



Bangchak Corporation Plc.

Management Discussion & Analysis of Business Operation

For the 3rd quarter period ended September 30, 2023



S&P Global

MSCI
ESG RATINGS **AA**
CCC B BB BBB A AA AAA

THSI
THAILAND
SUSTAINABILITY
INVESTMENT 2022

Carbon Neutrality
by 2030
Net Zero
by 2050

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Key Financial Data

Refinery Business Group	Q3/2023	Q2/2023	QoQ	Q3/2022	YoY	9M/2023	9M/2022	YoY
Average Crude Run (KBD)	116.4	118.6	-2%	123.2	-6%	119.9	122.6	-2%
Utilization Rate (%)	97%	99%		103%		100%	102%	
GRM (US\$/BBL)								
- Operating GRM	14.67	4.67	9.99	11.20	3.47	10.28	14.21	-3.93
- Total GRM	17.27	4.50	12.77	10.45	6.82	10.66	13.72	-3.06
Marketing Business Group								
Marketing Margin (Baht/Liter)	0.84	0.93	-10%	1.13	-26%	0.90	0.98	-8%
Sales Volume (Million Liters)	1,571	1,578	0%	1,386	13%	4,763	4,264	12%
Esso (Thailand) Business Group ^{1/}								
Average Crude Run (KBD)	48.2							
Utilization Rate (%)	28%							
GRM (US\$/BBL)								
- Operating GRM ^{2/}	5.31							
- Total GRM	37.43							
Total Sales Volume (Million Liters)	441							
Clean Power Business Group								
Electricity Sales Volume (GWh)	300.5	145.5	>100%	320.5	-6%	558.7	724.2	-23%
Bio-Based Product Business Group								
Sales Volume (Million Liters)								
- Ethanol	40.6	25.8	57%	40.2	1%	94.5	103.6	-9%
- Biodiesel	66.9	65.6	2%	46.9	43%	199.6	144.6	38%
Production Volume-Net to OKEA								
(kboepd)	26.69	22.78	17%	17.26	55%	29.10	16.23	79%
Realized Liquids Price (US\$/BBL)	89.00	70.10	27%	106.60	-17%	79.24	98.90	-20%
Realized Gas Price (US\$/BBL)	61.90	81.20	-24%	194.80	-68%	85.62	153.43	-44%

Note: 1/ Business of Esso Thailand Public Company Limited, consolidated since 1 September 2023

2/ including utility cost



Executive Summary

Unit: THB Million	Q3/2023	Q2/2023	QoQ	Q3/2022	YoY	9M/2023	9M/2022	YoY
Total Revenue	94,528	68,023	39%	74,767	26%	242,931	227,619	7%
Refinery and Trading Business ^{1/}	69,274	58,329	19%	62,137	11%	193,577	195,604	-1%
Marketing Business ^{2/}	46,718	45,434	3%	44,694	5%	141,372	131,046	8%
Esso (Thailand) Business ^{3/}	16,781	0	N/A	0	N/A	16,781	0	N/A
Clean Power Business ^{4/}	1,603	1,053	52%	1,544	4%	3,713	4,138	-10%
Bio-Based Products Business ^{5/}	3,526	3,049	16%	2,951	20%	9,517	10,104	-6%
Natural Resources Business ^{6/}	7,146	5,219	37%	7,776	-8%	22,137	18,097	22%
Eliminations and others	(50,521)	(45,061)	-12%	(44,334)	-14%	(144,166)	(131,371)	-10%
Accounting EBITDA	13,813	6,628	>100%	11,487	20%	31,433	37,773	-17%
Refinery and Trading Business	6,306	1,373	>100%	4,131	53%	11,708	15,658	-25%
Marketing Business	1,312	553	>100%	203	>100%	2,601	2,789	-7%
Esso (Thailand) Business	1,281	0	N/A	0	N/A	1,281	0	N/A
Clean Power Business	1,330	989	35%	1,209	10%	3,171	5,396	-41%
Bio-Based Products Business	169	138	22%	35	>100%	414	471	-12%
Natural Resources Business	4,873	3,701	32%	6,064	-20%	13,987	13,856	1%
Eliminations and others	(1,457)	(126)	<-100%	(155)	<-100%	(1,729)	(397)	<-100%
Profit attributable to owners of the parent	11,011	458	>100%	2,470	>100%	14,210	12,103	17%
Earnings (Loss) per share (Baht)	7.91	0.24		1.73		10.09	8.64	

Note: 1/ EBITDA from Refinery and Trading Business of the company (BCP, BCP Trading Pte. Ltd. (BCPT), Bangchak Fuel Pipeline and Logistic Co., Ltd. (BFPL), BSGF Co., Ltd (BSGF) and others

2/ EBITDA from Marketing Business of the company (BCP), Bangchak Green Net Co., Ltd. (BGN), Bangchak Retail Co., Ltd., (BCR) and others

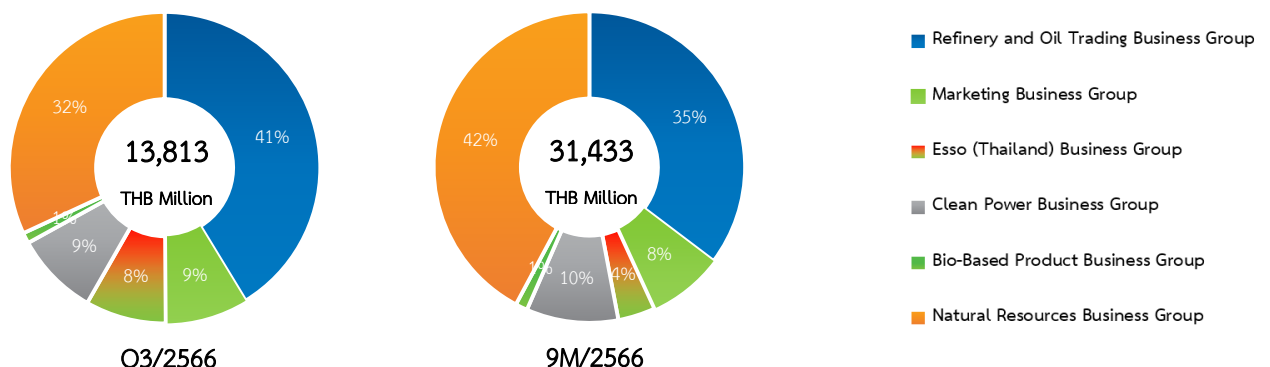
3/ EBITDA from Business of Esso Thailand Public Company Limited, consolidated since 1 September 2023

4/ EBITDA from Clean Power Business of BCPG Plc. (BCPG Group)

5/ EBITDA from Bio-Based Products Business of BBGI Plc. (BBGI Group)

6/ EBITDA from Natural Resources Business of OKEA ASA (OKEA), BTSG Co., Ltd. (BTSG), and others

Accounting EBITDA breakdown by business unit



In Q3/2023, Bangchak Group recorded net profit of THB 11,011 million (>100% QoQ, >100% YoY), reaching its all-time high since the establishment of the company 39 years ago, representing the earnings per share of THB 7.91. Bangchak Group earned a sales and services revenue of THB 94,528 million (+39% QoQ, +26% YoY) and EBITDA of THB



Executive Summary

13,813 million (>100% QoQ, +20% YoY). In this quarter, **oil-related business performance** improved backed by the rise in crude and refined products prices. The price increase was attributed to market concerns over tighter crude oil supply, given the extension of Saudi Arabia's voluntary production cut and Russia's crude oil export cut until the end of 2023. Consequently, Bangchak Group recorded an inventory gain of THB 3,598 million. Operating GRM remarkably increased to US\$14.67/BBL in Q3/2023 (higher than the Singapore GRM of US\$9.60/BBL) thanks to widening crack spreads of major products and Bangchak's unique Production Yield. Sales volume from the **National Resource Business** also increased as well as performance of the **Clean Power Business Group** which driven by a full-quarter recognition of revenue from the hydropower plants in Lao PDR and recognition of profit sharing from additional 2 combined cycle power plants in the United States, namely Hamilton Liberty and Patriot, in July 2023. In addition, the operating results of Esso (Thailand) in proportion of 76.34% began to be incorporated into Bangchak's consolidated financial statements from September 1, 2023. **The company recorded gain on bargain purchase resulted from the fair value assessment of assets (PPA) of Esso (Thailand) amounting to THB 7,389 million.**

