



# Bangchak Corporation Plc.

## Management Discussion & Analysis of Business Operation

For the 4<sup>th</sup> quarter period and year ended December 31<sup>st</sup>, 2022



**Sustainability Award**  
Silver Class 2022

**S&P Global**

**MSCI**  
ESG RATINGS



CCC B BB BBB A AA AAA

**THSI**  
THAILAND  
SUSTAINABILITY  
INVESTMENT 2022

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## Executive Summary

### Key Financial Data

Refinery Business Group	Q4/2022	Q3/2022	QoQ	Q4/2021	YoY	2022	2021	YoY
Average Crude Run (KBD)	122.6	123.2	-0.4%	112.2	9%	122.6	99.0	24%
Utilization Rate (%)	102%	103%		94%		102%	83%	
GRM (US\$/BBL)								
- Operating GRM	14.68	11.20	3.48	6.79	7.90	14.33	4.52	9.81
- Total GRM	6.64	10.45	-3.81	9.97	-3.33	11.87	8.96	2.91
Marketing Business Group								
Marketing Margin (Baht / liter) <sup>1/</sup>	0.81	1.13	-29%	0.69	17%	0.93	0.88	5%
Sales Volume (Million liters)	1,713	1,386	24%	1,379	24%	5,977	4,854	23%
Power Plant Business Group								
Electricity Sales Volume (GWh)	223.8	320.4	-30%	234.2	-4%	947.9	875.2	8%
Bio-based Product Business Group								
Sales Volume (Million liters)								
- Ethanol	37.6	40.2	-7%	51.7	-27%	141.2	179.9	-22%
- Biodiesel	63.9	46.9	36%	58.0	10%	208.5	239.1	-13%
Natural Resources Business and New Business Development Group								
Production volume-Net to OKEA (kboepd)	16.32	17.26	-5%	18.10	-10%	16.25	15.84	3%
Realized liquids price (US\$/BBL)	95.20	106.60	-11%	78.00	22%	98.40	65.30	51%
Realized gas price (US\$/mmbtu)	20.06	34.71	-42%	31.44	-36%	24.68	17.56	41%

Note: <sup>1/</sup> Marketing Margin of Bangchak and BGN (excluding Inventory gain/(loss) and net realizable value (NRV))

Unit: THB Million	Q4/2022	Q3/2022	QoQ	Q4/2021	YoY	2022	2021	YoY
<b>Total Revenue</b>	<b>84,583</b>	<b>74,767</b>	<b>13%</b>	<b>66,762</b>	<b>27%</b>	<b>312,202</b>	<b>199,417</b>	<b>57%</b>
Refinery and Trading Business <sup>1/</sup>	74,664	62,137	20%	56,544	32%	270,268	173,644	56%
Marketing Business <sup>2/</sup>	53,892	44,694	21%	36,362	48%	184,938	117,268	58%
Power Plant Business <sup>3/</sup>	1,267	1,544	-18%	1,232	3%	5,405	4,669	16%
Bio-Based Products Business <sup>4/</sup>	3,270	2,951	11%	4,001	-18%	13,373	14,095	-5%
Natural Resources Business and New Business Development <sup>5/</sup>	5,486	7,776	-29%	6,271	-13%	23,583	10,093	134%
Eliminations and others	(53,995)	(44,334)	22%	(37,647)	43%	(185,365)	(120,352)	54%
<b>Accounting EBITDA</b>	<b>6,951</b>	<b>11,487</b>	<b>-39%</b>	<b>9,281</b>	<b>-25%</b>	<b>44,724</b>	<b>25,818</b>	<b>73%</b>
Refinery and Trading Business	2,207	4,131	-47%	3,084	-28%	17,864	9,363	91%
Marketing Business	120	203	-41%	255	-53%	2,909	2,614	11%
Power Plant Business	1,003	1,209	-17%	1,038	-3%	6,400	4,193	53%
Bio-Based Products Business	146	35	321%	255	-43%	617	1,863	-67%
Natural Resources Business and New Business Development	3,769	6,064	-38%	4,832	-22%	17,625	8,251	114%
Eliminations and others	(294)	(155)	90%	(184)	60%	(691)	(466)	49%
<b>Profit attributable to owners of the parent</b>	<b>473</b>	<b>2,470</b>	<b>-81%</b>	<b>1,756</b>	<b>-73%</b>	<b>12,575</b>	<b>7,624</b>	<b>65%</b>
<b>Earnings (Loss) per share (Baht)</b>	<b>0.26</b>	<b>1.73</b>		<b>1.20</b>		<b>8.89</b>	<b>5.25</b>	



## Executive Summary

- 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 Power Plant Business of BCPG Plc. (BCPG Group)
  - 4/ EBITDA from Bio-Based Products Business of BBGI Plc. (BBGI Group)
  - 5/ EBITDA from Natural Resources Business and New Business Development of OKEA ASA (OKEA), BTSG Co., Ltd. (BTSG), BCP Innovation Pte. Ltd. (BCPI) and others

For the year 2022, the company and its subsidiaries (“Bangchak Group”) emerged strongly from COVID-19 crisis with the highest performance ever with revenue from sales and services of THB 312,202 million (+57 % YoY) and EBITDA of THB 44,724 million (+73% YoY). As a result, **net profit attributable to owners of the parent is THB 12,575 million (+65% YoY)**, representing **earnings per share of THB 8.89**. Key operating results of each business group are as follows:



### Refinery and Oil Trading Business Group

#### EBITDA +91% YoY

(+) Higher Operating GRM which increased by US\$ 9.81/BBL YoY to US\$ 14.33/BBL, as crack spreads for all finished products increased in tandem with higher demand and tightened supply due to Russia-Ukraine conflict. While crack spread for Diesel-Dubai (GO-DB) increased significantly.

(+) Bangchak refinery has maintained high production levels at 123 KBD throughout the year.

(-) Recognized higher loss from crude oil and product forward contracts compared to the previous year from the hedging of crack spreads risks. Moreover, in 2022, the Refinery Business recognized lower inventory gain compared to 2021 due to the lower crude oil price volatility and declining during the second half of 2022 while oil price increased throughout the year in 2021.

(+) For oil trading business, BCPT business has continued to grow. In 2022, the trading transaction of crude oil and refined products increased 15% YoY and gross profit increased from higher proportion of transactions with counterparties outside of Bangchak Group (Out-Out), resulting in an increased in EBITDA of 83% YoY to reach its highest record at THB 442 million.

(+) The company expanded its business into fuel pipeline transportation and logistics network through BFPL, which operates pipeline system transportation from Bangkok to the Bang-Pa-In oil depot. As well as a network to transport jet fuel to Suvarnabhumi and Don Mueang airports has been implemented since January 1<sup>st</sup>, 2022. This pipeline business endeavors to reduce fuel transportation costs and carbon dioxide emissions from vehicle transport, aligning with the company’s vision that emphasizes sustainable, innovative business development in harmony with the environment and society.

In addition, BSGF has established a Sustainable Aviation Fuel (SAF) unit at the Bangchak Refinery with an initial production capacity of 1 million liters per day. The unit is expected to serve domestic and international flights by Q4/2024.



## Executive Summary



### Marketing Business Group

#### EBITDA +11% YoY

(+) Sales volume from the Marketing Business increased 23% YoY from demand recovery as well as the company's efforts to meet customers' needs. In addition, the opening up of countries over the world drove jet fuel sales by 148% YoY. While total marketing margin per liter increased 5% YoY to 0.93 Baht/liter, mainly from an increase in industrial marketing margin from higher diesel and lubricants demands.

(-) Recognized lower inventory gain compared to 2021 due to the declining of finished product prices during the second half of 2022 while finished product price increased throughout the year in 2021.

(+) Bangchak's cumulative retail sales volume market share in 2022 was 16.4% compared to 16.2% from the previous year.

(+) At the end of 2022, the number of service stations grew steadily to 1,343 stations (+66 stations YoY). For Non-Oil business, Inthanin Coffee experienced rapid expansion with 1,002 branches in operation (+ 185 branches YoY) and Dakasi Bubble Tea branches in service stations increased to 51 branches. In addition, the company expanded partnerships with food services providers to open shops in service stations to serve modern customers' lifestyles. This was recognized by Bangchak having received Superbrands Thailand award for the fifth consecutive year and BCR receiving the award for Inthanin Coffee for the second consecutive year.



### Power Plant Business Group

#### EBITDA +53% YoY

(+) Recognized gain from the sale of all investments in Star Energy Group Holdings Pte. Ltd ("SEGHPL") THB 2,031 million in Q1/2022, resulting in the decline of recognition of share of profit from investments in associate company by THB 470 million YoY.

(+) Performance for normal operations increased from solar power plants in Japan which generated 373% YoY more electricity from the COD of 3 new solar power plant projects; namely, Chiba 1 (COD November 1<sup>st</sup>, 2021), Komagane (COD March 29<sup>th</sup>, 2022), and Yabuki (COD April 15<sup>th</sup>, 2022).



### Bio-Based Products Business Group

#### EBITDA -67% YoY

(-) There was a recognition of gain on fair value adjustment of investment in the amount of THB 616 million in 2021. In terms of normal operating results, performance was deteriorated due to lower sales volume from the Ethanol business.

## Executive Summary



### Natural Resource Business Group and New Business Development

#### EBITDA +114% YoY

(+) OKEA's EBITDA increased 82% YoY from higher average selling price of oil and natural gas liquid (liquids price) and natural gas price (gas price) which increase 51% YoY and 41% YoY, respectively, in line with higher demand from the global market.

Since 1<sup>st</sup> November 2022, OKEA has completed the acquisition of Winterdhall Dea Norge As, resulting OKEA became an operator of the Brage field with 35.2% and increased ownership to 6.5% stake in the Ivar Aasen field and 6.0% interest in the Nova field, which these acquisitions expanded OKEA's portfolio which OKEA anticipated to have a production capacity of 22,000-25,000 barrels per day in 2023.

In Q4/2022, Bangchak Group recorded revenue from sales and rendering of services in the amount of THB 84,583 million (+13% QoQ, +27% YoY), with EBITDA of THB 6,951 million (-39% QoQ, -25% YoY). This quarter's revenue was impacted by lower global energy prices, resulting in inventory loss of THB 4,003 million (including loss on net realized value (NRV)). **Net profit attributable to owners of the parent in Q4/2022 was THB 473 million** (-81% QoQ, -73% YoY) or **earnings per share of THB 0.26**. Key performance results of each business group are as follows.



### Refinery Business Group

#### EBITDA - 47% QoQ

(-) The decline of crude oil price, resulting in inventory loss of THB 3,818 million (including loss on net realizable value (NRV)); higher than Q3/2022 which had Inventory loss of THB 1,996 million.

(-) Recognition of gain from crude and oil products forward contract declined QoQ due to declining trend crack spreads.

(+) Improved normal operations from Operating GRM increased to US\$ 14.68 /BBL, mainly as diesel crack spread improved in line with global market which diesel is the highest product yield of Bangchak refinery product yield.

#### EBITDA -28% YoY

(-) Recognition of Inventory loss this quarter as global crude oil price declined while in Q4/2021 Inventory gain was THB 1,355 million.

(+) Improved normal operations from Higher Operating GRM which increased by US\$ 7.90/BBL YoY in tandem with significantly higher crack spreads of diesel product.

