million in this quarter. Also, the company group recorded an Inventory gain of THB 1,386 million, a slight increase from Q2/2021. Whereas, the performance was impacted by Refinery and Oil Trading Business Group where Operating GRM was pressured by increase in crude premium over Dated Brent. In addition, Marketing Business Group's performance was impacted by the decline in net marketing margin and sales volume due to worsening the third wave of COVID-19 outbreak. However, this quarter recorded gain from fair value adjustment of investment in UBE (as mentioned above). As a result, this quarter realized **net profit attributable to owners of the parent at THB 1,820 million** (+3% QoQ) or **earning per share of THB 1.25**. With performance for each business unit as follow.

Refinery and Trading Business Group saw its performance declined by 4% QoQ but improved 212% YoY, due to the increase in crack spread of most products. However, crude premium over Dated Brent increased which resulted in Operating GRM decline to 3.07 \$/BBL when compared to the previous quarter. While Crude premium over Dated Brent declined from Q3/2020, resulting in higher Operating GRM than the same period of the previous year. Due to the increase in crude price and Thai Baht depreciation, the refinery recorded an inventory gain of THB 1,261 million which is similar to Q2/2021, but the significant increase when compared to Q3/2020. However, Bangchak refinery has increased product yield of Unconverted Oil (UCO) to improve refining margins and to support satisfy increase demand for the product, resulting in an increase of average production rate to 111.4 KBD or 93% utilization rate in Q3/2021. As for the Oil Trading business under BCP Trading Pte. Ltd., saw its crude oil and finished product transaction as well as gross margin declined compared to Q2/2021, mainly from the decrease in crude oil transaction with companies outside of Bangchak group. This was due to the worsening of COVID-19 outbreaks in Asia during the quarter, which resulted in a severe decline in oil demand in many countries.

Marketing Business Group performance declined by 32% QoQ and 27% YoY, mainly from the decline in total sales volume which declined 11% QoQ and 18% YoY from worsening the third wave of COVID-19 outbreak caused by the Delta variant. This resulted in the tightening of government measures and the declaration of the lockdown measures in the maximum and strict controlled areas. In addition, net marketing margin per unit declined 17% QoQ and 18% YoY, due to the increase in average price of finished product and biodiesel (B100). Also, for lessening the



impact to consumers and the recovery of the economy, the company unable to adjust retail price to coincide with higher cost of finished products in accordance to the global market. This resulted in the decline in net marketing margin. However, due to the continue increase in oil price, resulting in recording inventory gain for this quarter was similar to Q2/2021 and gained more than Q3/2020. Moreover, the cumulative retail sales volume market share between January – September 2021 was 16.0%, an increase from the same period of the previous year which was 15.6%. This resulted the company was able to maintain 2nd place in market share (data from the Department of Energy Business). At the end of Q3/2021, Bangchak has 1,253 service stations where the goal is to create unique design service stations that integrates Bangchak brand identity seamlessly. Moreover, there were 40 service stations equipped with EV chargers in 27 provinces across the country. Under the concept of Greenovative Destination strategy, the company plan to develop service stations into destinations that can fulfill customers' desires but still respond to changing lifestyles. The company partnered with leading brands to develop “Bangchak Food Truck” business. In addition, lifestyle products have been introduced at service station in Grab & Go format. Of which the company opened food truck in 5 service stations as of the end of Q3/2021 and will expand to 15 service stations within this year. Also, Marketing Business Group still emphasizes to expand its non-oil business, there were 739 branches of Inthanin coffee shop and 12 branches of DAKASI pearl milk tea to be operated in Bangchak service stations at the end of Q3/2021. In addition, Bangchak Retail Co., Ltd. (“BCR”) signed an MOU with Thai Airways International Plc. to develop business plan to sell Puff & Pie products at 50 Inthanin coffee shops within 2021, with both Grab & Go and Shop in Shop formats. BCR continues to push up sales through online delivery platforms in line with consumers' behavior change due to COVID-19 outbreak.

Power Plant Business Group saw performance improved by 18% QoQ and 4% YoY, from the increase in electricity sales by 56% QoQ and 9% YoY. Mainly attributed to the increase in electricity sales of the Hydro power plant in Lao PDR, due to the plant entering the high season and from the higher rainfall. This quarter, the company realized share of profit from investments in associate company THB 150 million, mainly from the Geothermal Power Plant business in Indonesia. In July, Impact Energy Asia Development Limited (“IEAD”) which is an associate company of BCPG Plc. (“BCPG”) signed 600 MW PPA with Vietnam Electricity. The contract is for 25 years starting from COD with tariff rate of USD 0.0695 per KWh and the expected COD is 31st December 2025. In addition, BCPG issued THB 12,000 million of green bond, which was the first time raised fund through the bond market. The funds from green bond will be used for refinancing the existing loan of investment in Geothermal Power Plant projects, and for improvement and investment of BCPG's solar power plants in the future.

Bio-Based Products Business Group saw its performance increased by 201% QoQ and 128% YoY, mainly from BBGI Public Company Limited (“BBGI”) recognized profit from changing the status of investment in UBE from investment in associate to other investment as a result of UBE's initial public offering (IPO). Bio-Based Product Business Group was impacted by COVID-19 outbreak which worsen in this quarter. As a result, performance of each business unit are as follow. The **Biodiesel Business** was impacted by the decrease in sales volume of B100 in this quarter. However, gross profit has maintained its level from Q2/2021 due to the well managed raw material costs during the high crude palm oil price period and the slight increase in Refined Glycerin sales. Nevertheless, gross profit increased by 11% YoY, from sale of Refined Glycerin. Whereas, there were no sale of Refined Glycerin in Q3/2020. The **Ethanol**

Executive Summary



Business recoded a decline in gross profit by 48% QoQ and 82% YoY, mainly from lower sale volume of Ethanol products. YoY performance was also impacted by the selling price of Ethanol that was unable to adjust to coincide with the increase in raw material costs, resulting in a significant decline in gross margin. **High Value Products (HVP) Business**, BBGI began the sale of nutritional supplements under B Nature Plus brand. The first product launch to market is ASTA-IMMU, an astaxanthin extract, which is an antioxidant that helps support skin health. In addition, BBGI began expanding the sale of pharmaceutical grade hand sanitizing alcohol with GMP HACCP standard. In September, BBGI submitted IPO prospectus to the Securities and Exchange Commission for offering 216.60 million shares, which represented 30% of common shares and paid up capital with par value per share of 5.00 baht. Funds raised will be used to expand business, invest in future projects, repayment existing loans, and used for working capital.

Natural Resource Business Group saw its performance improved by >1,000% QoQ and YoY, mainly from the change in recording method of investment in OKEA from share of profit (loss) to consolidated method from 1st July 2021 onward which resulted in a significant increase in Natural Resources Business Group's EBITDA. In addition, gain from sale of investment in BCPE THB 122 million was recognized. Moreover, EBITDA's OKEA increased by 158% QoQ and 622% YoY, from higher revenue from crude oil and gas sales. This was due to adjusting upward in realized liquids price and gas price following the expansion of energy demand, after the progress in COVID-19 vaccine rollout in many countries. In addition, there were no maintenance planned in this quarter. Commencement of Yme production in October 2021 will strengthen OKEA's production and cash flow. The first year of production from YME will increase production capacity of OKEA by 5,600 barrel per day. OKEA's production for the rest of 2021 is estimated to be 15,500 - 16,500 barrels per day.

As the third wave of COVID-19 outbreak has begun to subside, from the vaccine rollout acceleration which led to lower new cases, the company has started Hybrid operation allowing employees to work either from home or on-site. However, the company maintains emphasis on the health and safety of its employees and customers. The company has facilitated COVID-19 vaccination, resulting in high percentage of employees who received 2nd shot. The company continues to provide booster shots and disinfected cleaning at the office. The antigen test mobile unit is also facilitated to BCP group's employees on weekly basis, including staff at service stations and Inthanin coffee shop in order to build customer confidence. Due to the global outbreaks of COVID-19 and volatile oil price in 2020, the company places importance on being agile and adaptable. In addition, the company has restructured its organization for sustainability as well as managed working capital, including issued THB 7,000 million bond in November 2021, to ensure sufficient funds for operations and execute investment plans. As the result, the company was enabled to better handle and well prepared COVID-19 pandemic going forward.