In 9M/2023, Bangchak Group earned a sales and services revenue of THB **242,931 million (+7% YoY)** and EBITDA of THB **31,433 million (-17% YoY)**. The **Refinery and Oil Trading Business Group** was pressured by plummeted Operating GRM particularly in the first half of the year owing to the falling oil prices. The decline was attributed to easing concerns over tight supply from the Russia-Ukraine tension and concerns over the global economic slowdown. Consequently, the performance of the refinery business dropped. However, Bangchak Group strategically invested and expanded into various potential businesses, such as the acquisition of stakes in Wintershall Dea to continue the expansion of the **Natural Resource Business Group**. The **Clean Power Business Group** also invested into 4 natural gas power plant projects in the United States (Carroll County, South Field, Hamilton Liberty, & Patriot). On August 31, 2023, the company successfully closed the **Historic Energy Deal in respect of the acquisition of shares in Esso (Thailand) Public Company Limited** from ExxonMobil Asia Holding Pte. Ltd. In combination with tendered shares, the company holds total of 76.34% shares in ESSO (Thailand), resulting in ESSO (Thailand) becoming a subsidiary of the company. The operating results of Esso (Thailand) began to be incorporated into Bangchak's consolidated financial statements from September 1, 2023. As a result, the **net profit attributable to owners of the parent was THB 14,210 million (+17% YoY)**, representing the **earnings per share of THB 10.09**.

Following the announcement of the completed acquisition of shares of Esso (Thailand) Public Company Limited on 31 August 2023, TRIS rating affirmed the company rating on Bangchak Corporation Public Company at "A" reflecting positive view on its strong financial position. This Historic Energy Deal is a landmark moment for Thailand's energy sector and the company, in line with the business expansion strategy to enhance energy security and strengthen competitive edge from integration between the refinery and marketing businesses.

Financial Position as of 30 September 2023, Bangchak Group had **cash and cash equivalents of THB 31,798 million** and **total assets of THB 328,857 million**, an increase of THB 86,513 million when compared to



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31 December 2022, Bangchak Group with **total liabilities of THB 222,470 million** which increased by THB 63,504 million and **total equity of THB 106,387 million**, an increase of THB 23,009 million. Total equity attributable to owners of the parent was THB 75,160 million. Net Interest-bearing Debt to Equity was 0.79 times, reflecting the strength of Bangchak's financial position.

On August 31, 2023, Bangchak Group Successfully completed acquisition of 65.99% of the shares of ESSO (Thailand) from major shareholder, ExxonMobil Asia Holdings Pte. Ltd. With an additional 10.36% of shares purchased under the Tender Offer, Bangchak holds 76.34% of the total shares in Esso (Thailand). This marks the beginning of a new historic chapter driven by a convergence of two great forces, **"Together To Greater"** to enhance energy security. Bangchak plans to optimize various operations at Bangchak Phrakanong Refinery and Bangchak Sriracha Refinery, focusing on creating synergy from the complementing potential and reducing greenhouse gas emissions for the benefit of both the planet and society as part of BCP 316 NET plan, aiming for Carbon Neutrality by 2030 and achieving Net Zero GHG Emissions by 2050. Also, marketing services will boast greater coverage and be able to service more customers with premium products that meet Euro 5 standard through the network of more than 2,200 service stations across the country. This not only benefits Bangchak's businesses but holds great significance for the energy industry of Thailand.

In Q4/2023, oil prices will likely stay unchanged with upward pressures from market concerns over the Middle East conflict and a seasonal increase in oil demand during the winter season. Nevertheless, the global economic slowdown and subsiding inflation might weigh down on oil demand and refining margin. Notably, a lower-than-expected rebound in Chinese oil demand will lead to higher refined product exports from China. Bangchak Group continues to closely monitor and assess the energy situation and stand ready to adjust our business plan accordingly.



Other Important Events in Q3/2023 until Present

July 2023

- BCPG: On July 12, 2023, BCPG fulfilled the terms and conditions under the Purchase and Sale Agreement and the transfer of the 25% stake in total shares in Hamilton Holding II LLC (“Hamilton”) has been successfully completed. Hamilton holds 100% stake in two projects of natural gas power plants in the United States of America (Liberty and Patriot). These two investments have increased BCPG’s total installed capacity by an additional 426 MW.
- OKEA: On July 13, 2023, OKEA announced the dividend payment for Q2/2023 at the rate of NOK 1.00 per share or approximately NOK 104 million. Dividend was paid on September 15, 2023.
- BCP: On July 18, 2023, the Company received an approval of The Trade Competition Commission Thailand, subject to specific conditions, in respect of the acquisition of shares in Esso (Thailand) Public Company Limited. (“ESSO”)

August 2023

- BCPG: On August 7, 2023, BCPG entered into the Purchase and Sale Agreement to acquire additional 40% of total shares in Carroll County Energy Holdings LLC (“CCE”), which operates Combined Cycle Power Generation Plant Project, with an amount not exceeding USD 145 million or equivalent to THB 5,031 million. Consequently, BCPG’s ownership stake increased from the initial 8.70% to a post-transaction ownership of 48.70% with the increased total installed capacity from 280 MW to 341 MW.
- BCPG: On August 22, 2023, BCPG announced its interim dividend payment for 1H/2023 at THB 0.10 per share, totaling THB 300 million. The dividend has been paid to the shareholders on September 15, 2023.
- BCP: On August 24, 2023, the company announced its interim dividend payment for 1H/2023 to the company’s shareholders at THB 0.50 per share, totaling THB 689 million. The dividend has been paid to the shareholders on September 19, 2023.
- BCP: On August 31, 2023, the company completed transfer and acquisition of ordinary shares of ESSO from ExxonMobil Asia Holding Pte. Ltd., amounting to 2,283,750,000 ordinary shares representing 65.99% of the total issued and paid-up ordinary shares of ESSO, at the total amount of THB 22,605,926,000, or approximately THB 9.8986 per share. This results in ESSO becoming a subsidiary of the company.

September 2023

- BCP: On September 11, 2023, the Ministry of Finance (through the Bank of Thailand) granted the Treasury Center License to Bangchak Treasury Center Company Limited (“BCTC”), BCP’s subsidiary company, and the Revenue Department permitted BCTC to be an International Business Center. BCTC now provides financial management services to its network companies.

October 2023

- BCP: On October 3, 2023, BCP incorporated new subsidiary company, Refinery Optimization and Synergy Enterprise Company Limited (“ROSE”) with a registered capital of THB 1 million. BCP holds 50% of the issued share while ESSO holds another 50%. The objective of ROSE is to provide planning, including



Other Important Events in Q3/2023 until Present

management services to the refinery business of BCP and ESSO to achieve the most efficient operation, minimize cost, and maximize profit with fairness and transparency to all stakeholders.

- BCP: On October 4, 2023, BCP opened the first-ever Liquefied Natural Gas (LNG) refueling station in Thailand, located in Bangchak Map lang service station, Sriracha, Chonburi Province. The station is operated by BTSG Company Limited (“BTSG”), a joint venture between BCP and Thai Special Gas Company Limited, aiming to become a leader in integrated LNG services to meet the demand of customers across the country.
- BCPG: On October 12, 2023, BCPG USA Inc, the wholly owned subsidiary of BCPG, established a subsidiary BCPG Holdings LLC (“BCHL”) with an initial registered capital of USD 141.9 million engaging in investment business. On October 31, 2023, BCPG fulfilled conditions under the Purchase and Sale Agreement to acquire an additional 40% of total shares in CCE, BCHL therefore transferred the purchase price in exchange for the ownership in CCE. Subsequently, BCPG has the post-transaction ownership of 48.7% and total installed proportion capacity of 341 MW.
- BCP: On October 16, 2023, BCP officially completed the Tender Offer for the securities of ESSO. Shareholders tendered 358,407,198 shares, equivalent to 10.36% of all issued and paid-up ordinary shares. After the completion of the Tender Offer, BCP holds 2,642,157,198 shares or equivalent to 76.34% of all issued and paid-up ordinary shares.
- BBGI: On October 18, 2023, the Board of Director’s Meeting passed the resolution to approve the establishment of BBGI Fermbox Bio Company Limited, a joint venture company with FermBox Bio Private Limited to establish the contract development and manufacturing organization (CDMO) platform for synthetic biology products with Precision Fermentation technology, with an Initial registered capital of THB 4 million, which planned to be incorporated within Q4/2023.
- OKEA: On July 26, 2023, OKEA announced the dividend payment for Q3/2023 at the rate of NOK 1.00 per share or approximately NOK 104 million, to be paid in December 2023.
- BCP: On October 30, 2023, BCP offered the “Bangchak Digital Debenture” through the “Paotang” application. Bangchak digital debenture is a specific-name bearer, unsubordinated, unsecured debenture which has a debenture holders’ representative, worth THB 3,000 million with 3-year investment period provided with a fixed annual interest rate of 3.45%.