(+) Average crude run increased 9% YoY

(+) Recognition of gain from crude oil and oil product forward contracts of US\$ 1.22/BBL while in Q4/2021 recognized a loss of US\$ 0.72/BBL



### Marketing Business Group

#### EBITDA -41% QoQ

(-) Marketing margin per unit decreased 0.32 baht/liter from lower retail marketing margin, as the Government continued to limit retail diesel prices as

#### EBITDA -53% YoY

(-) Recognized Inventory loss in Q4/2022 where as in Q4/2021 recognized Inventory gain. In addition, this



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EBITDA -41% QoQ	EBITDA -53% YoY
<p>well as the company's campaign to freeze retail oil prices during the New Year holidays.</p> <p>(+) Total sales volume increased 24% QoQ, mainly accelerated by retail expansion plan, coupled with seasonal factors, when December's sales volumes were the highest ever recorded.</p>	<p>quarter's marketing costs of sales and services increased in line with higher sales volume.</p> <p>(+) Marketing margin per unit and sales volume increased 17% and 24% YoY, respectively, due to the increase in domestic demand as well as effective sales management.</p>



### **Power Plant Business Group**

EBITDA -17% QoQ	EBITDA -3% YoY
<p>(-) Electricity sales volume from hydropower plant project in Laos declined 43% QoQ due to plant shutdown in December in preparation to selling electricity to Vietnam Electricity (EVN) together with the seasonal factor as Hydropower generation entering into low season.</p>	<p>(-) Recognized share of profit from investments in associates company declined by THB 138 million YoY as a result of divestment from geothermal power projects of SEGHPL in March 2022.</p> <p>(+) Electricity sales volume from solar power plants in Japan increased 149% YoY from the COD of 3 projects as stated earlier.</p>



### **Bio-Based Products Business Group**

EBITDA + 321% QoQ	EBITDA -43% YoY
<p>(+) Performance recognition from Biodiesel Business (B100) increased, mainly from higher sales volume in line with higher blending mandate from B5 to B7 announced by the Committee of Energy Policy Administration (CEPA) announcement on 10<sup>th</sup> October 2022.</p>	<p>(-) Performance recognition of Biodiesel business (B100) declined mainly from lower B100 sales price in line with lower crude palm oil price as well as glycerin, a by-product, which also experienced price decline.</p>



### **Natural Resource Business Group and New Business Development**

EBITDA -38% QoQ	EBITDA -22% YoY
<p>(-) Average selling price of liquid, and natural gas from OKEA declined, especially natural gas price which declined 42% QoQ. In Q4/2022, the winter season in European came abnormally late as well as high of gas storage level in Europe.</p>	<p>(-) OKEA's gas price declined 36% YoY in line with global market as this quarter Europe experienced a later-than-usual winter as well as high natural gas storage level in Europe.</p>

On 27<sup>th</sup> October 2022, due to the continued recovery of operating results and a significantly improved financial position, TRIS Rating Co., Ltd. upgraded the company rating to "A" from "A-" while BCPG, a major



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subsidiary, and BBGI, another subsidiary, were upgraded to “A” (from “A-”) and “A-” (from “BBB+”), respectively.

**Financial Position as of 31<sup>st</sup> December 2022**, Bangchak Group had cash and cash equivalents of THB 45,932 million and **total assets of THB 242,344 million**, an increase of THB 40,559 million when compared to 31<sup>st</sup> December 2021, Bangchak Group with **total liabilities of THB 158,966 million** which increased by 26,740 million Baht and **total equity of THB 83,378 million**, an increase of THB 13,819 million. Total equity attributable to owners of the parent was THB 62,704 million.

In November 2022, Bangchak announced the change of the corporate logo to align with vision and strategy of the company, the new logo represents energy innovations that drive the future endlessly, in line with the vision of “**Crafting a Sustainable World with Evolving Greenovation**” and mission “**We commit to accelerate sustainable energy transition, while balancing energy security. We are energizing lives through greenovative solution and promoting ESG for all**”.

The company focuses on business growth by balancing energy security for the country and the transition to clean energy, which Bangchak has formulated a roadmap (BCP 316 NET), efficiency improvement and production procedures (BCP 316 NET), which reduces carbon emissions, in order to achieve carbon neutrality by 2030 and Net Zero by 2050. As evidence of its global leadership in sustainability, the company has received “AA” rating from MSCI ESG Rating 2022, ranked in the ESG Leader Group for the 5th consecutive year, where “AA” is the highest rating of Thai companies in the same industry. The company continues to strive toward business operating in line with ESG principles to achieve 100 years old sustainable organization goal or “Bangchak100X”.





## Other importance events until present

### March 2022

- BBGI, a subsidiary of company, completed its Initial Public Offering (“IPO”) by issuing 433.20 million new ordinary shares with an offering price of THB 10.50 per share (par value of THB 2.50 per share) in the amount of THB 4,549 million. As a result of IPO, the company’s ownership interest in BBGI was 42.02%. In addition, during the period, the company purchase additional ordinary shares of BBGI which resulted in the company’s ownership interest at 45.0% as of 31<sup>st</sup> December 2022.
- The company and BCPG notified the Stock Exchange of Thailand in regard to the acquisition of Oam Suk Social Enterprise Co., Ltd. in 2022 as planned. The company raise its registered capital from THB 10 million to THB 126 million which is approximately THB 62.5 million. Consequently, the company held 50.4% from 40%. In addition, BCPG has already settled payment of THB 62.5 million, resulting BCPG held 49.6%. The investment will be used as an investment in Sukpracha Housing Project together with the National Housing Authority, which aligns with the strategic direction and business goals in tandem with social stewardship of the Bangchak Group and Oam Suk Social Enterprise Co., Ltd.
- On 3<sup>rd</sup> March 2022, BCPG disposed 33.33% shares of Star Energy Group Holdings Pte Ltd. (“SEGHPL”) to Springhead Holdings Pte Ltd. in the amount of USD 440 million (or an equivalent of THB 14,551.32 million based on exchange rate of THB 33.06/USD). The proceed from the divestment will be supported in new investment of renewable projects, increasing BCPG’s investment ability in the future.
- On 29<sup>th</sup> March 2022, BCPG successfully achieved the commercial operations of a solar power plant project in Komagane, Japan. The Komagane project is located in Nagano province and has a PPA of 25 MW at the Feed-In-Tariff rate of JPY 36 per kWh with Chubu Electricity Power Company for 20 years.

### April 2022

- The 2022 Annual General Meeting of Shareholders of the company approved the dividend payment for the second half of 2021 at THB 1.0 per share or approximately THB 1,357 million. The company has paid the dividend on 22<sup>nd</sup> April 2022. Combined with an interim dividend for the first half of the year, Bath 1.0 per share (paid out on 21<sup>st</sup> September 2021), the annual dividend payout amounted to THB 2.0 per share.
- On 1<sup>st</sup> April 2022, the solar rooftop project at Chiang Mai University (“CMU Project”) under CMU Smart City started the COD of phase 2 with an installed capacity of 1.3 MW. The second phase is located in Suan Dok area, Chiang Mai province, operated by Thai Digital Energy (“TDED”), a subsidiary of BCPG with a 75 % stake. The recent COD of the phase 2 project increases the operating contracted capacity to 9.8 MW.
- On 15<sup>th</sup> April 2022, BCPG successfully achieved the commercial operations of a solar power plant project in Yabuki, Japan. The Yabuki project is located in Fukushima province and has a PPA of 20 MW at the FIT rate of JPY 36 kWh with Tohoku Electricity Power Company for 20 years. As of April 2022, BCPG’s total operating capacity in Japan is 79.7 MW, with a developing capacity of 10 MW.

### June 2022

- The company notified the Stock Exchange of Thailand in regards to the disposition of shares in the subsidiary company, registered capital, and change in the company name, as the Board of Directors approved an investment in land loan and consignment business to extend the Mee Tee Mee Ngern Project, to increase liquidity for those affecting from COVID-19 pandemic and solve informal debt problems. The



## Other importance events until present

company has negotiated with business partners, Government Savings Bank and Dhipaya Group Holdings Public Company Limited (“TIPH”) as follows:

- BCV Biobased Co., Ltd. (“BCVB”) (a wholly-owned subsidiary of the company and registered capital THB 20 million is a joint venture company. Also, BCVB registered the change of the company name to Mee Tee Mee Ngern Co., Ltd.
- The company sold its shares in BCVB to the Government Savings Bank and TIPH. Consequently, the company, Government Savings Bank and TIPH will hold 20%, 49% and 31% of Mee Tee Mee Ngern Co., Ltd.’s shares respectively. After that, BCVB increased the registered capital to THB 1,000 million in proportion, resulting in Mee Tee Mee Ngern Co., Ltd. becoming an associate of the company.
- The company notified the Stock Exchange of Thailand in regards to the investment of the company, as the Board of Directors has approved the Digital Business Transformation Plan By applying digital technology to achieve the goal of business growth, the company therefore negotiated with its business partner, MFEC Public Company Limited (“MFEC”) and reached an agreement as follows:
  - The company jointly invested in Data Cafe Company Limited (“DC”), with the registered capital of THB 12.3 million DC and is an associate also held by MFEC, operating IT consulting services, research, and analysis of all types of business data, as well as providing IT service to business enterprise.
  - The Company holding 35% shares in DC and DC becoming an associate of the company.

### August 2022

- The company announced its interim dividend payment for the first six-month period of 2022 to the company’s shareholders at THB 1.25 per share, totaling THB 1,697 million. The dividend has been paid to the shareholders on 13<sup>th</sup> September 2022.
- The company issued Name-Registered, Unsubordinated and Unsecured Debentures with Debentureholders’ Representative to Institutional Investors and/or High Net Worth Investors in the amount of THB 10,000 million. The debentures were split into 3 series with tenors of 3, 5 and 10 years under fixed coupon rate of 2.84%, 3.26% and 4.00%, respectively.
- The company notified the Stock Exchange of Thailand in regards to the establishment of BSGF Co., Ltd. (“BSGF”), a joint venture with BBGI Plc. (“BBGI”) (a subsidiary of the company) and Thanachok Oil Light Co., Ltd. The objective is to secure raw materials and production together with distribution of sustainable aviation fuel (SAF) from used vegetable oil with initial registered capital has a value of THB 1.0 million and plan for capital increase afterward. The company, BBGI and Thanachok Oil Light Co., Ltd. will hold 51%, 20% and 29% of BSGF’s shares respectively.



## Other importance events until present

### October 2022

- The company issued “Bangchak Digital Debentures”, which were the company’s first Digital debentures, via the Krungthai Bank’s Paotang application. The debentures were issued Name-Registered, Unsubordinated and Unsecured Debentures with a Debentureholders’ Representative in the amount of THB 3,000 million, a 4-year investment period, with an interest rate of 3.60% p.a.
- On 19<sup>th</sup> October 2022, the company increased the capital in BCV Energy Co., Ltd. with the amount of THB 1,000 million (THB 10 per share). The objective is to invest in the suitable business.

### November 2022

- On 1st November 2022, OKEA has completed the acquisition of Wintershall Dea Norge AS’s 35.2% interest in the Brage field, 6.5% interest in the Ivar Aasen field, as well as a 6.0% interest in the Nova development field. The acquisition also included the operatorship of Brage oil field. The total value of the transaction amounts to NOK 1.1 billion (approximately THB 4 billion). Therefore, OKEA’s total production to 25,000 – 27,000 boepd in 2023 – 2024.

### January 2023

- BCPG signed the agreement to acquire all shares in Asia Link Terminal Company Limited, with the consideration not exceeding THB 9,000 million, to invest in an oil terminal and seaport business from Pan Asia Storage & Terminal Company Limited. BCPG anticipates that the completion of this transaction can occur approximately in the first quarter of 2023.
- the Board of Directors meeting of BCPG, which approved the establishment of a subsidiary in the United States of America, and the investment in combined cycle gas turbine power plants. Subsequently, the subsidiary was completed establishment and entered into a share purchase agreement for acquisition of 49% of the membership interest in AP-BCPG CCE Partners LLC (“AP-BCPG CCE”) from AP Carroll County Holdings LLC (“APCCH”) and acquisition of 49% of the membership interest in AP-BCPG SFE Partners LLC (“AP-BCPG SFE”) from AP South Field Holdings LLC (“APSFH”) with total amount of not exceeding USD 115 million, to acquire a generation capacity of 150.98 MW, proportionated to the membership’s interest.
- The company signed the Share Purchase Agreement with ExxonMobil Asia Holdings Pte. Ltd. to directly acquire a total of 2,283,750,000 ordinary shares (equivalent to approximately 65.99% of total issued shares). The transaction is expected to be completed in the second half of 2023.