Other importance events in this quarter

July

- The company group has considered to change the recording of investment status in OKEA ASA (“OKEA”) from investment in an associated company to subsidiary since 1st July 2021. This is because there are events and supporting evidence to support the conclusion that the company group has significant control over operations of OKEA, which the company group previously had a significant influence but has no right to control.

- The company notified the Stock Exchange of Thailand in regards to the founding of Carbon Markets Club. Bangchak Group, comprising the company, BCPG Plc. and BBGI Plc., invited leading organizations in Thailand to jointly establish the Carbon Markets Club, which is committed to reducing the effects of carbon emissions. These founding members of the Carbon Market Club are committed to support, promote carbon credit trading and set out to develop the current over-the-counter mode of trade into a digital platform that is convenient and modern and in line with international standards. This project is aligned with the Company’s aspiration and strategy to being a Thai energy company that conducts business in parallel with stewardship of the environment and society, engaging in the quality of life improvement for Thai society, and fulfilling Sustainable Development Goals.

- The company notified the Stock Exchange of Thailand in regards to the disposition of all shares in BCP Energy International Pte. Ltd. (“BCPE”), a wholly-owned subsidiary of the Company in Singapore, with Sargasco Limited, a company listed in Australian Securities Exchange. The transaction was completed on 2nd July 2021 and is not impacting the Company’s business operation

- On 20th July 2021, the company exercised Warrant of BCPG Public Company Limited No.1 (BCPG-W1) for 69.15 million units at exercise price of THB 8 each, for a value of THB 553 million. The Company’s ownership interest in BCPG Plc. has changed to be at 61.31% without change in control over BCPG Plc.

August

- The company notified the Stock Exchange of Thailand in regards to notify the change in the company name, objective, registered capital, and disposition of shares in the subsidiary company. The Board of Directors Meeting approved the development of liquefied natural gas (LNG) business in response to future business expansion strategy. BCVP Partnership Co., Ltd. (“BCVP”) (a wholly-owned subsidiary of the company) will register the change of the company name to BTSG Co., Ltd. (“BTSG”). Objective is to operate in the supply and distribution of liquefied natural gas and related business. Registered capital has a value of THB 200 million (initial registered capital a value of THB 20 million). At the time of the notification of capital increase, the company and Thai Special Gas Co., Ltd. (“TSG”) will inject the equity into BTSG which the company and TSG will hold 51% and 49% of BTSG’s shares respectively, resulting in BTSG remaining a subsidiary of the company.

- The company announced its interim dividend payment for the first six-month period of 2021 to the company’s shareholders at THB 1.00 per share, totaling THB 1,357 million. The dividend has been paid to the shareholders on 21st September 2021.

Statement of Income



Consolidated Statement of Income (THB Million)	Q3/2021	Q2/2021	QoQ	Q3/2020	YoY	9M2021	9M2020	YoY
Revenue from sale of goods and rendering of services	47,649	43,775	9%	33,652	42%	132,655	103,317	28%
Cost of sale of goods and rendering of services	(41,613)	(40,032)	4%	(31,058)	34%	(118,271)	(101,381)	17%
Gross Profit	6,036	3,744	61%	2,593	133%	14,384	1,936	643%
Other income	777	132	487%	121	543%	1,051	395	166%
Selling and administrative expenses	(1,652)	(1,590)	4%	(1,613)	2%	(4,686)	(4,953)	-5%
Exploration and Evaluation expenses	(133)	(38)	251%	-	N/A	(172)	(8)	>1000%
Loss from derivatives	(777)	(202)	N/A	(72)	N/A	(1,407)	(148)	N/A
Gain on foreign exchange	103	181	N/A	134	N/A	326	592	N/A
Gain (loss) from fair value adjustment of investment	575	43	N/A	(0.1)	N/A	618	17	N/A
Gain from sale of investment	122	-	N/A	-	N/A	120	-	N/A
Reversal of (loss) from impairment of assets	(13)	13	N/A	(1,003)	N/A	400	(2,490)	N/A
Profit (loss) from operating activities	5,037	2,283	121%	160	>1000%	10,633	(4,659)	328%
Finance costs	(748)	(518)	44%	(504)	48%	(1,731)	(1,486)	16%
Impairment gain and reversal of impairment loss (impairment loss) determined in accordance with TFRS 9	0.3	(8)	N/A	(24)	N/A	(1)	(913)	N/A
Share of profit (loss) of associates and joint ventures accounted for using equity method	177	512	N/A	58	N/A	884	(856)	N/A
Profit (loss) before tax	4,466	2,269	97%	(310)	>1000%	9,785	(7,914)	224%
Tax income (expense)	(1,904)	(195)	N/A	(19)	N/A	(2,507)	1,543	N/A
Profit (loss) for the period	2,562	2,074	24%	(329)	878%	7,278	(6,371)	214%
Owners of parent	1,820	1,765	3%	(647)	381%	5,868	(7,219)	181%
Non-controlling interests	742	309		318		1,410	848	
Basic earnings (loss) per share (Baht)	1.25	1.21		(0.57)		4.05	(5.59)	

The Company and its subsidiaries Q3/2021 performance recorded a profit for the period THB 2,562 million, an increase of 24% QoQ, and 878% YoY, of which the net profit attributable to the owners of the parent was THB 1,820 million, or basic earning per shares of THB 1.25 mainly due to the following reasons:

Statement of Income



- 1) This quarter, the company group changed the record of OKEA performance from share of profit (loss) to consolidated financial statement method. The difference of items in consolidated statement of income was significantly affected by the change as below.

Items in consolidated statement of income (THB Million)	OKEA's contribution (A)	Difference of consolidated statement of income			
		QoQ (B)	% (A) / (B)	YoY (C)	% (A) / (C)
Revenue from sale of goods and rendering of services	3,822	3,874	99%	13,998	27%
Cost of sale of goods and rendering of services	1,294	1,582	82%	10,555	12%
Gross Profit (loss)	2,528	2,292	110%	3,443	73%
Selling and administrative expenses	109	62	176%	39	278%
Exploration and Evaluation expenses	133	95	140%	133	100%
Gain (Loss) on foreign exchange	(255)	-78	N/A	-31	N/A
Tax expense	1,613	1,709	N/A	1,885	N/A

- 2) Revenue from sales and rendering services was THB 47,649 million, an increase of 9% QoQ, OKEA's contribution to revenue increase was 99%. Excluding OKEA revenue, the company group's revenue this quarter is similar to last quarter. Revenue from petroleum related business of the company increased, from the company's total sales volume of products increased 5% QoQ, mainly from sale of jet fuel and export of diesel and fuel oil. In addition, average selling price per unit increased 3% QoQ, due to the increase in crude oil price in line with economic recovery and growth in oil demand from the progression of global vaccine rollout. While BCPT's revenue declined mostly due to the decrease in oil trading with outside entities.

As such, when compared to Q3/2020, revenue increased 42% YoY. Excluding OKEA revenue, the company group's recorded revenue increase in petroleum related business from increase in average selling price per unit in line with global oil prices. OKEA's contribution to revenue increase was 27%.

- 3) Gross profit was recorded at THB 6,036 million, an increase of 61% QoQ, majority from OKEA's contribution. While petroleum related businesses of the company recorded a decline in gross profit mostly from the Refinery Business's Operating GRM of 3.07 \$/BBL which declined 1.12 \$/BBL compared to the previous quarter, due to the increase in crude premium over Brent. In addition, sales volume and marketing margin per unit of the Marketing Business Unit declined 11% and 17% QoQ, respectively.

As such, when compared to Q3/2020, gross profit increased 133% YoY, mainly contributed from OKEA 73%. The other businesses recorded the increase in gross profit mostly contributed from Inventory gain in this quarter which is higher than Q3/2020. This was due to the higher rate adjustment of crude oil price and Thai Baht depreciation when compared with Q3/2020.

- 4) Other income was recorded at THB 777 million, an increase of 487% QoQ and 543% YoY, mainly from construction delay claim which received from contractor.