November 2023

- BCP: On November 3, 2023, Winnonie Company Limited (a direct subsidiary of BCP as BCP holds 55.49% of total shares) entered into a joint investment agreement with BTS Group Holding Company Limited, in Smart EV Bike Company Limited (“Smart EV Bike”), with a stake of shareholding of 33.3% of the total shares resulting in Smart EV Bike becoming an associate of BCP. Smart EV Bike has a registered capital of THB 20 million with objectives to operate the hire purchase business of EV-bikes for the registered motorbike taxi drivers near BTS SkyTrain Stations, and other businesses related to the EV-bikes hire purchase.



Statement of Income

Consolidated Statement of Income (THB Million)	Q3/2023	Q2/2023	QoQ	Q3/2022	YoY	9M/2023	9M/2022	YoY
Revenue from sale of goods and rendering of services	94,528	68,023	39%	74,767	26%	242,931	227,618	7%
Cost of sale of goods and rendering of services	(82,177)	(62,631)	31%	(65,491)	25%	(216,879)	(187,870)	-15%
Gross Profit	12,351	5,392	>100%	9,276	33%	26,052	39,748	-34%
Other income	578	717	-19%	460	26%	1,922	1,276	51%
Selling and administrative expenses	(2,888)	(2,100)	38%	(2,109)	37%	(6,849)	(5,852)	17%
Exploration and evaluation expenses	(115)	(398)	-71%	(68)	69%	(591)	(509)	16%
Gain (loss) from derivatives	(415)	210	<-100%	1,459	<-100%	1,020	(6,283)	>100%
Gain on foreign exchange	(107)	239	<-100%	215	<-100%	424	(241)	>100%
Gain (loss) from fair value adjustment of contingent consideration	(130)	58	<-100%	-	N/A	(124)	10	<-100%
Gain from sale of investment	-	-	N/A	-	N/A	-	2,031	-100%
Reversal of (loss) from impairment of assets	(1,928)	(966)	-100%	(2,214)	13%	(3,306)	(1,647)	<-100%
Profit from operating activities	7,345	3,152	>100%	7,019	5%	18,549	28,533	-35%
Finance costs	(1,315)	(1,000)	32%	(1,093)	20%	(3,347)	(2,972)	13%
Impairment gain and reversal of impairment loss (impairment loss) determined in accordance with TFRS 9	43	3	>100%	1	>100%	56	(403)	>100%
Share of profit (loss) of associates and joint ventures accounted for using equity method	211	(40)	>100%	42	>100%	200	183	9%
Gain on bargain purchase	7,389	-	N/A	-	N/A	7,389	-	N/A
Profit (loss) before income tax expense	13,673	2,115	>100%	5,969	>100%	22,847	25,341	-10%
Tax expense	(2,478)	(1,406)	76%	(3,062)	-19%	(7,573)	(11,442)	-34%
Profit (loss) for the period	11,195	709	>100%	2,907	>100%	15,274	13,899	10%
Owners of the parent	11,011	458	>100%	2,470	>100%	14,210	12,102	17%
Non-controlling interests	184	251		437		1,064	1,797	
Basic earnings per share (Baht)	7.91	0.24		1.73		10.09	8.64	
Core Profit (excluding extraordinary items)	3,504	937	>100%	2,721	29%	7,373	9,718	-24%



Statement of Income

Extraordinary items (before tax)

Unit: THB Million

	Q3/2023	Q2/2023	QoQ	Q3/2022	YoY	9M/2023	9M/2022	YoY
Extraordinary items	6,480	(1,518)	>100%	(2,322)	>100%	4,466	2,835	58%
Main item as follows:								
Inventory Gain (loss) (including reversal of / loss on NRV)	3,598	(1,036)	>100%	(2,682)	>100%	646	5,711	-89%
Gain (loss) from unrealized of derivatives	(559)	4	<-100%	2,353	<-100%	877	(2,766)	>100%
Gain (loss) on foreign exchange	(107)	239	<-100%	215	<-100%	424	(241)	>100%
Reversal of (loss) from impairment of assets	(1,928)	(966)	-100%	(2,214)	13%	(3,306)	(1,647)	<-100%
Gain from sale of investment	-	-	N/A	-	N/A	-	2,031	-100%
Gain on bargain purchase	7,389	-	N/A	-	N/A	7,389	-	N/A
Acquisition-related costs	(453)	-	N/A	-	N/A	(453)	-	N/A
Tax adjustments	(420)	-	N/A	-	N/A	(420)	-	N/A

Performance of Q3/2023 compared to Q2/2023

Total revenue from sales and services was THB 94,528 million, increased by 39% QoQ, mainly driven by revenue of petroleum-related businesses as average selling price of refined products increased following the rise in global crude oil prices.

Gross profit was THB 12,351 million, increased by >100% QoQ, as the Operating GRM improved by US\$9.99/BBL to US\$14.67/BBL due to an increase in crack spread. In addition, in Q3/2023 recorded an Inventory Gain (including reversal of loss on NRV) of US\$3.29/BBL, increased by US\$5.32/BBL driven by an increasing global crude oil price unlike a decline in global crude oil price in Q2/2023.

Selling and administrative expenses were THB 2,888 million, an increase of 38% QoQ, mainly from expenses related to the acquisition of ESSO (Thailand) business and expenses for marketing campaign.

Loss from derivatives was THB 415 million, mainly from losses on fair value measurement of crude and refined products price futures contracts in accordance with accounting standards.

Extraordinary items

- **Gain from inventory gain (including reversal of /loss on NRV)** increased as the global crude oil prices rose.
- **Loss from unrealized derivatives** was mainly due to losses on fair value from the forward contracts of crude oil and oil products in accordance with accounting standards, as crack spread tends to rise from the previous quarter.
- **Loss on foreign exchange** from the strengthen Thai Baht at the beginning of Q3/2023 which then weakened in September. Meanwhile, in Q2/2023 recognized gain on foreign exchange from depreciated Thai Baht.
- **Loss from impairment of assets** increased mainly from the impairment of OKEA's assets due to the adjustment in reserve of the Yme field. Bangchak Group recognized the loss after tax and shareholding stake, amounting to approximately THB 159 million in Q3/2023 and THB 96 million in Q2/2023. Moreover, in Q3/2023 recognized a loss after tax from impairment of refinery assets of THB 268 million.

Tax expense was THB 2,478 million, increased by 76% QoQ. The increase was attributed to the higher operating profits from petroleum-related businesses and Natural Resources. However, the effective tax rate was lower than the previous quarter.



Statement of Income

Net profit attributable to the owners of the parent was THB 11,011 million, increased by >100% QoQ, representing the earnings per share of THB 7.91.

Net profit from normal operations (excluding extraordinary items) was THB 3,504 million, increased by >100% QoQ.

Performance of 9M/2023 compared to 9M/2022

Total revenue from sales and services was THB 242,931 million, increased by 7% YoY, mainly driven by revenue contributions from petroleum-related businesses, including revenue from the recent acquisition of Esso (Thailand) business and investments in OKEA's Wintershall Dea of Natural Resources Business.

Gross profit was THB 26,052 million, decreased by 34% YoY, driven by a plummeting Operating GRM in 9M/2023 due to sluggish oil demand in China, Europe, and the United States, influenced by economic conditions and inflation, resulting in a decline in gross profit.