### February 2023

- At the Board of Directors’ meeting, the Board approved to submit for approval at the Annual General Meeting of the Shareholders, a full year 2022 dividend payment at the rate of THB 2.25 per share of which THB 1.25 per share was paid as an interim dividend. Thus, the remaining dividend will be at the rate of THB 1.0 per share payable to the shareholders entitled to receive dividends. This dividend is subject to the approval of the Shareholders at the Annual General Meeting to be held on 11 April 2023.



## Statement of Income

Consolidated Statement of Income (THB Million)	Q4/2022	Q3/2022	QoQ	Q4/2021	YoY	2022	2021	YoY
Revenue from sale of goods and rendering of services	84,584	74,767	13%	66,762	27%	312,202	199,417	57%
Cost of sale of goods and rendering of services	(78,063)	(65,491)	19%	(57,473)	36%	(265,933)	(175,744)	51%
<b>Gross Profit</b>	<b>6,521</b>	<b>9,276</b>	<b>-30%</b>	<b>9,289</b>	<b>-30%</b>	<b>46,269</b>	<b>23,673</b>	<b>95%</b>
Other income	578	455	27%	228	154%	1,854	1,278	45%
Selling and administrative expenses	(3,352)	(2,109)	59%	(2,466)	36%	(9,204)	(7,152)	29%
Exploration and evaluation expenses	(679)	(68)	899%	(344)	97%	(1,188)	(516)	130%
Gain (loss) from derivatives	1,147	1,459	-21%	133	762%	(5,136)	(1,274)	303%
Gain (loss) on foreign exchange	242	215	N/A	(76)	N/A	1	250	N/A
Gain (loss) from fair value adjustment of investment	-	5	N/A	(4)	N/A	10	614	N/A
Gain from sale of investment	-	-	N/A	(2)	N/A	2,031	120	N/A
Loss from impairment of assets	(786)	(2,214)	N/A	(1,758)	N/A	(2,433)	(1,358)	N/A
<b>Profit (loss) from operating activities</b>	<b>3,671</b>	<b>7,019</b>	<b>-48%</b>	<b>5,000</b>	<b>-27%</b>	<b>32,204</b>	<b>15,635</b>	<b>106%</b>
Finance costs	(1,005)	(1,093)	-8%	(809)	24%	(3,977)	(2,539)	57%
Impairment gain and reversal of impairment loss (impairment loss) determined in accordance with TFRS 9	(8)	1	N/A	(29)	N/A	(411)	(30)	N/A
Share of profit (loss) of associates and joint ventures accounted for using equity method	5	42	N/A	158	N/A	188	1,041	N/A
<b>Profit (loss) before income tax expense</b>	<b>2,663</b>	<b>5,969</b>	<b>-55%</b>	<b>4,320</b>	<b>-38%</b>	<b>28,004</b>	<b>14,106</b>	<b>99%</b>
Tax income (expense)	(1,410)	(3,062)	-54%	(1,756)	-20%	(12,852)	(4,263)	201%
<b>Profit (loss) for the period</b>	<b>1,253</b>	<b>2,907</b>	<b>-57%</b>	<b>2,564</b>	<b>-51%</b>	<b>15,152</b>	<b>9,843</b>	<b>54%</b>
<b>Owners of the parent</b>	<b>473</b>	<b>2,470</b>	<b>-81%</b>	<b>1,756</b>	<b>-73%</b>	<b>12,575</b>	<b>7,624</b>	<b>65%</b>
Non-controlling interests	780	437		811		2,577	2,221	
<b>Basic earnings per share (Baht)</b>	<b>0.26</b>	<b>1.73</b>		<b>1.20</b>		<b>8.89</b>	<b>5.25</b>	
<b>Net profit from normal operations (excluding extraordinary items)</b>	<b>2,282</b>	<b>2,711</b>	<b>-16%</b>	<b>593</b>	<b>285%</b>	<b>11,547</b>	<b>1,484</b>	<b>678%</b>



# Statement of Income

## Performance of 2022 compared to 2021

**Total revenue from sales and services** was THB 312,202 million, increased 57% YoY, mainly from oil-related businesses revenue from higher average selling prices of crude and refined products in line with global prices as well as increase in sales volume. In addition, the Natural Resources business group benefited from higher average liquid and natural gas prices, which increased 51% YoY.

**Gross profit** was THB 46,269 million, increased 95% YoY, thanks to US\$ 9.81 /BBL increase of operating GRM of Refinery Business to achieve at US\$ 14.33 /BBL. This was mainly from higher crack spread of all products in line with the global market.

**Selling and administrative expenses** were THB 9,204 million, increased 29% YoY, mainly from expenses related to business growth and employee-related expenses.

**Profit from derivatives** was THB 5,136 million, mainly from the recognition of losses from crude oil and refined products futures contracts.

Unit: THB Million	2022	2021	YoY (%)
<b>Extraordinary items</b>	<b>43</b>	<b>6,497</b>	<b>-99%</b>
Main items as follows:			
Inventory Gain (including loss on net realizable value (NRV))	1,708	6,698	
Loss on impairment of assets	(2,433)	(1,358)	
Loss from unrealized of derivatives	(992)	(230)	
Gain from sale of investment	2,031	120	

- **Gain from inventory gain (including loss on net realizable value (NRV))** decreased due to the lower global crude oil prices volatility and declining in the second half of 2022.
- **Loss from impairment of assets** from the impairment of OKEA's asset due to the revision of reserve volumes of Yme field.
- **Unrealized gains from derivatives** mainly from fair value measurement of crude and refined products futures contracts.
- **Gain from sale of investment** from sold all investments in SEGHPL, recognized in profit of THB 2,031 million.

**Finance cost** was THB 3,977 million, increased 57% YoY, from the company's debenture issuance in Q4/2022 together with higher interest rates in the market.

**Income tax expense** was THB 12,852 million, increased 201% YoY, in line with improved performance of the petroleum related business and natural resources businesses. In addition, the recognition of OKEA performance for the full year. The effective tax rate was 45.9%, increased from 30.2% in the previous year.

**Net profit attributable to the owners of the parent** was THB 12,575 million, increased 65% YoY, with basic earning per shares of THB 8.89, up from THB 5.25 per share in previous years.

**Net profit from normal operation (excluding extraordinary items)** was THB 11,547 million, increased 678% YoY.



# Statement of Income

## Performance of Q4/2022 compared to Q3/2022

**Total revenue from sales and services** was THB 84,584 million, increased 13% QoQ, mainly driven by oil-related businesses which increased from higher sales volume as this quarter was in travel season.

**Gross profit** was THB 6,521 million, declined 30% QoQ, mainly from the Natural Resources business where the selling price of OKEA's natural gas dropped 42% QoQ.

**Selling and administrative expenses** were THB 3,351 million, increased 59% QoQ, mainly from employee-related costs, consultants fees, and cost related to sales volumes which rose in line with the increase in revenue from sale.

**Profit from derivatives** was THB 1,147 million, mainly from gains on fair value measurement of crude and refined products price futures contracts in accordance with accounting standards.

Unit: THB Million	Q4/2022	Q3/2022	QoQ (%)
<b>Extraordinary items</b>	<b>(2,781)</b>	<b>(2,323)</b>	<b>20%</b>
Main items as follows:			
Inventory Loss (including loss on net realizable value (NRV))	(4,003)	(2,682)	
Loss on impairment of assets	(786)	(2,214)	
Gain from unrealized of derivatives	1,774	2,353	

- **Loss from inventory loss (including loss on net realizable value (NRV))** was due to the decline in global crude oil prices.
- **Loss from impairment of assets** was due to the impairment of OKEA's assets as a result of the adjustment in Yme's petroleum reserve since Q3/2022. Bangchak Group recognized such losses after taxes and according to equity share was approximately THB 90 million in Q4/2022 and THB 222 million in Q3/2022.
- **Unrealized gains from derivative** was mainly from the decline of recognition of gains from fair value measurement of crude and refined products futures contracts in accordance with accounting standards due to lower crack spreads compared to the previous quarter.

**Income tax expense** was of THB 1,410 million, decreased 54% QoQ, mainly from lower profits from the Natural Resources and oil-related businesses. The effective tax rate was similar to the previous quarter.

**Net profit attributable to the owners of the parent** was THB 473 Million, decreased 81% QoQ, with basic earning per shares of THB 0.26.

**Net profit from normal operations (excluding extraordinary items)** was THB 2,282 million, decreased 16% YoY.



# Statement of Income

## Performance of Q4/2022 compared to Q4/2021

**Total revenue from sales and services** was THB 84,584 million, increased 27% YoY, mainly from revenue of oil-related businesses thanks to higher average selling prices of crude oil and refined products as well as from higher sales volumes.

**Gross profit** was THB 6,521 million, declined 30% YoY, mainly from the Refinery Business even though operating GRM increased by US\$ 7.89 /BBL YoY to US\$ 14.68 /BBL. However, Inventory loss (including loss on net realized value (NRV)) was 9.28 \$/BBL resulted in lower gross profit.

**Selling and administrative expenses** were THB 3,351 million, increased 36% YoY, mainly from employee-related costs, consultants fees, and cost related to sales volumes which increased in line with increase in revenue from sale.

**Profit from derivatives** was THB 1,147 million mainly from gains on fair value measurement of crude and refined products price futures contracts in accordance with accounting standards.

Unit: THB Million	Q4/2022	Q4/2021	YoY (%)
<b>Extraordinary items</b>	<b>(2,781)</b>	<b>405</b>	<b>-787%</b>
Main items as follows:			
Inventory Loss (including loss on net realizable value (NRV))	(4,003)	1,553	
Loss on impairment of assets	(786)	(1,758)	
Gain from unrealized of derivatives	1,774	721	

- **Loss from inventory loss (including loss on net realizable value (NRV))** was due to the decline in global crude oil prices in Q4/2022 Inventory gain in Q4/2021.
- **Loss from impairment of assets** mainly from the impairment of OKEA's asset as a result of the adjustment in reserve of the Yme field.
- **Unrealized gains from derivatives** increased due to declining in crack spread comparing to the YoY.

**Financial Cost** was THB 1,005 million, increased 24% YoY, mainly from the company's debenture issuance in Q4/2022 together with higher interest rates in the market

**Income tax expense** was THB 1,410 million, decreased 20% YoY, mainly from lower profits from the Natural Resources and oil-related businesses.

**Net profit attributable to the owners of the parent** was THB 473 Million, decreased 73% YoY, with basic earning per shares of THB 0.26.

**Net profit from normal operations (excluding extraordinary items)** was THB 2,282 million, increased 285% YoY.



## Performance by Business Group



### 1) Refinery and Oil Trading Business Group

#### Crude Oil and Crack Spread Situation

Crude Oil Price (US\$/BBL)	Q4/2022	Q3/2022	QoQ +/-	Q4/2021	YoY +/-	2022	2021	YoY +/-
Dubai (DB)	84.77	96.68	-11.91	78.27	6.50	96.38	69.39	26.99
Dated Brent (DTD)	88.87	100.84	-11.96	79.76	9.11	101.32	70.91	30.40
DTD-DB	4.10	4.16	-0.05	1.49	2.61	4.94	1.53	3.41
Crack Spread (US\$/BBL)	Q4/2022	Q3/2022	QoQ +/-	Q4/2021	YoY +/-	2022	2021	YoY +/-
UNL95-DB	9.53	13.07	-3.54	15.44	-5.91	18.74	11.11	7.63
IK-DB	33.51	32.43	1.08	10.21	23.30	30.51	5.86	24.65
GO-DB	39.29	35.23	4.06	11.45	27.84	34.49	6.73	27.75
LSFO-DB	8.26	13.37	-5.11	8.69	-0.43	15.02	7.59	7.44

Average Dubai price in Q4/2022 declined 11.91 \$/BBL compared to Q3/2022, pressured by the concern over global economic slowdown and COVID-19 situation in China, where the number of people infected with the disease increased sharply after the Chinese government lifted restriction measures which impacted crude oil demand. Average Dubai crude oil price in 2022 increased 26.99 \$/BBL compared to 2021 due to the impacts from Russia-Ukraine war which created uncertainties on crude oil supply, while global demand recovered following the reopening of economic activities.