Statement of Income



- 5) Selling and administrative expenses was recorded at THB 1,652 million, an increase of 4% QoQ and 2% YoY, mostly from OKEA's contribution. While the other businesses had a declined in expenses.
- 6) Exploration and Evaluation expenses was recorded at THB 133 million entirely from OKEA, while in Q2/2021 were from NIDO.
- 7) Loss from derivatives was recorded at THB 777 million, mostly from the fair value measurement for crude and product oil price hedging contract as well as forward foreign exchange contract according to accounting standards.
- 8) Gain on foreign exchange was recorded at THB 103 million, from the depreciation of THB against USD led to the increase in the company's and BCPG's asset value. Whereas, OKEA recorded foreign exchange losses, due to the depreciation of Norwegian Krone (NOK) against US Dollar led to the increase in liabilities value.
- 9) Gain from fair value adjustment of investment was recorded at THB 575 million, mainly from recognized profit from changing investment status in the UBE from investment in associate to other investment as a result of UBE's initial public offering (IPO).
- 10) Gain from sale of investment was recorded at THB 122 million from disposal of investment in BCPE.
- 11) Finance costs was recorded at THB 748 million, an increase of 44% QoQ and 48% YoY, mainly from BCPG's refinance expenses.
- 12) Share of profit (loss) of associates and joint ventures accounted for using equity method was recorded at THB 177, million mainly from Star Energy Group Holdings Pte. Ltd. in amount of THB 155 million and UBE in amount of THB 21 million. OKEA did not contribute share of profit in this quarter, due to the change the status of investment to be a subsidiary.
- 13) Tax expense was recorded at THB 1,904 million, an increased in amount of THB 1,709 million when compared to Q2/2021 and an increased in amount of THB 1,885 million when compared to Q3/2020. An increase in tax expenses mostly came from OKEA which has effective tax rate of around 80%, with 22% corporate income tax and 56% petroleum tax.

Performance by Business Group



1.) Refinery and Oil Trading Business Group

Crude Oil Price Situation

Crude Oil Price (\$/BBL)	Q3/2021			Q2/2021	QoQ	Q3/2020	YoY	9M	9M	YoY
	MAX	MIN	AVG	AVG	+/-	AVG	+/-	2021	2020	+/-
Dubai (DB)	77.30	65.34	71.68	67.02	4.66	42.88	28.80	66.36	41.45	24.91
Dated Brent (DTD)	79.12	66.17	73.51	68.97	4.55	42.94	30.57	67.92	41.06	26.86
DTD/DB	1.82	0.83	1.83	1.95	-0.11	0.06	1.77	1.55	(0.39)	1.95

Dubai crude price in Q3/2021 increased compared to Q2/2021. The increase was supported by the economic recovery and increase in global demand for oil. After the progress made in the deployment of the COVID-19 vaccine across the world resulted in the continuously declining number infected patients and gradual easing of lockdown measures in various countries. In addition, the summer driving season in the US and Europe pushed up demand while supply increased was limited due to OPEC+ decision to increase production in measured steps since May onwards. Also, the oil supply in the US was halting after the Impacts from hurricane Ida and hurricane Nicholas disrupted production in the Gulf of Mexico resulting in loss of production over 1.7 million barrel per day or 96% of total production in the Gulf. As for price of Dubai crude average in Q3/2021 increased significantly compared to Q3/2020 supported by global economy recovery from the COVID-19 outbreak situation in many countries have started to subside after vaccine rollout, and loosening of lockdowns in many countries.

As for the Dated Brent and Dubai spread (DTD/DB) in Q3/2021 declined when compared to Q2/2021 due to the increase in Light crude supply after the completion of Forties crude oil pipeline maintenance in Europe's North Sea which happened in May – June timeframe, resulting in easing supply tightness for Light crude. Concurrently, Asian demand for Dubai crude began to recover after the COVID-19 outbreak has subsided. For the Dated Brent and Dubai spread (DTD/DB) average in Q3/2021 increased when compared to Q3/2020, due to the increase demand for Light crude from easing of lockdowns and improved COVID-19 situation, especially in the US and Europe where driving activities begin to return to normal.

Crack Spreads Situation

Crack Spreads (\$/BBL)	Q3/2021			Q2/2021	QoQ	Q3/2020	YoY	9M	9M	YoY
	MAX	MIN	AVG	AVG	+/-	AVG	+/-	2021	2020	+/-
UNL95/DB	13.66	9.52	11.76	9.89	1.88	4.45	7.31	9.64	4.54	5.10
IK/DB	10.20	3.76	5.40	4.49	0.92	(0.77)	6.17	4.38	2.59	1.80
GO/DB	10.21	3.25	5.44	5.24	0.20	4.13	1.31	5.13	7.00	-1.87
FO/DB	3.49	(7.75)	(3.33)	(5.81)	2.48	(2.53)	-0.79	(4.19)	(3.81)	-0.38

Gasoline and Dubai crack spread (UNL95/DB) average in Q3/2021 increased when compared to Q2/2021 and Q3/2020. The increase was due to demand in the US making recovery from driving season while domestic gasoline inventories were low. Also, the reduction of gasoline export from India due to recovering domestic demand after the

Performance by Business Group



easing of lockdown and increase in driving activity. **As for the Jet (Kerosene) – Dubai crack spread (IK/DB)** average in Q3/2021 increased when compared to Q2/2021 and Q3/2020 supported by the recovery in the aviation sector in Europe for the summer season, among ease of lockdowns and increase in vaccination rate, combine with the uptick in domestic flights in China and India after the decline in COVID-19 cases. As for **Diesel and Dubai crack spread (GO/DB)** in Q3/2021 was higher than Q2/2021 and Q3/2020 due to tight supply in Asian market from the reduction of Chinese export quota and higher Asia – Europe arbitrage as a result of continued increase in demand from the European market. In addition, demand in Asia began to recover from the loosening of lockdown measures. **As for the Fuel oil and Dubai crack spread (FO/DB)** average in Q3/2021 gained when compared to Q2/2021, supported by increase in high sulfur fuel oil demand for electricity generation in the Middle East and South Asia during the summer season. Also, the significant rise in LNG price led many electrical power plants switched to fuel oil from LNG. For the Fuel oil and Dubai crack spread (FO/DB) average in Q3/2021 decreased in comparison to Q3/2020 from high supply of heavy crude which increased in line with OPEC+ decision to raise production since May 2021 onwards.

Refinery and Oil Trading Business Group Performance

	Q3/2021	Q2/2021	QoQ	Q3/2020	YoY	9M2021	9M2020	YoY
EBITDA (THB Million)	1,891	1,976	-4%	606	212%	6,279	(2,770)	327%
Average Crude Run (KBD)	111.4	107.0	4%	95.3	17%	94.6	96.3	-2%
Utilization Rate (%)	93%	89%		79%		79%	80%	
Average FX (THB/USD)	33.09	31.53		31.49		31.69	31.69	
<i>(Unit: \$/BBL)</i>								
Operating GRM	3.07	4.18	-1.12	2.33	0.74	3.54	3.02	0.52
Oil Hedging	(1.24)	(0.40)	-0.85	0.22	-1.46	(0.67)	0.17	-0.84
Inventory Gain/ (Loss) ^{1/}	3.72	3.81	-0.09	0.97	2.75	5.63	(5.23)	10.86
Total GRM	5.54	7.60	-2.06	3.52	2.02	8.51	(2.04)	10.55
Total Sales Volume in each market category of the Company ^{2/} (Million Liters)								
Marketing Business	1,052	1,183	-11%	1,286	-18%	3,474	3,855	-10%
Petroleum traders in accordance with section 7	212	171	24%	170	25%	527	509	4%
Export	462	294	57%	308	50%	984	784	25%
Total Sales Volume	1,726	1,648	5%	1,764	-2%	4,985	5,148	-3%

Note: 1/ Inventory Gain/(Loss) in the table included (Reversal of) losses on inventories devaluation (NRV)

2/ Sales volume does not include oil swaps between major oil companies (petroleum traders in accordance with section 7) and sales of crude oil

Performance for Q3/2021, the Refinery and Oil Trading Business Group recorded EBITDA of THB 1,891 million, a decline of THB 85 million when compared to Q2/2021, with the following factors affecting performance as follow:

1. The Bangchak refinery averaged its production in Q3/2021 at 111 KBD or 93% utilization rate, which is higher than the previous quarter's average production rate due to supporting the increased demand for UCO (Unconverted Oil).

Performance by Business Group



2. During this quarter, the refinery's Total Gross Refinery Margin (Total GRM) was recorded 5.54 \$/BBL, a decline of 2.06 \$/BBL when compared to the previous quarter, mainly due to the following reasons.