Selling and administrative expenses were THB 6,849 million, an increase of 17% YoY, mostly from employee-related expenses and special expenses associated with the acquisition of Esso (Thailand) business.

Profit from derivatives was THB 1,020 million, increased >100% YoY mainly from gains on fair value measurement of crude and refined products price futures contracts in accordance with accounting standards.

Extraordinary items

- **Gain from inventory gain (including reversal of loss on NRV)** of THB 646 million due to the rise in global crude oil prices.
- **Gain from unrealized derivatives** increased as crack spread is likely to narrow YoY.
- **Gain on foreign exchange** increased due to the weakening Thai Baht in 9M/2023, resulting in gain on foreign exchange from Oil business and Clean Power Business, which had assets denominated in US dollars. Whereas in 9M/2022, the depreciation of the Norwegian krone resulted in losses from exchange rates for the natural resource business group.
- **Loss on impairment of assets** was due to the impairment of OKEA's assets from the adjustment of the reserve volume of the Yme field, which Bangchak Group recognized the loss after tax and shareholding stake, amounting to approximately THB 287 million in 9M/2023.
- **Gain from sale of investment** was from the disposal of whole investment in Star Energy Group Holdings Pte. Ltd. ("SEGHPL") which Bangchak Group recognized a gain of THB 2,031 million in 9M/2022.
- **Gain on bargain purchase** resulted from the fair value assessment of assets (PPA) of Esso (Thailand), amounting to THB 7,389 million.

Tax expense was THB 7,573 million, declined by 34% YoY mainly from lower profits from Clean Power business and petroleum-related businesses. However, the effective tax rate decreased YoY.

Net profit attributable to the owners of the parent was THB 14,210 million, an increase of 18% YoY, representing the earnings per share of THB 10.09.

Net profit from normal operations (excluding extraordinary items) was THB 7,373 million, decreased by 24% YoY.



Performance by Business Group



1) Refinery and Oil Trading Business Group

Crude Oil and Crack Spread Situation

Crude Oil Price (US\$/BBL)	Q3/2023	Q2/2023	QoQ	Q3/2022	YoY	9M/2023	9M/2022	YoY
Dubai (DB)	86.63	77.59	9.04	96.68	-10.05	81.53	100.29	-18.76
Dated Brent (DTD)	86.75	78.05	8.70	100.84	-14.09	82.07	105.51	-23.43
DTD-DB	0.12	0.46	-0.35	4.16	-4.04	0.54	5.22	-4.68
Crack Spread (US\$/BBL)	Q3/2023	Q2/2023	QoQ	Q3/2022	YoY	9M/2023	9M/2022	YoY
UNL95-DB	18.97	16.54	2.43	13.07	5.90	18.09	21.84	-3.76
IK-DB	26.07	13.97	12.10	32.43	-6.36	22.09	29.50	-7.42
GO-DB	26.93	14.54	12.39	35.23	-8.30	22.16	32.87	-10.71
LSFO-DB	3.06	5.29	-2.23	13.37	-10.31	4.92	17.30	-12.38

The average Dubai crude oil price in Q3/2023 rose by US\$9.04/BBL compared to Q2/2023. The price increase was attributed to market concerns over tighter crude oil supply in the latter half of 2023, as Saudi Arabia extended its voluntary oil production cut of 1 million barrels per day from July until the end of December 2023. Similarly, Russia pledged a voluntary crude oil export cut of 300,000 barrels per day until the end of this year. Another upward pressure came from market anticipation that the US Federal Reserve (Fed) rate-hike cycle is nearing its peak following the US inflation cooldown. Nonetheless, crude oil prices still face downward pressure from the subdued Chinese economy and the unsolved real estate crisis—which will hamper the global oil demand outlook.

The average Dated Brent-Dubai spread (DTD-DB) in Q3/2023 slightly plummeted by US\$0.35/BBL compared to Q2/2023 as policy rate hikes to quell inflation have—in turn—hampered European economic activities and demand for Dated Brent crude oil, as European supply stocks remained high. At the same time, the Dubai crude oil price saw upward pressures from market concerns over tighter supply of heavy crude oil following Saudi Arabia's oil output cuts.

The spread between finished products and Dubai Price

- **Gasoline and Dubai crack spread (UNL95-DB) in Q3/2023, on average,** rose from Q2/2023. The widened crack spread was attributed to higher gasoline demand during the US driving season and shrinking supply as China issued export quotas for refined products.
- **Jet (Kerosene) and Dubai crack spread (IK-DB) in Q3/2023, on average,** increased from Q2/2023 due to slower supply growth as refineries continued a record-high crude run to seize margin opportunity.
- **Diesel and Dubai crack spread (GO-DB) in Q3/2023, on average,** widened from Q2/2023 owing to lower regional diesel stocks and tighter supply, given Saudi Arabia and Russia's crude oil output cuts. Meanwhile, the delay in China's refined product export quota allocation has limited Chinese diesel exports.



Performance by Business Group

- **Low-sulfur fuel oil and Dubai crack spread (LSFO-DB) in Q3/2023, on average**, shrank from Q2/2023 due to market concerns over regional oversupply after the Kuwait refinery ‘Al Zour’ expanded its crude run and continuously exported Low-sulfur fuel oil to the global market.

Refinery and Oil Trading Business Group Performance

Refinery and Oil Trading Business Group Performance	Q3/2023	Q2/2023	QoQ	Q3/2022	YoY	9M/2023	9M/2022	YoY
Revenue (THB Million)	69,274	58,329	19%	62,137	11%	193,576	195,604	-1%
EBITDA (THB Million)	6,306	1,373	>100%	4,131	53%	11,708	15,658	-25%
Average Crude Run (KBD)	116.4	118.6	-2%	123.2	-6%	119.9	122.6	-2%
Utilization Rate (%)	97%	99%		103%		100%	102%	
Average FX (THB/USD)	35.32	34.64		36.57		34.68	34.80	
(Unit: US\$/BBL)								
Operating GRM	14.67	4.67	9.99	11.20	3.47	10.28	14.21	-3.93
Oil Hedging	(0.69)	1.85	-2.54	4.07	-4.76	1.43	(5.16)	6.60
Inventory gain/ (Loss) ^{1/}	3.29	(2.02)	5.32	(4.82)	8.11	(1.05)	4.67	-5.72
Total GRM	17.27	4.50	12.77	10.45	6.82	10.66	13.72	-3.06
Product Yield (%)								
LPG	2%	2%	0.2%	2%	0.2%	2%	2%	0.2%
Gasoline	19%	19%	0.5%	20%	-0.3%	19%	20%	-0.9%
Jet (Kerosene)	12%	11%	1.0%	4%	7.5%	11%	4%	6.7%
Diesel	52%	51%	0.4%	52%	-0.1%	52%	53%	-0.9%
Non-Transportation fuels	0.1%	0.1%	0.0%	0.2%	-0.1%	0.1%	0.2%	-0.2%
Unconverted Oil (UO)	8%	9%	-0.1%	11%	-2.2%	9%	11%	-2.7%
Fuel Oil	7%	8%	-1.5%	11%	-4.2%	8%	9%	-1.7%
Total Sales Volume in each market category of the Company ^{2/} (Million Liters)								
Marketing Business	1,571	1,578	0%	1,386	13%	4,763	4,264	12%
Petroleum traders in accordance with section 7	172	152	14%	151	14%	481	492	-2%
Export	265	273	-3%	366	-28%	856	1,289	-34%
Total Sales Volume	2,008	2,002	0%	1,903	6%	6,100	6,044	1%

Note: 1/ Inventory gain/(loss) in the table included (reversal of) losses on inventories devaluation (NRV)

2/ Sales volume excluded oil swaps between petroleum traders in accordance with section 7 and sales of crude oil

In Q3/2023, the Refinery and Oil Trading Business Group recorded a total revenue of THB 69,274 million, an increase of 19% QoQ and 11% YoY. The EBITDA of THB 6,306 million, an increase of >100% QoQ and 53% YoY, as a result of the following factors:



Performance by Business Group

EBITDA >100% QoQ	EBITDA +53% YoY
<p>(+) Operating GRM remarkably increased to US\$14.67/BBL, driven mainly by widening crack spreads of major products in line with the global market developments. The global oil supply has tightened as some refineries in the US and Asia were under unplanned maintenance, while regional inventories of middle distillate products remained low.</p> <p>(+) Recognized an Inventory Gain of US\$3.29/BBL or equivalent to 1,246 million (including NRV). On a quarterly basis, the Inventory Gain has improved alongside the global crude oil price due to market concerns over tighter crude oil supply, given the extension of Saudi Arabia's voluntary production cut and Russia's crude oil export cut until the end of 2023.</p> <p>(-) Recognized loss from the forward contracts of crude oil and oil products (including fair value measurement per the accounting standards) totaling US\$0.69/BBL as crack spreads of contracted products trended upward.</p> <p>(-) In Q3/2023, some production units at Phra Khanong Refinery went offline for equipment installation and integration to improve oil quality in accordance with the Euro 5 standards. Hence, the QoQ crude run plummeted to 116.4 KBD.</p>	<p>(+) Operating GRM expanded by US\$3.47/BBL. Crack spreads of major products narrowed as oil supply became less tightened than in Q3/2022—when the Russia-Ukraine conflict squeezed the global oil supply. Nonetheless, a significant YoY decline of crude premium helped offset the lower crack spreads and resulted in higher operating GRM in this quarter.</p> <p>(+) Recognized an Inventory Gain thanks to rising global crude oil prices, in contrast to an Inventory Loss of US\$4.82/BBL (equivalent to THB 1,996 million) in Q3/2022.</p> <p>(-) Recognized loss from the forward contracts of crude oil and oil products (including fair value measurement per the accounting standards), whereas Q3/2022 recorded US\$4.07/BBL gains.</p> <p>(-) Average crude run ebbed by 6% YoY owing to above-mentioned factors.</p>

In 9M/2023, the Refinery and Oil Trading Business Group recorded a total revenue of THB 193,577 million, a decrease of 1% YoY. The EBITDA of THB 11,708 million, a decrease of 25% YoY, as a result of the following factors.

EBITDA -25% YoY
<p>(-) Operating GRM plummeted by US\$3.93/BBL to US\$10.28/BBL due mainly to lower crack spreads across all products as economic slowdown and elevated inflation continued to hamper the global oil demand. Meanwhile, 9M/2022 witnessed widening crack spreads owing to tight oil supply from the Russia-Ukraine war.</p> <p>(-) Recognized an Inventory Loss of US\$1.05/BBL (equivalent to THB 1,197 million). The inventory loss was attributed to falling crude oil prices as the global crude oil supply became less tightened. On the other hand, 9M/2022 recorded</p>



Performance by Business Group

EBITDA -25% YoY

an Inventory Gain of US\$4.67/BBL (equivalent to THB 5,438 million) owing to escalating oil price volatility as the Russia-Ukraine war tightened global oil supply.

(+) Recognition of gains from the forward contracts of crude oil and oil products (including fair value measurement per the accounting standards) totaling US\$1.43/BBL, in contrast to a US\$5.16/BBL loss in 9M/2022.

Furthermore, BCPT's total trade of crude oil and refined products rose by 7.8 million barrels (+36 % YoY) to 29.6 million barrels. The growth was mainly led by Bangchak refinery crude procurement and the expansion of overseas trading business (Out-Out), which recorded a high growth at 95% YoY. Furthermore, BCPT continuously expanded the Out-Out trading network for crude oil and crude products to accommodate business expansion and diversification via broader sales channels. BCPT will also procure crude oil and products for Esso (Thailand).



2) Marketing Business Group

Marketing Business Group Performance

Unit: Sites	Q3/2023	Q2/2023	QoQ	Q3/2022	YoY	9M/2023	9M/2022	YoY
Service Stations	1,370	1,361	9	1,320	50	1,370	1,320	50
EV Chargers	223	199	24	107	116	223	107	116
Inthanin Coffee Shop	1,026	1,023	3	931	95	1,026	931	95
Marketing Business Performance								
Revenue (THB Million)	46,718	45,434	3%	44,694	5%	141,372	131,046	8%
EBITDA (THB Million)	1,312	553	>100%	203	>100%	2,601	2,789	-7%
Marketing Margin (Baht / liter)	0.84	0.93	-10%	1.13	-26%	0.90	0.98	-8%
Net Marketing Margin (Baht / liter) ^{1/}	1.29	0.76	69%	0.62	>100%	0.78	0.84	-7%
Sales Volume (Million Liters)								
Retail (via Service Stations)	1,161	1,181	-2%	1,096	6%	3,529	3,388	4%
Industrial	410	397	3%	290	41%	1,234	876	41%
Total	1,571	1,578	0%	1,386	13%	4,763	4,264	12%
Sales volume in each product category (Million liters)								
LPG	29	29	1%	31	-5%	93	82	14%
Gasoline	5	12	-59%	7	-28%	25	17	45%
Gasohol	441	435	1%	434	2%	1,298	1,237	5%
Jet Fuel	204	202	1%	80	>100%	573	257	123%
Diesel	846	849	0%	787	8%	2,624	2,520	4%
Fuel Oil and Others	46	50	-9%	47	-3%	149	151	-1%
Total	1,571	1,578	0%	1,386	13%	4,763	4,264	12%

Note: 1/ Net Marketing Margin (including Inventory gain/(loss) and NRV)



Performance by Business Group

In Q3/2023, the Marketing Business Group recorded a total revenue of THB 46,718 million (increased 3% QoQ and 5% YoY) and EBITDA of THB 1,312 million (increased >100% QoQ and >100% YoY), as a result of the following factors:

EBITDA >100% QoQ	EBITDA >100% YoY
<p>(+) Recognized an Inventory Gain, backed by higher oil prices in Q3/2023, in contrast to an Inventory Loss in Q2/2023.</p> <p>(-) Total sales volume slightly plummeted from Q2/2023 to 1,571 million liter due to weaker sales at service stations during the rainy season, while sales volume in the industrial segment marginally improved.</p> <p>(-) Marketing margin slipped by 10% QoQ due to higher refined product prices, yet the retail prices could not be properly adjusted to reflect actual costs.</p> <p>(-) Selling and administration expenses increased, mainly led by marketing campaigns and advertising-related expenses to boost product awareness and expand the customer base for Hi Premium 97 and Hi Premium Diesel.</p>	<p>(+) Sales volume grew by 13% YoY both in the retail and industrial segments. The growth in the retail market was attributed to promotion strategies to boost sales, service station expansion, and marketing campaigns. Furthermore, Thailand's aviation industry saw a promising sign of recovery, backed by a rebound in the tourism sector and overseas travel. This helped bolster the sales volume of aviation fuel by 154% YoY.</p> <p>(+) Recognized an Inventory Gain as oil prices escalated, in contrast to an Inventory Loss in Q3/2022.</p> <p>(-) Marketing margin plummeted by 26% YoY as refined product prices trended upward due to the above-mentioned factors. Meanwhile, Q3/2022 recorded lower refined product prices in line with the global market conditions.</p>

In 9M/2023, the Marketing Business Group recorded a total revenue of THB 141,372 million, an increase of 8% YoY and EBITDA of THB 2,601 million, a decrease of 7% YoY, as a result of the following factors:

EBITDA -7% YoY
<p>(-) Marketing margin dipped by 8% YoY to THB 0.90/liter as higher refined product costs in the global market weighed down on retail marketing margin, particularly in Q3/2023. Hence, the retail prices could not be properly adjusted to reflect the higher oil prices.</p> <p>(0) Recognized an Inventory Gain, mostly similar to Q3/2022.</p> <p>(+) Sales volume increased to 4,763 million liter (+12% YoY) due mainly to a steady rebound in the aviation fuel market as tourism industries worldwide continued to gather momentum. Other impetus came from higher domestic demand backed by the resumption of economic activities after the COVID-19 pandemic subsided and marketing campaigns to bolster sales volume at service stations.</p>

Under the vision to be **'Your Greenovative Destination,'** Bangchak is committed to developing the best fuel products and enhancing retail experiences via an in-depth understanding of our customers. We strive to offer a variety of products and services at Bangchak stations to deliver premium services to customers of all ages. In this quarter, we launched 9 new stations,