Average Dated Brent and Dubai spread (DTD-DB) in Q4/2022 declined by 0.05 \$/BBL compared to Q3/2022 from the impact of interest rate hikes to control inflation to the European economy as well as warmer than the usual temperature in European winter which reduced demand for Brent crude oil. Average Dated Brent and Dubai spread (DTD-DB) in 2022 increased by 3.41 \$/BBL compared to 2021 due to uncertainties in European crude oil supply. The sanctions on crude oil imports from the Russia after Russia-Ukraine war began raised the demand for Dated Brent crude oil, resulting in higher DTD-DB.

**1. Gasoline and Dubai crack spread (UNL95-DB)** average in Q4/2022 declined compared to Q3/2022, pressured by high supply as China increased export quota for finished products in 2022, while demand in Asia slowed down and demand in the United States declined as the driving season ended. Average Gasoline and Dubai crack spread (UNL95-DB) in 2022 increased compared to 2021 as COVID-19 restrictions eased which supported the increase in driving activities. **2. Jet (Kerosene) - Dubai crack spread (IK-DB)** average in Q4/2022 increased compared to Q3/2022 supported by the increase in the number of flights, especially during the New Year holidays. On top with, Kerosene demand for heating during winter season, especially in North Asia which experienced abnormally low usual temperature. Jet (Kerosene) - Dubai crack spread (IK-DB) average in 2022 increased compared to 2021 from the lifting of COVID-19 restrictions and countries opening up supported demand from the aviation industry. **3. Diesel and Dubai crack spread (GO-DB)** average in Q4/2022 increased compared to Q3/2022 supported by tight supply in Europe due to labor strikes at multiple French refineries during the turnaround season. The strikes resulted in increased diesel import from Asia in order to support demand during the winter. Diesel and Dubai crack spread (GO-DB) average in 2022 increased compared to 2021 due to market uncertainties from European sanctions of refined





## Performance by Business Group

products from Russia, while overall refined product inventories were below average and recovering in demand from the lifting of COVID-19 restrictions. **4. Low sulfur fuel oil and Dubai crack spread (LSFO-DB)** average in Q4/2022 declined compared to Q3/2022 pressured by regional oversupply due to high export volume especially from China, as well as the new refinery in Kuwait which commenced operation and has been exporting low sulfur fuel oil since November 2022. As for Low sulfur fuel oil and Dubai crack spread (FO-DB) average in 2022 increased compared to 2021 supported by tight supply as high gasoline crack spread incentivized refineries in the region to raise their Fluid Catalytic Cracking (FCC) unit utilization for higher gasoline yield, resulting in lower low sulfur fuel oil supply.

### Refinery and Oil Trading Business Group Performance

Refinery and Oil Trading Business Group Performance	Q4/2022	Q3/2022	QoQ	Q4/2021	YoY	2022	2021	YoY
<b>Revenue (THB Million)</b>	<b>74,664</b>	<b>62,137</b>	<b>20%</b>	<b>56,544</b>	<b>32%</b>	<b>270,268</b>	<b>173,644</b>	<b>56%</b>
<b>EBITDA (THB Million)</b>	<b>2,207</b>	<b>4,131</b>	<b>-47%</b>	<b>3,084</b>	<b>-28%</b>	<b>17,864</b>	<b>9,363</b>	<b>91%</b>
Average Crude Run (KBD)	122.6	123.2	-0.4%	112.2	9%	122.6	99.0	24%
Utilization Rate (%)	102%	103%		94%		102%	83%	
Average FX (THB/USD)	36.54	36.57		33.55		35.24	32.16	
<b>(Unit: US\$/BBL)</b>								
Operating GRM	14.68	11.20	3.48	6.79	7.90	14.33	4.52	9.81
Oil Hedging	1.22	4.07	-2.85	(0.72)	1.94	(3.49)	(0.69)	-2.80
Inventory gain/ (Loss) <sup>1/</sup>	(9.26)	(4.82)	-4.44	3.91	-13.17	1.03	5.13	-4.10
<b>Total GRM</b>	<b>6.64</b>	<b>10.45</b>	<b>-3.81</b>	<b>9.97</b>	<b>-3.33</b>	<b>11.87</b>	<b>8.96</b>	<b>2.91</b>
<b>Product Yield (%)</b>								
LPG	2%	2%	0.4%	2%	0.1%	2%	2%	-0.1%
Gasoline	19%	20%	-0.8%	20%	-1.1%	20%	20%	-0.5%
Jet (Kerosene)	7%	4%	2.5%	6%	1.3%	5%	4%	0.8%
Diesel	52%	52%	0.5%	49%	3.0%	53%	52%	0.0%
Non-Transportation fuels	0.2%	0.2%	0.0%	0%	0.1%	0.2%	0.3%	-0.1%
Unconverted Oil (UO)	10%	11%	-1.0%	11%	-1.3%	11%	9%	1.9%
Fuel Oil	10%	11%	-1.2%	12%	-2.1%	9%	12%	-2.2%
<b>Total Sales Volume in each market category of the Company</b>								
<sup>2/</sup> (Million liters)								
Marketing Business	1,713	1,386	24%	1,379	24%	5,977	4,854	23%
Petroleum traders in accordance with section 7	170	151	13%	211	-19%	662	738	-10%
Export	362	366	-1%	510	-29%	1,650	1,494	10%
<b>Total Sales Volume</b>	<b>2,244</b>	<b>1,903</b>	<b>18%</b>	<b>2,101</b>	<b>7%</b>	<b>8,288</b>	<b>7,086</b>	<b>17%</b>

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

**For the year 2022**, Refinery and Oil Trading Business Group recorded revenue of THB 270,268 million, an increase 56% YoY. EBITDA was recorded at THB 17,864 million, an increase 91% YoY. These were resulted from the following factors.



## Performance by Business Group

### EBITDA +91% YoY

(+) Average crude run increased by 24% YoY due to the recovery in domestic demand and higher crack spreads as COVID-19 situation improved, resulting in the refinery increased and continuously maintained average crude run at high level.

(+) Operating GRM increase US\$ 9.81/BBL mainly from the higher crack spread for all products in line with global demand recovery as countries around the world opened up, while supply tightened from the Russia-Ukraine war. Diesel and Dubai crack spread (GO-DB) increased significantly, which gas oil is the largest portion of Bangchak refinery production yield, resulting in higher Operating GRM YoY.

(-) Recognition of loss from crude oil and refined product forward contracts, including fair value measurement according to accounting standards, was at US\$ 3.49/BBL due to higher crack spread for all products in line with demand recovery after COVID-19 situation improved as well as from supply tightness due to the Russia-Ukraine war. In 2021, there was a loss of US\$ 0.69/BBL.

(-) In 2022, the company recognized inventory gain (including loss on net realizable value (NRV)) decreased from 2021 due to crude oil price volatility and declining during the second half of 2022, while price increased throughout the year in 2021.

(+) BCPT traded 33.3 million barrels of crude oil and refined products, an increase of 4.4 million barrels (+15% YoY) mainly from the procurement of crude oil for the Bangchak Refinery, which increased production and maintained its run rate at a high level. The company has expanded market coverage to regions such as New Zealand, Angola, and Gabon as well as strategic access to crude oil producers and National Oil Companies. Gross profit increased from out-out trading (outside Bangchak Group) which continued to grow. In addition, in 2022, BCPT recognized gain from crude oil and refined product forward contracts resulting in EBITDA increased by +83% YoY.

**In Q4/2022**, Refinery and Oil Trading Business Group recorded revenue of THB 74,664 million, an increase of 20% QoQ and 32% YoY. EBITDA was recorded at THB 2,207 million, a decrease of 47% QoQ and 28% YoY. These were resulted from the following factors.

### EBITDA -47% QoQ

(o) The average crude run was at the similar rate to the previous quarter.

(+) Operating GRM of US\$ 14.68/BBL increased by US\$ 3.48/BBL QoQ mainly as diesel crack spread improved in line with the global market and was supported by tight supply in Europe and higher demand during the winter season. Diesel is the highest portion of Bangchak refinery product yield.

(-) Recognized gain from crude oil and oil product forward contracts, including fair value measurement according to accounting standards, declined from

### EBITDA -28% YoY

(+) Average crude run increased 9% YoY due to the recovery in domestic demand as COVID-19 situations improved, resulting in a high production level.

(+) Operating GRM increased US\$ 7.90/BBL YoY mainly from significantly higher crack spread for diesel products. In addition, crack spread for jet fuel increased after countries lifted COVID-19 restrictions and opened up, resulting in high operating GRM YoY.

(+) Recognized gain from crude oil and oil product forward contracts, including fair value measurement



## Performance by Business Group

the previous quarter as crack spreads had the downward curve.

(-) Recognized Inventory loss including loss on net realizable value (NRV) of US\$ 9.26/BBL, (THB 3,818 million) as the decrease in crude oil prices compared with the last quarter. In Q3/2022, Inventory loss was US\$ 4.82 BBL (THB 1,996 million).

(+) BCPT traded 11.4 million barrels of crude oil and finished products, an increase of 3.7 million barrels (+47% QoQ) mainly from gasoline product groups and crude oil. However, gross profit declined mostly attributed to less crude oil supply tightness compared to the previous quarter. In addition, BCPT recognized profit from crude oil and oil product forward contracts, resulting in EBITDA increased of 14% QoQ.

according to accounting standards, of US\$ 1.22/BBL while in Q4/2021 recognized a loss of US\$ 0.72/BBL.

(-) Recognized inventory loss in this quarter as global crude oil price declined while in Q4/2021 recognized inventory gain of US\$ 3.91 /BBL (THB 1,355 million).

(+) BCPT's transaction of crude oil and finished products increased by 3.4 million barrels (+43% YoY), mainly from gasoline products and crude trading. The higher volume of crude trading was due to procurement for Bangchak refinery, which increased production and maintained its run rate at a high level. Gross profit increased mainly from crude oil and fuel oil trading transactions as the demand increased after lifting COVID-19 restrictions, resulting in BCPT's EBITDA increased 30% YoY.



# Performance by Business Group



## 2) Marketing Business Group

### Marketing Business Group Performance

Unit: Sites	Q4/2022	Q3/2022	QoQ	Q4/2021	YoY	2022	2021	YoY
Service Stations	1,343	1,320	23	1,277	66	1,343	1,277	66
EV Chargers	179	107	72	70	109	179	70	109
Inthanin Coffee Shop	1,002	931	71	817	185	1,002	817	185
Dakasi Shop <sup>1/</sup>	51	51	0	15	36	51	15	36
<b>Marketing Business Performance</b>								
<b>Revenue (THB Million)</b>	<b>53,892</b>	<b>44,694</b>	<b>21%</b>	<b>36,362</b>	<b>48%</b>	<b>184,938</b>	<b>117,268</b>	<b>58%</b>
<b>EBITDA (THB Million)</b>	<b>120</b>	<b>203</b>	<b>-41%</b>	<b>255</b>	<b>-53%</b>	<b>2,909</b>	<b>2,614</b>	<b>11%</b>
Marketing Margin (Baht / liter) <sup>2/</sup>	0.81	1.13	- 29%	0.69	17%	0.93	0.88	5%
Net Marketing Margin (Baht / liter) <sup>3/</sup>	0.68	0.62	10%	0.83	-18%	0.94	1.03	-9%
<b>Sales Volume (Million Liters)</b>								
Retail (via Service Stations)	1,248	1,096	14%	1,142	9%	4,636	4,091	13%
Industrial	464	290	60%	237	96%	1,340	762	76%
<b>Total</b>	<b>1,713</b>	<b>1,386</b>	<b>24%</b>	<b>1,379</b>	<b>24%</b>	<b>5,977</b>	<b>4,854</b>	<b>23%</b>
<b>Sales volume in each product category (Million liters)</b>								
LPG	34	31	11%	28	22%	116	97	20%
Gasoline	11	7	72%	4	168%	29	23	28%
Gasohol	453	434	4%	412	10%	1,690	1,474	15%
Jet Fuel	146	80	82%	60	143%	403	163	148%
Diesel	1,025	787	30%	829	24%	3,546	2,917	22%
Fuel Oil and Others	43	47	-8%	46	-5%	194	180	8%
<b>Total</b>	<b>1,713</b>	<b>1,386</b>	<b>24%</b>	<b>1,379</b>	<b>24%</b>	<b>5,977</b>	<b>4,854</b>	<b>23%</b>

Note: 1/ Dakasi pearl milk tea shop under the business expansion and rights of BCR

2/ Marketing Margin of Bangchak and BGN (excluding Inventory gain/(loss) and NRV)

3/ Marketing Margin of Bangchak and BGN (including Inventory gain/(loss) and NRV)

**For the year 2022**, Marketing Business Group recorded revenue of THB 184,938 million, an increase of 58% YoY. EBITDA was recorded at THB 2,909 million, rose of 11% YoY. These were resulted from the following factors.