- Operating GRM was recorded at 3.07 \$/BBL, a decline of 1.12 \$/BBL, due to the rise in crude premium over Dated Brent compared to previous quarter. Although, the crack spread of most products improved in line with global market from higher demand of finished products. After the progress in COVID-9 vaccine rollout across the world and loosening of lockdown measures in many countries. However, during the quarter the refinery increased production yield of UCO from 6% to 11% to support refining margins.
 - In this quarter, the refinery business recorded loss from crude and product oil price hedging contract 1.24 \$/BBL, mostly from the fair value measurement in accordance with TFRS. Whereas, the previous quarter recorded a loss of 0.40 \$/BBL.
 - This quarter the refinery business recorded Inventory gain of 3.72 \$/BBL or THB 1,261 million, due to the continue rise in price of crude oil in the global market compared to previous quarter. As a result of increased in demand for oil consumption, after the easing of lockdown measures in many countries. Additionally, Thai Baht depreciated. Whereas, Inventory gain for Q2/2021 was 3.81 \$/BBL or THB 1,171 million.
3. In this quarter the refinery recorded other income, mainly from construction delay claim which received from contractor in amount of THB 433 million.

4. BCPT recorded total trade transactions of crude oil and finished product of 6.96 million barrels, a decline of 0.90 million barrels (-11%) compared to the previous quarter. Gross profit declined from previous quarter, mainly due to the decrease in crude oil transaction with companies outside of Bangchak Group. The worsening of COVID-19 outbreaks in Asia during the quarter resulted in a large decline in oil demand. However, this quarter BCPT was able to expand its customer base to new countries such as the United Arab Emirates in accordance with BCPT strategic direction.

Performance comparison between Q3/2021 and Q3/2020, the Refinery and Oil Trading Business Group recorded EBITDA increase of THB 1,286 million, with the following factors affecting performance:

1. The Bangchak refinery's average production rate increased 17% YoY, due to support the expansion of UCO export which alleviate the decline in domestic oil consumption during worsening of the third wave of COVID-19 outbreak.
2. Total Gross Refinery Margin increased 2.02 \$/BBL when compared to Q3/2020, mainly due to the following reasons:
 - Operating GRM increased 0.74 \$/BBL from the lower crude premium over Dated Brent as well as increase in crack spread of most products compared to Q3/2020.
 - During this quarter the refinery recorded loss from crude and product oil price hedging contract 1.24 \$/BBL, whereas Q3/2020 realized a gain of 0.22 \$/BBL.

Performance by Business Group



- The refinery business recorded an inventory gain of 3.72 \$/BBL or THB 1,261 million (as mentioned above). Whereas in Q3/2020 recorded inventory gain of 0.97 \$/BBL or THB 269 million (including reversal of losses on inventories devaluation (NRV)). Due to Q3/2021, crude oil price adjusted upward and Thai Baht depreciated, at a higher rate than the same period of the previous year.

3. In this quarter the refinery recorded other income, mainly from construction delay claim which received from contractor (as mention earlier).

4. BCPT recorded a decline in transactions of crude oil and finished product by 1.67 million barrels (-19%) when compared to Q3/2020. Main contributors to the lower trade volume were gasoline and crude oil. Whereas, gross profit improved mainly from higher margin per unit from low sulfur fuel oil which benefited from the significant rise in LNG prices. This led many power plants to switch to using fuel oil to generate electricity. In addition, BCPT continues to expand transactions with new trading partners as well as expanding into new products in accordance with the company strategic direction.

2.) Marketing Business Group

Marketing Business Performance	Q3/2021	Q2/2021	QoQ	Q3/2020	YoY	9M2021	9M2020	YoY
EBITDA (THB Million)	562	827	-32%	766	-27%	2,359	1,572	50%
Net Marketing Margin (Baht / Liter)	0.73	0.88	-17%	0.89	-18%	0.79	0.86	-8%
Sales Volume (Million Liters)								
Retail (Service Stations)	900	996	-10%	1,104	-19%	2,949	3,095	-5%
Industrial	153	187	-18%	182	-16%	525	760	-31%
Total	1,052	1,183	-11%	1,286	-18%	3,474	3,855	-10%
Sales volume in each product category (Million Liters)								
LPG	26	26	1%	33	-22%	69	102	-33%
Gasoline	3	8	-65%	13	-79%	18	36	-49%
Gasohol	326	354	-8%	448	-27%	1,063	1,188	-11%
Jet Fuel	33	34	-5%	14	135%	102	237	-57%
Diesel	627	713	-12%	731	-14%	2,088	2,153	-3%
Fuel Oil and Others	37	49	-23%	47	-20%	135	139	-3%
Total	1,052	1,183	-11%	1,286	-18%	3,474	3,855	-10%

Note: Net Marketing Margin of Bangchak only (excluding Inventory Gain/(Loss) and NRV)

The Q3/2021 performance of the Marketing Business Group recorded EBITDA of THB 562 million, a decrease of THB 265 million compared to Q2/2021, with the following factors affecting performance:

1. Total sale volume of the Marketing Business Group declined 11% QoQ, attributed to the 10% and 18% QoQ decline in retail channel and industrial channel, respectively. This was due to third wave of COVID-19 outbreak which started in April 2021 and exacerbated by the Delta variant resulting in high number of new cases when compared to previous quarter. The government tightened COVID-19 control measure such as declaring highest lockdown

Performance by Business Group



measures in the maximum and strict controlled areas, avoid unnecessary travel, and asking for cooperation to work from home as much as possible which resulted in increase in business disruptions. In addition, flooding in many areas of the country in late September also suppressed oil demand.

2. Net marketing margin per unit declined by 17% QoQ, due to finished product price adjusting upward from the previous quarter and fluctuation of global market. Price for biodiesel (B100) increased throughout the quarter. Also, for lessening the impact to consumers and the recovery of the economy, the company unable to adjust retail price to coincide with cost of finished products that rose in accordance to the global market. This resulted in the decline in net marketing margin. However, in this quarter recorded inventory gain which was similar to the previous quarter.

3. The company still continues to implement its strategy to expand customer base and strive for increase sale per service station by expanding the number of service stations in high potential locations as well as plans to open more Unique Design Service Stations. In Q3/2021, the number of new service stations was 11 stations, as of the end of Q3/2021 was at 1,253 stations, and the cumulative retail sales volume between January – September 2021 was at 16.0% (data from the Department of Energy Business). Under the concept of Greenovative Destination strategy, the company plans to develop service stations into destinations that can fulfill customers' desires but still respond to changing lifestyles. Such as "Bangchak Food Truck" business where Bangchak partnered with leading brands to open food trucks at service stations. In addition, lifestyle products have been introduced at service station in Grab & Go format. At the end of Q3/2021, Bangchak opened food truck in 5 service stations and will expand to 15 service stations by the end of the year. In addition, there were 40 service stations equipped with EV chargers in 27 provinces across the country which the company plans on expanding EV chargers to cover Bangkok area.

4. Marketing Business Group still continues to develop and expand its non-oil business. As such new Inthanin coffee shops were opened at an increment of 36 branches. As of the end of Q3/2021, the total number was 739 branches. In addition, there are 12 branches of DAKASI pearl milk tea to be operated in Bangchak service stations, with target to have 50 branches within 2021. Furthermore, new partnerships are being formed to continue the push for Inthanin coffee shop to become more than coffee shop by offering bakery products. To the end, Banchak Retail Company ("BCR") signed an MOU with Thai Airways International Plc. to develop business plan to sell Puff & Pie products at 50 Inthanin coffee shops within 2021, with both Grab & Go and Shop in Shop formats. This quarter, Inthanin coffee shop began offering natural vitamin drinks to boost immune system during the COVID-19 pandemic such as iced fingerroot honey lemon and iced sacred lotus honey lemon drinks. BCR continues to push up sales through online delivery platforms in line with consumers' behavior change due to COVID-19 pandemic and government containment measures.

Performance comparison between Q3/2021 and Q3/2020, the Marketing Business Group recorded EBITDA decrease of THB 204 million, with factors affecting operations as follow:

1. Total sale volume of the Marketing Business Group decreased by 18% YoY, attributed to the sold through the retail channel and industrial channel decreasing by 19% and 16% YoY, respectively. The reduction in sale volume was a result of the severe third wave of COVID-19 outbreak where the government declared highest lockdown measures for the maximum and strict controlled areas to contain the virus. While Q3/2020 saw the loosening of lockdown measures

Performance by Business Group



from improved situation from the first wave of COVID-19 outbreak which boosted consumer social activities coupled with government's stimulus for economic and tourism which resulted in higher oil consumption compared to Q3/2021.