Performance by Business Group

making a total of 1,370 service stations as of Q3/2023—84 of which are ‘Bangchak Unique Design’ service stations, and over 223 are fully equipped with electric vehicle (EV) chargers. With service stations operated under ESSO (Thailand) included, Bangchak Group has a total of 2,203 service stations under its wing. Bangchak stations also emphasized enriching retail experiences by offering diverse services at stores, restaurants, coffee shops, and car maintenance services. Apart from that, we have developed the Hi Premium products that present a quality above the regulatory standards. **Hi Premium 97** boasts the highest octane in Thailand, and **Hi Premium Diesel** comes with a high cetane rating of up to 70. Both products are the special USA formula with powerful features to uplift engine performance, reduce fuel consumption, and offer long-term engine protection. They also meet the Euro 5 standards with environmentally friendly qualities. Besides oil products, we attempt to improve lubricant products under the brand “**BCP Lubricants**” and the premium lubricant brand “**FURIO**” to serve customer demand in diverse segments. To bolster overall sales of lubricant products, Bangchak has continuously broadened sales channels via exports to over 20 destinations, starting from Southeast Asia (The Philippines, Malaysia, Vietnam, Laos, Cambodia) and other regions such as China, the Middle East, and Africa.



3) Esso (Thailand) Business Group

Esso (Thailand) Business Group Performance

Esso (Thailand) Business Group Performance	Q3/2023 ^{1/}
Revenue (THB Million)	16,781
EBITDA (THB Million)	1,281
Average Crude Run (KBD)	48.2
Utilization Rate (%)	28%
(Unit: US\$/BBL)	
Operating GRM ^{2/}	5.31
Inventory gain/ (Loss)	32.12
Total GRM	37.43
Product Yield (%)	
LPG	7%
Gasoline	37%
Jet Fuel	9%
Diesel	44%
Fuel Oil	3%
Asphalt	0.1%
Total Sales Volume (Million Liters)	
Marketing Business	265
Commercial Business	176
Petroleum traders in accordance with section 7	-
Export	-
Total Sales Volume	441



Performance by Business Group

Sales volume in each product category (Million liters)

LPG	22
Gasoline	124
Naphtha	-
Jet Fuel / Kerosene	13
Diesel	257
Fuel Oil	15
Asphalt	6
Other	4

Total 441

Unit: Sites

Service Stations **833**

Note: 1/ Business of Esso Thailand Public Company Limited, consolidated since 1 September 2023

2/ including utility cost

In Q3/2023, the Company successfully completed the acquisition of 76.34% of ordinary shares of Esso (Thailand) Public Company Limited (“ESSO”), formally establishing Esso (Thailand) Public Company Limited as a subsidiary of the Company. Subsequently, the operating results of Esso (Thailand) began to be incorporated into Bangchak's consolidated financial statements from September 1, 2023. In September 2023, the average production rate for the Bangchak Sriracha refinery was 48.2 KBD mainly due to the partial shutdown for the scheduled maintenance as well as implementing and connecting new facility for Euro 5 project for 25 days (continued until October 15, 2023). The total sales volume was 441 million liters primarily driven by Diesel and Gasohol products. After maintenance, the Bangchak Sriracha refinery plans to improve its production capacity.



4) Clean Power Business Group

Clean Power Business Performance (THB Million)	Q3/2023	Q2/2023	QoQ	Q3/2022	YoY	9M/2023	9M/2022	YoY
Revenue from sales and rendering of services	1,603	1,053	52%	1,544	4%	3,713	4,138	-10%
EBITDA	1,330	989	35%	1,209	10%	3,171	5,396	-41%
Share of profit (loss) from associated companies ^{1/}	172	(20)	>100%	(17)	>100%	172	116	66%
BCPG Group's contracted capacity (Equity MW)								
Solar Power Plant - Thailand	175.8	174.7	1%	173.7	1%	175.8	173.7	1%
Wind Power Plant - Thailand	9.0	9.0	0%	9.0	0%	9.0	9.0	0%
Solar Power Plant - Japan	79.7	79.7	0%	79.7	0%	79.7	79.7	0%
Hydropower Plant - Lao PDR	114.0	114.0	0%	114.0	0%	114.0	114.0	0%
Wind Power Plant - Philippines	14.4	14.4	0%	14.4	0%	14.4	14.4	0%
Natural Gas Power Plants - USA	577.0	151.0	>100%	-	N/A	577.0	-	N/A
Total	969.8	542.8	79%	390.7	>100%	969.8	390.7	>100%



Performance by Business Group

Electricity Sales (GWh)								
Solar Power Plant - Thailand	76.7	83.8	-8%	75.6	1%	245.0	245.7	-0%
Wind Power Plant - Thailand	4.0	2.2	82%	3.4	19%	9.3	8.5	9%
Solar Power Plant - Japan	37.0	35.0	5%	33.1	12%	97.2	83.6	16%
Hydropower Plant - Lao PDR	182.9	24.5	>100%	208.4	-12%	207.4	386.3	-46%
Total	300.5	145.5	>100%	320.5	-6%	558.8	724.1	-23%

Note: 1/ In March 2022, BCPG disposed the whole investment in SEGHP, which invests in geothermal projects in Indonesia.

In Q3/2023, the Clean Power Business Group's revenue was THB 1,603 million, an increase of 52% QoQ and 4% YoY. The EBITDA was THB 1,330 million, an increase of 35% QoQ and 10% YoY, with factors affecting operations as follows:

EBITDA +35% QoQ	EBITDA +10% YoY
(+) The hydropower plants in Lao PDR experienced a significant increase in electricity sales volume >100% QoQ following the full-quarter commencement of its commercial operation.	(+) The share of profit from investments in the associated company of THB 172 million mainly from 4 combined-cycle power plants in the United States as stated earlier, as well as the higher share of profit from wind power business in the Philippines due to the elevated wind speed.
(+) Full-quarter recognition of revenue from oil terminal and seaport project in Thailand.	(+) Recognition of revenue from oil terminal and seaport project in Thailand started in June 2023.
(+) The share of profit from investments in the associated company of THB 172 million. These were mainly driven by contributions from 2 new investment in combined-cycle power plants in the United States, namely Liberty and Patriot, as well as the higher share of profit from wind power business in the Philippines due to the high season during the Philippine monsoon.	(+) The electricity sales volume of solar power plants in Japan increased 12% YoY due to higher irradiation.
(+) The electricity sales volume of wind power plants in Thailand rose 82% QoQ driven by elevated wind speeds influenced by seasonal factors.	(+) The electricity sales volume of wind power plants in Thailand increased 19% YoY due to higher wind speed.
(+) The electricity sales volume of solar power plants in Japan increased 5% QoQ due to higher irradiation from a seasonal factor.	(-) Total revenue of solar power plants in Thailand experienced a decline due to the gradual expiration of the adder scheme as stated earlier.
(-) Total revenue of solar power plants in Thailand declined due to a seasonal factor and the impact of the expiration of the adder scheme.	(-) The electricity sales volume of hydropower plants in Lao PDR fell by 12% YoY from lower rainfall, primarily resulting from changing weather conditions impacted by El Niño, and the 7-day maintenance of Nam San 3A's transmission line.



Performance by Business Group

In 9M/2023, the Clean Power Business Group's revenue was THB 3,713 million, a decrease of 10% YoY. The EBITDA was at THB 3,171 million, a decrease of 41% YoY, with factors affecting operations as follows:

EBITDA -41% YoY

(-) Total revenue of solar power plants in Thailand declined due to the impact of the expiration of the adder scheme of 82 MW solar power plants since July and October 2022, and March and April 2023. However, the impact was mitigated by the increase in the Ft rate.

(-) The electricity sales volume of hydropower plants in Lao PDR dropped 46% YoY due to the temporary halt of the projects to facilitate the preparation and transmission to Vietnam Electricity (EVN). The projects have commenced commercial operation and distributed electricity to the Socialist Republic of Vietnam according to the Power Purchase Agreement with EVN on June 15, 2023.