### EBITDA +11% YoY

(+) Marketing margin per unit increased 5% YoY to 0.93 baht/litre, mainly from higher industrial marketing margin as demand for diesel and lube oil increased, while retail marketing margin rose slightly from efficient sales management during the controlled marketing margins period.



## Performance by Business Group

(+) Total sales volume increased 23% YoY from the economic recovery after COVID-19 situations improved which drove domestic oil demand, together with marketing efforts to meet customer needs. In addition, jet fuel sales volume increased 148% YoY from the most countries reopening.

(-) Recognized lower inventory gain compared to the previous year, as refined product prices declined during the second half of 2022 while prices increased throughout 2021.

In Q4/2022, Marketing Business Group recorded revenue of THB 53,892 million, an increase of 21% QoQ and 48% YoY. EBITDA was recorded at THB 120 million, a decrease of 41% QoQ and 53% YoY. These were resulted from the following factors.

EBITDA -41% QoQ	EBITDA -53% YoY
<p>(-) Marketing margin per unit decreased 29% QoQ to 0.81 baht/litre mainly from lower retail marketing margin as the Government continued to limit retail diesel price. In addition, in this quarter, the company relaunched “Dust reducing oil” or EURO 5 standard for low-sulfur diesel for the 4<sup>th</sup> consecutive year to alleviate PM2.5 dust pollution problem sold at normal diesel price. Furthermore, the company helped to ease travelling expenses for customers by freezing retail oil prices at services stations during December 24<sup>th</sup>, 2022, to January 2<sup>nd</sup>, 2023 as a New Year’s gift to our customers.</p> <p>(+) Total sales volume of Marketing Business was 1,713 million liters, up 24% QoQ, and sales hit a record high in December. The volume was accelerated by retail expansion plan, continual development of high-quality products and traveling season. Together with industrial diesel volume from diesel-LNG switching, and higher jet volume as travel demand recovered.</p> <p>(-) Higher inventory loss compared to last quarter due to lower refined product prices.</p> <p>(-) Typically, the 4<sup>th</sup> quarter has seasonally high selling and administrative expenses. This is mainly from the expenses related to employees and marketing promotion corresponding to the higher sales volume.</p>	<p>(+) Marketing margin per unit increased 17% YoY. The increase in industrial marketing margin corresponded with the expansion of diesel demand in the industry and efficient sales management. Retail marketing margin also increased as the Q4/2022 cost of refined products rose significantly, especially during October 2022, and biodiesel (B100) cost was higher than Q4/2022.</p> <p>(+) Total sales volume increased 24% YoY coming both from retail and industrial segments as COVID-19 situations improved and economic activities recovered, which increased domestic demand.</p> <p>(-) Recorded inventory loss in this quarter where as in Q4/2021 recognized inventory gain.</p> <p>(-) In Q4/2022, there were an increase in sales and service expenses which corresponds to the increase in sales volume as well as employee related expenses, advertising, and marketing promotions.</p>

## Performance by Business Group



The company aims to continually develop high-quality fuels to deliver the best products for customers. This quarter, the newest premium EURO 5 standard gasohol, Bangchak Hi Premium 97 Gasohol, was launched to serve premium vehicles drivers who want high octane fuel. The product was also developed for general vehicles that want to increase performance and extend engine life. The company continued to expand the number of service stations to cover the entire country. In quarter, the company opened 25 new service stations, as a result at the end of Q4/2022 there were 1,343 service stations. The company maintains a policy to develop service stations to meet all lifestyles under the concept of **“Your Greenovative Destination of Intergeneration”** and continues to focus

on developing and expanding non-oil business in order to create modern lifestyle community in Bangchak service stations. In quarter, the company has additionally partnered with famous local chain restaurants such as Nub Cal, Hong Pao, Siam Steak, Decha Fried Chicken, NOODLEBOX and Por Ubon, etc. As well as expanding the number of charging stations for electric vehicles to meet the increasing number of EV users. EV chargers are currently available at 179 service stations covering 57 provinces across the country. The company continue to expand the number of branches for Inthanin coffee shops, resulting in record new high revenue in this quarter. There were 78 new Inthanin branches this quarter, and 1,002 branches at the end of Q4/2022. BCR targets to expand Inthanin nationwide through franchises with “Bonding, Blooming, and Sustainable” concept of “Green Coffee Shop.” In addition, Bangchak has received Superbrands Thailand award for the 5<sup>th</sup> consecutive year and BCR has received Superbrands Thailand award for the 2<sup>nd</sup> consecutive year for Inthanin coffee brand in 2022. This represents the commitment Bangchak and Inthanin Coffee provide good experiences and create customer engagement which has brought consumers’ royalty to the brands.

## Performance by Business Group



### 3) Power Plant Business Group

Power Plant Business Performance (THB Million)	Q4/2022	Q3/2022	QoQ	Q4/2021	YoY	2022	2021	YoY
<b>Revenue from sales and rendering of services</b>	<b>1,267</b>	<b>1,544</b>	<b>-18%</b>	<b>1,232</b>	<b>3%</b>	<b>5,405</b>	<b>4,669</b>	<b>16%</b>
<b>EBITDA</b>	<b>1,003</b>	<b>1,209</b>	<b>-17%</b>	<b>1,038</b>	<b>-3%</b>	<b>6,400</b>	<b>4,193</b>	<b>53%</b>
Share of profit (loss) from associated companies*	14	(17)	183%	152	-91%	130	600	-78%
<b>BCPG Group's contracted capacity (Equity MW)</b>								
Solar Power Plant - Thailand	173.7	173.7	0%	171.8	1%	173.7	171.8	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%	34.7	130%	79.7	34.7	130%
Hydropower Plant - Lao PDR	114.0	114.0	0%	114.0	0%	114.0	114.0	0%
Geothermal Power Plant - Indonesia	-	-	N/A	157.5	N/A	-	157.5	N/A
Wind Power Plant - Philippines	14.4	14.4	0%	14.4	0%	14.4	14.4	0%
<b>Total</b>	<b>390.7</b>	<b>390.7</b>	<b>0%</b>	<b>501.4</b>	<b>-22%</b>	<b>390.7</b>	<b>501.4</b>	<b>-22%</b>
<b>Electricity sales volume (GWh)</b>								
Solar Power Plant - Thailand	81.6	75.6	8%	80.1	2%	327.4	317.0	3%
Wind Power Plant - Thailand	2.2	3.4	-34%	3.3	-33%	10.7	13.4	-20%
Solar Power Plant - Japan	21.5	33.1	-35%	8.6	149%	105.1	22.2	373%
Hydropower Plant - Lao PDR	118.4	208.4	-43%	142.2	-17%	504.7	522.6	-3%
<b>Total</b>	<b>223.8</b>	<b>320.5</b>	<b>-30%</b>	<b>234.2</b>	<b>-4%</b>	<b>947.9</b>	<b>875.2</b>	<b>8%</b>

\* In March 2022, BCPG disposed the whole investment in SEGHPL, which invests in geothermal projects in Indonesia.

**For the year 2022**, the Power Plant Business Group's revenue was THB 5,405 million, an increase of 16% YoY and its EBITDA was THB 6,400 million, increasing 53% YoY from the following factors.

#### EBITDA +53% YoY

- (+) Recognition of the gain from the disposal of all investments in SEGHPL of THB 2,031 million in Q1/2022.
- (+) The electricity sales volume of solar power plants in Thailand increased 3% YoY due to the additional COD of the solar rooftop project at CMU Project in this year. In addition, the increase in the Ft rate alleviated the impact of the expiration of the adder scheme in July and October 2022 of 40 MW solar power plants.
- (-) Total electricity sales volume of wind power plants in Thailand dropped 20% YoY as the lower wind speed.
- (+) The electricity sales volume in solar power plants in Japan increased 373% YoY. This was due to the COD of 3 new solar power plants, including Chiba 1 (COD on 1<sup>st</sup> November 2021), Komagane (COD on 29<sup>th</sup> March 2022) and Yabuki (COD on 15<sup>th</sup> April 2022).
- (-) The electricity sales volume of hydropower plants in Lao PDR decreased 3.4% YoY due to the pause of power plants' operation.
- (-) Share of profit from associated company is recorded THB 130 million, decreasing THB 470 million YoY. mainly from share of profit from the geothermal power plants for only two months as the disposal of such investment in March 2022.



## Performance by Business Group

In Q4/2022, the Power Plant Business Group's revenue was THB 1,267 million, a decrease of 18% QoQ but an increase of 3% YoY. The EBITDA was THB 1,008 million, decreasing 17% QoQ and 3% YoY, with factors affecting operations as follows:

EBITDA -17% QoQ	EBITDA -3% YoY
<p>(+) From a seasonal factor, the electricity sales volume of solar power plants in Thailand increased 8% QoQ. The third quarter is the low season for solar power plants in Thailand.</p> <p>(-) The electricity sales volume of wind power plants in Thailand decreased 34% QoQ from the seasonal decline in wind speed at the project.</p> <p>(-) The electricity sales volume of solar power plants in Japan fell 35% QoQ due to lower irradiation from a seasonal factor.</p> <p>(-) The electricity sales volume of hydropower plants in Lao PDR dropped 43% QoQ as the operation was paused in December to prepare for transmission of electricity to Vietnam Electricity (EVN) and the hydropower plants entered the low season.</p> <p>(-) The share of profit from investments in the associated company of THB 20 million increased by THB 31 million from the previous quarter. This was mainly from the share of profit from wind power plants in the Philippines increased THB 33 million from the prior quarter due to the high season of the Philippine monsoon and a recognized insurance claim.</p>	<p>(+) The electricity sales volume of solar power plants in Thailand increased 2% YoY due to the additional COD of the solar rooftop project at CMU Project in this year. Additionally, the increase in the Ft rate alleviated the impact of the expiration of the adder scheme in October 2022 of 10 MW solar power plants.</p> <p>(-) The electricity sales volume of wind power plants in Thailand dropped 33% YoY due to lower wind speed.</p> <p>(+) The electricity sales volume of solar power plants in Japan increased 149% YoY, due to the COD of 3 new solar power plants as stated earlier.</p> <p>(-) Total electricity sales volume of hydropower plants in Lao PDR decreased 17% YoY due to the pause of power plants' operation.</p> <p>(-) The share of profit from investments in associated company decreased THB 138 million as no recognition of profit sharing from the geothermal power plants in Indonesia due to the disposal of all investment in SEGHPPL in March 2022.</p>



## Performance by Business Group



### 4) Bio-Based Product Business Group

Bio-Based Products Business Performance (THB Million)	Q4/2022	Q3/2022	QoQ	Q4/2021	YoY	2022	2021	YoY
<b>Sales Revenue</b>	<b>3,270</b>	<b>2,951</b>	<b>11%</b>	<b>4,001</b>	<b>-18%</b>	<b>13,373</b>	<b>14,095</b>	<b>-5%</b>
<b>EBITDA</b>	<b>146</b>	<b>35</b>	<b>321%</b>	<b>255</b>	<b>-43%</b>	<b>617</b>	<b>1,863</b>	<b>-67%</b>
<b>BBGI Performance</b>								
Gross Profit/(loss)	112	(4)	N/A	227	-51%	464	1,030	-55%
Selling and Administrative expenses	(85)	(72)	19%	(83)	2%	(309)	(276)	12%
<b>Sales Volume (Million Liters)</b>								
Ethanol	37.60	40.21	-7%	51.71	-27%	141.17	179.93	-22%
Biodiesel	63.94	46.89	36%	58.04	10%	208.49	239.14	-13%

For the year 2022, Bio-Based Product Business Group recorded revenue of THB 13,373 million, a decrease of 5% YoY. EBITDA was recorded at THB 617 million, a decrease of 67% YoY. These were resulted from the following factors.