2. In Q3/2021 net marketing margin per unit declined 18% YoY, due to the increase in finish product price in line with global market conditions. In addition, prices for biodiesel (B100) and ethanol adjusted upward. This resulted in Q3/2020 the company was able to adjust retail price to be more appropriate match with finished product cost when compared to Q3/2021. This led the net marketing margin per unit declined when compared to Q3/2020. However, in this quarter recorded higher inventory gain due to the increase in oil price at a higher rate.

3. The company's cumulative retail sales volume market share between January - September 2021 was 16.0%, whereas the cumulative between January – September 2020 was 15.6% (data from the Department of Energy Business). From the end of Q3/2020 to this quarter, there were 44 new service stations and 126 new Inthanin coffee shops.

3.) Power Plant Business Group

Power Plant Business Performance (THB Million)	Q3/2021	Q2/2021	QoQ	Q3/2020	YoY	9M2021	9M2020	YoY
EBITDA	1,179	997	18%	1,138	4%	3,155	2,771	14%
Revenue from sale and rendering of services	1,302	1,088	20%	1,238	5%	3,437	3,094	11%
Share of profit (loss) from associated companies	150	157	-4%	101	49%	448	295	52%
Wind Power Plant	(5)	4	-234%	(22)	75%	18	(13)	240%
Geothermal Power Plant	156	153	2%	122	27%	430	307	40%
Electricity Sales (Million KWh)								
Solar Power Business – Thailand (166.9 MW)	75.30	80.05	-6%	73.70	2%	236.94	216.96	9%
Wind Power Business – Thailand (9.0 MW)	3.95	2.44	62%	2.68	48%	10.09	8.25	22%
Solar Power Business – Japan (14.7 MW)	5.02	4.55	11%	5.06	-1%	13.59	12.98	5%
Hydropower Business – Lao PDR (114.0 MW)	210.24	102.02	106%	188.82	11%	380.38	296.19	28%
Total Electricity Sales	294.52	189.06	56%	270.27	9%	640.99	534.39	20%

Performance comparison between Q3/2021 and Q2/2021 of the Power Plant Business Group recorded EBITDA of THB 1,179 million, an increase of THB 182 million, with the following factors affecting operations:

1. Solar Power Plant projects in Thailand recorded a decrease in total electricity sales by 6% QoQ, due to seasonal factors from rainy season. This led to a decline in irradiation.

2. Wind Power Plant project in Thailand, "Lom Ligor", recorded an increase in total electricity sales by 62% QoQ, due to entering high season in accordance with the seasonal factor of the wind power plant as usual.

3. Solar Power Plant projects in Japan recorded an increase in total electricity sales by 11% QoQ, due to the decline in curtailment from Japan Electric Power Company compared to previous quarter.

4. Hydro Power Plant project in Lao PDR recorded an increase in total electricity sales by 106% QoQ, from entering the high season in accordance with the seasonal factor of the hydropower plants as usual.



5. Recorded shares of profit from investments in associated companies THB 150 million, a decline from the previous quarter THB 7 million, with details as follow:

- Share of loss from the Wind Power Plant business in the Philippines was recorded at THB 5 million, a decrease from the previous quarter of THB 9 million. Even though electricity sales increased slightly, but the plants received the adjustment from tariff escalation in Q2/2021, resulting in lower share of profit.
- Share of profit from the Geothermal Power Plant business in Indonesia was recorded at THB 156 million, an increase from the previous quarter by THB 3 million. Even though electricity sales dropped from the previous quarter due to higher shutdown days, but the plants received higher tariff rate and lower operational expenses from the decrease in number of employees. This led to an increase in share of profit.

Performance comparison between Q3/2021 and Q3/2020, the Power Plant Business Group recorded EBITDA increase of THB 40 million, with the following factor affecting operations:

1. Solar Power Plant projects in Thailand recorded an increase in total electricity sales by 2% YoY, due to improvement in the efficiency of electricity generation. The increase in electricity sales could partially alleviate from lower revenue compared to the same period of the previous year. This was due to the adder expiration of 8 MW Solar Power Plant in August 2021.

2. Wind Power Plant project in Thailand, the “Lom Ligor”, recorded an increase in total electricity sales by 48% YoY, mainly from the increase in wind speed compared to the same period last year.

3. Solar Power Plant projects in Japan recorded a decrease in total electricity sales by 1% YoY, due to the slightly increase in curtailment from Japan Electric Power Company compared to the same period last year. However, revenue from sale of electricity increased compared to same period of the previous year from the depreciation of THB against JPY, resulting in higher revenue when converted to THB.

4. Hydro Power Plant projects in Lao PDR recorded increase in total electricity sales by 11% YoY, due to an increase in rainfall compared to the same period of the previous year.

5. Realized increase in share of profit from investments in associated companies of THB 50 million from the same period of the previous year, with details as follow:

- Share of loss from the Wind Power Plant business in the Philippines decreased by THB 16 million, mainly from the increase in wind speed at the project compared to the same period of the previous year.
- Share of profit from the Geothermal Power Plant business in Indonesia increased by THB 33 million. Even though the electricity sales dropped from higher shutdown days, but the plants benefited from higher tariff rate compared to Q3/2020. Additionally, the plant recorded lower finance cost due to the drop of interest rate and loan outstanding, resulting in improved share of profit.

Performance by Business Group



4.) Bio-Based Product Business Group

As for the performance of the Bio-based Product Business Group in Q3/2021, total EBITDA was recorded at THB 890 million, an increasing of THB 594 million compared to Q2/2021, and an increase of THB 500 million compared to Q3/2020. The main contribution for the increase was from BBGI recognized profit from changing the status of investment in UBE from investment in associate to other investment as a result of UBE's initial public offering (IPO). Performance of each business unit are as follow:

Biodiesel Business

Biodiesel Business Performance	Q3/2021	Q2/2021	QoQ	Q3/2020	YoY	9M2021	9M2020	YoY
Revenue (THB Million)	1,999	2,260	-12%	1,508	33%	6,781	5,539	22%
Gross Profit (THB Million)	178	176	1%	161	11%	611	606	1%
B100 Production Volume (Million Liters)	55.69	63.19	-12%	66.01	-16%	181.61	186.28	-3%
B100 Sales Volume (Million Liters)	53.51	63.08	-15%	65.08	-18%	181.10	194.34	-9%

Performance comparison between Q3/2021 and Q2/2021 are as follow:

1. B100 production volume was at 55.69 million liters, while sales volume of B100 was at 53.51 million liters. Both production and sales volume were down 12% and 15% QoQ due to the worsening of COVID-19 outbreak from the Delta variant where the number of infections and deaths reached new high. Government imposed highest lockdown in the maximum and strict controlled areas including Bangkok and other provinces to curb the outbreak and consumers' reduction in travel and outside activities to limit infections have suppressed biodiesel fuel demand compared to the previous quarter.

2. Sales revenue during the quarter was THB 1,999 million, a decline of 12% QoQ. Reduction in sales volume was the main contributor to the decline, although B100 average selling price increased from previous quarter in line with the increase in crude palm oil (CPO) price which increased steadily throughout the quarter. This was due to the reduced production level from Malaysia which is the 2nd largest exporter of CPO, thus, Thailand was able to export CPO. Concurrently, the yield for palm oil began its seasonal decline resulting in domestic selling price of CPO increase. Input cost management during CPO price increase has lessen the impacts from reduced sales volume. In addition, the revenue from sale of Refined Glycerin slightly increased, resulting in similar gross profit level compared to the previous quarter.

Performance comparison between Q3/2021 and Q3/2020 are as follow:

1. B100 production and sales volume declined 16% and 18% YoY, respectively due to the third wave of COVID-19 pandemic throughout the quarter, which was more severe than previous year. During Q3/2020, the first wave of COVID-19 has subsided, the government loosen lockdown restrictions, promoted domestic tourism and declared multiple long weekends which resulted in higher biodiesel demand compared to this quarter.

2. Sales revenue increased 33% YoY, mainly from the increase in average selling price of B100 which increased significantly (as detailed above). The price for B100 (according to announcement made by the Department of Energy Business) in Q3/2021 average was 38.75 baht/liter, an increase of 56% YoY. The increase was due to higher market price

Performance by Business Group



for crude palm oil compared to last year. In addition, this quarter the revenue from Refined Glycerin sales was recorded (whereas there was no revenue from Refined Glycerin sales in Q3/2020), resulting in gross profit increasing by 11% YoY.