(+) Share of profit from investments in the associated company of THB 172 million, an increase from THB 116 million from 9M/2022. This was mainly from recognition of profit sharing from the Combined Cycle Gas Turbine (CCGT) power business in the United States, total installed capacity of 151 MW from Carrol County & South Field in March 2023 and 426 MW from Hamilton Liberty and Patriot in July 2023 as well as the contribution from wind power business in the Philippines due to the high season which mitigated the impact from the disposal of all investments in Star Energy Group Holdings Pte. Ltd. (SEGHPL) in March 2022.

(+) The electricity sales volume of solar power plants in Japan increased 16% YoY driven by the full nine-month revenue recognition of 2 new projects, including Komagane (COD on 29 March 2022) and Yabuki (COD on 15 April 2022).

(+) The electricity sales volume of wind power plants in Thailand increased 9% YoY due to higher wind speeds at the project.

(+) Recognition of operating revenue from oil terminal and seaport project in Thailand which started realizing contribution in June 2023.



5) Bio-Based Product Business Group

Bio-Based Products Business Performance (THB Million)	Q3/2023	Q2/2023	QoQ	Q3/2022	YoY	9M/2023	9M/2022	YoY
Sales Revenue	3,526	3,049	16%	2,951	20%	9,517	10,104	-6%
EBITDA	169	138	22%	35	>100%	414	471	-12%
BBGI Performance								
Gross Profit/(loss)	116	57	>100%	(4)	>100%	248	352	-29%
Selling and Administrative expenses	(72)	(115)	-37%	(72)	0%	(277)	(225)	23%
Sales Volume (Million Liters)								
Ethanol	40.6	25.8	57%	40.2	1%	94.5	103.6	-9%
Biodiesel	66.9	65.6	2%	46.9	43%	199.6	144.6	38%



Performance by Business Group

In Q3/2023, the Bio-Based Product Business Group recorded revenue of THB 3,526 million, an increase of 16% QoQ and 20% YoY. EBITDA was recorded at THB 169 million, an increase of 22% QoQ and >100% YoY. These were resulted from the following factors:

EBITDA +22% QoQ	EBITDA >100% YoY
<p>(+) Ethanol business reported higher gross profit attributed to an increase in sales volume, in alignment with the company's strategic sales management plan to maximize benefits, paralleled by an increase in product selling prices.</p> <p>(+) Lower selling and administrative expenses were recorded in this quarter due to the absence of extra items, compared to Q2/2022 when additional work expenses had to be remunerated to the contractor as mandated by the arbitral tribunal's ruling.</p> <p>(-) Biodiesel business (B100) witnessed a decline in gross profit due to the weakened biodiesel selling price, a consequence of the high level of crude palm oil inventory in Thailand.</p> <p>(-) For the high-value bio-based product business, observed a reduction in gross profit recognition aligns with a declining sale volume.</p>	<p>(+) For biodiesel business (B100), experienced an increase in gross profit due to the rise in biodiesel sales volume following the announcement of increasing the biodiesel blending in high speed diesel from B5 to B7 since October 10, 2022.</p> <p>(-) Ethanol business recorded lower gross profit due to the increased cost of raw materials.</p> <p>(-) For the high-value bio-based product business, experienced a decrease in gross profit, as stated earlier.</p>

In 9M/2023, Bio-Based Product Business Group recorded revenue of THB 9,517 million, a decrease of 6% YoY and EBITDA of THB 414 million, a decrease of 12% YoY. These were resulted from the following factor:

EBITDA -12% YoY
<p>(-) For the production and distribution of biodiesel business (B100), experienced a decline in gross profit, which can be attributed to weakening selling prices of biodiesel, crude glycerin, and refined glycerin. This contrasts with 9M/2022 when biodiesel prices experienced a notable increase, propelled by the elevated crude palm oil prices resulting from Thailand's intensified promotion of crude palm oil exports, serving as a strategic substitute source to address the global shortage of oil crops.</p> <p>(-) The ethanol production and distribution business experienced a decline in gross profit, attributed to the decreased volume of ethanol sales at the beginning of the year. This decline was a result of the initiative to promote the use of E20 gasohol as base gasoline, coupled with reduced subsidies for gasohol E85 through the Oil Fuel Fund starting from</p>



Performance by Business Group

EBITDA -12% YoY

Q4/2022. This reduction in demand for ethanol was further exacerbated by rising costs of raw materials, such as cassava and molasses, as well as low sugarcane production in the country, impacted by the effects of El Niño.

(+) For the high-value bio-based product business, gross profit increased primarily driven by the successfully launching of new health and well-being products under the brand "B Nature+" (B Nature Plus) and the expansion of distribution channels.



6) Natural Resources Business Group

Natural Resources Business (THB Million)	Q3/2023	Q2/2023	QoQ	Q3/2022	YoY	9M/2023	9M/2022	YoY
Revenue	7,146	5,219	37%	7,776	-8%	22,137	18,097	22%
EBITDA	4,873	3,701	32%	6,064	-20%	13,987	13,856	1%
OKEA Performance								
Revenue from crude oil and gas sales	7,146	5,283	35%	7,702	-7%	22,137	17,941	23%
EBITDA	4,892	3,709	32%	6,074	-19%	14,017	13,907	1%
Production volume – Net to OKEA (kboepd)	23.71	22.26	6%	16.06	48%	22.73	15.67	45%
Sales volume – Net to OKEA (kboepd)	26.69	22.78	17%	17.26	55%	29.10	16.23	79%
Realized liquids price (US\$/BBL)	89.00	70.10	27%	106.60	-17%	79.24	98.90	-20%
Realized gas price (US\$/BBL)	61.90	81.20	-24%	194.80	-68%	85.62	153.43	-44%

In Q3/2023, Natural Resources Business Group's revenue was THB 7,146 million, an increase of 37% QoQ but a decrease of 8% YoY. The EBITDA was THB 4,873 million, an increase of 32% QoQ but a decrease of 20% YoY. The factors impacting the performance are as follows:

EBITDA +32% QoQ

(+) Sales volume of OKEA rose by 17% QoQ, mainly driven by higher sales volume from the Brage and Nova fields. There was no lifting from both fields in Q2/2023.

(+) Average selling price of oil and gas (Liquid Price) increased by 27% QoQ following higher crude oil prices as the global market anticipated tighter supply due to a voluntary output cut from Saudi Arabia.

(-) Selling price of natural gas (Gas Price) plummeted by 24% QoQ as natural gas inventories across Europe

EBITDA -20% YoY

(-) Liquid price dropped by 17% YoY, and gas price declined by 68% YoY amid growing concerns over the global economic slowdown. On the other hand, Q3/2022 faced tight supply from the Russia-Ukraine war and specific pressures from extensive damages in the Nord Stream pipeline, which fueled natural gas supply uncertainties during winter months in Europe.

(+) Sales volume of OKEA rose by 55% YoY. The increase was mainly attributed to the higher sales volume of oil



Performance by Business Group

EBITDA +32% QoQ	EBITDA -20% YoY
remained high in contrast to lower demand amidst mild weather.	thanks to a performance recognition of the new petroleum field acquired from Wintershall Dea in Q4/2022, while the production capacity at the Yme field continued to improve.

In 9M/2023, Natural Resources Business Group's revenue was THB 22,137 million, increased by 22% YoY. The EBITDA was THB 13,987 million, an increase of 1% YoY. The factors impacting the performance are as follows.

EBITDA +1% YoY
<p>(+) Sales volume of OKEA expanded by 79% YoY, buoyed by a larger sales volume of oil and natural gas liquids, as the sales volume in Q1/2023 significantly exceeded the contracted production capacity. Moreover, performance recognition from the new petroleum field acquired from Wintershall Dea in Q4/2022 has contributed to a full performance recognition in 9M/2023.</p> <p>(-) Average selling price of oil and gas (Liquid Price) dropped by 20% YoY, while the selling price of natural gas ebbed by 44% YoY. The global economy has yet to regain full traction, whereas the oil supply became less tight compared to 2022 when the Russia-Ukraine war emerged. Gas inventories across Europe and the UK also remained high as refineries have stocked up on gas ahead of winter while the weather turned milder compared to 9M/2022.</p>

Furthermore, OKEA has got the green light from relevant government authorities to expand the investment in Statfjord's petroleum field in the Norwegian Continental Shelf (NCS). OKEA acquired a 28% working interest in the Statfjord field in March 2023, and the transaction should be complete by November 30, 2023.