#### EBITDA -67% YoY

(-) The decrease in performance was partially impacted by recognition of the gain on fair value adjustment of THB 616 million in 2021.

(-) For production and distribution of ethanol business, recorded revenue decreased THB 645 million or 14% YoY. This was mainly due to an increase in the price of main raw materials for ethanol production, which caused a decreased 22% YoY in ethanol sale volume.

(-) Revenue from production and distribution of Biodiesel business (B100) decreased by THB 78 million or 1% YoY, mainly due to the Committee on Energy Policy Administration (CEPA) announcement to decrease biodiesel blending in high-speed diesel from B7 to B5 from February to September 2022 and increased to B7 in October 2022. Meanwhile, the biodiesel blending in high-speed diesel was B10 as a standard grade throughout 2021, resulting in a decrease of 13% YoY in biodiesel sales volume. In addition, costs associated with chemicals and energy have also increased.

(+) For high-value bio-based products, recorded revenue increased by THB 2 million or 86% YoY, from an increase in the launch of new products related to health and well-being under the brand B nature+ (B Nature Plus) more than the previous year, including "Calcium-LT plus UC-II" and 4 "Probiotics" formulations, and expanded more distribution channels both online, on TV, and at Bangkok Drug Store. Moreover, we are launching the Oat & Soy milk under the brand "More Day" for health lovers as well.

(-) Selling and administrative expenses increased by THB 34 million or 12% YoY due to an increase in expenses relate to the Initial Public Offerings (IPO) and listing on the stock of exchange as well as expenses of promoting high-value bio-based products and developing new products.



## Performance by Business Group

In Q4/2022, Bio-Based Product Business Group recorded revenue of THB 3,270 million, an increase of 11% QoQ but a decrease of 18% YoY. EBITDA was recorded at THB 146 million, an increase of 321% QoQ but a decrease of 43% YoY. These were resulted from the following factors.

EBITDA +321% QoQ	EBITDA -43% YoY
(+) For production and distribution of ethanol business, recorded revenue increased by THB 16 million or 1% QoQ. This was mainly due to an increase in the selling price which reflected the higher cost of raw materials.	(-) For production and distribution of ethanol business, recorded revenue decreased THB 150 million or 12% YoY. This was mainly due to lower sales volume from the cost of raw materials for ethanol production. However, expenses related to production decreased.
(+) For production and distribution of Biodiesel business (B100), recorded revenue increased THB 303 million or 17% QoQ. This was mainly due to the Committee on Energy Policy Administration (CEPA) announcement to increase biodiesel blending in high-speed diesel from B5 to B7 from 10 <sup>th</sup> October to 31 <sup>st</sup> December 2022.	(-) Revenue from production and distribution of Biodiesel business (B100) decreased THB 582 million or 22% YoY, mainly due to the decreased selling price of biodiesel in accordance with a drop in crude palm oil price. Moreover, the selling price of Glycerin which is a byproduct has also declined.
(-) Selling and administrative expenses increased THB 13 million or 19% YoY due to an increase in expenses related to promoting high-value bio-based products.	



### 5) Natural Resources Business and New Business Development Group

Natural Resources Business and New Business Development (THB Million)	Q4/2022	Q3/2022	QoQ	Q4/2021	YoY	2022	2021	YoY
<b>Revenue</b>	<b>5,486</b>	<b>7,776</b>	<b>-29%</b>	<b>6,271</b>	<b>-13%</b>	<b>23,583</b>	<b>10,093</b>	<b>134%</b>
<b>EBITDA</b>	<b>3,769</b>	<b>6,064</b>	<b>-38%</b>	<b>4,832</b>	<b>-22%</b>	<b>17,625</b>	<b>8,251</b>	<b>114%</b>
Share of profit (loss) OKEA*	N/A	N/A	N/A	N/A	N/A	N/A	371	N/A
<b>OKEA Performance</b>								
Revenue from crude oil and gas sales	5,408	7,702	-30%	6,247	-13%	23,349	14,201	64%
EBITDA	4,044	6,074	-33%	4,827	-16%	17,951	9,850	82%
Production volume – Net to OKEA (kboepd)	19.89	16.06	24%	16.04	24%	16.74	15.53	8%
Sales volume – Net to OKEA (kboepd)	16.32	17.26	-5%	18.10	-10%	16.25	15.84	3%
Realized liquids price (US\$/BBL)	95.20	106.60	-11%	78.00	22%	98.40	65.30	51%
Realized gas price (US\$/mmbtu)	20.06	34.71	-42%	31.44	-36%	24.68	17.56	41%

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

For the year 2022, Natural Resources Business and New Business Development Group's revenue was THB 23,583 million, increasing 134% YoY. The EBITDA was THB 17,625 million, increasing 114% YoY due to the following factors.



## Performance by Business Group

### EBITDA +114% YoY

(+) OKEA's average selling price of crude oil and gas (liquid price) and natural gas price (gas price) increased 51% YoY and 41% YoY, respectively, in corresponded to the market's growing demand.

(+) The sales volume increased 3% YoY, mainly from Yme field, starting the operation in October 2021. Therefore, in 2022, the group recognized the revenue from Yme field for the full year while in 2021, it only recognized the revenue in the latter half.

(+) The increase in EBITDA was partially supported by the changing recognition of OKEA's performance to the consolidated method since Q3/2021. As a result, in 2022, Natural Resources Business group recognized OKEA's EBITDA for the full year, while in 2021, it recognized the EBITDA only from the year's second half.

In Q4/2022, Natural Resources Business and New Business Development Group's revenue was THB 5,486 million, decreasing 29% QoQ and 13% YoY. The EBITDA was THB 3,769 million, a decrease of 38% QoQ and 22% YoY. The factors impacting the performance are as follows.

### EBITDA -38% QoQ

(-) OKEA's average selling price of crude oil and gas (liquid price) and natural gas price (gas price) decreased, particularly the gas price dropped by 42% QoQ since the winter season in Europe came abnormally late. The natural gas storage level was relatively high because they continuously stocked the inventory since the middle of last year to prepare for the sanctions on imports from Russia.

### EBITDA -22% YoY

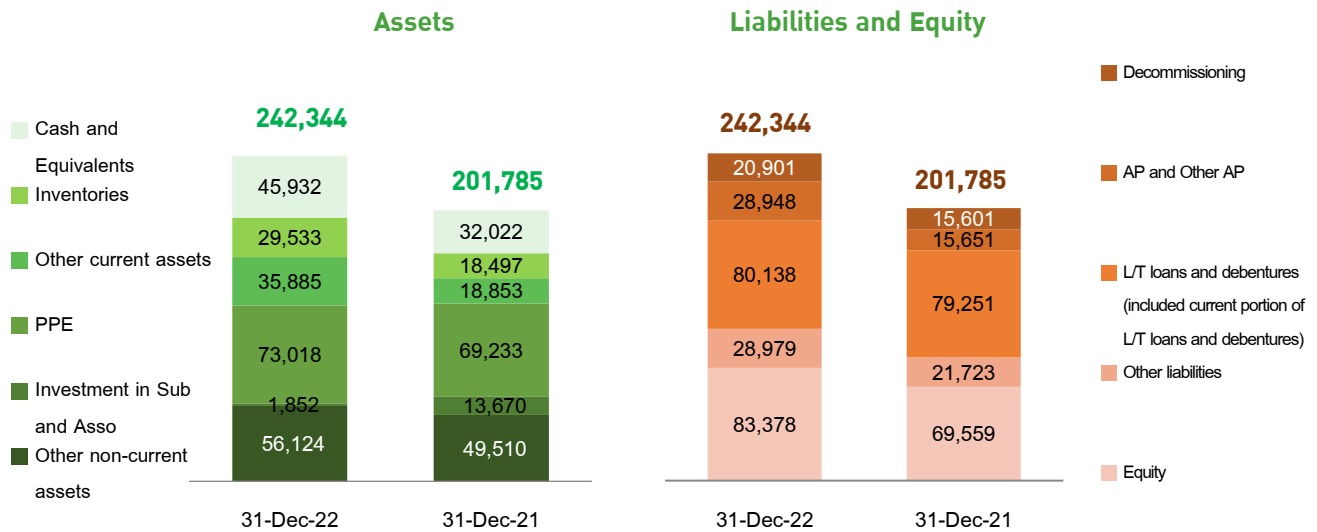
(-) The selling price of natural gas (gas price) decreased 36% YoY following the global market as a resulted from the high level of natural gas storage continuously stocking since the middle of last year.

(-) The sales volume declined 10% YoY, mainly from Ivar Aasen.



# Statement of Cash Flows

Unit: THB Million



## Assets

As of 31<sup>st</sup> December 2022, Bangchak Group had total assets in the amount of THB 242,344 million, an increase of THB 40,559 million compared to 31<sup>st</sup> December 2021. Changes in assets are as follow:

- Inventory increased THB 11,039 million, mainly from higher volume of crude oil and finished products and higher average costs for crude oil and refined products.
- Other current assets increased by THB 17,032 million mainly from:
  - (1) Accrued oil fund compensation increased THB 8,766 million as the government raised subsidy for diesel fuel from average 2.43 baht/liter in 2021 to 3.99 baht/liter in 2022.
  - (2) Trade and other current receivables increased THB 6,965 million due to:
    - (+) Trade account receivables increased from higher volume and average selling prices of finished product.
    - (+) Other receivables of the Natural Resources business (OKEA) increased from the recognition of accrued income (Underlift).
- Property, plant, and equipment increased THB 3,785 million mainly from:
  - (+) The increase in shareholding and additional investment in OKEA's resources (Draugen, Ivar, Aasen, Brage, and Nova) of THB 11,174 million.
  - (-) Depreciation of property, plant, and equipment of THB 7,190 million
  - (-) Asset impairment of THB 1,761 million from the adjustment in reserve volume of Yme field.
- Investments in subsidiaries and associated companies decreased THB 11,818 million, mainly due to the divestment of SEGHPL in Q1/2022.
- Other non-current assets increased by THB 6,614 million, mainly from an increase in leasehold assets of THB 3,300 million and an increase in goodwill of THB 1,765 million.