Ethanol Business

Ethanol Business Performance	Q3/2021	Q2/2021	QoQ	Q3/2020	YoY	9M2021	9M2020	YoY
Revenue (THB Million)	1,158	1,278	-9%	1,218	-5%	3,312	3,257	2%
Gross Profit (THB Million)	31	60	-48%	171	-82%	207	541	-62%
Ethanol Production Volume (Million Liters)	44.54	41.73	7%	51.31	-13%	142.38	146.89	-3%
Ethanol Sales Volume (Million Liters)	44.56	49.76	-10%	52.35	-15%	128.22	136.06	-6%

Performance comparison between Q3/2021 and Q2/2021 are as follow:

1. Total production volume of Ethanol products was at 44.54 million liters, an increase of 7% QoQ, due to the annual maintenance at KSL Green Innovation Public Company Limited (“KGI”) in Amphoe Namphong, Khon Kaen province. While last quarter there were annual maintenance activities at Bangchak Bioethanol (Chachoengsao) Company Limited (“BBE”) and KGI plants in Amphoe Boploy, Kanchanaburi province and Amphoe Namphong, Khon Kaen province. Total sales volume of Ethanol products was at 44.56 million liters, a decline of 10% QoQ, due to the third wave of COVID-19 which has exacerbated compared to the previous quarter. The government imposed highest lockdown measures in the maximum and strict controlled areas including Bangkok and other provinces to curb the outbreak and consumers’ reduction in travel and outside activities to limit infections contributed to reduce Ethanol demand in the production of Gasohol fuel.

2. Sales revenue was recorded at THB 1,158 million, a decline of 9% QoQ. Gross profit was recorded at THB 31 million, a decline of 48% QoQ, mainly due to the reduction of total Ethanol products sales volume from reduced demand for Ethanol during COVID-19 outbreaks.

Performance comparison between Q3/2021 and Q3/2020 are as follow:

1. Total production volume of Ethanol products declined by 13% YoY, from the longer annual maintenance activity at KGI plant in Amphoe Namphong compared to the same period of previous year. Total Ethanol sales volume was down 15% YoY due to the impact from the third wave of COVID-19 outbreak throughout the quarter which was also the worst outbreak since the start of the pandemic. Ethanol consumption for the fuel production declined compared to Q3/2020, due to stricter government measures to control the spread of the virus.

2. Sales revenue declined 5% YoY, due to weaken Ethanol sales volume. Although average selling price for Ethanol products increased in line with main feedstock price; however, due to suppressed domestic Ethanol demand during the third wave of COVID-19 outbreak pressured price. Then, Ethanol selling prices could not increase in line with the increase in feedstock cost, resulting in gross profit decline of 82% YoY.

High Value Products (HVP) Business

On 1st September 2021, BBGI began the sales of nutritional supplements under B Nature Plus brand. The first product launch to market is ASTA-IMMU, an astaxanthin extract, which is an antioxidant that helps support

Performance by Business Group



skin health. The product received the Food Recipe Registration Certificate (Orr.18) and is sold through multiple channels including Facebook: BNaturePlus and Line official: @BNaturePlus. In addition, BBGI began expanding the sales of pharmaceutical grade fragrant-free hand sanitizing alcohol with GMP HACCP standard to the Business-to-Customer (B2C) market from previously only selling to Business-to-Business (B2B) market.

5.) Natural Resources Business Group

Natural Resources Business Group Performance	Q3/2021	Q2/2021	QoQ	Q3/2020	YoY	9M2021	9M2020	YoY
EBITDA (THB Million) ^{1/}	3,112	276	>1,000%	(58)	>1,000%	3,418	(1,224)	379%
Share of profit (loss) from OKEA (THB Million) ^{1/}	N/A	333	N/A	(50)	N/A	N/A	(1,189)	N/A
OKEA Performance								
EBITDA-OKEA (THB Million)	3,005	1,165	158%	416	622%	5,023	2,115	138%
Revenue from crude oil and gas sales (THB Million)	3,822	2,225	72%	1,068	258%	7,955	3,552	124%
Production volume - Net to OKEA (KBD)	16.32	13.21	24%	13.30	23%	15.36	16.14	-5%
Sales volume - Net to OKEA (KBD)	16.98	13.05	30%	14.23	19%	15.08	14.89	1%
Realized liquids price (USD/BBL)	67.40	63.80	6%	32.30	109%	60.30	35.19	71%
Realized gas price (USD/MMBTU)	16.1	9.1	78%	2.3	613%	10.7	2.2	393%

Note: 1/ Natural Resources Business Group changed the recording of OKEA's performance from share of profit (loss) to consolidated method since Q3/2021.

Performance of the Natural Resources Business Group in Q3/2021 recorded an EBITDA of THB 3,112 million, an increase from the previous quarter of THB 2,836 million and THB 3,170 million when compared to Q3/2020. Due to the change in recording method of investment in OKEA from associated company to subsidiary during this quarter, the company group changed the recording of performance from share of profit (loss) to consolidated method since 1st July 2021. This has resulted in a significant increase in Natural Resources Business Group's EBITDA. In addition, gain from sale of investment in BCPE THB 122 million was recognized. Since OKEA contributes to the majority of the Natural Resources Business Group's performance, its performance was as follow:

This quarter OKEA's EBITDA was THB 3,005 million, increase of THB 1,840 million from the previous quarter.

Main factors affecting performance are as follow:

- Net production to OKEA was 16.32 KBD, an increase 24% QoQ. Mainly from Gjøa field returned to normal operation after undergoing 31 days of planned maintenance in the previous quarter.
- Revenue from crude oil and gas sales was THB 3,822 million, an increase of 72% QoQ, mainly attributed to the adjusting upward in realized liquids price and gas price due to the continued increase in demand for energy from global economic recovery after progress in COVID-19 vaccine rollout in many countries. In addition, gas reserves in Europe has been lower than normal level and natural gas export from Russia, which is the main exporter of natural gas, has been limited. Furthermore, sales volume increased 30% QoQ from the higher production capacity.

OKEA's EBITDA in Q3/2021 increased THB 2,589 million when compared to Q3/2020. Main factors affecting OKEA's performance were as follow:

Performance by Business Group



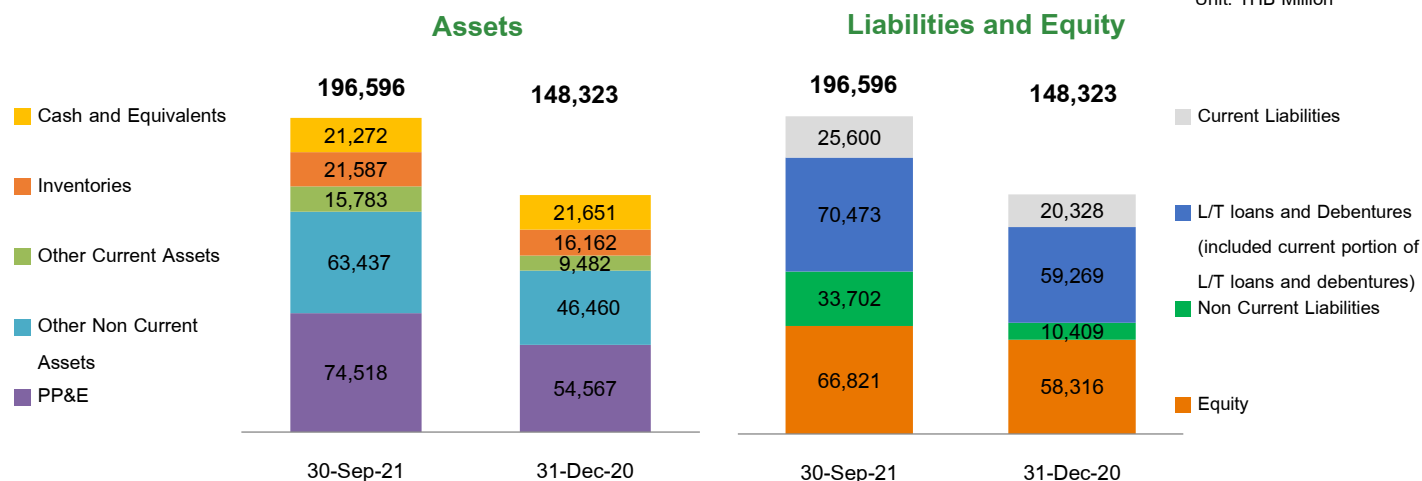
- Net production to OKEA increased 23% YoY, due to there were planned maintenance at Draugen and Gjøa field during Q3/2020.
- Revenue from crude oil and gas sales increased 258% YoY, mainly from the adjusting upward in realized liquids price and gas price (as mention earlier) and the increase in sales volume of 19% YoY in line with production volume.