Statement of Financial Position, Statement of Cash Flows, and Financial Ratios

As of September 30, 2023, Bangchak Group recorded total assets in the amount of THB 328,857 million, an increase of THB 86,513 million compared to the end of 2022, primarily from PPE and the acquisition of ESSO (Thailand) Public Company Limited. Meanwhile, total liabilities increased by THB 63,504 million to THB 222,470 million due to the increase in long-term loans and debentures, account payable and other current account payable, and corporate income tax payable. Bangchak Group's total equity amounted to THB 106,387 million, an increase of THB 23,009 million compared to the end of the previous year, representing the book value per share of THB 47.54.

Bangchak Groups had cash and cash equivalents in the amount of THB 31,798 million, reflecting a decrease primarily attributable to the acquisition of ESSO (Thailand) Public Company Limited. Net Interest-bearing Debt to Equity was healthy at 0.79 times. On August 31, 2023, TRIS Rating affirmed the company rating on Bangchak Corporation Public Company Limited and the ratings on its outstanding senior unsecured debentures at "A" with "stable" rating outlook.

Statement of Financial Positions

(Unit : THB Million)	9M/2023	% to total assets	2022	% to total assets	% change
Cash and cash equivalents	31,798	10%	45,932	19%	-31%
Inventories	57,562	18%	29,533	12%	95%
Other current assets	35,831	11%	35,885	15%	0%
PPE	113,445	34%	73,018	30%	55%
Investment in subsidiaries and associates	24,140	7%	1,852	1%	>100%
Other non-current assets	65,811	20%	56,124	23%	17%
Total assets	328,857		242,344		36%
AP and Other AP	41,976	13%	28,948	11%	45%
L/T loans and debentures (included current portion of L/T loans and debentures)	115,708	35%	81,239	34%	42%
Decommissioning	18,794	6%	20,901	9%	-10%
Other liabilities	45,992	14%	27,878	12%	65%
Equity	106,387	32%	83,378	34%	28%
Total liabilities and equity	328,857		242,344		36%

Statement of Cash Flows

(Unit : THB Million)	9M/2023	9M/2022	change
Profit before income tax	15,274	13,900	1,374
Adjustment for depreciation and amortization expenses	9,610	7,163	2,447
Other adjustments	1,814	12,019	(10,206)
Changes in operating assets and liabilities	5,468	(29,267)	34,735
Net cash receipts (payments) from operating activities	32,165	3,816	28,349
Net cash receipts (payments) in investing activities	(53,116)	481	(53,597)
Net cash receipts (payments) for financing activities	6,489	(3,593)	10,081
Net increase (decrease) in cash and cash equivalent	(14,462)	704	(15,166)
Cash and cash equivalents – opening balance (1 January 2023)	45,932	32,022	13,910
Exchange gain (loss) on cash and cash equivalents	328	562	(234)
Cash and cash equivalents (net bank overdraft) – closing balance	31,798	33,288	(1,490)



Statement of Financial Position, Statement of Cash Flows, and Financial Ratios

Financial Ratio

	Q3/2023	Q2/2023	Q3/2022	9M/2023	9M/2022
Profitability Ratios (%)					
Gross Profit Margin	13.84%	7.93%	12.41%	10.96%	17.46%
EBITDA Margin	15.48%	9.74%	15.36%	13.23%	16.59%
Net Profit Margin	12.55%	1.04%	3.89%	6.43%	6.11%
Return of Equity (ROE)	21.28%	9.70%	24.11%	21.28%	24.11%
Efficiency Ratio (%)					
Return on Assets (ROA)	10.73%	9.34%	15.76%	10.73%	15.76%

	30 Sep 23	30 Jun 23	30 Sep 22
Liquidity Ratios (Times)			
Current Ratio	1.53	2.49	2.46
Quick Ratio	0.74	1.67	1.38
AR Turnover	23.08	39.53	31.02
Collection Period (days)	16	9	12
AP Turnover	13.79	16.47	25.67
Payment Period (days)	26	22	14
Leverage Ratios (Times)			
Debt to Equity	2.09	1.78	1.73
Interest bearing Debt to Equity	1.09	1.02	0.98
Net Interest-bearing Debt to Equity	0.79	0.42	0.50
Release of Debenture Ratio (Times)			
Net Debt to Equity	0.77	0.40	0.46

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 (%) = $\frac{\text{Profit attributable to owners of the parent}}{\text{Total Equity attributable to owners of the parent (Average)}}$

Efficiency Ratio

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

Liquidity Ratios

- Current Ratio (Times) = $\frac{\text{Current asset}}{\text{Current liabilities}}$
- Quick Ratio (Times) = $\frac{(\text{Cash \& Equivalents} + \text{Short-term investments} + \text{Trade and other account receivable})}{\text{Current liabilities}}$



Statement of Financial Position, Statement of Cash Flows, and 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) = $365 / \text{Account receivable turnover}$
- Accounts Payable Turnover (Times) = $\frac{\text{Cost of sale of goods and rendering of services}}{\text{Accounts payable (Average)}}$
- Payment Period (Days) = $365 / \text{Accounts Payable Turnover}$

Financial Policy Ratios

- 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) = $\frac{(\text{Interest bearing debt} - \text{Cash and cash equivalents} - \text{Short-term investments})}{\text{Total equity}}$

Issuance of Debenture Ratio

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

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)



Management Outlook towards the Business in Q4/2023

Economic Outlook

The global economy is poised for moderate growth in Q4/2023. In its October report, the International Monetary Fund (IMF) anticipated global economic growth at 3% in 2023 with impetus from low unemployment readings among major economies, despite the service industry showing signs of weakening alongside the industrial sector. China's economic downturn is another headwind to the global economic outlook. In contrast, soaring inflation that posed a daunting risk over the recent months continued to subside, thus prompting central banks in advanced economies to close in on the end of their rate-hike cycles. Nonetheless, escalating geopolitical risks from the Israel-Palestinian conflict might trigger a global inflation spike.

The Thai economy in Q4/2023 will continue to regain positive momentum, backed by robust private consumption and rebounding foreign tourist arrivals. The investment promotion policy also helps spur private investment. Yet, there remain uncertainties surrounding China's economic slowdown—which could impair export recovery—and the massive government stimulus to bolster Thai household spending. Meanwhile, inflation should pick up alongside higher energy and food prices but will likely remain anchored to the central bank's target range. We thus expect the Bank of Thailand to hold the policy rate steady at 2.5% throughout the remainder of 2023.

Oil Price Outlook

The International Energy Agency (IEA) anticipates higher average crude oil prices in Q4/2023, driven by increasingly tight supply in the global market as Saudi Arabia extended its voluntary oil output cut until the end of December 2023. Meanwhile, crude oil demand will likely rally as travel activities continue to regain the pre-pandemic pace, thus exacerbating a supply shortfall. IEA expects the global oil demand to edge up by 2.3 million barrels per day and reach 101.9 million barrels per day in 2023, with China's demand accounting for 70% of the global oil demand growth. The global oil supply is expected to increase by 1.5 million barrels per day—with primary contribution from the non-OPEC+ producers.

Based on our assessment, the average Dubai crude oil price in Q4/2023 will likely move between US\$ 85-95/BBL, buoyed by market expectations of tighter crude oil supply until the end of December 2023. Apart from that, the Israel-Hamas conflict, which broke out in early October 2023, might jeopardize global crude oil supply as the war takes place in the Middle East region—the major source of global oil production.

The Dated Brent-Dubai (DTD-DB) spread in Q4/2023 is expected to settle between US\$1.0-1.5/BBL. Compared to Q3/2023, the spread will likely widen due to market expectations of higher crude oil demand in Europe during winter months, which normally record rising demand for heating oil.

In Q4/2023, we expect the refining margin of cracking refineries in Singapore to stay unchanged from Q3/2023, with upward pressures from market concerns over the Middle East conflict and a seasonal increase in oil demand during the winter season. Nevertheless, the global economic slowdown and subsiding inflation might weigh down on oil demand. Notably, a lower-than-expected rebound in Chinese oil demand will lead to higher refined product exports from China.