## Statement of Cash Flows

### Liabilities

As of 31<sup>st</sup> December 2022, the company and its subsidiaries had total liabilities THB 158,966 million, an increase of THB 26,740 million, changes in liabilities are as follow:

- Trade and other current liabilities increase THB 13,297 million mainly from:
  - (+) Trade account payable of oil business increased due to higher purchase volume of crude oil and finished products as well as higher average purchase prices.
  - (+) Other payables of natural resources business (OKEA) increased due to creditor contract from Joint Venture
- Provisions related to decommission costs increased by THB 5,300 million mainly due to the additional investment in OKEA's resources (Ivar, Aasen, Brage, and Nova).
- Other liabilities increase by THB 7,256 million, mainly from the Natural Resources business (OKEA) as a result of Special Petroleum Tax implemented by Norway as of January 1<sup>st</sup>, 2022 resulting in an increase in deferred tax liabilities of THB 4,000 million and an increase in lease liabilities of THB 3,000 million

### Equity

As of 31<sup>st</sup> December 2022, the Bangchak Group had total equity in the amount of THB 83,378 million, an increase of THB 13,819 million mainly from:

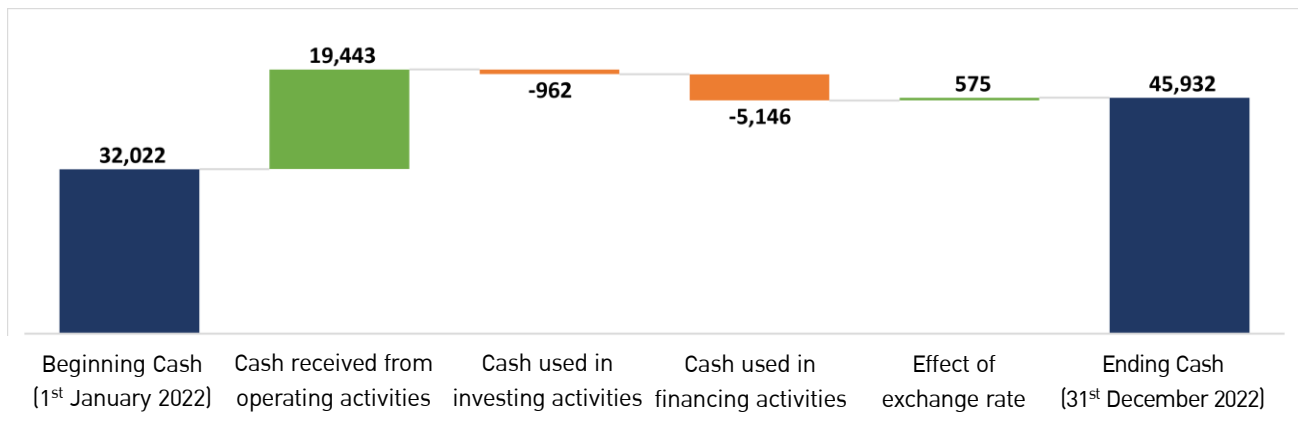
- (+) Profit for the year of THB 15,153 million
- (+) Changes in stakes in subsidiaries of THB 4,582 million
- (-) Dividend payment of THB 4,261 million
- (-) Interest expenses for perpetual subordinated bonds of THB 500 million

Total equity attributed to owners of the parent was THB 62,704 million and book value per share (excluding perpetual subordinated bonds) was THB 38.86.



## Statement of Cash Flows

Unit: THB Million



As of 31<sup>st</sup> December 2022, the company and its subsidiaries had cash and cash equivalents in the amount of THB 45,932 million, details for each activity are as follow:

- Net Cash received from operating activities** was THB 19,443 million, main items consist of EBITA of THB 44,724 million and change in working capital. The main items that increased cash flow included the increase in trade and other payables increasing THB 13,533 million and main items that decreased cash flow included trade accounts receivable and other current receivables which increased THB 17,590 million, increase in inventory of THB 11,283 million, and income tax paid in the amount of THB 10,465 million.
- Net Cash used in investing activities** was THB 962 million, mainly from cash paid for (1) property, plant, and equipment THB 7,526 million as detailed in the assets section (2) business acquisition of THB 4,306 million (3) intangible assets of THB 1,379 million (4) right-of-use asset THB 997 million (5) investments in subsidiaries and associated companies net of cash received THB 988 million while cash received from the sale of investment in associated companies of THB 14,551 million.
- Net Cash used in financing activities** was THB 5,146 million, mainly from (1) repayment of debentures THB 9,634 million (2) repayment of long-term loans THB 8,258 million (3) dividend payment THB 4,261 million (4) finance costs THB 2,819 million and (5) payment in accordance with lease agreement THB 2,083 million. Cash received from (1) bond issuance THB 13,000 million (2) long-term loans from financial institution THB 5,144 million, and (3) issuance of ordinary share of subsidiary THB 3,991 million.

## Financial Ratio

	Q4/2022	Q3/2022	Q4/2021	2022	2021
<b>Profitability Ratios (%)</b>					
Gross Profit Margin	7.71%	12.41%	13.91%	14.82%	11.87%
EBITDA Margin	8.22%	15.36%	13.90%	14.33%	12.95%
Net Profit Margin	1.48%	3.89%	3.84%	4.85%	4.94%
Return of Equity (ROE)	21.65%	24.11%	15.27%	21.65%	15.27%
<b>Efficiency Ratio (%)</b>					
Return on Assets (ROA)	14.40%	15.76%	9.51%	14.40%	9.51%

	2022	2021
<b>Liquidity Ratios (Times)</b>		
Current Ratio	2.33	2.03
Quick Ratio	1.45	1.40
AR Turnover	27.42	26.29
Collection Period (days)	13	14
AP Turnover	19.21	18.61
Payment Period (days)	19	20
<b>Leverage Ratios (Times)</b>		
Debt to Equity	1.91	1.90
Interest bearing Debt to Equity	0.97	1.16
Net Interest-bearing Debt to Equity	0.41	0.69
<b>Release of Debenture Ratio (Times)</b>		
Net Debt to Equity	0.37	0.59

### 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 (%) =  $\frac{\text{EBIT}}{\text{Total asset (Average)}}$



## Financial Ratio

### Liquidity Ratios

- Current Ratio (Times) = Current asset / Current liabilities
- Quick Ratio (Times) = (Cash & Equivalents + Short-term investments + Trade and other account receivable) / Current liabilities
- Accounts Receivable Turnover (Times) = Revenue from sale of goods and rendering of services / Accounts receivable before doubtful debt (Average)
- Collection Period (Days) = 365 / Account receivable turnover
- Accounts Payable Turnover (Times) = Cost of sale of goods and rendering of services / Accounts payable (Average)
- Payment Period (Days) = 365 / Accounts Payable Turnover

### Financial Policy Ratios

- Debt to Equity (Times) = Total debt / Equity
- Interest Bearing Debt to Equity (Times) = Interest bearing debt / Total equity
- Net Interest-Bearing Debt to Equity (Times) = (Interest bearing debt - Cash and cash equivalents - Short-term investments) / Total equity

### Issuance of Debenture Ratio

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

#### Note:

1/ Average total equity attributable to owners of the parent

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

2/ Average total assets

- Yearly = (Total assets of the year before + Total assets of the Company of this year) / 2
- Quarterly = (Total assets of the quarter of the year before + 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 = (Accounts receivable before doubtful debt of the year before + Accounts receivable before doubtful debt of the Company of this year) / 2
- Quarterly = (Accounts receivable before doubtful debt of the quarter of the year before + Accounts Receivable before doubtful debt of the quarter this year) / 2

6/ Average accounts payable

- Yearly = (Accounts payable of the year before + Accounts payable of the Company of this year) / 2
- Quarterly = (Accounts payable of the quarter of the year before + 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)





## Sustainability Performance in 2022

The company has always placed importance on sustainability performance through management of environmental, social, and good governance and economic performance. To bolster confidence in the company's sustainability management, the company participates in the Stock Exchange of Thailand's (SET) Thailand Sustainability Investment (THSI) and the DJSI Corporate Sustainability Assessment (DJSI/CSA 2022), which is assessed by S&P Global. In addition, the company was also evaluated by Morgan Stanley Capital International (MSCI) ESG Research Rating, an organization with expertise and credibility in ESG indices internationally. The assessment process is designed to measure a company's resilience to environmental, social and governance risk (ESG risks) relevant to their respective industries. Those risks are comprised of five factors: the environment, customers, human rights and the community, labor rights and the supply chain, and governance. Results from ESG assessments are as follow:

- **Stock Exchange of Thailand's Assessment**

- The company has been included in the Thailand Sustainability Investment (THSI) for the eighth consecutive year (2015 -2022).
- The company received an award in the Sustainability Excellence group for the sixth consecutive year as well as received an honorary award for listed companies for sustainability, Sustainability Awards of Honor, for the third consecutive year.

- **International ESG Assessments**

- The company continues to participate in the S&P Global Corporate Sustainability Assessment (S&P Global CSA) by S&P Global; in 2022, S&P Global changed the assessment timeframe; the assessment results will be announced in early 2023.
- The company received MSCI ESG Ratings of AA rating for the fifth consecutive year (2018-2022).

The company's ESG management focuses on these five areas:

### 1) Risks from economic uncertainties and high energy prices

Energy and consumer goods prices have increased as a result of supply constraints and the Russia-Ukraine conflict. In many countries around the world, inflation exceeds the target rate, prompting central banks to tighten their monetary policies. In addition, governments have implemented stabilization mechanisms to support domestic retail energy prices. As a result, the company has put in place a risk management plan to accommodate uncertainties by focusing on developing the High Value Specialty Products Refinery, diversifying crude oil sourcing, raising the level of service to create maximum customer satisfaction to maintain no. 1 in the Net Promoter Score (NPS) through customer understanding, customer empathy, and customer relationship management as well as developing services and utilizing digitalization to deliver a good experience to customers under the concept of "Your Greenovative Destination." In addition, the company continues to expand non-oil business together with business partners. This year, Inthanin coffee aimed to expand the number of branches both inside and outside of the service station. Thus, by the end of 2022, there were 1,002 Inthanin Coffee branches. BBGI is modifying its biodiesel production to reflect shifting market dynamics as the government modifies Diesel mixtures.

### 2) Risks from changes in digital technology and cyber threats

Changes in digital technology and cyber threats are external factors that have developed and evolved very rapidly. In today's environment, due to competition and business development, it is crucial that businesses rely more on the use of modern technology and connectivity of information from various devices and work processes via the internet to increase business efficiency and create good experiences for customers while



## Sustainability Performance in 2022

considering the security of the information technology system of the organization. Therefore, the company has prepared to support such developments and technological changes, as well as consider technology risks that may have a significant impact on current business disruptions, through the establishment of a digital technology center in order to plan, monitor, and provide tools to prevent risks and continue to manage the Refinery Cyber Security System project. The company is certified to ISO/IEC 27001 (Information Security Management) for the distribution control system of the refinery.

### 3) Risks from the implementation of the Personal Data Protection Act B.E. 2562

In accordance with the Personal Data Protection Act, B.E. 2562, which was announced in the Government Gazette on May 27, 2019, and took effect on June 1, 2022, to comply with the Act, the company has appointed a personal data protection officer (DPO) and DPO office, which consists of representatives from relevant departments, to provide consultation and advice on personal data protection, review operations regarding the processing of personal data, and coordinate and cooperate with the Office of the Personal Data Protection Commission and the owner of personal data.

### 4) Risks from climate change, environment, and greenhouse gas reduction

The company has managed business operations that may affect global warming by focusing on reducing energy consumption, reducing the causes and amount of carbon dioxide and greenhouse gas emissions as follows:

- Demonstrate commitment to low-carbon business operations and take the lead in the energy transition by continually increasing the proportion of green business to reduce carbon emissions. The company established the Carbon Markets Club to promote carbon credit trading.
- Set carbon neutrality target by 2030 and Zero GHG Emissions target by 2050, in accordance with the BCP 316 NET concept covering 4 key approaches, namely: B = Breakthrough Performance by focusing on high-efficiency production processes, improving and increasing efficiency in work processes, lowering carbon emissions, and being environmentally friendly; C = Conserving Nature and Society by supporting ecological balance through natural based solutions; P = Proactive Business Growth and Transition through the utilization of clean energy and technology to support sustainable growth. Bangchak receives low-carbon and sustainable business award from Thailand Greenhouse Gas Management Organization (TGO) for the second consecutive year. The award takes into account good governance, sustainability reports, and the size of the organization in accordance with economic, environmental, and social indicators that support the nation's sustainable development goals.
- Use natural gas to generate electricity and steam through a cogeneration power plant as the primary energy source in the refinery process, as opposed to fuel oil, will increase the refinery's energy efficiency and reduce carbon emissions.
- The company becomes part of the effort to alleviate pollution from dust and PM 2.5 by selling "Dust Reducing Oil." By producing 5 times lower sulfur diesel with less than 10 PPM sulfur, reducing sulfur content can help reduce dust from combustion and sulfur dioxide released in the Bangkok Metropolitan area during the dust crisis.