However, if Natural Resources Business Group still recognize OKEA's performance by using share of profit (loss) method from associate company, Natural Resources Business Group's EBITDA would have increased THB 40 million from Q2/2021. This quarter recognized gain from sale of investment in BCPE (as mention earlier). While share of profit from OKEA declined due to the reversal of impairment asset in Q2/2021. As for Natural Resources Business Group's EBITDA in Q3/2021 gained THB 380 million when compared to Q3/2020 from the increase in share of profit from OKEA. Due to Q3/2020, OKEA recorded the impairment related to the Yme asset under development. Whereas, this quarter did not record this transaction.

Statement of Financial Position



Unit: THB Million



This quarter, the company group changed the record of OKEA performance from share of profit (loss) basis to consolidated financial statement method. The difference of consolidated statement of financial position were affected by the change as below.

Items in consolidated statement of financial position (THB Million)	Difference of consolidated statement of financial position as of 30 th September 2021 compared to 31 st December,2020		
	Total difference	OKEA's contribution	The company group's contribution (Excluding OKEA)
Cash and Cash Equivalents	-379	5,783	-6,163
Inventories	5,424	874	4,550
Other Current Assets	6,301	2,782	3,519
Other Non-Current Assets	16,977	11,393	5,584
PP&E	19,951	17,980	1,971
Assets	48,273	38,812	9,461
Current Liabilities	5,272	4,933	339
L/T loans and Debentures (included current portion of L/T loans and debentures)	11,204	9,145	2,060
Non-Current Liabilities	23,293	23,445	-152
Equity	8,504	1,289	7,215
Liabilities and Equity	48,273	38,812	9,461

Assets

As of the 30th September 2021, the company and its subsidiaries had Total Assets in the amount of THB 196,596 million, an increase of THB 48,273 million when compared to the 31st December 2020, changes in assets are as follow:

1. Cash and cash equivalents decreased by THB 379 million. The company group (excluding OKEA) cash holding declined by THB 6,163 million, while OKEA cash holding increased by THB 5,783 million. Details are stated in Analysis of the Cash Flow Statement.

Statement of Financial Position



2. Inventories increased by THB 5,424 million, mainly from increased in the company group (excluding OKEA) was THB 4,550 million, which came from the increase in cost of oil inventory per unit in line with global oil prices. The rest of inventories rose of THB 874 million was contributed by OKEA.
3. Other current assets increased THB 6,301 million, increased from OKEA's contribution was THB 2,782 million. The rest of the increase in amount of THB 3,519 million mostly came from the company's trade account receivables due to the increase in export sales volume and average selling price of finished products, and BCPG's trade account receivable due to the longer duration of electricity payment period from EDL. However, BCPG closely monitored EDL debt collection and continues to receive payment.
4. Other non-current assets main items consist of investments, right of use assets, intangible assets and indemnification assets. Other non-current assets increased by THB 16,977 million, increased from OKEA's contribution was THB 11,393 million, which mainly from indemnification assets. This was expenses related to close-down and removal of oil equipment for Draugen and Gjøa field, which could be collected from the seller. The rest of the increase was THB 5,584 million, mainly from
 - Other non-current financial assets rose by THB 2,275 million from BBGI changing investment status of UBE from associate company to other investment and BCPG's investment in VRB Energy Inc through the purchase of convertible bonds.
 - Intangible assets increased by THB 702 million, due to increase in BCPG's intangible assets value from the depreciation of THB against USD.
 - Investments in associate and joint ventures increased by THB 2,343 million. Not only the recognition of share of profit from investments in associate and joint ventures, but also the increase in investment value due to the depreciation of THB against USD.
5. Property, plant and equipment net increased by THB 19,951 million rose from OKEA's contribution in amount of THB 17,980 million and the rest of contribution increased in amount of THB 1,971 million, from (1) the company invested by THB 2,854 million, mainly from major turnaround and Efficiency, Energy, and Environment Enhancement Project (3E) (2) Power Plant Business invested in solar power business in Japan and Thailand, by THB 1,783 million and (3) Bio- Based Product Business enhance the production capacity of the Ethanol plant and construct the power and steam generator plant, by THB 463 million. Depreciation of the company group for the period (excluding OKEA) was THB 3,286 million.

Liabilities

As of the 30th September 2021, the company and its subsidiaries had Total Liabilities THB 129,775 million, an increase of THB 39,769 million, changes in liabilities are as follow:

1. Current liabilities (exclude current portion of long-term loans from financial institutions and debentures) increased by THB 5,272 million from OKEA's contribution was THB 4,933 million.

Statement of Financial Position



2. Long-term loans and debentures (included current portion of long-term loans and debentures) increased by THB 11,204 million, occurred from increase in OKEA's debenture by THB 9,145 million and increase in the rest of contribution from issuance of debentures by THB 13,300 million which were BCPG by THB 12,000 million and BBGI by THB 1,300 million. Loan drawdown increased by THB 1,717 million which were BCPG by THB 1,501 million and BBGI by THB 216 million. While there were loan repayment by THB 12,176 million and debenture repayment of the company by THB 2,500 million. Besides, the company group (excluding OKEA) had the effects of foreign exchange rate led to the increase in liabilities value of THB 1,700 million and the amortized issuance cost of loans and debenture by THB 19 million.
3. Other non-current liabilities increased by THB 23,293 million, increased from OKEA's contribution was THB 23,445 million. The main item was provisional for decommissioning cost.

Equity

As of 30th September 2021, the company and its subsidiaries had Total Equity in the amount of THB 66,821 million, an increase of THB 8,504 million. Mainly from (1) the net profit for the period of THB 7,278 million (2) changes in ownership interests in subsidiary of THB 1,386 million (3) increased in other comprehensive income by THB 2,453 million, which mostly occurred from exchange differences on translating financial statements by THB 2,374 million from the depreciation of THB against USD (4) dividend paid by THB 2,407 million and (5) coupon payment on perpetual subordinated debentures by THB 249 million. There was total equity attributable to owners of the parent was THB 52,105 million, and book value per share (exclude perpetual subordinated debentures) was THB 31.06.

Statement of Cash Flows



As of 30th September 2021, the company and its subsidiaries had Cash and cash equivalents in the amount of THB 21,272 million, details are as follow:

Cash Flows (THB Million)	9M2021	9M2020
Net cash received from operating activities	3,248	4,458
Net cash used in investing activities	(2,232)	(10,566)
Net cash received (used in) financing activities	(1,508)	10,866
Effect of exchange rate changes on cash and cash equivalents	112	141
Net increase (decrease) in cash and cash equivalents	(379)	4,899
Cash and cash equivalents as of 1 st January	21,651	7,276
Cash and cash equivalents as of 30th September	21,272	12,175

Details of each activities are as follows:

Net cash received from operating activities in the amount of THB 3,248 million which was derived from (1) profit for the period by THB 7,278 million (2) adjustments to net cash received by (used in) operating activities, in which the main activities that affected an increase in cash flow were depreciation and amortization by THB 5,790 million, tax expense by THB 2,507 million, finance costs by THB 1,731 million and unrealized loss from derivatives by THB 951 million. Whereas, the main items that affected a decrease in cash flow were share of profit of associates and joint ventures by THB 884 million and gain from fair value adjustment of investment by THB 618 million (3) change in net operating assets and operating liabilities resulted in cash flow declining by THB 12,978 million, and (4) taxes paid by THB 298 million.

Net Cash used in investing activities of THB 2,232 million, mainly from cash paid for (1) acquisition of property, plant and equipment in the amount of THB 5,925 million mostly from equipment of major turnaround and working in progress of Efficiency, Energy, and Environment Enhancement Project (3E), Power Plant Business from solar power business in Japan and Thailand, Bio-based Product Business for enhance the production capacity of the Ethanol plant and construct the power and steam generator plant, and Natural Resources Business from oil and gas properties in production (2) other investments by THB 916 million and (3) long-term loans by THB 625 million. Whereas, cash received from acquisition of subsidiary in amount of THB 5,011 million.

Net Cash used in financing activities of THB 1,508 million, mostly from cash paid for (1) repayment of long-term loans from financial institutions by THB 12,176 million (2) redemption of debentures by THB 2,906 million (3) dividends by THB 2,407 million (4) finance costs by THB 1,460 million, and (5) lease liabilities by THB 1,290 million. Whereas, cash received from (1) issuance of debentures by THB 13,300 million (2) short-term loans from financial institutions by THB 3,828 million and (3) long-term loans from financial institutions by THB 1,717 million.

Financial Ratios



	Q3/2021	Q2/2021	Q3/2020	9M2021	9M2020
Profitability Ratios (%)					
Gross Profit Margin	12.67%	8.55%	7.71%	10.84%	1.87%
EBITDA Margin	15.80%	9.75%	8.23%	12.47%	1.31%
Net Profit Margin	5.38%	4.74%	-0.98%	5.49%	-6.17%
Return on Equity ^{1/} (ROE)	12.37%	7.67%	-14.90%		
Efficiency Ratio (%)					
Return on Assets (ROA)	7.43%	5.26%	-3.87%		

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

	30-Sep-21	30-Jun-21	30-Sep-20
Liquidity Ratios (Times)			
Current Ratio	1.76	1.94	1.51
Quick Ratio	1.03	1.07	0.78
AR Turnover	23.87	27.71	21.54
Collection Period (Days)	15	13	17
AP Turnover	22.33	25.74	18.40
Payment Period (Days)	16	14	20
Leverage Ratios (Times)			
Debt to Equity	1.94	1.32	1.61
Interest bearing Debt to Equity	1.30	1.06	1.31
Net Interest-bearing Debt to Equity	0.98	0.80	1.09
Release of Debenture Ratio (Times)			
Net Debt to Equity	0.82	0.66	0.83

Financial Ratios Calculation

Profitability Ratios

- Gross Profit Margin (%) = $\frac{\text{Gross Profit}}{\text{Revenue from sale of goods and rendering of services}}$
- EBITDA Margin (%) = $\frac{\text{EBITDA}}{\text{Revenue from sale of goods and rendering of services}}$
- Net Profit Margin (%) = $\frac{\text{Profit attributable to owners of the parent}}{\text{Revenue from sale of goods and rendering of services}}$
- Return on Equity (%) = $\frac{\text{Profit attributable to owners of the parent (Yearly)}}{\text{Total Equity attributable to owners of the parent (Average)}}$

Efficiency Ratio (%)

- Return on Assets (%) = $\frac{\text{EBIT (Yearly)}}{\text{Total Asset (Average)}}$

Liquidity Ratios (Times)

- Current Ratio (Times) = $\frac{\text{Current Asset}}{\text{Current Liabilities}}$
- Quick Ratio (Times) = $\frac{(\text{Cash \& Equivalents} + \text{Short term investments} + \text{Trade and other Account Receivable})}{\text{Current Liabilities}}$



Financial Ratios

- Accounts Receivable Turnover (Times) = $\frac{\text{Revenue from sale of goods and rendering of services}}{\text{Accounts receivable before doubtful debt (Average)}}$
- Collection Period (Days) = $\frac{365}{\text{Account Receivable Turnover}}$
- Accounts Payable Turnover (Times) = $\frac{\text{Cost of sale of goods and rendering of services}}{\text{Accounts Payable (Average)}}$
- Payment Period (Days) = $\frac{365}{\text{Account Payable Turnover}}$

Leverage Ratios (Times)

- Debt to Equity (Times) = $\frac{\text{Total Debt}}{\text{Equity}}$
- Interest Bearing Debt to Equity (Times) = $\frac{\text{Interest bearing Debt}}{\text{Total equity}}$
- Net Interest Bearing Debt to Equity (Times) = $\frac{(\text{Interest bearing Debt} - \text{Cash and cash equivalents} - \text{Current investments})}{\text{Total equity}}$

Issuance of Debenture Ratio (Times)

- Net Debt to Equity (Times) = $\frac{(\text{Interest bearing Debt} - \text{Cash and cash equivalents} - \text{Current investments})}{(\text{Total equity} - \text{Unrealized gain/loss from derivatives} - \text{Unrealized gain/loss on foreign exchange} - \text{Inventory gain/loss})}$

Note:

1/ Average Total Equity attributable to owners of the parent

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

2/ Average Total Assets

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

3/ The numerator of ROE is defined as the Profit attributable to owners of the parent and have to be annualized.

4/ The numerator of ROA is defined as EBIT and have to be annualized.

5/ Average Accounts Receivable before doubtful debt

- Yearly = $\frac{(\text{Accounts Receivable before doubtful debt of the year before} + \text{Accounts Receivable before doubtful debt of the Company of this year})}{2}$
- Quarterly = $\frac{(\text{Accounts Receivable before doubtful debt of the quarter of the year before} + \text{Accounts Receivable before doubtful debt of the quarter this year})}{2}$

6/ Average Accounts payable

- Yearly = $\frac{(\text{Accounts payable of the year before} + \text{Accounts payable of the Company of this year})}{2}$
- Quarterly = $\frac{(\text{Accounts payable of the quarter of the year before} + \text{Accounts payable of the quarter this year})}{2}$

7/ Interest Bearing Debt defined as Short-term loans + Long-term loans (including current portion of long-term loans) + Debentures (including current portion of long-term debentures) + Lease liabilities (including current portion of lease liabilities)

Management Outlook towards the Economy and Crude Oil Price in Q4/2021



Economic outlook

The global economy is expected to continue its recovery in Q4/2021 on the back of improvements in consumption index, private and service sector investment. Governments' monetary policies and fiscal stimulus measures also continue to be supportive of the recovery, especially in European countries. However, the IMF has revised down its forecast of the US GDP in 2021 from 7% to 6% due to the impacts from supply chain disruptions and political stalemate in Congress. Forecast for emerging economies has also been revised down from 6% to 5.9%

In terms of forecast for the Thai economy in Q4/2021, the economy likely bottomed out in Q3/2021; however, uncertainties surrounding the spread and impacts of COVID-19 will pose risk for the recovery in Q4/2021, especially on the increase in household debt and prospects of the labor market. Latest forecast by the Bank of Thailand put the GDP for 2021 at 0.7%. The increase in effectiveness of vaccines, high agricultural commodities prices, earlier than expected loosening of COVID-19 containment measures in addition to government's stimulus measures have improved consumer confidence and private consumption. Tourism sector is expected to improve from government measures and increase in international visitors while inflation remains low due to the subdued demand-pull inflationary pressure.

Crude Oil Price Outlook

The International Energy Agency (IEA) forecast that crude oil demand will expand 5.23 million barrel per day in 2021 compared to the contraction of 8.76 million barrel per day in 2020. The IEA revised its forecast down 0.01 million barrel per day due to increasing number of COVID-19 case in some countries in Q3/2021. However, the progress made in the COVID-19 vaccine rollout to cover the majority of the population will further support economic recovery and the growth rate of oil consumption.

Dubai crude oil price is expected move between 75 – 80 \$/BBL in Q4/2021. It is expected that the continued accelerate the global deployment of COVID-19 vaccine to target population, resulting in demand for oil recovering. While OPEC+ has indicated that they are monitoring the market and will cooperate to increase production in measured steps to ensure oil price stability. Also, Energy crisis situation has pushed up natural gas and coal prices, resulting in demand for oil increasing from fuel switching and demand is expected to increase as winter approaches.

Dated Brent and Dubai spread (DTD/DB) is expected to be average 2.20 - 2.70 \$/BBL in Q4/2021 supported by Light crude demand recovery from higher consumption of gasoline and diesel in western countries where COVID-19 situation has start to subside. Also, fuel switching as a result of high natural gas and coal prices will increase oil demand for electricity generation in the winter. Demand for heavy crude in Asia continues its gradual recovery due to low vaccination rate compared to the US and European countries; increase production from OPEC+ has help with supply.

As for the Gross Refinery Margin (GRM) in Q4/2021, it is expected that Dubai crude cracking margin Singapore is continuously increase compared to Q3/2021. Demand for finished product in Asia is expected to gradually increase due to COVID-19 outbreak situation subsiding after accelerate the deployment of COVID-19 vaccines to population in many countries. This led economic activities and industries, combine with the tourism sectors to make a recovery. Also, the adjusting upward of natural gas and coal price will support fuel switching to using more oil. And, expected trend of oil demand is likely to grow for producing heat in winter season which improve the refining margin.