## Sustainability Performance in 2022

- Improve resource use through the implementation of the 3R strategy - Reduce, Reuse, and Recycle - and focusing on conducting environmentally friendly and sustainable business practices such as setting up plastic bottles collection points in the service stations to make products for society, creating a project to recycle engine oil containers to make recycled pellets to be used in the production of new engine oil containers to preserve the value of resources, reduce waste generation, and promote the circular resources to generate the highest benefits to the environment, society, and communities.
- Reduce plastic usage in non-oil business by using plastic sip cap to reduce the use of straws as well as switching to bio-degradable cups. Additionally, the company encourages customers to collect used cups in exchange for discounts and has delivered over one million biodegradable cups to the Royal Forest Department as part of the "Kaew Por Klar" initiative.
- "Orphaned Waste" Project - The company continues to maintain its commitment to environmental stewardship, and societal sustainability by encouraging proper waste management in line with the circular economy as well as reducing waste at its origins can help lessen the social impact from the amount of waste in open dumps and the amount of air pollution from landfills. The company joins an alliance to support the environment by utilizing areas in the Bangchak service station as "orphan waste" pick-up points. In 2022, over 65 tons of orphaned waste were collected from donations through service stations in Bangkok. In addition to waste management, Bangchak is also 1 of the 14 partners of the "Green Shelter" campaign by providing the space to receive the donation of used beverage cartons. The collected carton is recycled into new construction materials, such as Eco Roof, Eco Door Frame, Eco Wood, and Eco Brick, which are then presented to Friends in Need (of "PA") Volunteers Foundation and Thai Red Cross to build homes for the victims of natural disasters, those in need, and those who continue to face housing challenges.

### 5) Risks from water scarcity

The unpredictability of water supplies is exacerbated by global warming, making the water crisis a potential threat on a global scale in the future. Along with the rise in population, the demand for consumable water resources has also risen. The company therefore sees the importance of managing the production process to reduce the use of water resources as follows:

- Risks associated with climate change, such as drought, should be tracked and monitored along with the water situation update from the Metropolitan Waterworks Authority on a daily basis to assess the risk of water scarcity that may affect production processes. Procure emergency water sources to mitigate water shortage risks and implement measures to monitor and cope with the risks of the low water level in the Chao Phraya river that may affect navigation. This is achieved by taking precautions to ensure that related measures do not negatively impact stakeholders. In addition, during the rainy season, the company monitors and maintains a flood watch on the main river, checks the readiness of flood protection equipment in high-risk areas, and establishes a risk management plan based on the probability of occurrence and severity level to ensure business continuity.



## Sustainability Performance in 2022

- Through the use of a micro-filtration system, reverse osmosis system, and water reuse from condensate water and stripped water to be reused in the production process, the company was able to reduce water consumption in the production process by approximately 1,290,335 cubic meters in 2022. Additionally, the company was able to recycle an additional 203,167 cubic meters of water by using a reverse osmosis system to improve the quality of treated water from the wastewater treatment unit. The amount of water saved by all 3Rs measures was equivalent to the amount of water used by 4,120 households.
- In addition, the company conducted a water stress assessment through the AQUEDUCT program in 2022 and determined that the Bangchak refinery area is in the medium-high (20-40%) water stress area, which is not designated as a significant water tension area.
- The cooling units at the refinery have been upgraded for greater efficiency, which will help reduce water loss from the cooling system and thus reduce the use of water supply.
- Encourage affiliated companies to reduce water consumption in the production process, beginning with the bio-products business group reusing process water. The company has also established a project to drill raw water wells to reserve more water for use in the factory area.



# Management Outlook towards the Business in 2023

## Economy Outlook

In 2023, the global economy is still highly uncertain. Although inflation is expected to grow at a slower pace, it remains above target. Despite the slowdown in inflations in major economies as a result of tightening monetary policy, the International Monetary Fund (IMF) forecasts the global economic growth of 2.7%, a slower rate than in 2022, supported by the services and tourism sectors as well as the recovery in private investment. In addition, Chinese economy is expected to gradually recover in line with the lifting of Zero-Covid measures. However, negative factors remain from the prolonged conflicts between Russia and Ukraine, persistently high energy prices, high level of public debt globally, and the risks of recessions in Europe and the United States.

The Thai economy is expected to continuously expand in 2023., but growth is uneven and has not yet reached businesses with financial fragility. Tourism is expected to be the main driver of economic growth. The Bank of Thailand expects the economy to recover back to the same level as pre-Covid. However, risks to economic growth remain from exports slowdown, as seen during the end of 2022, due to slow global economy and persistently high energy prices.

<b>Summary of Thai Economic Projections</b>			
<b>(%)</b>	<b>2021</b>	<b>2022*</b>	<b>2023*</b>
<b>Economic growth rate</b>	1.5	3.2	3.7
<b>Inflation rate</b>	1.2	6.3	3.0

Source: Bank of Thailand

\* Projections

## Crude Oil Price Outlook

The International Energy Agency (IEA) expects crude oil prices to rise in 2023 due to tight supply conditions in the market. The IEA forecasts global oil demand to increase by 1.7 million barrels per day in 2023 to 101.6 million barrels per day supported by the recovery in demand for oil from China. Production from Russia is expected to decline 14% to 9.6 million barrels per day at the end of Q1/2023 as a result of European sanctions and price cap on Russian oils, which became effective at the end of 2022. In addition, OPEC+ group's policy which is ready to adjust crude oil production to support prices.

Average Dubai crude oil price in 2023 is forecasted to move between 75 – 85 \$/BBL range as demand is pressured by the global economy recession following interest rate increases of central banks. However, a rebound in Chinese economic activities will support oil demand.

Dated Brent and Dubai (DTD-DB) spread in 2023 is expected to be at 3 - 4 \$/BBL, a decline compared to 2022 due to the expected economic recovery and demand for heavy crude oil rally after the Chinese government lifted the Zero COVID-19 policy and opens up the country. As a result, Dubai price is expected to increase, resulting in the decrease in DTD-DB gap.

The refining margin of cracking refineries in Singapore is expected to decline from 2022 as the refining margin is pressured by increase supply of refined products as well as new refineries commencing operation. While demand remains uncertain due to recession fears pressuring economic activities. However, negative pressures are constrained by the uncertainties in the refined product supply from Europe sanction over



## Management Outlook towards the Business in 2023

Russian products. In addition, light distillate crack spread is supported by higher demand from increase driving activities after China lockdown easing and the country opening up.

### Performance Outlook

Due to the current uncertainties in economic and business environment from COVID-19 and Russia-Ukraine conflict that began in 2022 which causes the increase in oil and natural gas prices resulting in soaring inflation. In addition, tightening monetary policy and rising interest rates to combat inflation have tempered the growth of global and Thai economy. As Thailand has a high proportion of income from tourism and exports this has impacted the country's GDP as well as the demand and refinery margin of Oil Business. The Bangchak Group is prepared to adapt to uncertain situations and is focusing on work processes that are efficient, effective, and flexible to changing circumstances by:

**The Refinery and Oil Trading Business** has plans for business development and opportunities as well as reducing costs and expenses associated with the crude oil procurement & production process, storage tanks, oil distribution pipes including oil tankers to be able to efficiently optimize distillation process. As a result, the average production volume was higher than 120 thousand barrels per day. The refinery is transforming towards becoming a High Value Specialty Products Refinery, emphasizing to increase the production capacity of UO (Unconverted Oil), which is used in the production of lube base oil and to prepare another Euro 5 quality oil production unit by 2023. In addition, the refinery is concentrating on increasing energy efficiency in the production process by utilizing electricity and steam from cogeneration power plant powered by natural gas which is more environmentally friendly than fuel oil to optimize the production potential of the company. Moreover, the companies in the refinery and oil trading group have goal to expand and develop the business in line with the organization's goal as follows:

- The fuel pipeline transportation and logistics network, Bangkok Fuel Pipeline and Logistics Co., Ltd. ("BFPL") targets and plans to expand its business to support a fully integrated fuel transportation system.
- BCP Trading Pte. ("BCPT") aims to continuously develop its international oil trading business by focusing on the strategy of expanding the proportion of out-out oil trading business (oil procurement and trading with entities outside of Bangchak). In addition, BCPT also has strategy to proactively procuring crude oil directly from national oil companies, enhancing capability development with low sulfur fuel oil partners, capturing new revenue opportunities in the biofuels market, and building good relationships with trading partners.
- BSGF Co., Ltd., ("BSGF") funding has been accelerated to prepare the area for the construction of a Sustainable Aviation Fuel (SAF) unit to be able to deliver products to both domestic and international airlines by Q4/2024, thereby contributing to the reduction of greenhouse gas emissions and meeting the organization's BCP 316 NET objective.

**Marketing Business** has committed to the goal of maintaining the second-ranked market share for oil sales through service stations by focusing on providing maximum customer satisfaction through service station improvements, service standards, high-quality environmentally friendly products, and developing non-oil businesses to meet customers' needs and expectations in order for Bangchak service stations to become "Your Greenovative Destination for Intergeneration." The company continues to expand non-oil



## Management Outlook towards the Business in 2023

businesses both inside and outside of service stations, as well as lube oil businesses. In addition, the company values the digitalization process to improve customer service delivery and business processes. In 2023, the company aims for approximately 80 new service stations. In addition, Inthanin Coffee business will be developed under the concept of “Inthanin Green Coffee Shop” to increase customer and brand loyalty as well as improve value chain toward a circular economy by allowing customers to be part of the solutions to take care of the society and the environment. The plan is to add another 250 Inthanin Coffee branches.

**Power Plant Business:** BCPG aims to further invest in renewable energy power business, both domestically due to the new Thailand Power Development Plan, PDP, and internationally following the global energy transition to clean energy. As well as future potential businesses such as battery and energy storage business, energy technology services, new energy sources, and other low carbon businesses.

**Bio-Based Product Business:** BBGI expanded its business into High-Value Products (HVP) by focusing on the development of health-related products using synthetic biology (SynBio), aiming to selectively design and develop products with specific requirements, especially healthcare and beauty products in line with global consumer trend. In addition, BBGI continues to grow its biofuel business, especially Sustainable Aviation Fuel for the aviation industry.

**Natural Resources Business and new business development** continues to focus on enhancing energy security along with seeking opportunities for further development and create opportunities for growth and increase revenue streams as follows:

- OKEA ASA in Norway, where Bangchak Group is the majority shareholder, continues to focus on enhancing energy security through business expansion in the natural resources group. By managing production costs and seeking opportunities for M&A as well as contemplating future expansion of natural resources into other potential areas.
- For the lithium business, the company holds the rights to purchase lithium according to the lithium purchase agreement with Lithium Americas Corp., along with finding opportunities to develop related businesses such as batteries.
- Liquefied natural gas (LNG) business by BTSG Company Limited (BTSG) plans to expand business domestically by targeting industrial customers to meet growing demand for LNG which is a relatively cleaner and environmentally friendly fuel source.
- Bangchak Group Initiative and Innovation Center (BiiC) plans to establish additional internal startups through an in-house innovation promotion program to generate growth opportunities and increase company’s revenue channels. There is a plan to expand the number of “Krating Kiosks” (digital refueling kiosks), as well as in the future, there are plans for additional lifestyle-related services together with partnerships with external organization both government and private organizations to drive innovation in synthetic biology technology. In accordance with the Bio-Circular-Green (BCG) economy, further development of Biosphere to build human resource capacity and incubate entrepreneurs in synthetic biology technology will sustainably increase competitiveness. In addition, there are plans to diversify investments beyond green energy to include clean energy such as hydrogen economy and carbon capture and carbon utilization (CCUS).



## Management Outlook towards the Business in 2023

- In addition, there are plans to expand the business by leveraging existing businesses or the potential for growth business such as Winnonie, an electric motorcycle service platform with battery swapping network and new s-curve businesses in line with the company's policy.

